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HISTORICAL
CHEMICAL LIBRARY



Maier, Michael. Atalanta Fugiens. Oppenheimii: Ex Typographia Hieronymi Galleri, Sumptibus Job. Theodori de Bry, 1618.

Johann Theodore de Bry engraved this title page of Maier's famous and rare work revealing the secrets of nature through music and art. The superbly executed images seen here, which include, at bottom, Hippomenes (Mercury) using golden apples to catch the swiftly fleeing Atalanta (Sulphur), are the first in the fifty de Bry plates that grace this beautiful and mysterious book.

THE ROY G. NEVILLE HISTORICAL CHEMICAL LIBRARY

An Annotated Catalogue
of Printed Books on
Alchemy, Chemistry, Chemical Technology,
and Related Subjects

by Roy G. Neville

In Two Volumes

VOLUME I

A-K



Chemical Heritage Foundation
Philadelphia, Pennsylvania

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*I dedicate this work to my dear wife, Jeanne,
and to the memory of
my mother, Georgina Lallie Neville (1902–1987), and
father, Percy Herbert Neville (1898–1989).*

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Foreword

BORN IN BOURNEMOUTH, ENGLAND IN 1926, Roy G. Neville came to the United States in 1951 on a Fulbright Scholarship after receiving his B.Sc. from the University of London. Within three years he had earned an M.Sc. and a Ph.D. in chemistry from the University of Oregon, writing his thesis on the oxidation of cysteine. The technical career that followed was spent mostly in the aerospace industry, where he was variously employed by Boeing, Lockheed, Aerospace Corporation, North American-Rockwell, and the Bechtel Corporation. Dr. Neville is the author of numerous papers and patents in the scientific literature, many of them relating to polymers that were corrosion and heat resistant, including the polymer used on the nozzles of the *Saturn V* rocket of the Apollo space program. After leaving Bechtel he continued for many years as a private consultant, specializing in pollution-control methods, especially the treatment of wastewater-containing cyanides.

Roy Neville's passion for books began when he was still a young boy in England. After reading *Book Collecting as a Hobby, in a Series of Letters to Everyman* by Percy H. Muir, a thin book first published in London in 1944, he visited a local bookshop where the owner encouraged young people to collect books. For fifteen shillings (about three dollars) he purchased three books, one each from the sixteenth, seventeenth, and eighteenth centuries, including a chemistry book printed in 1649. Having very limited resources, Roy nevertheless was able slowly to expand his collection. His determination and focus signaled what were to be the signature marks of his career and his collecting. Equally telling is how, soon after he arrived in Oregon, Roy won first prize in a university-sponsored contest for the best graduate student private library.

Seeing his books under glass and on display in the university library vestibule was a crucial step in cementing Roy Neville's passion for books and the beginning of a lifetime commitment to amassing an astonishing and unique collection charting the progress (and the byways) of the chemi-

cal sciences through six centuries. Dr. Neville was never interested in a volume just as another trophy in his library; he was interested in the book and the author, and their place in the history of chemistry. Over the years he has published a number of significant papers on works by Boyle, Dalton, Priestley, and Macquer, using the unique features of a particular text in his collection or the anniversary of a publication date as the *raison d'être* for exploring these works. Finely crafted and carefully detailed, these articles show the intensity and insight of a gifted historian coupled with the scientific background of a versatile chemist.

From the start Roy Neville kept comprehensive records of his collection and meticulously typed lists and descriptions of his library. Ten years after arriving in Oregon, that library list already filled fourteen legal-size pages of single-spaced type, with each book receiving two lines. Roy is particularly fond of the bibliographic method of Denis Duveen, an earlier chemist book collector who built and sold two famed collections, one in alchemy and the other on Lavoisier. Using Duveen as a model, Dr. Neville developed his own entry style, which shapes the substance of the present remarkable annotated catalogue. The biographical and bibliographical information provided for each item in the Roy G. Neville Historical Chemical Library offers a rich and remarkable resource for the historian.

Over the years the library grew, prices of antiquarian books rose sharply from the depressed levels of the 1940s and 1950s, and Roy was now searching for the "truly rare," having long ago collected all the familiar staples of a collection in the history of chemistry. Lesser men—mindful of a modest income and a family to feed—might have despaired or quit the field. However, Roy was blessed not only with determination and focus, but also with Jeanne, his wife and life partner, since the earliest days in Oregon. Thanks to her forbearance and support, Roy's collecting has continued undaunted for almost sixty years. Today, as he approaches his eightieth birthday, Dr. Neville can

finally relax. He—and we—are delighted that the Roy G. Neville Historical Chemical Library is securely housed at the Chemical Heritage Foundation. It is a one-of-a-kind research tool for scholars of many disciplines. However, it is more than that. The Neville library provides the secure foundation for CHF's longer-term plans to develop a true "library of record" for the six-hundred-year era "from Gutenberg to Moore" in which the typeset printed page

was the sole bearer of the record of chemical, and all human, progress. Given this latter reality, it is especially fitting and pleasing that the acquisition of the Neville library by CHF was made possible by the quiet generosity of Gordon and Betty Moore.

Arnold Thackray
New Year's Day 2006

Resolution of the CHF Board of Directors

Resolved, that Dr. Roy G. Neville be honored with CHF's Lifetime Achievement Award. This Award recognizes his dedicated collecting for over half a century, his unrivalled bibliographic knowledge, and his zeal in creating a unique library of antiquarian works in the chemical sciences. The Board notes, with gratitude, that his ardent chemical bibliophilia has created an extraordinary record of the scientific progress of mankind.

Further resolved, that Dr. Roy G. Neville be appointed Founding Director of CHF's Roy G. Neville Historical Chemical Library.

20 April 2004

Arnold Thackray
President
CHF

Harold A. Sorgenti
Chair
CHF Board of Directors

Introduction

EXACTLY ONE HUNDRED YEARS AGO, in 1906, James Ferguson's famous catalogue of the James Young collection of early chemical, alchemical, and pharmaceutical books was published in two volumes in Glasgow under the simple title *Bibliotheca chemica*. Still in print today, and indeed more easily available than ever before thanks to its posting on the Internet, Ferguson's work remains a valuable resource for historians, bibliophiles, and bibliopoles everywhere. A generation later, in 1949, Denis I. Duveen published the *Bibliotheca alchemica et chemica*, a detailed catalogue of his own outstanding collection of books relating to the history of chemistry. This substantial volume joined Ferguson's earlier catalogue as a key reference work for all those concerned with the history of chemistry and its bibliographical heritage. Today, these two venerable and landmark works of bibliography are joined by a third: Roy G. Neville's catalogue of his own extraordinary collection of books focusing on the history of chemistry—the Roy G. Neville Historical Chemical Library.

The Roy G. Neville Historical Chemical Library is one of the finest, most comprehensive, and most cohesive collections on the history of chemistry in the world. It is the cumulative product of sixty years of ceaseless, tireless, and brilliant collecting activity on the part of Roy G. Neville. With great wisdom and foresight, this unparalleled collection has been preserved intact through its acquisition in 2004 by the Chemical Heritage Foundation (CHF) in Philadelphia. There is no doubt that here in its new home the Roy G. Neville Historical Chemical Library will attract scholars from around the world, and indeed it has already begun to do so. I had the great good fortune to be the first scholar given free rein to the collection in its new home, and thus I was able to become acquainted firsthand with its inspiring contents.

The Neville library contains well over five thousand titles dealing with all aspects of chemistry and closely related subjects, and spans six centuries of print, with particular richness in the seventeenth and eighteenth centuries. Readers will find here essentially all of the acknowledged “land-

mark” works of the history of chemistry, often in multiple editions. Lavoisier, Boyle, Scheele, Stahl, Becher, Macquer, Black, Dalton, and Mendeleev are only a tiny sample of the authors to be encountered in the stacks. Alongside the celebrated gems exist hundreds upon hundreds of other less-well-known works, of equal or (by virtue of their scarcity) of even greater interest to those exploring the history of chemistry. Within the collection are dozens of titles that appear to be unique in the world. Some of these belong to the mass of hundreds of extremely scarce chemical dissertations and disputations dating from the seventeenth to nineteenth centuries; these little-studied works promise to bear substantial fruit in the hands of knowledgeable and interested scholars.

Chrysopoetic alchemy is of course extremely well represented in everything from handbooks of recipes and laboratory operations to famously enigmatic tomes and exquisitely illustrated books of emblems. Michael Maier, Basil Valentine, George Starkey, Heinrich Khunrath, and many others are there in plenty. The collection likewise contains significant concentrations of works on the early chemical industry and commerce, including distillation, bleaching and dyeing, the study and use of mineral waters, the early gas-lighting industry and its critics, perfumery, and a host of productive processes ranging from the extraction and treatment of sugar; to the procurement and purification of saltpeter; to the manufacture of steel, glass, alum, vitriol, and porcelain as well as that of beer and wine. Allied fields that deploy chemical knowledge form further important clusters of topics, such as mining and metallurgy, assaying, gunnery, pyrotechnics, and books of secrets. The related subjects of medicine, pharmacy, crystallography, geology, mineralogy, balneology, physics, and botany are also well represented. In sum, anyone involved in the study of almost any aspect of the history of chemistry will now find rich gleanings in this collection at CHF. But to get an adequate sense of this stellar collection, one must visit it either in person or through the medium of a catalogue. This observation brings me to the present volume.

Like the collection itself, the compilation of this catalogue is entirely the work of Roy G. Neville. The final typescript as completed by Dr. Neville filled eleven substantial loose-leaf binders. It should be stressed that after his delivery of the manuscript the only further work toward bringing this sixty-year project into its present printed form was the scanning and final typesetting of the document. Nothing has been added, subtracted, or altered, save for the addition of the short appendix containing details of some further books in the collection. Dr. Neville has himself put the contents into such a form that nothing else was to be

done but to publish. In perusing the following pages, the attentive reader will readily see how discussing bibliophilic terms of art, intricacies of attributions, details of the history of science, and matters of authorial biography and significance Dr. Neville displays equivalent mastery and connoisseurship. Indeed, that such a massive and variegated work as this could flow from the pen and mind of one person is nothing short of incredible. This catalogue represents a fitting testimony to the man, his life, and his life's work.

Lawrence M. Principe

ABBATIA, Antonius de

Zwey vortreffliche und noch nie in Druck gewesene Chymische Bücher: I. Des gelehrten und in der Kunst erfahrenen Münchs Antonii de Abbattia Bericht von Verwandlung der Metallen. II. Aufrichtig-teutscher Wegweiser zum Licht der Natur oder ad Tincturam Physicam Paracelsi, und Lapidem Philosophorum. Authore Domino in Limo, non malo malo Allen der geheimen und hohen Kunst Liebhabern zu Nutz und merklichem Unterricht in teutscher Sprach übersetzt, herausgegeben durch einen der niemahls genug gepriesenen Wissenschaft sonderbahren Beförderer.
N.p. 1759.

First separate German edition. 8vo., 2 parts in 1 vol., 62 pp., 1 leaf (blank). Very good copy in original marbled boards.

TWO RARE alchemical tracts, the first of which is on the transmutation of metals by Antonius de Abbattia (fl. 1600). Ferguson notes that much confusion exists as to the identity of the author: he appears to have been an Italian alchemist who lived before or contemporary with Robert Boyle. The *Send-Brieff von Verwandlung der Metallen*, by Abbattia, published in a series of alchemical tracts entitled *Drey vortreffliche . . . Chymische Bücher* (Hamburg, 1670; Ferguson, 1, 226–227), is an earlier version of the present work under a different title. The second tract (pp. 33–58) by an anonymous author has a separate title page and a preface signed by Wilhelm Gutende. This deals with the “light of nature,” or tincture of Paracelsus, and the philosopher’s stone. At the end are two “Aenigma” about the stone. (Caillet, 17; Duveen, 655; Ferchl, 1, 598; Ferguson, I, 1, II, 573–574; Ferguson Coll., 1; Neu, 4441; Wellcome, II, 2)

ABRAHAM BEN DAVID ARIE

De Auro Dialogi Tres. In quibus non solum de Auri re Medica facultate, verum etiam de specifica eius, & caeterarum rerum forma, ac duplici potestate, qua mixtis in omnibus illa operatur, copiosè disputatur. Abrahamo è Porta Leonis Mantuano Medico Hebraeo Auctore. Ad Serenissimum Dominum Dominum [sic] Gulielmum Gonzagam Mantuae tertium ac Montisferrati primum prudentissimumq(ue) Duces. Cum licentia sanctae Inquisitionis, & Illustrissimi Senatus Veneti. Cum Privilegio.

Venice: Apud Io. Baptistam à Porta. 1584.

First edition. 4to. 4 leaves, 178 pp., 13 leaves (index, final leaf blank). Woodcut printer’s device on title, full-page engraving of author’s crest on page 12, printer’s imprint in blind on signature A3, numerous decorative headpieces and woodcut initials. Two gatherings (signatures Z and Aa) embrowned owing to poor paper quality; otherwise a fresh and fine copy, bound in contemporary limp vellum.

ACCORDING TO Duveen, “This is one of the few books which can with certainty be attributed to Abraham ben David Arie who, alone among the many Jewish doctors who bore the name Abraham from the XIIIth to the XVIth century, can claim distinction. He was born at Modena in 1542, studied at Mantua, Padua, Bologna, and Pavia, but having obtained his doctorate at Mantua was always known as Abraham Mantuanus. The work should be classed as an important iatrochemical one. The author denies that the internal use of gold will prolong life, and the book contains much of interest to the historian of Chemistry.” See also, Friedenwald, *The Jews and Medicine*, II, pp. 597–599. There is much variation in the manner of listing this author: e.g., Duveen lists him as Abraham è Porta Leonis Mantuanus, whereas Durling lists him as Abraham Portaleone. Other variations also occur. A rare book, on potable gold prepared by chemical treatment of the metal. Not in Bolton, Cushing, Ferguson, Guaita, Osler, Smith, Waller, Watt, etc. (Caillet, 33; Durling, 3736; Duveen, 2; Ferchl, 1; Ferguson Coll., 2; Neu, 3; Partington, II, 163; Rosenthal, 1; Waite, 276; Waring, 279; Wellcome, I, 9)

ACADEMIAE NATURAE CURIOSORUM GERMANIAE

Miscellanea Medico-Physica Academiae Naturae Curiosorum Germaniae. In quibus plurimae et novae Observationes, Medicae, Chirurgicae, Anatomicae, Therapeuticae, Physicae, Chymicae, & Botanicae, continentur. Cum Figuris aeneis.
Paris: Ludovicum Billaine. 1672.

First French edition. 4to. 6 leaves, 335 pp. With 10 folding copperplates. Fine copy in contemporary mottled calf, spine richly gilt, with green morocco lettering label.

THE FIRST French edition of the first German scientific periodical, which appeared at Leipzig in 1670. The Collegium Naturae Curiosorum was the second learned society in Germany and predates both the Accademia del Cimento and the Royal Society, as it was founded in 1651 and is still in existence. The first German learned society, the Societas Ereunetica founded in 1622 by Joachim Jungius, was short-lived, no trace of it being found after 1624.

The Collegium was a society of physicians whose main function was to publish scientific papers containing original researches of its members and other investigations of importance to medicine. Dr. Lorenz Bausch, in the fall of 1651, proposed to the physicians of Schweinfurt the formation of the academy, and in January 1652 the society was established consisting of only four members. Very little is known of the society’s activities during its first ten years. In 1661 Dr. Philipp Jacob Sachs joined them, and under his leadership the society grew. By 1670 it was decided to



Abraham Ben David Arie. De Auro Dialogi Tres. Venice, 1584.

publish a permanent record of the society's work, and the first volume of the *Miscellanea* appeared. It contained many papers by Sachs and Bausch (who had died in 1665), and in addition to purely medical researches there were articles on therapeutics, pharmacy, chemistry, physics, botany, zoology, etc. Authors represented included many famous names in the history of medicine and science: e.g., Rayger, Bartholin, Seger, Wepfer, Elsner, Paterson, and Velsch. Pages 305–335 comprise observations on vipers and their poisons by Redi. There are a number of papers of chemical and pharmaceutical importance. This very rare Paris reprint, the privilege of which is signed by Dalence, is apparently unrecorded. See Ornstein (pp. 169–175) and Thorndike (VIII, 232) on the *Miscellanea* (1670).

ACADÉMIE DE DIJON

Académie des Sciences, Arts et Belles-Lettres de Dijon. Séance publique du 23 Août 1823.

Dijon: Frantin, Imprimeur du Roi et de l'Académie. 1824.

First edition. 8vo., 324 pp. Mint copy, uncut, in dark-brown quarter morocco, marbled boards, maroon label, gilt, spine dated, with original blue wrappers bound in.

“SEVERAL LEARNED societies exist in Dijon, the best known being the Académie des Sciences, Arts et Belles-Lettres founded in 1740” (*Encycl. Brit.*). The present volume contains a number of chemical and medical tracts, comments on the discoveries of Champollion concerning Egyptian hieroglyphics, a study on Sir Joseph Banks and his travels, etc. At the end (pp. 302–320) is a long list of the members of the Academy, including several distinguished British and French chemists. Volumes published by this Academy are very scarce. The Wellcome Library (II,7) lists the volume for 1769 only.

ACADÉMIE ROYALE DES SCIENCES, BELLES-LETTRES ET ARTS, Bordeaux

Catalogue des Dissertations de ceux qui ont mérité le Prix au Jugement de l'Académie Royale des Belles Lettres, Sciences & Arts, établie à Bordeaux en 1713.

N.p, n.d. (1739).

First edition. 12mo. 2 leaves (unpaginated). Fine copy, bound with Cavallery, A., *Dissertation sur la cause de la chaleur et de la froideur des eaux minérales* (Bordeaux, 1739).

A LIST OF twenty-three dissertations, with titles and authors, which had been awarded prizes by the Bordeaux Academy from 1713 to 1739. The dissertations are mainly on chemical and physical subjects (e.g., ice, fermentation, salinity of waters, fire, nature of the air, physical properties of substances, magnetism, barometers, and nature of light). Extremely rare. Apparently unrecorded.

ACADÉMIE ROYALE DES SCIENCES, Paris

Memoirs of the Royal Academy of Sciences in Paris Epitomized. With the Lives of the late Members of that Society. And a Preface by Monsieur Fontenelle, Secretary and Author of the History of the said Academy. The Second Edition. London: Printed for William and John Innys, at the West End of St. Paul's. 1721.

Second edition. 8vo. 8 leaves, xxxv, 464 pp., 2 leaves (advertisements). Very good copy in contemporary speckled calf, rebounded, with red and green gilt-lettered morocco labels. Bookplate: Cecil H. Desch, Stratford-on-Avon.

DEDICATED TO Sir Thomas Parker (1666?–1732), first Earl of Macclesfield (1710), this summary of a number of the more important papers presented to the illustrious Académie in Paris are here edited by John Chamberlayne (1666–1723). Part I (pp. 1–226) comprises biographies of famous French scientists, written by Fontenelle, including Bernoulli, Duhamel, and Tournefort. Part II (pp. 227–464) summarizes papers on a variety of subjects (e.g., natural history, medicine, botany, physics, and meteorology). Many papers are of chemical interest (e.g., those on salts from plants; subterranean fires explained chemically; calcination using a burning glass; the nature of iron, silver, and gold; different types of vitriol; inks; nature of fire; and vegetable and mineral acids). The first edition appeared in 1717. Very rare. Not in Blake, Osler, Thornton & Tully, Waller, Wellcome, etc. (Watt, I, 210f)

ACADÉMIE ROYALE DES SCIENCES, Paris

The Philosophical History and Memoirs of the Royal Academy of Sciences at Paris: or, An Abridgment of all the Papers relating to Natural Philosophy, which have been publish'd by the Members of that Illustrious Society. Illustrated with Copper-Plates. The Whole Translated and Abridged, By John Martyn, F.R.S. Professor of Botany in the University of Cambridge; and Ephraim Chambers, F.R.S. Author of the Universal Dictionary of Arts and Sciences. Vol. I. (–V.)

London: Printed for John and Paul Knapton, in Ludgate-street; and Francis Cogan, and John Nourse, near Temple-Bar. 1742.

First edition. 5 vols., 8vo. I: 1 leaf, 456 pp., 8 leaves. Pp. 133–136 (tables) extending. 17 engraved plates (16 folding). II: 1 leaf, 407 pp., 7 leaves, 10 pp. (addenda for 1701). 6 folding engraved plates. III: 1 leaf, 422 pp., 8 leaves. 6 folding engraved plates. IV: 1 leaf, 410 pp., 7 leaves (pp. 11–26, continuation of addenda of vol. II, for 1701). 6 engraved plates (5 folding). V: 1 leaf, 426 pp., 7 leaves. 10 folding engraved plates. All plates engraved by J. Mynde. Fine set in contemporary speckled calf, spines gilt-ruled. Neat signature, in ink, of William Davison (fl. 1740) at top of each title page.

A VALUABLE SUMMARY of papers published by the Académie on all aspects of science and medicine from 1699 to 1719, including much of importance in chemistry, mineralogy, metallurgy, etc. Authors include, among many, such luminaries as Geoffroy, Homberg, Lemery, Marriotte, Reaumur, Rohault, and Tournefort. Plate 10 of volume V depicts a view of Almaden, with furnaces for roasting cinnabar to produce mercury. On the distinguished translators and editors, Martyn (1699–1768) and Chambers (d. 1740), see the D.N.B. Rare. Not in Cushing, Osler, Thornton & Tully, Waller, etc. (Blake, 3; Eales, 1186a; Sondheimer, 1362; Watt, II, 651m)

ACCADEMIA DEL CIMENTO

Essays of Natural Experiments Made in the Academie del Cimento, Under the Protection of the Most Serene Prince Leopold of Tuscany. Written in Italian by the Secretary of that Academy. Englished by Richard Waller, Fellow of the Royal Society.

London: Printed for Benjamin Alsop At the Angel and Bible in the Poultry, over against the Church. 1684.

First English edition. 4to. 13 leaves, "160" (i.e., 164, pp. 77–80 repeated) pp., 6 leaves (last blank). Fine engraved title (R. Waller delin.), and 19 engraved plates. Very fine copy, with license leaf, in original calf, rebound, spine gilt-lettered and dated. Engraved armorial bookplate: Earl of Roden.

THE ONLY English translation of the *Saggi di . . . Accademia del Cimento* (Florence, 1666). In the dedication to Sir John Hoskyns, P.R.S., Waller (c. 1650–1715) states that the Italian edition was presented to the Society, 12 March 1667/8 by Lorenzo Magalotti and Paulo Falconieri, and "has ever since layn in our Library." He praises the book but points out that many of the experiments described therein had already been exhibited by Robert Boyle et al. Achievements of the Accademia include the first sealed thermometers with graduated scales, which contributed greatly to the progress of science. Also described are the first true hygrometer, an improved barometer, experiments on air pressure, radiant heat, phosphorescence, expansion of water on freezing, pendulums showing that they deviate from the plane of oscillation (later used by Foucault to prove the rotation of the earth), etc. Inventions include the mercury air pump, which was forgotten until Heinrich Geissler rediscovered it. This great work marks "the beginning of modern physics" (Ornstein). (Cushing, A24; D.S.B., IX, 3; Duveen, 636; Eales, 990; Fulton, 340; Knight, 30; Krivatsy, 26; Morgan, 2; Ornstein, 88; Osler, 2534; Partington, II, 508; Smith, 2; Thorndike, VIII, 216; Thornton & Tully, 261; Watt, II, 945d; Wing, A161)

ACCADEMIA DEL CIMENTO

Saggi di Naturali Esperienze fatte nell'Accademia del Cimento sotto la Protezione del Serenissimo Principe Leopoldo di Toscana e descritte dal Segretario di essa Accademia. Florence: Per Giuseppe Cocchini all'Insegna della Stella. 1666.

First edition, first issue. Folio. 8 leaves, 269, (1) pp., 9 leaves (last blank). Title in red and black. With the rare engraved folding frontispiece portrait of Ferdinando II, dated 1659 (included in only a few copies), and 74 full-page engravings. Numerous large engraved capitals, head- and tailpieces. Very fine, wide-margined copy, complete with 4-page dedication to Ferdinando II, dated 1667, in full calf antique, maroon label.

A LANDMARK IN the history of experimental science, this beautiful and expensively produced book is the only publication of the first organized scientific society. Established under the patronage of the Medici brothers, Grand Dukes Ferdinando II and Leopold of Tuscany, in 1657, it was formed to carry out the experimental ideas of Galileo and his two pupils Torricelli and Viviani. The Accademia, which had only ten members and closed in 1667, included the most illustrious Italian scientists of the time: Borelli, Cassini, Redi, Stensen, and Viviani, as well as the two Grand Dukes, who were dilettantes (in the best sense). Members conducted their own independent researches in the first well-equipped physical sciences laboratory in Europe. This account of their discoveries and investigations was elegantly written by Lorenzo Magalotti (1637–1712), the secretary of the Academy. At first accessible only to wealthy scientists who read Italian, the *Saggi* gained wider circulation with the publication of the English translation (London, 1684), sponsored by the Royal Society. In 1731 a Latin translation by von Musschenbroek appeared. The second issue of this edition has the title page dated 1667. Rare. (British Library, 17th Cent. Italian, 347; Dibner, 82; D.S.B., IX, 3; Krivatsy, 25; Ornstein, 73–90; Partington, II, 508; Smith, 2; Thornton & Tully, 260; Watt, II, 634f; Wolf, I, 55)

ACCUM, Friedrich Christian

Chemical Amusement, comprising a series of curious and instructive experiments in chemistry, which are easily performed, and unattended by danger. . . .

London: Printed for Thomas Boys. 1817.

First edition. 12mo. 1 leaf, xxv, (1), 191, (1) pp. + 59, (1) pp. (catalogue of apparatus, chemicals, and portable laboratories). Fine copy in contemporary calf, spine richly gilt and dated, crimson morocco label, gilt inner and outer dentelles on both covers.

ONE OF the most popular expositions of elementary chemistry of the time, which did much to bring the study of the

science to the attention of the general public. The book was “written with a view, to blend chemical science with rational amusement” (preface). Five English editions appeared in quick succession: 1817, 1818 (2 eds.), 1819, and 1821, as well as translations into German (1819, 1824), Italian (1820, 1829, 1854), French (1825, 1835), and Spanish (1836). At the end is *A descriptive catalogue of the apparatus & instruments employed in experimental and operative chemistry manufactured and sold by Fredrick Accum* (1817), comprising a detailed list of the apparatus and chemicals used at the time, complete with prices. Accum supplied apparatus to Harvard and Yale universities and even universities in India. The first edition is very scarce. Not in D.S.B., Ferchl, Ferguson Coll., Morgan, Sondheimer, Wellcome, etc. (Bolton, 259; Duveen, 2; Edelstein, 6; Partington, III, 827; Smith, 3; Sotheran, Cat. 666 [1906], 17; Thornton & Tully, 213; Watt, I, 3u)

ACCUM, Friedrich Christian

Chemical Amusement, comprising a series of curious and instructive experiments in chemistry, which are easily performed, and unattended by danger. The third edition, with plates, and considerably enlarged. . . .
London: Printed for Thomas Boys. 1818.

Third edition. Large 12mo. 18 leaves, 360 pp. + 1 leaf, 59, (1) pp. (catalogue of apparatus, chemicals, and portable laboratories). With 2 engraved plates of apparatus (Lowry sculp.) and woodcuts in text. Very fine copy in contemporary polished green half calf, marbled boards, maroon morocco label gilt, spine gilt in compartments.

THIRD, GREATLY enlarged edition of this popular introductory chemical manual. The advertisement (sig. a2 recto) states: “The whole impression of the second edition of this treatise having been sold within a week after its publication, the publisher has put the third to press . . . the reader is . . . informed that the present edition is merely a re-print of the second impression” (dated 2 February 1818). The catalogue at the end lists two of Accum’s books and gives full descriptions of the wide variety of chemicals and apparatus for sale by this enterprising scientist-businessman. This edition is not in Duveen, Edelstein, Ferchl, Smith, Wellcome, etc. (Bolton, 259; Ferguson Coll., 2; Partington, III, 827; Thornton & Tully, 213)

ACCUM, Friedrich Christian

Divertimento Chimico contenente una serie di sperienze curiose ed istruttive di chimica che si eseguiscono con facilità e sicurezza di Federico Accum . . . Con note e colla soluzione di diversi problemi fisico-chimici del Dr. Giovanni Pozzi . . . Edizione seconda ritoccata ed aumentata di nuove aggiunte. Con tavole in rame.
Milan: Per l’editore Ranieri Fanfani. 1829.

Second Italian edition. 2 vols., 8vo., in 1. I: xxi, (1), 286 pp. II: 333, (1) pp. With 4 folding copperplates (Sasso inc.). Small repair to title page of volume I (not affecting text); otherwise very fine copy with wide margins (many fore-edges uncut), in contemporary quarter calf, gilt, marbled boards.

THE SECOND Italian edition by G. Pozzi (first: Milan, 1820, 2 vols.), revised and enlarged with new material. Not in the usual early chemical bibliographies. Rare. Only the first edition is listed by Bolton (p. 259) and Smith (p. 3).

ACCUM, Friedrich Christian

Chemical Re-agents, or Tests; and their application in analyzing waters, earths, soils, metalliferous ores, metallic alloys, &c. &c. Originally by F. Accum; improved, and brought down to the present state of Chemical Science, by William Maugham, . . .
London: Published by Charles Tilt. 1828.

Fourth edition (first edition thus). Large 12mo. xxiii, (1), 452 pp., 1 leaf (errata and addenda), 1 leaf (advertisements). With 3 engraved plates of apparatus (Turrell sculp.). Very fine, crisp copy, uncut, in original boards, with original printed paper label on spine (“Price 9s.”). From the library of Professor Franz Sondheimer.

FINAL EDITION of Accum’s classic work on chemical analysis, completely revised and updated by Maugham, who states in the preface that “in correcting it, he has been obliged to expunge several parts, to rewrite others, and to make such additions as the nature of the subject continually required.” The appendix (pp. 424–429) contains a table of chemical equivalents, definite proportions, and atomic and molecular weights. An important work, describing the analytical reagents then employed, with examples of their use. Scarce. Not in D.S.B., Edelstein, Ferchl, Ferguson Coll., Hoover, Morgan, Poggendorff, Smith, etc. (Bolton, 260; Duveen, 3; Partington, III, 827; Sondheimer, 11; Thornton & Tully, 213; Wellcome, II, 11)

ACCUM, Friedrich Christian

Culinary Chemistry, exhibiting the scientific principles of cookery, with concise instructions for preparing good and wholesome pickles, vinegar, conserves, fruit jellies, marmalades, and various other alimentary substances employed in Domestic Economy, with observations on the chemical constitution and nutritive qualities of different kinds of food. . . .
London: Published by R. Ackermann. 1821.

First edition. Large 12mo. xxii pp., 1 leaf, 336 pp. + xxiii, (1) pp. (advertisements of Accum’s books, with favorable reviews of his *Treatise on adulterations of foods*). With 2 aquatint copperplates (frontispiece and title-vignette, of kitchen stoves, etc.). Fine copy, uncut, in original brown blind-stamped cloth, rebacked, with original gilt-tooled spine laid on.

PUBLISHED A YEAR after Accum's sensational exposure of food adulteration, this scientific cookbook "with observations on the chemical constitution . . . of different kinds of food" became a standard work on the subject, and is a "milestone" text in food chemistry. Owing to the appearance of this and his *Treatise on adulteration*, Accum became embroiled in much scandal, and, although a distinguished chemist and promoter of practical gas lighting, in 1822 he was forced to flee from England to Germany. In Berlin he took the post of professor at the Gewerbe-Institut. Ackermann, the publisher of illustrated book fame, was one of the first to employ Accum's gas lighting in his shop. Rare. Not in D.S.B., Duveen, Ferchl, Morgan, Poggendorff, Thornton & Tully, etc. (Bitting, 2; Bolton, 259; Drummond & Wilbraham, *The Englishman's Food*, 1939, p. 342; Edelstein, 8; Ferguson Coll., 2; Partington, III, 827; Smith, 3; Sotheran, Cat. 702 [1910], 5628 ["Rare"]; Wellcome, II, 11)

ACCUM, Friedrich Christian

Description of the Process of Manufacturing Coal Gas, for the lighting of streets, houses, and public buildings, with elevations, sections, and plans of the most improved sorts of apparatus now employed at the Gas Works in London, and the principal provincial towns of Great Britain; accompanied with comparative estimates, exhibiting the most economical mode of procuring this species of light. . . .

London: Printed for Thomas Boys. 1819.

Second edition, first issue (with title page dated 1819). 8vo. xv, (1), 320 pp. With 7 fine colored aquatint plates (1 on title, and 6 folding). Very fine copy, in early-nineteenth-century half calf cloth, rebacked, orange morocco label gilt.

THE VERY rare first issue of the second, final, and best edition. Most copies are of the second issue, with the engraved title page dated 1820. The first edition (London, 1819) has 334 pages. Together with *A practical treatise on gas-light*, the present work forms the first technical and scientific exposition of the subject. "The extraordinarily rapid progress which the recent invention of lighting with coal gas has made in this country, is perhaps without parallel in the history of the useful arts. . . . A single exhibition of the gas lights in actual use was sufficient to determine the public judgment in favour of the new mode of illumination" (preface). All aspects of the up-to-date manufacture of coal gas are covered, and the equipment used is beautifully illustrated in the plates. In the final chapter Accum describes the commercially important by-products obtained: oil, tar, pitch, ammoniacal liquor, ammonium carbonate, etc. These by-products formed the basis of the heavy and fine chemical industries later in the nineteenth century. A "milestone" work in chemical technology. Accum's pioneering work on

gas lighting was of "fundamental importance" (D.S.B.). Cushing, Edelstein, and Wellcome list the rare first (1819) edition, but the second appears to be rarer. Not in Bolton, D.S.B., Duveen, etc. The second issue is listed by Partington (III, 827) and Smith (p. 3), but the present first issue of 1819 appears to be unrecorded.

ACCUM, Friedrich Christian

Elements of Crystallography, after the Method of Haüy; with, or without, Series of Geometrical Models, both solid and dissected; exhibiting the forms of crystals, their geometrical structure, dissections, and general laws. According to which the immense variety of actually existing crystals are produced. . . .

London: Printed for Longman, Hurst, Rees, Orme, and Brown. 1813.

First edition. 8vo. lxiii, (1), 396 pp. With 4 engraved plates (including frontispiece, by Lowry). Many woodcut figures in text. Very good copy, with half title, in modern green cloth, crimson label gilt.

A LANDMARK BOOK in chemical crystallography, being the first on the subject to appear in English. "The first English treatise on crystallography on the structural theory, based on Haüy's epoch-making work" (Zeitlinger). Quoting from Haüy's *Traité de minéralogie* (Paris, 1801, vol. I, p. 162) Accum states (p. 359): "In the system of Haüy, the chemical composition of minerals is . . . taken into view, . . . the species is determined from . . . the integrant molecule; and hence Haüy defines the species, 'A collection of bodies, of which the integrant molecule are alike, and composed of the same elements united in the same proportion.' . . . He generalizes the definition, and extends it to substances which, having their integral molecule of the same form, differ essentially in the principles of which these molecule are composed; the form of the integrant particle therefore being the basis of the specific distinction." Scarce. Not in Bolton, D.S.B., Duveen, Ferchl, Ferguson Coll., Morgan, Poggendorff, Sondheimer, Thornton & Tully, Wellcome, etc. (Edelstein, 10; Hoover, 6; Partington, III, 827; Smith, 3; Sotheran, Cat. 666 [1906], 21; *ibid.*, Cat. 825 [1931], 4691 ["scarce"]; Ward & Carozzi, 1; Watt, I, 3t)

ACCUM, Friedrich Christian

An Explanatory Dictionary of the Apparatus and Instruments employed in the various operations of philosophical and experimental chemistry. . . . By a practical chemist.

London: Printed for Thomas Boys. 1824.

First edition. 8vo. vii, (1), 295, (1) pp. With half title and 17 folding copperplates (H. Adlard, sculp.). Very fine, crisp copy, uncut and unpressed, in original gray boards, blue cloth spine and original printed paper label ("Price 16s.").

SOLE EDITION of an interesting dictionary of practical chemistry, published anonymously by (or for) Accum. In effect it is the sales catalogue of Accum's wares as a chemicals and apparatus supplier. Although anonymous, the author is certainly Accum, as three of the four books advertised on the final page are by him. No prices are given for the chemicals and apparatus described, but other pertinent details are furnished. Scarce. Not in D.S.B., Edelstein, Ferchl, Ferguson Coll., Morgan, etc. (Bolton, 50; Duveen, 171; Partington, III, 827; Smith, 3; Wellcome, II, 539)

ACCUM, Friedrich Christian

Guide to the Chalybeate Spring of Thetford, exhibiting the general and primary effects of the Thetford Spa, rules essential to be observed whilst taking a course of the waters, an account of the diseases in which it will most probably be found efficacious, cautionary hints against the indiscriminate use of this water in diseases to which it is inapplicable, and testimonials of medical men, showing the curative effects of the spa in certain obstinate and lingering maladies; with observations on bathing, and a sketch of the history and present state of Thetford. . . .

London: Sold by T. Boys, . . . at the Spa by the Superintendent; and by all the Booksellers at Thetford, Bury St. Edmunds, Norwich, and Dereham. 1819.

First edition. Large 12mo. xiv, 159, (1) pp. With beautiful folding aquatint engraved frontispiece ("View of Thetford from River Ouse"), and 1 folding uncolored engraved plate ("Entrance into Thetford"). Fine, crisp copy, uncut, in original decorated boards. Armorial bookplate (George W. Agnew) and small ticket (Kenney Collection) on front pastedown endpaper.

ONE OF the rarest works by Accum, on Thetford Spa in Norfolk, with details of the analysis of the waters on pages 55–76. The only title cited by Waring on Thetford Spa. Not listed in any of the early chemical bibliographies, except Smith. (Abbey, *Scenery in Great Britain*, 327; Prideaux, *Aquatint Engraving*, 325; Smith, 3; Waring, 802; Wellcome, II, 11)

ACCUM, Friedrich Christian

A Manual of Analytical Mineralogy, intended to facilitate the Analysis of Minerals. In two volumes. . . . Second edition. . . .

London: Printed for the Author, and G. Kearsley, Bell and Bradfute, and Archer and Mahon. N.d. (1808).

Second edition. 2 vols., 12mo. I: xvii, (1), 311, (1) pp. II: vi, 313–562 pp. Engraved frontispiece to each volume. Good copy, lower edges uncut, in modern gilt-lettered cloth. From the Birmingham and Midland Institute Library, with release stamp on both title pages (not affecting text).

THE ENTIRELY rewritten, greatly enlarged, and best edition of *A practical essay on the analysis of minerals* (London, 1804). Dedicated to the celebrated mineralogical chemist Richard Kirwan, it covers more ground and gives more detailed information on the analysis of minerals than the 1804 edition. "The whole has . . . been written anew, and the additions . . . alone exceed twice the contents of the original publication" (preface). Scarce. Ferchl and Poggendorff give the date erroneously as 1806. The Wellcome Library has volume I only. Not in Bolton, D.S.B., Duveen, Edelstein, Morgan, Partington, Smith, etc. (Ferchl, 2; Hoover, 7; Poggendorff, I, 7; Thornton & Tully, 213; Watt, I, 3t; Wellcome, II, 11)

ACCUM, Friedrich Christian

A Practical Essay on the Analysis of Minerals, exemplifying the best methods of analysing ores, earths, stones, inflammable fossils, and mineral substances in general. . . .

London: Printed for the Author; G. Kearsley; J. Johnson; and J. Callow. 1804.

First edition. 12mo. vi, xvi, 183, ix pp., 1 leaf (errata). Engraved vignette of chemical apparatus on title. Woodcut of Accum's furnace (p. 16). Half title not present; otherwise a very fine, crisp copy, in contemporary half calf gilt-ruled, marbled boards, dark-blue morocco label gilt. Non-identical nineteenth-century armorial bookplate of John Gordon on front and rear pastedown endpapers.

ACCUM'S SECOND published work and one of his rarest. "This Essay is printed by express desire of a number of gentlemen, to whom I delivered a private course of Lectures on Practical Chemistry. The task imposed upon me was, to draw up a set of concise directions to enable a person, not intimately acquainted with analytical chemistry, to examine such unknown minerals as he may meet with, so as readily to ascertain their nature and principal component parts" (preface). An important early work on mineralogical analysis describing about fifty reagents, some of which are still employed. The second edition appeared with a slightly altered title: *A manual of analytical mineralogy* (London, 1808, 2 vols., 8vo., with frontispiece and plate). Thornton & Tully wrongly state that the present edition of 1804 is in 2 volumes. Not in D.S.B., Duveen, Edelstein, Ferguson, Ferguson Coll., Hoover, Morgan, Smith, Wellcome, etc. (Bolton, 260; Ferchl, 2; Partington, III, 827; Poggendorff, I, 7; Sondheimer, 13; Thornton & Tully, 213; Watt, I, 3t)

ACCUM, Friedrich Christian

A Practical Essay on the Analysis of Minerals, exemplifying the best methods of analysing ores, earths, stones, inflammable fossils, and mineral substances in general. . . . First American, from the London edition.

Philadelphia: Published by Kimber & Conrad, . . . and Benjamin & Thomas Kite, . . . 1809.

First American edition. 12mo. xxiv, (1), 26–236 pp. With engraved frontispiece (B. Tanner sc.) of chemical apparatus and engraved plate of Accum's furnace (facing p. 42). Fine, crisp copy, in contemporary half calf gilt-ruled, marbled boards, dark-blue morocco label gilt. From the Library Company of Philadelphia, with bookplate (and release) on front pastedown endpaper.

THE AMERICAN edition of Accum's important treatise on the chemical analysis of minerals, being an exact reprint of the London (1804) edition. The reengraved title-vignette of the London edition is here enlarged and used as a frontispiece. Very scarce. Not in Bolton, Cushing, D.S.B., Duveen, Hoover, Partington, Wellcome, etc. (Edelstein, 14; Morgan, 3; Smith, 4)

ACCUM, Friedrich Christian

A Practical Essay on Chemical Re-agents or Tests. Illustrated by a series of experiments. . . .

London: Printed for J. Callow. 1816.

First edition. 12mo. Xli, (1), 263, (1). Engraved vignette of chemical apparatus on title page. Very good copy in contemporary half calf gilt, marbled boards, maroon morocco label gilt. Armorial bookplate on front pastedown endpaper: James Easton.

AN INTERESTING early work describing approximately 60 reagents and analytical techniques, illustrated by over 180 experiments. Accum briefly traces the history of wet chemical analysis, with particular reference to the contributions of Boyle, Duclos, Bergman, Scheele, Kirwan, and Westrumb. The title-vignette depicts an apparatus for impregnating water with carbon dioxide. The experiment is described on pages 251–255. The sixty-page catalogue of chemical apparatus for sale by Accum and Garden (mentioned by Duveen) is not bound with this copy. However, page 264 (unnumbered) is the title page to this catalogue, dated 1816. A copy of the catalogue, dated 1817, is bound with the author's *Chemical Amusement* (London, 1817). Further English editions appeared in 1818, 1826, and 1828; also at Philadelphia, 1817. French and Italian editions were published in 1819. Not in Cushing, D.S.B., Edelstein, Ferchl, Hoover, Morgan, Poggendorff, Wellcome, etc. (Bolton, 260; Duveen, 2; Ferguson Coll., 2; Partington, III, 827; Smith, 3; Sondheimer, 10; Thornton & Tully, 213 [wrong date: 1815]; Watt, I, 3u)

ACCUM, Friedrich Christian

A Practical Treatise on Gas-Light; exhibiting a summary description of the apparatus and machinery best calculated for illuminating streets, houses, and manufactories, with carburetted hydrogen, or coal-gas; with remarks on the utility, safety, and general nature of this new branch of civil economy. . . .

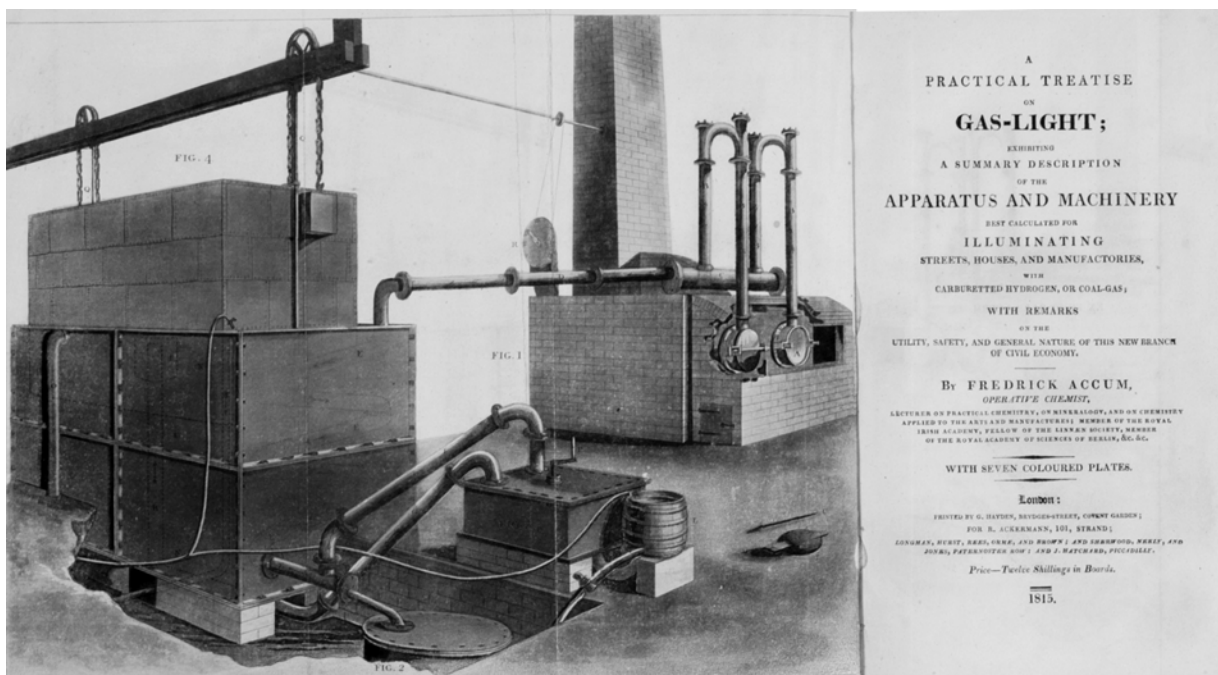
London: Printed by G. Hayden, . . . for R. Ackermann, . . . Longman, Hurst, Rees, Orme, and Brown; and Sherwood, Neely, and Jones, . . . ; and J. Hatchard. 1815.

First edition. 8vo. 1 leaf, iii, (1), v, (1), 186 pp. With 7 colored plates (2 folding, including frontispiece) of apparatus, gaslight fixtures, ornate chandeliers, etc. Woodcut figures in text. Fine copy in contemporary tree calf, rebacked, maroon morocco label gilt.

THE FIRST practical treatise on gas lighting, a classic work on applied chemistry and technology. An advertisement in the second edition states that the first was completely sold within four months, necessitating the publication of the second the same year (1815). Third (1816) and fourth (1818) editions followed. The great importance of the book was immediately recognized on the Continent, translations quickly appearing in French (1816), German (1816, 1819), and Italian (1819). "Accum associated himself with Ackermann, the art publisher, in order to introduce into England the lighting of towns by gas; and in 1810, when the London Chartered Gaslight and Coke Company was formed, Accum was nominated one of its engineers. . . . this mode of lighting in London and other large cities was greatly due to his Practical Treatise . . ." (D.N.B.). Accum applied F. A. Winsor's gaslight process, first demonstrated in London in 1804, and achieved fame as the popularizer of gas lighting. Smith (p. 4) and Bolton (p. 261) list only the third and fourth editions, respectively. Not in Duveen, Ferguson Coll., Morgan, Sondheimer, Wellcome, etc. (D.S.B., I, 44 ["important work"]; Edelstein, 15; Ferchl, 2; Partington, III, 827; Poggendorff, I, 7; Singer, *History of Technology*, IV, 268; Thornton & Tully, 213; Watt, I, 3u)

ACCUM, Friedrich Christian

Praktische Abhandlung über das Gaslicht eine vollständige Beschreibung des Apparats und der Maschinerie, um Strassen, Häuser und Manufacturen damit zu beleuchten, enthaltend; von Friedrich Accum. Aus dem Englischen übersetzt und mit Anmerkungen und neuen Kupfertafeln vermehrt, von W. A. Lampadius, der Chemie und Hüttenkunde Professor an der Freiburger Berg-Akademie, Oberhüttenamts-Assessor, mehrerer gelehrten Gesellschaften Mitglieder. Mit 9 Kupfertafeln. Weimar, im Verlage des Gr. H.S. priv. Landes-Industrie-Comptoirs. 1816.



Accum. *Practical Treatise on Gas-Light*. London, 1815.

First German edition. 8vo. viii, 204 pp. With 3 folding tables and 9 folding copperplates. Small woodcut on page 23, and copperplate map of central London on page 161. Title and first few leaves lightly foxed; otherwise a fine, crisp copy in contemporary half calf, marbled boards, spine gilt, with gilt-lettered orange label.

THE FIRST edition in German, translated by Wilhelm August Lampadius (1772–1842), professor of chemistry and mineralogy in the Mining Academy of Freiberg. Originally published in English in two editions the previous year (London, 1815), this German translation is valuable for the extensive additional footnotes and commentary by Lampadius. A second German edition also appeared (Weimar, 1819). This edition is not mentioned by Bolton, Cushing, Duveen, Edelstein, Rosenthal, Waller, Watt, Wellcome, etc. (Ferchl, 2; Partington, III, 827; Poggendorff, I, 7; Smith, 4; Thornton & Tully, 213)

ACCUM, Friedrich Christian

Traité pratique de l'éclairage par le gaz inflammable, contenant une description sommaire de l'appareil et du mécanisme employés pour l'illumination des rues, des maisons et des manufactures, à l'aide du gaz hydrogène carburé, tiré du charbon de terre; accompagné de remarques sur l'utilité, la sûreté et la nature générale de cette nouvelle branche d'économie civile; traduit de l'anglais sur la 3e édition de M. Accum; publié et augmenté par F. A. Winsor, . . .
Paris: Chez l'auteur & Neveu. 1816.

First French edition. 8vo. 2 leaves, vi, 7–73, (1), vi, 176 pp. With 8 engraved uncolored plates (7 folding). Fine copy in contemporary dark-blue quarter calf gilt, mottled boards.

FIRST TRANSLATION into French, from the third English edition of Accum's *A practical treatise on gas-light* (London, 1816), by Frederick Albert Winsor (1763–1830). One of the pioneers of gas lighting, Winsor was then engaged in introducing it in Paris, where he founded a gaslight company in 1815 (liquidated in 1819). The introduction (73 pp.) contains important information by Winsor not in the English original. C. A. Browne (*Chymia*, 1 [1948], 3) gives an account of Winsor. Not in Bolton, Edelstein, Ferchl, Ferguson Coll., Morgan, Poggendorff, Sondheimer, Watt, etc. (D.S.B., I, 44; Duveen, 2; Partington, III, 827; Smith, 4; Thornton & Tully, 213; Wellcome, II, 11)

ACCUM, Friedrich Christian

A Practical Treatise on the Use and Application of Chemical Tests, with concise directions for analysing Metallic Ores, Metals, Soils, Manures, and Mineral Waters. Illustrated by Experiments. Second edition, with plates, enlarged. . . .
London: Printed for Thomas Boys. 1818.

Second edition. 12mo. 1 leaf, 496 pp. (pp. 265–496, misnumbered 275–506). Engraved vignette of furnace on title page, and 2 engraved plates of apparatus (pl. I, frontispiece, pl. II facing p. 49). Fine copy in contemporary half calf, gilt, marbled boards, black morocco label gilt. From the library of Sir Sydney Young (1857–1937), F.R.S., with signature in ink on title page.

GREATLY ENLARGED second edition of *A practical essay on chemical re-agents or tests* (London, 1816) and the first to contain plates. Accum states in the preface that he has given numerous examples of analysis from the publications of Davy, Klaproth, Murray, Thenard, and other celebrated “analysts” [*sic*]. Advertisements for apparatus and chemicals manufactured by Accum appear on pages 504–506 (i.e., 494–496). “This edition is so much enlarged as practically to amount to a new work” (Zeitlinger). Third (1820) and fourth (1828) editions appeared, the latter, completely rewritten by J. Maugham, “improved and brought down to the present state of chemical science.” The present (1818) edition was translated into French by Riffault (Paris, 1819) and Italian by G. Pozzi (Milan, 1819). This copy has a distinguished provenance, having belonged to Sydney Young, physical chemist, who collaborated extensively with Sir William Ramsay at the University of Bristol (see Partington, IV, 915). Not in D.S.B., Duveen, Edelstein, Ferchl, Poggendorff, Waller, Watt, Wellcome, etc. (Bolton, 260; Ferguson Coll., 3; Morgan, 4; Partington, III, 827; Smith, 4; Sondheimer, 12; Sotheran, Cat. 800 (1926), 10035; Thornton & Tully, 213)

ACCUM, Friedrich Christian

Traité pratique sur l'usage et le mode d'application des réactifs chimiques fondé sur des expériences; suivi d'instructions, pour l'analyse, des mines métalliques, des métaux, des sols, des engrais, et des eaux minérales. . . . Traduit de l'anglais, sur la seconde édition (de 1818); par Jn. Riffault, . . . Paris: Chez Méquignon-Marvis. 1819.

First French edition. 8vo. xxxiii, (1), 305, (1) pp. With 2 engraved plates of apparatus. Fine copy in contemporary mottled calf, gilt, dark-green morocco label, gilt dentelles on both covers.

THE ONLY French translation, by Jean René Riffault des Hêtres (1754–1826), of *A practical treatise on the use and application of chemical tests* (London, 1818, second edition). Riffault, who was general administrator of saltpeter and gunpowder manufacture in Paris, also translated Thomas Thomson's *System of Chemistry* (Paris, 1818–22) and many other English works. He published several books of his own on saltpeter, dyeing, and chemistry, on which see Poggendorff (II, 644). Not in D.S.B., Duveen, Edelstein, Ferchl, Ferguson Coll., Hoover, Morgan, Sondheimer, Thornton & Tully, Watt, etc. (Bolton, 260; Partington, III, 827; Smith, 4; Wellcome, II, 11)

ACCUM, Friedrich Christian

A System of Theoretical and Practical Chemistry. . . . London: Printed for the Author, . . . 1803.

First edition. 2 vols., 8vo., in 1. I: 2 leaves, vi pp., 1 leaf (blank), xvi pp. (contents), xvi pp. (list of subscribers), iv pp. (authors quoted), 373, (1) pp. II: 1 leaf, xxvii, (1), 360, xxxi, (1) pp. With 5 copperplates of apparatus (including 2 frontispieces). Fine copy in sprinkled half calf antique, marbled boards, green morocco label gilt, spine dated in gilt.

ACCUM (1769–1838), a German chemist who came to England in 1793, lectured at the Surrey Institution and was librarian of the Royal Institution. He later returned to Germany. Chiefly remembered as an applied chemist and pioneer of coal-gas lighting, he prepared and sold chemicals and apparatus. Most of his books (including the present one) contain lists of his wares. He also gave private instruction in chemistry at his large laboratory in London. Benjamin Silliman Senior studied there in 1804–1805, and later another famous American, the mineralogist James Freeman Dana. Written when he was a “chemical operator” to Sir Humphry Davy at the Royal Institution (to the managers of which the book is dedicated), this is Accum's first published work. It is a milestone in the development of English chemical texts, and contains numerous experiments illustrating chemical affinity, theories of combustion (of Lavoisier and Thomson), and the laws just beginning to revolutionize the science. Important as a compendium of the chemistry known at the turn of the nineteenth century, the first edition is scarce. The second, enlarged edition was published in 1807; two American editions also appeared (2 vols., Philadelphia, 1808; 2nd. ed., 2 vols., Philadelphia, 1814). Not in Duveen, Edelstein, Ferguson, Ferguson Coll., Hoover, Morgan, Waller, etc. (Bolton, 260; Cushing, A29; D.S.B., I, 44; Ferchl, 2; Partington, III, 827; Poggendorff, I, 7; Smith, 4; Sondheimer, 8; Thornton & Tully, 213; Watt, I, 3t; Wellcome, II, 11)

ACCUM, Friedrich Christian

System of Theoretical and Practical Chemistry. . . . The second edition, considerably enlarged and improved. London: Printed for the Author, . . . 1807.

Second edition. 2 vols., 8vo. I: xxiv, 393, (1) pp. II: xxiii, (1), 489, (1) pp. With 7 engraved plates of apparatus (including 2 frontispieces). Woodcuts in text. Very good copy in contemporary tree calf gilt, blue morocco labels. Book label (19th century) in each volume: E. M. Onslow.

FINAL AND best edition. “I have carefully revised the second edition . . . the discoveries . . . in the field of chemical science are inserted, some new plates have been added . . .

and no labour has been spared to render the present edition worthy of the distinguished approbation which this work has met with, amongst the chemical public" (preface). "The value of Accum's work lies in the way he saw and exploited the technological possibilities of the rapidly advancing science of chemistry. His activities as lecturer, author, laboratory instructor, merchant, consultant, and technical adviser epitomize the opportunities that the industrial revolution opened to the emerging class of professional chemists" (D.S.B.). Not in Cushing, D.S.B., Duveen, Ferchl, Ferguson, Ferguson Coll., Poggendorff, Waller, Watt, etc. (Bolton, 260; Edelstein, 16; Morgan, 5; Partington, III, 827; Smith, 4; Sondheimer, 9; Sotheran, Cat. 666 [1906], 26 ["scarce"]; Thornton & Tully, 213; Wellcome, II, 11)

ACCUM, Friedrich Christian

A Treatise on Adulterations of Food, and Culinary Poisons, exhibiting the fraudulent sophistications of bread, beer, wine, spirituous liquors, tea, coffee, cream, confectionery, vinegar, mustard, pepper, cheese, olive oil, pickles, and other articles employed in domestic economy. And methods of detecting them. . . .

London: Printed by J. Mallett, . . . sold by Longman, Hurst, Rees, Orme, and Brown. 1820.

First edition. Large 12mo. 1 leaf (title, with sepia engraved vignette), xvi, 372 pp. Fine copy, uncut and unpressed (rare in this state), in original decorated boards (depicting a spider and its web, skull and crossbones with caption "There is Death in the Pot" at the top, the whole surrounded by entwined, forked-tongued snakes), rebacked, printed paper label on spine.

A CLASSIC WORK that first exposed the dangerous adulteration of many foods and beverages, the eventual result being the enactment of pure food and drug laws later in the nineteenth century. Popularly called "Death in the Pot," it immediately attracted a great deal of attention. The dedication to the Duke of Northumberland is dated 19 January 1820; and after a thousand copies were sold within a month of publication, a second edition appeared in April of that year. Two variants of the title-vignette exist. The first (as here) shows a draped table, hourglass, spindle, and two moths around a candle flame. The second (described by Ihde) is of a cooking vessel with a death's head superimposed and the legend "There is Death in the Pot, 2 Kings C.IV.v.40." "His pioneer work on . . . food adulteration was of fundamental importance" (D.S.B.). The book reached the fourth edition by 1822, with translations into German (1822, 1841) and French (1844). Rare. (Bitting, *Gastro-nomic Bibliography*, 2; Bolton, 260; R. J. Cole, *Annals of Science*, 7 [1951], 135–137; D.S.B., I, 44; Drummond & Wilbraham, *The Englishman's Food*, 1939, pp. 341–344;

Duveen, 3; Edelstein, 18; Ferguson Coll., 3; Ihde, *The Development of Modern Chemistry*, 1964, p. 439; Morgan, 7; Partington, III, 827; Smith, 4; Thornton & Tully, 213; Wellcome, II, 11)

ACCUM, Friedrich Christian

A Treatise on Adulterations of Food, and Culinary Poisons. Exhibiting the fraudulent sophistications of bread, beer, wine, spirituous liquors, tea, coffee, cream, confectionery, vinegar, mustard, pepper, cheese, olive oil, pickles, and other articles employed in domestic economy. And methods of detecting them. . . .

Philadelphia: Printed and Published by Ab'm Small. 1820.

First American edition. 12mo. 269 pp. Very good copy, uncut and unpressed, in half morocco antique, marbled boards, spine gilt-lettered and dated.

THE RARE first American edition of this classic work, published in the same year as the first two London editions. It is much rarer than the London first edition, itself a very scarce book. Not in Cushing, D.S.B., Duveen, Ferchl, Morgan, Osler, Partington, Poggendorff, Smith, Waller, Watt, Wellcome, etc. (Bolton, 260; Edelstein, 20)

ACCUM, Friedrich Christian

A Treatise on the Art of Brewing, exhibiting the London practice of brewing Porter, Brown Stout, Ale, Table Beer, and various other kinds of malt liquors. . . .

London: Longman, Hurst, Rees, Orme, and Brown. 1820.

First edition. Large 12mo. xiv, 268 pp. + xxiii, (1) pp. (advertisements of Accum's books, particularly the *Treatise on adulterations of food*, with favorable reviews). With 2 aquatint copperplates by W. Read (frontispiece and title-vignette, of brewing equipment) and 2 folding printed tables (on brewing ale and porter) between pages 186–187. Large woodcut of saccharometer on page 109. Fine, crisp copy, uncut and unpressed, in original boards, rebacked, printed paper label on spine.

AN IMPORTANT work on the chemistry and technology of brewing, beginning with a history of the "art of brewing beer." In the preface Accum states that he has explained the chemical changes that occur in the malting process, in order to "divest the art of brewing of the mystery in which it has been involved." A second edition appeared in 1821, as well as translations into German (1821) and French (1825). Very scarce. Only the second English and the first German editions are listed by Bolton and Ferchl, respectively. Not in D.S.B., Duveen, Ferguson Coll., Morgan, Poggendorff, Thornton & Tully, Wellcome, etc. (Edelstein, 21; Partington, III, 827; Smith, 5; Sotheran, Cat. 702 [1910], 5636)

ACCUM, Friedrich Christian

A Treatise on the Art of Making Wine from Native Fruits; exhibiting the chemical principles upon which the art of wine making depends; the fruits best adapted for home made wines, and the method of preparing them. . . .

London: Longman, Hurst, Rees, Orme, and Brown. 1820.

First edition. 12mo. viii, 9–92 pp. Colored engraved title-vignette (winepress). Fine, crisp copy in calf antique, spine gilt-lettered and dated, original rear beige wrapper bound in.

A VALUABLE WORK on the preparation of various types of wine from British fruits. Accum gives a brief history of winemaking and describes the chemical differences between wines made from British fruits and those prepared from grapes. Prevailing misconceptions regarding the manufacture of British wines are corrected. The directions for preparing wines are very clear, the influence of lucid chemical reasoning being evident. In addition to wines made from fruits (e.g., gooseberry, raspberry, cherry, damson, apricot, peach, orange, and raisin), the author describes those made from cowslip, ginger, elderberry, etc. A second edition (London, 1823) also appeared, with much later French translations (1851, 1872). One of the rarest works by Accum. Not in Bolton, D.S.B., Duveen, Edelstein, Ferchl, Ferguson Coll., Morgan, Sondheimer, Thornton & Tully, Watt, etc. (Partington, III, 827; Smith, 5; Sotheran, Cat. 702 [1910], 5637 [“rare”]; Wellcome, II, 11)

ACHARD, Franz Karl

Traité Complet sur le Sucre Européen de Betteraves; culture de cette plante considérée sous le rapport agronomique et manufacturier: traduction abrégée de M. Achard; par M.D. Angar; précédé d'une introduction et accompagné de notes et observations par M. Ch. Derosne, Pharmacien de Paris, Raffineur de sucre.

Paris: Chez M. Derosne & D. Colas. 1812.

First French edition. 8vo. 2 leaves, xxxvi, 268 pp. 4 folding copperplates (by Gaitte). Verso of half title signed in ink by D. Angar (translator). Fine copy in contemporary crimson, gilt-ruled, quarter calf, red and blue mottled boards.

A PUPIL OF A. S. Marggraf, Achard (1753–1821) is chiefly remembered for the industrial development of Marggraf's discovery of sugar (sucrose) in beets. He began working on the subject in 1786, and in 1799 presented Friedrich Wilhelm III of Prussia a loaf of beet sugar with a description of the industrial extraction process. Achard was the real founder of the beet-sugar industry, though he did not live to see the success of his work. Napoleon encouraged the development of the beet-sugar industry in France. Partington gives extensive details on Achard, his chemical investigations, and his publications. Rare. Not in Browne,

D.S.B., Ferchl, Poggendorff, Vicaire, etc., or the usual chemical bibliographies. (Partington, III, 594; Wellcome, II, 11)

ACOSTA, José

Historia Naturale, e Morale delle Indie; scritta dal R. P. Gioseffo di Acosta della Compagnia del Gesù; nell'aquele si trattano le cose notabili del Cielo, & de gli Elementi, Metalli, Piante, & Animali di quelle: i suoiriti, & ceremonie: Legge, & governi, & guerre de gli Indiani. Novamente tradotta della lingua Spagnuola nella Italiana da Gio. Paolo Galucci Salodiano Academico Veneto.

Venice: Presso Bernardo Basa, all'insegna del Sole. 1596.

First (only) Italian edition. 4to. 24 leaves, 173 folios, 1 leaf (blank). Woodcut printer's device on title page, and many woodcut headpieces, ornaments, and historiated initials. Printed with the types of Aldus, the text being mainly in italics. Fine, crisp copy with wide margins, in contemporary vellum, spine and lower edge of pages lettered in ink by a sixteenth-century scribe.

THE SOLE Italian edition of this classic work. Acosta (1539–1600) went to Peru in 1571 as a Jesuit missionary. He was one of the first writers to describe the natural history and products of America and the first to discuss the use of mercury in the refining of silver. Included is a survey of the rites, customs, and wars of the Indian civilizations of the New World. His description of mountain sickness (Book III), when crossing the Andes to Peru, is the first report of the phenomenon. The book is of considerable interest in the history of chemistry, mineralogy, extractive metallurgy, and related sciences. “It is one of the earliest and fundamental American treatises on natural history” (Casey Wood [p. 178]). “Acosta deserves high praise as an acute and diligent observer, whose numerous new and valuable data are set forth in a vivid style” (*Encycl. Brit.*). There were also translations into French (1598), Dutch (1598), and English (1604). Rare. This edition is not in D.S.B., Durling, Osler, Partington, Thornton & Tully, Waller, etc. (Garrison-Morton, 2244 [Seville, 1590]; LeClerc, 15; Rodrigues, 20; Sabin, 124; Sommervogel, 6; Watt, I, 4q; Wellcome, I, 22)

ACOSTA, José

The Naturall and Morall Historie of the East and West Indies. Intreating of the remarkable things of Heaven, of the Elements, Mettalls, Plants and Beasts which are proper to that Country: Together with the Manners, Ceremonies, Lawes, Governements, and Warres of the Indians. Written in Spanish by Ioseph Acosta, and translated into English by E.G. London.

Printed by Val: Sims for Edward Blount and William Aspley. 1604.

First English edition. 4to. 3 leaves, 590 pp., 8 leaves (index and errata, final blank). Woodcut ornament on title page, woodcut initials, head- and tailpieces. Neat old inscription in ink on title and a few marginal notes. Lacks leaf A1 (blank except for sign. "A"). Six leaves strengthened at inner margins; otherwise a very good copy in calf antique, maroon morocco label gilt.

THE RARE first English translation of Acosta's *Historia natural y moral de las Indias* (Seville, 1590). The translator "E. G." is traditionally believed to have been Edward Grims-ton (1528?-1599), on whom see the D.N.B. The book is dedicated to Robert Cecil (1563?-1612), who secured the accession of James VI of Scotland to the English throne in 1603. The chemical interest of the work lies in its description of the metallurgical and mineralogical resources of Central and South America. "A simplified modification of the amalgamation process . . . carried out in the silver mines of Potosi in South America, is first described in detail by . . . Acosta. . . . This so-called 'Mexican process' . . . was introduced into Schemnitz in 1780-5 by Baron von Born" (Partington). In book 3 (p. 213) on gold and silver there is a reference to platinum: "there is an other kinde which the Indians call *Papas*, and sometimes they find peeces very fine and pure, like to small round rootes, the which is rare in that mettall, but usuall in gold" (see D. McDonald & L. B. Hunt, *A History of Platinum*, London, 1982, p. 5). (Casey Wood, 178; D.S.B., I, 48; Garrison-Morton, 2244; Hoover, 9; Palau, 1996; Partington, II, 39; Sabin, 131; S.T.C., 94; Thornton & Tully, 84; Watt, I, 4q)

ACTA LITERARIA ET SCIENTIARUM SVECIAE

Acta Literaria et Scientiarum Sveciae . . .
Uppsala, 1720-1734.

First edition. 3 vols., 4to. I: 8 leaves, 608 pp., 12 leaves (index, interleaved with 12 leaves of contemporary paper, on 3 of which are neat handwritten lists of authors). II: 2 leaves, 614 pp. III: 6 leaves, 120 pp.; 2 leaves, 124 pp.; 120 pp.; 1 leaf, 118 pp.; 94 pp. (pp. 9-16 omitted from pagination), 5 leaves. Numerous text woodcuts and 27 copperplates (most folding). Very good set, in dark-brown quarter morocco antique, marbled boards, maroon labels, gilt.

A RARE JOURNAL with the text mainly in Latin, containing articles on archaeology, astronomy, botany, chemistry, geology, medicine, mathematics, meteorology, mineralogy, paleontology, physics, and other sciences; by distinguished Swedish scientists (e.g., Brandt, Celsius, Klingenstierna, and Swedenborg). The pre-1956 N.U.C. locates only two other sets. A fourth volume (for 1735-39) appeared, which is listed in one other location. The series was continued under the title *Acta Regiae Societatis Scientiarum Upsaliensis* for 1740-50 (Uppsala 1744-51, 5 vols., 4to.), and then under the title *Nova Acta Reggae Societatis Scientiarum Upsaliensis*

(Uppsala, 1773-1850, 14 vols., 4to.). See H. C. Bolton, *A Catalogue of Scientific and Technical Periodicals, 1665-1882* (Washington, D.C.: Smithsonian Institution, 1885, p. 4, no. 27).

ADET, Pierre-Auguste

Leçons élémentaires de chimie, à l'usage des lycées. Ouvrage rédigé par ordre du Gouvernement; par Pierre-Auguste Adet, préfet du Département de la Nièvre.
Paris: Dentu, An XIII (1804).

First edition. 8vo. Pp. xvi + 435. Errata on unnumbered page 436. Fine, crisp copy, in contemporary tree calf, spine richly gilt, with green morocco lettering label. From the library of Professor Franz Sondheimer (1926-1981), with his bookplate on the front pastedown endpaper.

ADET (1763-1834) was a physician to the Ministry of Marine, served under Napoleon, and was an editor of the *Annales de Chimie*. He was an early supporter of the antiphlogistic system and collaborated with Lavoisier's assistant, Hassenfratz, with whom he devised a table of chemical symbols to be used in the new chemistry. This is one of the earliest textbooks of elementary chemistry based on the antiphlogistic system of Lavoisier, Guyton de Morveau, Berthollet, and Fourcroy, who are mentioned on page xi. The important contemporary publications of Chaptal, Laplace, Vauquelin, et al., are also mentioned. A scarce work that is not in Duveen, Ferguson, Morgan, Smith, Waller, Watt, Wellcome, etc. (Bolton, 262; Ferchl, 3; Partington, III, 107; Poggendorff, I, 12)

AETIUS OF AMIDA

Contractae ex veteribus medicinae Tetrabiblos, hoc est, quaternio, sive libri universales quatuor, singuli quatuor sermones complectentes, ut sint in summa quatuor sermonem quaterniones, id est, sermones sedecim, per Janum Cornarium . . . latinè conscripti. Accesserunt in duos priores libros (quos de simplicibus scripsit) scholia, . . . Hugonem Solerium . . . nunc primum in lucem edita.

Lyons: Ex officina Godefridi et Marcelli Beringorum fratrum. 1549.

First Lyons edition. Folio. 18 leaves, 1032 pp., 9 leaves. Woodcut printer's device on title, historiated woodcut capitals, and tailpiece. Illegible signature in ink, dated 1686, on inner margin of title. Minor water staining on some leaves; otherwise good copy in early-eighteenth-century quarter calf, blue boards, green morocco label gilt. From the Wellcome Library, with release stamp on verso of title leaf.

AETIUS (502-575) of Amida (now Diarbekr) in Mesopotamia, who wrote this medical encyclopedia in sixteen books, was educated in Alexandria and lived in Byzantium,

where he was court physician under Emperor Justinian I. Usually called *Tetrabiblos*, from being later divided into four sets of four books, its pharmacology is mostly taken from Dioscorides and Galen. Originally published in Greek (Venice: Aldus, 1534; eight books only), the first Latin translation by Janus Cornarius (1500–1558) appeared in Basel (Froben, 1542). The present Lyons edition is enlarged by the scholia of Hugo Solerius (fl. 1549), now first printed. An edition in 16mo. appeared later (Lyons, 1560). Aetius “was held in great repute by Renaissance physicians and his translator here, Janus Cornarius . . . regarded him as the greatest of the medical writers. His *Tetrabiblos* . . . is a compilation which remains the chief source of knowledge for the works of Rufus of Ephesus and Leonides in surgery, and of Soranus and Philumenos in gynecology and obstetrics” (*Heirs of Hippocrates*). Partington discusses the chemical interest of the book. This edition is not in Eales, Neu, Osler, Reynolds, Waller, etc. (D.S.B., I, 68; Durling, 49; *Heirs of Hippocrates*, 26; Partington, I, 201; Stillwell, 260; Thorndike, I, 570–575; Thornton, 14; Wellcome, I, 52; Watt, I, 10)

AFZELIUS, Johann

Dissertatio Chemica de Acido Sacchari, quam, . . . praeside Mag. Torb. Bergman, . . . pro gradu publico examini subiicit Iohannes Afzelius Arvidsson, Vestrogothus. . . XIII Iun. An. MDCCLXXVI.

Uppsala: Typis Edmannianis. (1776).

First edition. 4to. 22 pp. Fine copy with wide margins, uncut, in maroon half morocco, marbled boards, spine gilt-lettered and dated.

THE SECOND dissertation presented by Afzelius, with Bergman presiding. One of the most comprehensive early works on the preparation and properties of the organic compound oxalic acid, which Afzelius made by oxidizing sugar with nitric acid. Oxalates of the known metals are also discussed. Not in the usual early chemical libraries. (Bolton, 263; Ferchl, 3; Moström, 104; Partington, III, 182, 200; Poggen-dorff, I, 16; Waring, 600)

AFZELIUS, Johann

Dissertatio Chemica de Niccolo, quam, . . . praeside Mag. Torb. Bergman, . . . publico examini submittit Iohannes Afzelius Arvidsson, Vestrogothus, . . . die 12 Julii Anni MDCCLXXV.

Uppsala: Typis Edmannianis. (1775).

First edition. 4to. 30 pp., 2 leaves. Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

AFZELIUS (1753–1837) was a pupil of Bergman, under whom he published three dissertations. This is the first, on nickel ores, the metal, and its salts, with references to Cronstedt (the discoverer of nickel) and the most recent information on the subject. The final four pages, in Swedish, describe nickel ores from various European locations. Afzelius graduated Phil. Mag. (1776) in Uppsala, and always went by this name, dropping Arvidsson (from his father's Christian name Arvid). He became one of the most famous professors of chemistry (1784–1820) at the University of Uppsala and was the teacher of Berzelius. Not in Blake, D.S.B., Duveen, Edelstein, Ferguson, Ferguson Coll., Hoover, Neu, Smith, Sondheimer, Waller, Wellcome, etc. (Bolton, 263; Ferchl, 3; Moström, 100; Partington, III, 182, 200; Poggen-dorff, I, 16; Waring, 576)

AFZELIUS, Johann, and ÖHRN, Peter

Dissertatio Chemica de Acido Formicarum, quam, . . . publico examini subiiciunt Iohannes Afzelius Arvidsson, et Petrus Öhrn, Vestrogothi. . . XVIII Jun. An. MDCCLXXVII.
Uppsala: Typis Edmannianis. (1777).

First edition. 4to. 1 leaf, 22 pp. Few pages slightly foxed; otherwise a good copy with wide margins, uncut, in maroon half morocco antique, marbled boards, spine gilt-lettered and dated.

THE THIRD and final dissertation of Afzelius, with Öhrn (dates unknown), on formic acid and its compounds. The praeses (Bergman?) is not named. After a historical introduction mentioning works by seventeenth- and eighteenth-century chemists, the authors give quantitative details on the preparation of formic acid by the destructive distillation of ants. One pound of ants yielded 7.5 oz. of formic acid, specific gravity 1.0075 at -15° ; and, on redistillation, acid of sp. gr. 1.0011 was obtained. Formates of the known metals are described. On page 6 the earliest preparation of an ester of formic acid, ethyl formate, is given. The difference between formic and acetic acids is discussed (pp. 20–22), based on quantitative analyses. On page 22 there is a five-line quotation in English from Isaac Newton. An important early organic chemical work, which is discussed by Partington. Rare. Not in Blake, Duveen, Edelstein, Ferguson, Ferguson Coll., Moström, Neu, Smith, Waller, Waring, Wellcome, etc. (Bolton, 263; Ferchl, 3 [wrong imprint: Leipzig]; Partington, III, 200; Poggen-dorff, I, 16)

AFZELIUS, Peter

Dissertatio Gradualis sistens Chemiae Progressus a Medio Saec. VII ad Medium Saec. XVII, cujus partem priorem, . . . praeside Mag. Torb. Bergman, . . . publice ventilandam exhibet Petrus Afzelius Arvidsson, Stipend. Wictorin. Westrogothus. . . . 11 Junii 1782.

Uppsala: Apud Johan. Edman. (1782).

First edition. 4to. 1 leaf, 40 pp. Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

THE DISSERTATION presented by Peter, the brother of Johann Afzelius, with Bergman presiding. It briefly covers the history of chemistry (including alchemy, metallurgy, and related subjects) from the mid-seventh to the mid-seventeenth centuries. The author displays considerable grasp of the progress of the chemical sciences and makes reference to contemporary and earlier writers. Virtually nothing is known of the author. An important and rare work containing useful information difficult to find elsewhere. On page 40 mention is made of Jean Rey and the increase in weight of metals on calcination. Not in the usual early chemical libraries. (Bolton, *First Supplement*, 22; Moström, 200; Neu, 420; Partington, III, 183)

AGGRAVI, Giovanni Francesco

Protolum Chimico ecbeggianti di conduplicati paraphrasi. La Natura non diversare nella simmetria delle connaturali operationi, entruso l'epilogati termini spargirici redundanti balsamici remedij, & arcanizzati magisteri nuovamente indagati, & teoricamente esplorati da Gio: Francesco Aggravi Senese. Al Molto Illustre & Eccellentiss. Signor Sig. Padron Colendiss. il Signor Francesco Albertini Medico, Fisico, e Chirurgo.

In Venetia, MDCLXXXII. Appresso Abbondio Menafoglio. Con Licenza de' Superiori, e Privilegio.

First Venetian edition. 12mo. 6 leaves, 365 pp., 3 leaves. Woodcut ornament on title page. Fine copy in contemporary vellum, with old ink lettering on spine.

THE FIRST edition of this work to appear from Venice, and the first in 12mo. format. The first edition was published in Parma, 1678 (Ferguson, I, 7), with a *seconda edizione* (issue?), Parma, 1680 (Neu, 13), having identical pagination. Of the author nothing seems to be known. From the title of this work he was evidently a resident of Siena, and Ferchl describes him as an Italian doctor. The dedication of this Venetian edition is dated 6 December 1682, so that this is possibly the third edition to appear. The first part of the book (pp. 1–106) covers chemical apparatus, operations, and processes, with a discussion of general principles and

definitions. The remainder of the book (pp. 106–365) comprises an alphabetical list of preparations of chemicals, mainly for pharmaceutical uses. Many descriptions of the preparation of pure chemicals (e.g., acids, alkalies, and salts) are given, with clear directions, so that this is a practical laboratory manual. An extremely rare book. No bibliographical reference to this Venice 1682 edition has been found.

AGMER-BEN-AB-DALA

Tratado de las Aguas Medicinales de Salam-Bir, que comunemente llaman de Sacedon escrito en lengua Arabe, por Agmer-Ben-Ab-Dala, Medico de Toledo, en el año de mil cinquenta y quatro. Traducido al idioma Castellano, e ilustrado con varias notas, para su mayor inteligencia. Por el Doctor Don Mariano Pizzi y Frangeschi, Medico en esta Corte Madrid. Por Antonio Perez de Soto, Impresor de los Reynos, y de las Academias Española, y de la Historia.

1761.

First edition. 4to. xlv, 239 pp. Fine, crisp copy, in the original vellum.

AN INTERESTING balneological work on the waters of Salam-Bir and their medicinal properties, originally written in 1504 in Arabic by Agmer-Ben-Ab-Dala (in Arabic: Ahmad Ibn 'Abd Allah, al-Tulaitili). Here translated into Spanish by Dr. Mariano Pizzi y Frangeschi and dedicated to the Royal Academy of Medicine, the first section (pp. 1–48) gives details on the history and properties of the waters and their chemical analysis, with additional commentary on silver, sulphur, vitriol, etc. Not in Cushing, Eales, Edelstein, Ferchl, Ferguson, Ferguson Coll., Garrison-Morton, Osler, Partington, Reynolds, Smith, Waller, Watt, etc. (Blake, 6; Duveen, 4; Neu, 33; Wellcome, II, 17)

AGRICOLA, Georgius

Georgii Agricolae De ortu & causis subterraneorum, Lib. V. De natura eorum quae effluunt ex terra, Lib. IIII. De natura fossilium, Lib. X. De veteribus & novis metallis, Lib. II. Bermannus, sive De re metallica Dialogus. Interpretatio Germanica vocum rei metallica, addito Indice foecundissimo. Basel: Hieronymus Froben and Nicolaus Episcopium. 1546.

First edition. Folio. 487, (1) pp., 26 leaves (index). Blank leaves g6 and M6 lacking. Large printer's device on title and colophon. Full-page text illustration on page 146 and many fine woodcut initial letters, historiated, white on black. Very fine, crisp copy in eighteenth-century quarter calf, marbled boards, spine gilt-lettered and dated. Several neat annotations in blank margins in an old hand. A remarkably important association copy, having come from the library of the great eighteenth-century biologist Buffon (1707–1788), with his signature in ink

on the title page and dated “Le Clerc de Buffon 1731.” With later neat manuscript note on the recto of the first flyleaf: “Cet exemplaire est signé de Buffon à qui il a appartenu—Je L’ai acheté à La Vente de Mirabeau à l’hotel Bullion.” Honoré-Gabriel Riqueti Comte de Mirabeau (1749–1791) was a famous orator and writer who took an active part in the French Revolution.

THE “FIRST handbook of modern systematic mineralogy” (Horblit). It contains four new works and an enlargement of the *Bermannus*, which first appeared in 1530. In addition to containing the first work on physical geology and ore deposits, it contains the first worthwhile book on mineralogy, plus a history of mining and metallurgy from ancient times, with a glossary in Latin and German. Of chemical importance are the contemporary views on the composition of metals (pp. 64–65): “metalla ex sulfure & argento vivo constare.” A most desirable copy of a great early scientific work. There were several later editions. Not in Dibner, Durling, Duveen, Edelstein, Ferguson Coll., Neu, Smith, Waller, etc. (Bolton, 264; Caillet, 79; D.S.B., I, 79; Ferchl, 4; Ferguson, I, 9; Hoover, 14; Horblit, 2a; Osler, 674; Partington, II, 44; Poggendorff, I, 17; P.M.M., 79; Sparrow, 3; Thornton & Tully, 74; Watt, I, 11g; Wellcome, I, 62)

AGRICOLA, Georgius

Georgii Agricolae De ortu & causis subterraneorum, Lib. V. De natura eorum quae effluunt ex terra, Lib. IIII. De natura fossilium, Lib. X. De veteribus & novis metallis, Lib. II. Bermannus, sive De re metallica Dialogus, Lib. I. Interpretatio Germanica vocum rei metallica, addito duplici Indice, altero rerum, altero locorum. Omnia ab ipso authore, cum haud poenitenda accessione, recens recognita.

Basel: Cum Imp. Maiestatis renovato privilegio ad quinquennium. 1558.

Second edition. Folio. 4 leaves, 470 pp., 1 leaf (blank), 20 leaves (index). With Froben’s woodcut device on title and final leaf, historiated woodcut capitals, and full-page woodcut (p. 142). Minor repair to title and final leaf; otherwise fine copy with wide margins. Bound in a fifteenth-century manuscript on vellum (with red and blue capitals) over boards, sixteenth-century lettering in ink on spine. Old signature on title (“Voigt”), dated 1773; possibly the mineralogist Johann Karl Wilhelm Voigt (1752–1821):

THE SECOND edition (first: Basel, 1546) with the revised and enlarged *De ortu*: the first handbook of systematic mineralogy and physical geology. The first index, which is identical to that of the 1546 edition, is followed by a blank leaf (Qq6), after which are two new indices (printed in italics) entitled *Index in universum hoc opus, geminus, alter rerum,*

alter locorum. These indices “were probably added later since the main text ends with a blank (Qq6), and the type and paper seem to differ. Of the four copies in Adams one lacks all after Qq5” (Honeyman Cat. [describing an imperfect copy]). All the indices in this complete copy are printed on the same paper. (Adams, A346; Bolton, 264; British Library, *S.T.C. German Books*, 8; D.S.B., I, 79; Duveen, 5; Ferguson, I, 9 [not in Young Coll.]; Honeyman, 26; Hoover, 15 [imperf.]; Partington, II, 44; Smith, 6; Wellcome, I, 63)

AGRICOLA, Georgius

De la generatione de le cose, che sotto la terra sono, e de le cause de’ loro effetti e natura, lib. V. De la natura di quelle cose, che da la terra scorrano, lib. IIII. De la natura de le cose fossili, e che sotto la terra si cavano, lib. X. De le minere antiche e moderne, lib. II. Il Bermanno, ò de le cose metalliche, dialogo, recato tutto hora dal Latino in buona lingua volgare. . . .

(Colophon:) Venice: Per Michele Tramezzino. 1550.

First Italian edition. 8vo. 28 leaves (last blank), 467 folios, 1 leaf. Woodcut printer’s device on title page, repeated on last leaf. Historiated woodcut capitals. Italic letter. Full-page woodcut of a mine (folio 142v). A beautiful copy, crisp and clean, in early-eighteenth-century Dutch quarter calf, gilt, speckled boards, red and green morocco labels.

THE FIRST Italian translation of *De ortu et causis subterraneorum* (Basel, 1546), by an anonymous translator, containing most of the author’s mineralogical and geological writings published to date. Also included are several tracts on weights and measures. A book of “considerable importance” (Duveen), as it includes one of the earliest attempts to classify minerals. The observations made by Agricola on crystal form, hardness, cleavage, density, color, and other physical properties served as a model for later mineralogical description. Werner styled Agricola the “father of mineralogy.” The *De le minere antiche e moderne* is the first history of metals, and the *Bermannus* is Agricola’s first work on mining and mineralogy. There are references to alchemy and chemical tests throughout, and the book is the earliest modern scientific treatise on geology in which the action of water on the surface of the earth and volcanic action are considered. Another Italian edition appeared (Venice, 1559). Scarce. (Adams, A338; British Library, *S.T.C. Italian Books, 1465–1600*, p. 10; Ferchl, 4; Ferguson, I, 9 [not in Young Coll.]; Ferguson Coll., 7; Hoover, no. 12; Partington, II, 45; Thornton & Tully, 74; Tinto, *Ann. dei Tramezzino*, 95; Ward & Carozzi, 30; Wellcome, I, 64)

AGRICOLA, Georgius

Georgii Agricolae De Re Metallica Libri XII. Quibus Officia, Instrumenta, Machinae, ac omnia denique ad Metallicam spectantia, non modo luculentissimè describuntur, sed & per effigies, suis locis insertas, adjunctis Latinis, Germanicisque appellationibus ita ob oculos ponuntur, ut clarius tradi non possint. Ejusdem De Animantibus Subterraneis Liber, ab Autore recognitus: cum Indicibus diversis, quicquid in opere tractatum est, pulchre demonstrantibus.
Basel: Hieronymus Froben & Nicolaum Episcopium. 1556.

First edition. Folio. 6 leaves (last blank), 502 pp. (misnumbered 538), 37 leaves. With the woodcut Froben device on the title and verso of final leaf. Two folding woodcut plates at pages 97 and 101 and 271 large woodcuts. Fine copy, bound in dark-brown crushed levant morocco, blind-ruled, spine gilt-lettered and dated, by Sangorski and Sutcliffe, London.

ONE OF THE deservedly famous and great books of sixteenth-century mining and metallurgical technology. It “has earned its place in history as a masterpiece of Renaissance technical writing and technical illustration” (Hoover Catalogue). “The *De Re Metallica* embraces everything connected with the mining industry and metallurgical processes, including administration, prospecting, the duties of officials and companies and the manufacture of glass, sulphur and alum. The magnificent series of two hundred and seventy-three large woodcut illustrations by Hans Rudolf Manuel Deutsch adds to its value. Some of the most important sections are those on engineering and the use of water-power, hauling, pumps, ventilation, blowing of furnaces, transport of ores, etc., showing a very elaborate technique” (P.M.M.). The chemical importance of this work is discussed by Partington. Latin editions followed in 1561, 1621, and 1657, and the book was translated into other languages. The processes described were used for well over three hundred years. (Bolton, 264; Caillet, 80; Dibner, 88; D.S.B., I, 78; Duveen, 4; Edelstein, 3754; Ferchl, 4; Ferguson, I, 9 [not in Young Coll.]; Hoover, 17; Horblit, 2b; Neu, 16; Osler, 670; Partington, 11, 46; Poggendorff, I, 17; P.M.M., 79; Sparrow, 4; Smith, 6; Thornton & Tully, 74; Wellcome, I, 67)

AGRICOLA, Georgius

Georgii Agricolae De Re Metallica Libri XII. Quibus Officia, Instrumenta, Machinae, ac Omnia Denique ad Metallicam spectantia, non modo luculentissimè describuntur, sed & per effigies, suis locis insertas, adjunctis Latinis, Germanicisque appellationibus ita ob oculos ponuntur, ut clarius tradi non possint. Ejusdem De Animantibus Subterraneis Liber, ab Autore recognitus cum Indicibus diversis, quicquid in opere tractatum est, pulchre demonstrantibus, atque omnibus nunc iterum ad archetypum diligenter restitutus & castigatis.
Basel: Hieronymus Froben & Nicolaum Episcopium. 1561.

Second edition. Folio. 5 leaves (the last, a blank, wanting), 502 pp., 37 leaves (index). With woodcut Froben device on title and verso of final leaf. With woodcut plates at pp. 97 (folding) and 108 and 271 large woodcuts (as in the 1556 edition). Fine copy, in early-seventeenth-century blind-ruled calf, strongly and tastefully rebaced in matching calf, original gilt-lettered maroon morocco label preserved.

A CLOSE PAGINARY reprint of the first edition of 1556 but typographically superior and printed on heavier paper. The woodcuts are identical to those of the first edition. Printed from a new and distinct setting of type; although the text of the first edition is closely followed in this second edition, it is not identical page for page (line beginnings and endings, catchwords, etc., are different). It is sometimes claimed that the second edition is made up of the sheets of the first edition, with a new title page and is thus the second issue of the 1556 edition, but that is completely erroneous. The two editions are quite distinct. Not in Caillet, Cushing, Duveen, Edelstein, Neu, Osler, Poggendorff, Smith, Waller, etc. (Bolton, 264 [wrong date: 1556]; Darmstaedter, 89; D.S.B., I, 79; Durling, 53; Ferchl, 4; Ferguson, I, 9; Ferguson Coll., 6; Hoover, 18; Partington, II, 46; Thornton & Tully, 74; Wellcome, I, 68)

AGRICOLA, Georgius

Georgii Agricolae . . . De Re Metallica Libri XII. Quibus Officia, Instrumenta, Machinae, ac Omnia Denique ad Metallicam spectantia, non modo luculentissimè describuntur; sed & per effigies, suis locis insertas, adjunctis Latinis, Germanicisque appellationibus, ita ob oculos ponuntur, ut clarius tradi non possint. Ejusdem De Animantibus Subterraneis Liber, ab Autore recognitus. Cum Indicibus diversis, quicquid in Opere tractatum est, pulchre demonstrantibus.
Basel: Sumptibus itemque typis chalcographicis Ludovici Regis. 1621.

Third edition. Folio. 5 leaves (last, a blank, wanting), “538” (i.e., 502) pp., 29 leaves. (N.B.: pp. 493–496 misnumbered 529–532, and pp. 501–502 misnumbered 537–538). Large woodcut on title page (repeated on p. 176). Woodcut folding

GEORGII AGRICOLAE

DE RE METALLICA LIBRI XII. QVI-
bus Officia, Instrumenta, Machinae, ac omnia denique ad Metallis-
cam spectantia, non modo luculentissime describuntur, sed & per
effigies, suis locis insertas, adiunctis Latinis, Germanicisque appella-
tionibus ita ob oculos ponuntur, ut clarius tradi non possint.

E I V S D E M

DE ANIMANTIBVS SVBTERRANEIS Liber, ab Autore re-
cognitus: cum Indicibus diuersis, quicquid in opere tractatum est,
pulchre demonstrantibus.



BASILEAE M. D. LVI.

Cum Priuilegio Imperatoris in annos v.
& Galliarum Regis ad Sexennium.

plates facing pages 97 and 100, and 269 text woodcuts (as in 1556 and 1561 editions). Large decorative woodcut capitals. Some scattered foxing as usual (owing to quality of paper), and with skillful restoration of many fore-edges; otherwise very good, tall copy, handsomely rebound in full paneled sheep antique.

THE THIRD Latin edition, with all of the magnificent woodcuts of the first edition (1556) in original size. The text reproduces that of the original exactly. Newton owned a copy of this edition (see Harrison, p. 84; Villamil, p. 63). Not in Duveen, Edelstein, Ferchl, Ferguson Coll., Neu, Poggendorff, Smith, etc. (Bolton, 264; Caillet, 79; D.S.B., I, 79; Ferguson, I, 9 [not in Young Coll.]; Hoover, 19; Morgan, 12; Partington, II, 46; Sondheimer, 17; Thornton & Tully, 74; Ward & Carozzi, 33; Wellcome, I, 69)

AGRICOLA, Georgius

Georgii Agricolae Kempnicensis Medici ac Philosophi Clariss. De Re Metallica Libri XII. Quibus Official Instrumenta, Machinae, ac omnia denique ad Metallicam spectantia, non modò luculentissimè describuntur; sed & per effigies, suis locis insertas, adjunctis Latinis, Germanicisque appellationibus, ita ob oculos ponuntur, ut clariùs tradi non possint. Quibus accesserunt hâc ultimâ editione, Tractatus ejusdem argumenti, ab eodem conscripti, sequentes. De Animantibus Subterraneis. Lib. I. De Ortu & Causis Subterraneorum. Lib. V. De Natura eorum quae effluunt ex Terra. Lib. IV. De Natura Fossilium. Lib. X. De Veteribus & Novis Metallis. Lib. II. Bermannus sive de Re Metallica, Dialogus. Lib. I. Cum Indicibus diversis, quicquid in Opere tractatum est, pulchrè demonstrantibus.

Basel: Sumptibus & Typis Emanuelis König. 1657.

Fourth edition. Folio. 6 leaves, 708 pp., 46 leaves (including 1 blank leaf). Large woodcut on title (assayer and furnace), 2 large woodcuts on separate leaf, and 291 other woodcuts (many full page). Slightly browned (as usual with paper of this period); otherwise a fine large copy, in full paneled calf antique, spine gilt-lettered.

THE FINAL early Latin edition of *De Re Metallica*, with six other works by Agricola, making an *Opera Omnia* of all his important works. The first three editions (1556, 1561, 1621) are essentially identical and contain only the first of the six works included here (i.e., *De Animantibus*). The fourth edition is the most complete collection of Agricola's works and is valuable because it contains few typographical or factual errors. The original woodcuts are present, but they are not quite as sharp after over a century of use through three previous editions. The book is necessarily a close paginary reprint as the woodcuts had to be accommodated to the text. This copy has Agricola's original dedication (to Prince

Maurice of Saxony), but not the editor's dedication (to Dr. J. Sigfrid). Since other copies also lack the Sigfrid dedication (e.g., those of Alain Brioux, 1978; François Chamonal, 1972; and Jacob Zeitlin, 1969), and as this copy is otherwise in fine condition, it appears that some copies were issued with and others without the Sigfrid dedication. (Bolton, 264; Cushing, A58; D.S.B., I, 79; Ferguson, I, 9 [not in Young Coll.]; Ferguson Coll., 6; Hoover, 20; Neu, 17; Partington, II, 46; Smith, 6; Wellcome, II, 18)

AGRICOLA, Georgius

Vom Bergkwerck XII Bücher darinn alle Empter, Instrument, Bezeuge, unnd alles zü disem Handel gehörig, mitt schönen Figuren vorbildet, und klärlich beschrieben seindt, erstlich in Lateinischer sprach, durch den Hochgelerten und Weittberümpften Herrn Georgium Agricolam, Doctorn unnd Bürgermeister der Churfürstlichen statt Kempnitz, jezundt aber verteüschet, durch den Achtparen unnd Hochgelerten Herrn Philippum Bechium, Philosophen, Artzet, und in der Loblichen Universitet zü Basel Professorn.

Basel: Getruckt . . . durch Jeronymus Froben, und Niclausen Bischoff, im 1557 jar mitt Keiserlicher Freyheit.

First edition in German. Folio. 4 leaves, 491, (1) pp., 4 leaves (index). Black letter. With Froben's woodcut device on title page, woodcut folding plate (facing p. 104), and 273 large woodcuts in text. Fine copy in boards covered with a fifteenth-century manuscript on vellum (with capitals in red and blue), spine with sixteenth-century lettering in ink. Bound with Agricola, G., *De ortu & causis subterraneorum Lib. V* (Basel, 1558).

THE FIRST German translation, by Philip Bech (d. 1566), of the *De Re Metallica* (Basel, 1556). As the first edition in the vernacular, this preeminent book on mining and metallurgy was eagerly welcomed by those who were not proficient in reading the original. Consequently, it is very much rarer than the Latin edition published a year earlier, and comparatively few copies have survived. The excellent woodcuts are identical to those in the Latin edition and appear in the same order but not on the same pages. The translator, Bech, admitted that "in many a point I am not satisfied with my translation . . . due to the shortness of the time and because I have not translated from Latin into German in former times." (Annen, 3; Bolton, 264; British Library, *S.T.C. German Books*, 8; Ferguson, I, 10 [not in Young Coll.]; Hoover, 22; Partington, II, 46-47; Waller, 19325; Wellcome, I, 70)

AGRICOLA, Georgius

Georgii Agricolae Medici Bermannus, sive De Re Metallica. Basileae, in aedibus Frobenianus Anno M.D.XXX. (1530).

First edition. 8vo. 135, (1) pp. With Froben's woodcut printer's device on title page and colophon. Very good copy in early-sixteenth-century vellum, with old title in ink on spine.

THE GREAT pioneer of mining and chemical technology, Georg Bauer (latinized as Agricola [1494–1555]), studied medicine in Leipzig and Italy (Bologna, Padua, Venice). He then returned to Joachimstal as physician to the miners, and there studied the techniques of mining and the extraction of metals. The present book, his first on mining, is especially important as it is the first work on mineralogical science in Europe. "The *Bermannus* for the first time gathered together the unsystematic knowledge of the miners . . . [and made] . . . an epoch in the history of the subject" (Ferguson). Agricola here describes various minerals for the first time and gives German designations (*Rerum metallicarum appellationes*, pp. 131–135), which are still in use. Like other copies, leaf A2 containing the commendatory letter from Erasmus is here replaced by a blank leaf of contemporary paper. The copy in the British Library also lacks this leaf, and the letter may have been systematically excised, as it was not uncommon for Erasmus to be censored—caught up as he was in the religious conflicts of the day. The rarity of the *Bermannus* is underscored by the fact that Herbert Hoover, in amassing his great collection on the history of mining and metallurgy, failed to acquire this first edition, even though the works of Agricola were his favorite. (British Library, *S.T.C. German Books, 1455–1600*, p. 8; D.S.B., I, 77–78; Ferguson, I, 10 [not in Young Coll.]; Partington, II, 44; Roller & Goodman, I, 16; Ward & Carozzi, 27)

AGRICOLA, Georgius

Georgii Agricolae Medici Libri Quinque De mensuris & ponderibus: In quibus pleraque à Budaeo & Portio parum animadversa diligenter excutiuntur.

Basileae ex Officina Frobeniana Anno MDXXXIII. Cum gratia & privilegio Caesareo ad sex annos. (1533).

First edition. 4to. 292 pp., 2 leaves. With Froben's woodcut printer's device on title and colophon. Fine historiated crible initials. Very good copy in contemporary vellum. Neat early manuscript notes in ink on 3 blank leaves at beginning. From the library of Gilbert Boucher (1782–1841), famous French magistrate, with his signature neatly written in ink on title page.

A TREATISE ON the weights and measures of the ancient Greeks and Romans. The dedication to the Duke of Saxony

is dated 9 March 1533. Froben was the publisher of Agricola's first book, *Bermannus sive de re Metallica* (Basel, 1530). A second edition of the *De mensuris & ponderibus* (Paris: C. Wechel, 1533), appeared in 8vo. format later in the same year. The colophon of this first edition reads: "Basileae apud Hieronymum Frobenium & Nicolaum Episcopium, mense Augusto, anno MDXXXIII." The work is of interest to historians of chemistry and physics as it discusses the relative densities of salts, oils, metals, etc. In his English translation of *De Re Metallica* (London, 1912, p. 597), Herbert Hoover describes the *De mensuris & ponderibus* as "a careful work still much referred to by students of these subjects." Hoover mistakenly believed that the Paris (1533) edition was the first. A rare book. There were several later editions, on which see Hoover *op. cit.* This edition is not mentioned by Bolton, Caillet, Durling, Duveen, Edelstein, Ferguson, Ferguson Coll., Morgan, Neu, Osler, Poggendorff, Rosenthal, Smith, Waller, Watt, etc. (Cushing, A60; D.S.B., I, 78; Ferchl, 4; Hoover, 4; Partington, II, 44; Wellcome, I, 58)

AGRICOLA, Johann Wilhelm

Ignis-Aquae ac Gebennae Ignis Historiam atque prima tentamina dissertatione hac chymico-medica inaugurali, . . . praeside . . . Elia Camerario, . . . submittit ad diem XIV. April. A. MDCCXXXI. Auctor et Respondens Johannes Guilielmus Agricola, Ratisbonensis.

Tübingen: Typis Antonii Henrici Roebelii. (1731).

First edition. 4to. 2 leaves, 24 pp. Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

AN ACCOUNT of an extremely strong chemical liquid mixture that will dissolve metals, their salts, gems (e.g., diamond, ruby, sapphire), as well as animal and plant matter. Experiments were conducted in glass vessels. The composition of the solvent mixture is not revealed; however, the author frequently mentions hot *aqua regia*. A translation (*Geschichte des Feuer-Wassers*) appeared in the *Magazin für die höhere Naturwissenschaft und Chemie* (Tübingen, 1784, vol. I, pp. 217 et seq.). Alchemical in nature, the book is discussed by Schmieder (*Geschichte der Alchemie*, 1832). Ferguson (I, 12; II, 61) briefly mentions the German translation (1784) but not the Latin original, which is very rare. The praeses, Elias Camerarius (1673–1734), an iatrochemist, was professor of medicine and botany at Tübingen (see J. J. Manget, *Bibliotheca Scriptorum Medicorum*, Geneva, 1731, vol. I [part 2], pp. 7–17; and Ferchl, 82). Not in Blake, Bolton, Duveen, Edelstein, Ferchl, Ferguson Coll., Guaita, Neu, Partington, Poggendorff, Watt, etc. (Smith, 99; Wellcome, II, 18)

AGRIPPA, Henricus Cornelius

De Occulta Philosophia Libri Tres. Henricus Cornelius Agrippa.
(Cologne: Johannes Soter, 1533).

First edition. Folio. 6 leaves, 362 pp. Large woodcut portrait of Agrippa on title. Several larger woodcuts of magical subjects and numerous woodcut diagrams and tables in text. Historiated woodcut initials in various sizes throughout. A handsome copy in old vellum, maroon morocco label gilt. From the library of the celebrated cabalist Kurt Seligmann, with his bookplate.

FIRST COMPLETE edition of one of the most important early-sixteenth-century works on alchemy and the best general account of the esoteric wisdom of its time. The life work of Heinrich Cornelius (1486–1535), called “Agrippa” after his native Cologne, was motivated by the increasing interest at the time in occult doctrine, and its success was no doubt greatly helped by official suppression and prohibition. The three books correspond with the three worlds of the cabalists, the first book having been published in 1531. The present first complete edition is preceded by a privilege of Charles V (in French); a correspondence (two letters) with Trithemius, abbot of Spanheim (to whom Agrippa had sent a first draft of his work in 1510); and dedications to Hermann von Wied, archbishop of Cologne, who had sheltered Agrippa from persecution during the time of publication. This book turned the author into a high sorcerer in the literature of magic for the next two centuries, making him a source for Goethe’s Faust. Nevertheless, Agrippa’s genuine contributions to early chemistry and medicine are recognized, and he holds an important position in the history of ideas for his particular blend of natural philosophy. There were at least three variants of the present edition, but no priority of issue has been established. All are of considerable rarity. This copy has an important provenance, having once belonged to Kurt Seligmann. (Caillet, 93; D.S.B., I, 80; Durling, 70; Edelstein, 25; Ferchl, 5; Ferguson, I, 12; Ferguson, *Books of Secrets*, I, Part VI, 26; Ferguson Coll., 12; Guaita, 1100; Neu, 30; Osler, 1746; Partington, II, 134; Poggendorff, I, 18; Thorndike, V, 129; Waller, 19328; Watt, I, lln; Wellcome, I, 91)

AGRIPPA, Henricus Cornelius

Henry Cornelius Agrippa His Fourth Book of Occult Philosophy. Of Geomancy. Magical Elements of Peter de Abano. Astronomical Geomancy. The Nature of Spirits. Arbatel of Magick. Translated into English by Robert Turner, . . .
London: Printed by J. C. for John Harrison, at the Lamb at the East-end of Pauls. 1655.

First edition in English. 4to. 8 leaves, 217, (1) pp. Fine engraved frontispiece portrait of Agrippa. Woodcut headpieces,

initials, figures, and symbols in text. Two leaves of gathering M torn (no loss); otherwise fine copy in contemporary sheep.

THE ASTROLOGER and botanist Robert Turner (fl. 1640–1664) translated into English the apocryphal fourth book (Cologne, 1565) of the *De occulta philosophia*. Although of some alchemical interest, this work of extreme magical character is preceded by Agrippa’s treatise on geomancy, followed by four other works on magic: 1) the *Heptameron: or, Magical Elements*, ascribed to Peter of Abano, but apocryphal (see Sarton, III, 443); 2) the *Isagoge* of Georg Pictorius von Villingen, a sixteenth-century German physician and professor of medicine (Thorndike, VI, 399–406); 3) Gerard of Cremona’s treatise of astronomical geomancy; and 4) a tract on the magic of the ancients issued under the name of Arbatel in 1575, which (according to Thorndike, VI, 457–458) appears to have been a modern fabrication. “This, though not by Agrippa, is much sought after on account of its extreme rarity. It was re-published at London in 1665, 4to., and in 1783, 8vo.” (Ferguson). Not in D.S.B., Duveen, Ferchl, Neu, Osler, Partington, Smith, Waller, etc. (Edelstein, 27; Ferguson, I, 13 [not in Young Coll.]; Ferguson, *Books of Secrets*, I, Part VI, 26; Ferguson Coll., 13; Mellon, 120 [1665 ed. only]; Watt, I, lln [1665 ed. only: “very scarce in 1824]; Wellcome, II, 18; Wing, A785)

AGRIPPA, Henricus Cornelius

Henrie Cornelius Agrippa, of the Vanitie and uncertaintie of Artes and Sciences, Englished by Ja. San. Gent. Ecclesiastes I. All is but moste vaine Vanitie: and all is most vaine, and but plaine Vanitie. Seene and allowed according to the order appointed.

London: Imprinted by Henry Wykes dwelling in Fleete-streat, at the signe of the blacke Elephant. 1569.

First edition in English. 4to. 8 leaves, 187 unnumbered folios, 2 leaves (errata and index). Black letter. Title page within elaborate woodcut border. Historiated woodcut initials and full-page coat of arms facing dedication to Thomas Howard, Duke of Norfolk. Contemporary unlettered sheep, skillfully rejoined, edges and corners little worn, later endpapers. Few very minor stains; otherwise a remarkably fine, entirely unsophisticated copy. Inscription (seventeenth century) on blank verso of *4: “Robert Larke His Booke.”

THE VERY rare first English translation by James Sandford (fl. 1567) of Agrippa’s *De incertitudine et vanitate scientiarum et artium, atque excellentia verbi Dei declamatio* (Antwerp, 1530: D.S.B., I, 80). An important polemic on the vanity and uncertainty of human knowledge of arts and sciences, the first and second Latin editions were immediately condemned by the Theological Faculty at Paris and publicly burned. This work discusses the tension then existing between the word of God and human knowledge and marks

the beginning of an era in natural science and the delineation of the limits of human understanding of the material world. Agrippa covers many subjects, including the mathematical and physical sciences, alchemy, pharmacy, and medicine. Also discussed are topics such as grammar, poetry, logic, geography, history, printing, music, and religious beliefs and doctrine. (Bolton, 946; Cushing, A64; Edelstein, 28; Ferguson Coll., 10; Neu, 25; Pritchard, 290; S.T.C., 204; Watt, I, 11m)

AGRIPPA, Henricus Cornelius

Three Books of Occult Philosophy, written by Henry Cornelius Agrippa, of Nettesheim, Counsellor to Charles the Fifth, Emperor of Germany: and Judge of the Prerogative Court. Translated out of the Latin into the English Tongue, by J. F.

London: Printed by R. W. for Gregory Moule, and are to be sold at the Sign of the three Bibles neer the West-end of Pauls. 1651.

First edition in English. 4to. 14 leaves, 583, (1) pp., 6 leaves. Fine engraved frontispiece portrait of Agrippa (mounted), folding woodcut table (facing p. 162), numerous large woodcut figures in text, woodcut initials and headpieces. Very good copy in contemporary gilt-ruled calf, maroon morocco label gilt, spine richly gilt (small piece missing). Signature in ink of the cabalist Francis Barrett at top of title page. Book ticket of George Redway and penciled note on flyleaf in Redway's hand. Armorial bookplate (eighteenth century): Townson.

THE FIRST translation into English of the *De occulta philosophia libri tres* (Cologne, 1533). Ferguson (I, 293) makes a good case for the translator ("J. F.") being John French, rather than John Freake (or Freke) as suggested by Lowndes. Apart from its significance to the history of the occult, the book contains many references to subjects of chemical importance at the beginning of the sixteenth century (e.g., elements, nature of fire, metals, minerals, and salts). This copy has a distinguished provenance, having belonged to Francis Barrett (dates unknown), who published *The Magus, or Celestial Intelligencer* (London, 1801). On page 179 of that work Barrett refers to this book, stating that it was "very rare" (in 1801). Not in Bolton, Caillet, Cushing, D.S.B., Guaita, Partington, Poggendorff, Thorndike, Waller, etc. (Duveen, 7; Edelstein, 29; Ferchl, 5; Ferguson, I, 13; Ferguson, *Books of Secrets*, I, Part VI, 26; Ferguson Coll., 13; Mellon, 99; Neu, 31; Osler, 1747; Smith, 7 [imperf.]; Watt, I, 11n; Wellcome, II, 18 [imperf.]; Wing, A789)

AGRIPPA, Henricus Cornelius

The Vanity of Arts and Sciences. . . .

London: Printed by R. Everingham for R. Bentley at the Post-House in Covent-Garden, and Dan. Brown at the Bible without Temple-Bar. 1694.

Third edition of this translation. 8vo. 10 leaves, 368 pp.

Engraved frontispiece portrait of Agrippa (fine impression).

Very good copy, in contemporary paneled calf, rebacked, with original gilt spine and label preserved. Armorial bookplate on verso of title page: Richard Syms Esqr. 1703.

A DIFFERENT AND anonymous English translation (cf. J. Sandford, 1569) of Agrippa's *De incertitudine et vanitate scientiarum et artium* (Antwerp, 1530). The first and second editions of the present translation appeared in 1676 and 1684. Agrippa held "Alchymy, or Chymistry" in very low esteem, saying (p. 313), "Every Alchymist is a Physician or a Sope-boyle . . . the smells of Coles, Sulphur, Dung, Poyson, and Piss, are to them a greater pleasure than the taste of Honey . . . [they are] a laughing-stock to the people . . . [and] are compell'd to live in the lowest degree of poverty." According to Ferguson (*Books of Secrets*, I, part VI, 27), this work "survives as one of the few books of its time that can be read with interest and with profit." Not in Bolton, Duveen, Ferguson, Neu, Waller, etc. (Ferguson Coll., 10; Smith, 7; Watt, I, 11n; Wellcome, II, 18; Wing, A792)

AGRIPPA, Henricus Cornelius

The Vanity of Arts and Sciences. . . .

London: Printed by R. Everingham for R. Bentley at the Post-House in Covent-Garden, and Dan. Brown at the Bible without Temple-Bar. 1694.

Fifth edition in English. 8vo. 9 leaves, 368 pp. Engraved frontispiece portrait of Agrippa. Very good copy in contemporary paneled calf, rebacked, with original gilt spine and label preserved. Armorial bookplate on verso of title page: Richard Syms Esqr. 1703.

A CRITICAL SURVEY of science and scholarship in the early sixteenth century, for which the author was imprisoned. Originally appearing as *De incertitudine et vanitate scientiarum et artium* . . . (Antwerp, 1530), numerous editions were published in the sixteenth and seventeenth centuries. One of the author's most important books, it emphasized the tension that existed between the word of God and human knowledge. Written "at the beginning of the era of natural science, it is one of the first testimonials to knowledge of the limits of human understanding" (D.S.B.). Agrippa held "Alchymy, or Chymistry" in low esteem, saying (p. 313): "Every Alchymist is a Physician or a Sope-boyle . . . the

smells of Coles, Sulphur, Dung, Poyson, and Piss, are to them a greater pleasure than the taste of Honey . . . [they are] a laughing-stock to the people . . . [and] are compell'd to live in the lowest degree of poverty." Medicine, the cabala, magic, astrology, the humanities, theology, etc., are all criticized in equally strong terms. Agrippa's attacks on the existing order offended almost everyone, and were officially condemned, and his book was publicly burned. Translated into English by James Sanford, the present edition was preceded by those of 1569, 1575, 1676, and 1684. "It survives as one of the few books of its time that can be read with interest and with profit" (Ferguson [*Books of Secrets*, I, Part VI, 27]). This edition is not mentioned by Bolton, Cushing, Duveen, Edelstein, Ferguson, Neu, Waller, etc. (Ferguson Coll., 10; Smith, 7; Watt, I, lln; Wellcome, II, 18; Wing, A792)

AIKIN, Arthur

A Manual of Mineralogy. By Arthur Aikin . . .

London: Printed by Richard and Arthur Taylor, Shoe-Lane, for Longman, Hurst, Rees, Orme, and Brown, Pater-noster-Row. 1814.

First edition. 8vo. lx, 164 pp. Very good copy, in original half calf, marbled boards, spine decorated in blind and gilt, maroon morocco label. Armorial bookplate (early nineteenth century): "E.P.S." (unidentified).

BORN IN Warrington, Lancashire, and trained for the Unitarian ministry, Aikin (1773–1854) later became a chemist and general science writer. He was one of the founders of the Geological Society (1807) and was the first treasurer of the Chemical Society (1840). The present work "includes the substance of some Lectures delivered during the last winter before the Members of the Geological Society: to whom it is most respectfully dedicated" (advertisement [dated 10 June 1814]). Besides describing the physical properties of minerals (hardness, crystal structure, density, etc.), Aikin gives details of chemical tests on them (treatment with acids and bases, use of the blowpipe, etc.). He divides minerals into four classes: I. Non-metallic and combustible; II. Native metals and metalliferous; III. Earthy; and IV. Saline. A valuable work on early methods of mineralogical analysis, an American edition appeared (Philadelphia, 1814; Ward & Carozzi, 37). Aikin also published several other books on mineralogy and chemistry. (D.N.B., I, 184; Poggendorff, I, 19; Roller & Goodman, I, 18; Wellcome, II, 19)

ÅKERMAN, Joachim, and EUSTRÖM, Joh. Magn.

Dissertatio Academica de Vi Corporum Caloris Perducendi, quam Consent. Ampliss. Phil. Ord. m. p. Joachim Åkerman, Phil. Doct. Respondente Joh. Magn. Euström, Seano. In lyceo Carol. die XIV Decembris MDCCCXXII.

Lundae: Typis Berlingianis, 1822.

First edition. 8vo. 16 pp. Fine copy, in crimson quarter morocco, marbled boards, spine gilt-lettered and dated.

ÅKERMAN (born 1798) was director of the mining school at Fahlun and professor of chemistry there. He published *Chemischer Elementarkurs* (1831) and *Vorlesungen über Chemie* (1832). The present thesis, written in conjunction with his student Euström, is on specific heat, heat content, and related subjects. There are references to the work of Ingenhousz, Senebier, Murray, Rumford, et al., and this tract is of chemical interest. Rare. Unknown to the usual authorities.

ALBERTUS MAGNUS

Alberti magni philosophorum maximi de mineralibus libri quinque.

(Colophon: Auguste Vindellicorum [Augsburg] impensis Sigismundi Grimm medicine doctoris & Marci Vuysung. 1519, 17 February).

First Augsburg edition? 4to. 58 unnumbered leaves. Fine copy in modern pasteboards. From a Carmelite monastery, with sixteenth-century inscription on title page in faded brown ink. With fine woodcut border around title (white on black background) and woodcut capitals in text.

A VERY RARE edition of this work on mineralogy by the great medieval scientist (ca. 1193–1280). "One of the best and most comprehensive of the western medieval lapidaries, it was written about 1260. There are several works, dealing in whole or in part with minerals, which are attributed to Albertus. Of these, that entitled *De Mineralibus* is the most important, and is at the same time undoubtedly a genuine work of his" (Adams). It contains the descriptions of approximately ninety-five precious stones and minerals. The notes to them are based to some extent on direct observations. There are references to metals, salts, borax, sulphur, niter, magnetite and its magnetic properties, naturally occurring glass (obsidian), etc. The preparation of metals from their ores is briefly covered. Metals whose chemical and physical properties are described include gold, silver, mercury, lead, tin, and iron. Alchemical opinions on the nature and composition of metals are extensively discussed on folios 36 et seq. The generation of metals in ores is described on folios 38 et seq. Chemical processes discussed

include, among many, solution congelation, crystallization, calcination, sublimation, and amalgamation. The medicinal virtues of preparations containing metals, salts, and mineral extracts are also covered. The final two leaves comprise a description of experiments against demons by Arnaldus de Villanova (ca. 1240–1311), a contemporary of Albertus Magnus. This edition is not in the British Library, the Cambridge Libraries, or the National Library of Medicine. (F. D. Adams, *The Birth and Development of the Geological Sciences*, pp. 114–115; Caillet, 128; Wellcome, I, 131 [only 56 leaves]; Wheeler Gift, 8 [only 57 leaves]; Zapf, *Augsburgs Buchdruckergeschichte*, II, 121, No. XX)

ALBERTUS MAGNUS

De Secretis Mulierum. Item de virtutibus herbarum, lapidum et animalium.

Amsterdam: Apud Henricum et Theod. Boom. 1669.

12mo. 329, (1) pp., 3 leaves. Engraved title page and ornamental woodcut initials. Unobtrusive signature (dated 1696) on title; otherwise fine copy in contemporary vellum.

A VOLUME CONTAINING the following works by Albertus: *De secretis mulierum* (pp. 10–118); *Liber aggregationis . . . de virtutibus herbarum, lapidum, et animalium* (pp. 118–158); and *De mirabilibus mundi* (pp. 158–203). To these are added *De secretis naturae* (pp. 204–329) by Michael Scot. Thorndike (II, 739–745) questions the attribution of “The secrets of women” to Albertus Magnus, and Ferguson (*Books of Secrets*) notes that this work has been ascribed to Henricus de Saxonia, a pupil of Albertus. The *De secretis mulierum* is important for the history of obstetrics but also covers cosmetics, pharmacology, astrology, and the magical powers attributed to certain gems. The tracts by Albertus and Scott “began to be printed in the fifteenth century, and passed through a very great number of editions, both separately and conjoined (as here)” (Ferguson). Two issues of the 1669 edition appeared, one with incorrect pagination (see Ferguson). The present copy has the correct numbering of the pages. Other editions are listed by Bolton, Caillet, Duveen, Ferchl, et al. Scarce. (Blocker, 5; Ferguson, I, 15; Ferguson, *Books of Secrets*, I, part 3, p. 27; Waller, 313; Wellcome, II, 24)

ALBERTUS MAGNUS

Liber Mineralium Alberti Magni . . . Sequitur tractatus de lapidum et gemmarum materia accidentibus . . . virtutibus ymaginibus, sigillis. De alchimis speciebus, operationibus et utilitatibus. De metallorum origine et inventionione, generatione . . . colore . . . virtute, transmutatione. Ad Emtores Thiloninus . . .

(Colophon:) Impressum in Oppenheim (by Jacob Koebel). 1518.

First Oppenheim edition. 4to. 4 leaves, 71 folios, 1 leaf. With five large and four smaller woodcuts, numerous small marginal woodcuts, and decorated initials. Neat marginal annotations and alchemical symbols in ink by a sixteenth-century adept on several leaves. Title and final three leaves guarded, and a few minor water stains; otherwise very good copy in nineteenth-century mottled boards, with spine and corners from a fourteenth- or early-fifteenth-century manuscript on vellum written in red and black.

A VERY RARE illustrated edition of this medieval alchemical and mineralogical treatise, one of the authentic writings of Albertus Magnus. The large woodcuts depict an alchemist carrying out a distillation (title, verso), a jeweler and his wares (folio 1, recto), a lady (folio 71, verso), and a man in elaborate costume (final leaf, recto). The final leaf (missing in some copies) is headed “De Alchimie phantastica fatiga Exhortatio Virgillii Saltzburgensis” and carries a six-line alchemical poem in German, enclosed in a woodcut border. Folios 20–36 have marginal woodcuts of finger rings set with various gemstones, and folio 32 (verso) contains four small woodcuts of rings and their parts. (Adams, A527; British Library, *S.T.C. German Books, 1455–1600*, p. 13; Duveen, Supplement, 2; Ferchl, 6; Ferguson Coll., 15; Poggendorff, I, 24; Proctor, 11914; Rothe, *Die Buchdruckerei des Jacob Koebel*, no. 30; Thorndike, V, 536; Waller, 12105; Watt, I, 14p; Wellcome, I, 132)

ALBERTUS MAGNUS

Liber secretorum Alberti magni de virtutibus herbarum lapidum & animalium quorundam, eiusdemque liber de mirabilibus mundi, etiam de quibusdam effectibus causatis a quibusdam animalibus &c.

(Paris: Pierre Viart, ca. 1499–1500).

First Viart edition? Sm. 8vo. 32 leaves (last blank), unfoliated. Woodcut printer’s device on title. Fine copy in modern vellum.

BORN AT Lassinggen, Swabia, Albertus Magnus (1193 or 1206–1280) was a great naturalist and compiler of Aristotelian writings. After studying at Padua, he became a monk of the Dominican order in 1223, devoting his life to teaching and writing on almost every aspect of theology, philosophy, and natural science. He was the foremost naturalist of the Middle Ages. Thorndike (II, 517–521) describes him as “the dominant figure in Latin learning and natural science of the thirteenth century. . . His best works are those on science.” In the present work he describes the physical, chemical, and medicinal properties of animals, plants, and minerals, as known at the time. The verso of the sixth leaf lists forty-six minerals. Originally printed at Ferrara (ca. 1477), numerous editions of the *Liber secretorum* followed (see Rudolph Hirsch, “The invention of printing and the diffusion of alchemical and chemical knowledge” [*Chymia*, 3 (1950), 124–125]). The present undated edition, printed

Liber secretorū

Alberti magni de virtutibus herbarū
lapidum & animalium quorundam,
Eiusdemq; liber de mirabilibus mun-
di, etiam de quibusdam effectus causa-
tis a quibusdam animalibus &c. 4



Albertus Magnus. Liber secretoru. Paris (?), ca. 1499–1500.

in Paris by Pierre Viart, appeared ca. 1499–1500. The *Gesamtkatalog der Wiegendrucke* (Leipzig, 1925) lists an undated Paris edition at ca. 1499–1500 (GW. 617); also another “ca. 1500” (GW. 652), and yet another “after 1500” (GW. 652a). The present edition is probably GW 617. All fifteenth-century editions are extremely rare. Not in the British Library, Ferguson *Books of Secrets*, Wellcome, etc.

ALBERTUS MAGNUS

Opera spirituale di Alberto Magno Intitolata Paradiso dell'Anima. Tradotta in lingua Toscana per Messer Frosino Lapini.

Florence: Appresso i Giunti. 1556.

First edition. 16mo. 8 leaves, 112 folios. Woodcut device on title. Printed in italics throughout. Very good copy in contemporary vellum. From the library of Leonis S. Olschki, with book ticket on front pastedown endpaper.

A VERY RARE book, with commentary by Filippo Giunti, printed by the famous Giunta press. The dedication is dated 10 August 1556. Although primarily on human behavior and emotions, chapters VII, “Della astinenza,” and XI, “Della temperanza,” also discuss food and wine. “Prima edizione, poco conosciuta” (Camerini). Not in the usual chemical and medical bibliographies. (British Library, *S.T.C. Italian Books, 1465–1600, Supplement*, p. 14; Camerini, *Firenze*, I, 297)

ALBERTUS PARVUS

Secrets Merveilleux de la Magie Naturelle & Cabalistique du Petit Albert, traduits exactement sur l'original Latin, intitulé Alberti Parvi Lucii Libellus de mirabilibus Naturae Arcanis. Enrichi de Figures mistérieuses, & de la manière de les faire. Nouvelle Édition corrigée & augmentée.

Lyons: Chez les Héritiers de Beringos Fratres, à l'Enseigne d'Agrippa. 1743.

12mo. 6 leaves, 252 pp. With 10 copperplates (some folding). Title page in red and black. Very fine, crisp copy, entirely uncut, in gilt-ruled quarter calf antique, marbled boards, with original marbled wrappers bound in. From the library of Maximilien Baron de Fontoy, with armorial bookplate.

NUMEROUS PRINTINGS appeared of this anonymous but well-known collection of magical absurdities, impossibilities, and secrets of making perfumes, powder of sympathy, artificial gold, borax for melting gold, artificial pearls, musk, soap, etc. While many of these “secrets” are fraudulent, some are illustrative of certain contemporary chemical processes. Other editions are listed by Caillet, Duveen, Guaita, Smith, Watt, Wellcome, etc. All editions are very scarce or rare. (Blake, 9 [imperf.]; Ferguson, I, 17; Ferguson, *Books of Secrets*, I, pt. 4, p. 35)

ALBINEUS, Nathan

Bibliotheca Chemica Contracta ex delectu & emendatione Nathanis Albinei . . . in gratiam & commodum Artis Chemicæ studiosorum.

Geneva: Sumpt. I. Ant. & Samuelis De Tournes. 1673.

Second edition. 8vo. 7 leaves, 78 pp., 1 leaf (blank), 11, (1) pp., 1 leaf (blank), 175, (1) pp., 1 leaf (blank), 9, (1) pp., 179, (1) pp., 6 leaves, 83, (1) pp. General title in red and black. Occasional minor foxing; otherwise fine, complete copy, in modern patterned boards, black morocco label, gilt.

THE FINAL and best edition of this important collection of nine alchemical tracts, edited by the Geneva chemist Albineus (i.e., Aubigné de la Fosse, 1601–1669?). Rarely found complete, it contains 1) Hermes: *Tabula Smaragdina*; 2 & 3) Augurellus: *Chrysopoeia* and *Vellus Aureum*; 4 & 5) Albineus: *Carmen Aureum* and *Aenigma*; 6 & 7) Sendivogius: *Novum Lumen Chemicum* and *De Sulphure*; and 8 & 9) Espagnet: *Enchiridion Physicæ Restitutæ* and *Arcanum Hermeticæ Philosophiæ Opus*. Following the preface of Sendivogius's *Novum Lumen* is a one-page *Testamentum Arnaldi de Villanova* in verse. The tracts by Espagnet and Sendivogius have formal title pages, dated 1673, as these were sold separately. The first edition (Geneva: J. A. & S. de Tournes, 1653) contained only seven tracts. Two issues of the second edition appeared: one with the imprint *Genevæ* (as here), the other with *Coloniae Allobrogum* (see Ferguson). “Ouvrage fort rare” (Caillet). Newton owned a copy of this work. Complete copies are very rare. The copies described by Duveen, Ferguson, and Neu are imperfect. (Bolton, 947; Caillet, I, 147; Duveen, 10; Edelstein, 41; Ferchl, 6; Ferguson, I, 18; Ferguson Coll., 22; Harris, 220; Heym, *Ambix*, 1 [1937], 56; Neu, 154; Partington, II, 427; Smith, 9; Thorndike, VII, 155; Verginelli, 8; Waller, 11044 [fragment only]; Wellcome, II, 25)

ALBUQUERQUE, Luiz da Silva Mousinho de

Curso Elementar de Physica e de Chymica offerecido aos Alumnos destas Sciencias no Real Laboratorio Chymico da Moeda: por L. S. M. De Albuquerque.

Lisbon: Na Typografia de Antonio Rodrigues Galhardo. 1824.

First edition. 5 vols. in 3. 4to. I: 10 leaves, 109 pp., 1 leaf (blank); 105 pp., 7 plates (3 folding); 51 pp., 2 leaves (index); 11 folding plates. II: 101 pp.; folding table; 36, 44 pp., 7 folding plates; pp. 203, 22; 3 leaves; 5 tables (2 folding); 2 leaves (errata); 8 folding plates. III: pp. 27, 162, 161; 1 table; 2 leaves (index); 2 folding plates. IV: 216 pp.; 4 tables; 59 pp.; 2 leaves (index). V: pp. 62, 47, 6, 16, 9; 1 folding table; pp. 14, 58, 20, 42, 34, 9, 37, 26, 11, 10; 1 folding table; 10 leaves (index and errata). Very fine copy, with all half titles, in contemporary quarter calf gilt, marbled boards. From the library of A. J.

Barjona (nineteenth century), with his signature in ink and occasional marginal notes.

A COMPREHENSIVE AND very rare Portuguese treatise on physics and chemistry, replete with physical and chemical calculations. Albuquerque (fl. 1800) was obviously a well-read and competent scientist, but he is not listed in any of the usual scientific biographical works consulted. Bolton (p. 265) states incorrectly that the work is in three volumes.

ALCENIUS, Henricus Gabrielis

Dissertatio Chemica, de Acido Carbonico, . . . Praeside Mag. Job. Gadolin, . . . pro gradu philosophico publicae censurae subijcit Henricus Gabr. Alcenius, Stip. Reg. Ostrob. In Auditorio Mathem. die XVI Junii MDCCXCVIII. . .

Abo: Typis Frenckellianis. (1798).

First edition. 4to. 1 leaf, 8 pp. Very fine copy, uncut with wide margins, in maroon quarter cloth antique, marbled boards, spine labeled: Gadolin. Five Dissertations. 1797–1805.

A DISSERTATION ON the history, preparation, and physical and chemical properties of carbon dioxide and carbonic acid, presented by Alcenius under the direction of Gadolin, professor of chemistry at Åbo. The works of Helmont, Boyle, Boerhaave, Hales, Macquer, Lavoisier, Senebier, and others are cited. The part played by carbon dioxide in plant photosynthesis is discussed. (Partington, III, 235)

ALCHYMISTISCH

Alchymistisch Sieben-Gestirn, das ist, Sieben schöne und ausserlesene Tractätlein, vom Stein der Weisen, darinn der richtige Weg zu solchem allerhöchsten Geheimnüss zu kommen hell und klar gezeigt wird. Allen Liebhabern der Hoch-Edlen Wissenschaft zu Gefallen und nützlichem Unterricht, aus dem Latein ins Hochdeutsche treulich übersetzt, und in Druck gefertigt. . . .

Hamburg: In Verlegung Johann Naumanns, und Georgen Wolffs. Im Jahr Christi 1675.

First edition. 8vo. 4 leaves, 231, (1) pp. Title page in red and black. With 7 divisional title pages (included in pagination). Fine copy, in blind-ruled calf antique, maroon morocco label, gilt, spine dated. With the name "Schweitzer" in ink in a seventeenth-century hand on title page.

AN IMPORTANT and rare alchemical collection containing the following seven tracts: Hermes Trismegistus, *Gülden Tractätlein*; Raymund Lull, *Apertorium* and *Elucidarium*; pseudo-Aristotle, *Ein Tractat Aristotelis der Alchimisten*; John Dausten, *Rosarium*; Albertus Magnus, *Compendium . . . der Metallen*; Johannes Pontanus, *Ein Sendbrief . . . vom Stein der Weisen*. This copy belonged to the famous Dutch physician Johan Friedrich Schweitzer (1625–1709), author of

the well-known *Vitulus Aureus* (Amsterdam, 1667), the first book to describe a supposedly successful transmutation. In his publications he latinized his name to Helvetius, but signed his name Schweitzer in books he personally owned. The present collection of tracts on the philosopher's stone is so written, according to the anonymous editor, that in this single book the reader could find in brief all the necessary information on the subject as was contained in the six-volume *Theatrum Chemicum* (1659–61). On page 231 the editor signs himself "H.R.C." The intense interest that Schweitzer had in the philosopher's stone and transmutation makes this a most interesting and historically important association copy. Other editions: Hamburg, 1697; Frankfurt, 1756, 1772. (Caillet, 163; Ferguson, I, 20–21; Schmieder, 166; Wellcome, II, 27)

ALDROVANDI, Ulisse

Musaeum Metallicum in Libros IIII Distributum . . . cum Indice copiosissimo. . .

(Colophon) Bologna: Typis Io. Baptistae Ferronij. 1648.

First edition. Folio. 4 leaves (last blank), 979, (1) pp., 6 leaves. With beautifully engraved copperplate title page and numerous fine woodcut illustrations by Christopher Coriolanus. Many historiated woodcut capitals, head- and tailpieces. A magnificent, absolutely complete copy, with blank leaf before sig. A; in old, gilt-ruled reversed calf, maroon morocco label.

COMPLETE BY itself, this work is volume 13 of the monumental *Opera omnia* (Bologna, 1599–1668) by Aldrovandi (1522–1605), professor of natural history at Bologna and founder of a museum there. Only the first four volumes of his *Opera* were published in his lifetime, the other volumes being compiled by his pupils from the manuscripts he left at his death. "Aldrovandi's books are scholarly and useful; the one . . . often cited, is *Musaeum Metallicum*, compiled . . . by Bartholomaeus Ambrosinus from a manuscript . . . said to use the name 'geology' for the first time in its modern sense. The work is divided into four sections: on metals, earth, concrete juices, and stones (minerals, rocks, and fossils). It includes the medicinal properties of rocks, minerals, and gems" (Partington). Subjects of chemical interest include metals, transmutation, acids, alkalies, salts, crystals, and magnets. There is an illustration of a pre-Columbian mask made from lava (p. 550). Aldrovandi's "work as a teacher and as the author of volumes that constitute an irreplaceable cultural patrimony earns him a place among the fathers of modern science . . . He was among the first to attempt to free the natural sciences from the stifling influence of the authority of textbooks" (D.S.B.). (Annen, 50; Caillet, 165; D.S.B., I, 110; Neu, 72; Osler, 1773; Partington, II, 93; Poggendorff, I, 27; Ward & Carozzi, 43; Watt, I, 16u; Wellcome, I, 172)

ALEXANDER, William

Dissertatio Inauguralis, de Partibus Corporis Animalis quae Viribus Opii Parent. Quam, annuente summo numine, . . . Gulielmi Robertson, . . . pro gradu doctoris . . . Gulielmus Alexander, Anglus . . . Ad diem 13. Septembris, . . .
Edinburgh: Apud Balfour et Smellie, Academiae Typographos. 1790.

First edition. Sm. 4to. 4 leaves, 125, (1) pp. Printed corrigenda pasted on verso of leaf preceding p. 1. Very fine copy, in maroon half morocco antique, marbled boards, spine gilt-lettered and dated.

THE DOCTORAL dissertation of William Alexander (dates unknown), with William Robertson as praeses. An interesting biochemical work describing many experiments on the absorption and action of opium on various parts of the anatomy of dogs, frogs, and other animals; with references to the works of Barton, Fontana, Monro, et al. Rare. Not in Blake, Cushing, Neu, Waller, Wellcome, or the usual chemical bibliographies. (Waring, 590)

ALEXIS OF PIEDMONT

De Secretis Libri Septem, a Ioan. Iacobo Veckero Doctors Medico, ex Italico sermone in Latinum conversi, & multis bonis Secretis aucti. Accessit hac editione eiusdem weckeri opera, octavus de artificiosis vinis liber.
Basel: Apud Petrum Pernam. 1563.

Third Perna edition. 8vo. 8 leaves (last blank), 480 pp., 24 leaves (last blank). Historiated woodcut capitals. Few very minor marginal stains; otherwise fine copy in contemporary unlettered blind-stamped vellum, each cover depicting a large figure in center panel, surrounded by vignettes of the heads of Erasmus, Huss, Luther, Melancthon, et al., amid floral decoration. Neat inscription on title page: "Matthia Proney et Amicorum," dated 1589.

THE THIRD Basel edition (first, 1559) of this famous book of secrets, translated by Johann Jakob Wecker (1528–1586) and the first to contain the seventh "book." To this edition Wecker has added a treatise of his own on the making of various types of artificial wines (pp. 447–480). The first edition in Italian, entitled *Secreti, Nuovamente, posti in luce* (Venice: Sigismondo Bordogna, 1555, 4to.), is extremely rare. "Wecker says that when he came back from Italy . . . he thought he might translate some useful Italian book . . . Alexis' six books had just then been published . . . and the contents . . . interested him . . . [so] . . . he translated it" (Ferguson, *Books of Secrets*). This work has been attributed to the Italian minor literary figure, Girolamo Ruscelli (ca. 1471–1566), whose *Secreti nuovi* (Venice, 1567) was posthumously published. Ferguson (I, 22), however, doubts the

attribution. The true identity of Alexis of Piedmont (Alesio) is unknown, and the name may be a pseudonym for Ruscelli or some other person. The book became immediately popular, with many editions in several European languages. Duveen, Edelstein, et al. list other editions. The Basel, 1559, and 1560 editions are in the British Library, but not the present one. Very rare, most copies were literally "read to pieces." (Ferguson, *Secrets*, I, pt. 2, p. 41, pt. 5, p. 32; Wellcome, I, 181)

ALEXIS OF PIEDMONT

The second part of the Secretes of Maister Alexis of Piemont, by hym collected out of divers excellent aucthours, and newly translated out of French into English, with a generall Table, of all the matters contayned in the sayde Booke. By Willyam Ward.

London: Printed by Rouland Hall, for Nicholas Englande. 1563.

Second English edition. 4to. 2 leaves, 79 numbered folios, 7 leaves (index). Woodcut printer's device on title page. Woodcut capitals. Black letter. Few headlines shaved, and occasional sixteenth-century marginal annotations in English; otherwise crisp, clean copy. Bound with: Alexis of Piedmont. The first, third, and fourth parts (London, 1568, 1566, 1569).

THE SECOND English edition (first, 1558), translated by William Warde, containing a great deal of information on sixteenth-century chemical preparations and their practical application. Extremely rare. This edition is not in Durling, Duveen, Ferguson Coll., etc. The Wellcome copy is imperfect. (Partington, I, 28; S.T.C. 301; Waller, 349; Watt, I, 20n; Wellcome, I, 185)

ALEXIS OF PIEDMONT

The secretes of the reverende Maister Alexis of Piemont [sic]: contayning excellent remedies agaynste divers dyseseas, woundes, and other accidentes, with the maner to make dystillations, parfumes, confitures, dyings, colours, fusions, and meltings. A worke wel approved, very profitable and necessary for every man. Newly corrected and amended, and also somewhat enlarged in certayne places which wanted in the first edition. Translated out of French into Englishe, by William Warde.

London: Imprinted by Henry Bynneman, for Iohn Wight. 1568.

Fourth English edition. 4to. 6 leaves, 117 numbered folios, 11 leaves (index). Woodcut printer's device on title page and another on final leaf. Woodcut capitals. Black letter. Title page slightly dusty, few headlines shaved, and small stain on lower margin of some leaves; otherwise crisp copy in near-contemporary calf (rebacked, corners repaired), covers gilt-

ruled each with center gilt ornament and the letters R. B. From the library of the antiquary, John Brand (1744–1806), with his engraved bookplate. Bound with: Alexis of Piedmont. The second, third, and fourth parts (London, 1563, 1566, 1569).

THE FOURTH English edition (first, 1558), translated by William Warde (1534–1604?), physician (M.D., 1567) and fellow of King's College, Cambridge. The French edition (1557) from which this translation was made was itself translated from the Italian edition (1555). As the title indicates, there is much of interest to the chemical historian. This copy has a distinguished provenance, having belonged to John Brand, who was secretary to the Society of Antiquaries, 1784–1806 (see D.N.B.). Complete sets of the four parts of this beautiful and important Elizabethan work, as here, are extremely rare. (Durling, 119 [imperf.]; Duveen, 16 [imperf.]; Edelstein, 2751; Ferguson Coll., 26; Honeyman, 67 [imperf.]; Partington, II, 28; S.T.C. 297)

ALEXIS OF PIEDMONT

The Secrets of Alexis: containing many excellent remedies against divers diseases, wounds, and other Accidents. With the maner to make Distillations, Perfumes, Confitures, Dyings, Colours, Fusions, and Meltings. A worke well approved, very necessarie for every man. Newly corrected and amended, and also somewhat more enlarged in certaine places, which wanted in the former Editions.

London: Printed by William Stansby for Richard Meighen and Thomas Jones, and are to be sold at their shop without Temple-Bar under S. Clements Church. 1615.

First edition to contain all five parts. 4to. Collation: A–Zz8. 6 leaves, 348 folios, 14 leaves. Folios 115, 191, & 242 are misnumbered 108, 125, & 250. Signatures Q4, Bb7, and Mm2 are divisional title pages to the second, third, and fourth parts, respectively, each with large woodcut device and dated 1614, and with the name William Stansby only. Part 5 was issued without a divisional title page. Black letter. Title and final leaf remargined, and a few other minor paper repairs; otherwise very good, unsophisticated copy, in contemporary blind-ruled unlettered sheep, with occasional neat seventeenth-century text annotations.

WRITING IN 1893, Ferguson (*Books of Secrets*) states: "The latest edition in English with which I am acquainted was printed in London in 1615. . . . This is a convenient edition, but it labours under the disadvantage of being rather rare." With the passage of another century, the book has become extremely rare. Both Ferguson and the new British Library catalogue erroneously describe this edition as having only four parts, instead of the five parts as here. The Wellcome copy is imperfect at the end. Given that the last part is not recorded, the S.T.C., Bishop, and Ramage list only four complete copies, three of which are in England.

Not in the usual chemical and medical bibliographies. (Edelstein, 2750; Ferguson, *Secrets*, II, pt. 1, p. 26; Lawrie, 3; Neu, 3590 [imperf.]; Partington, II, 28; S.T.C. 299, 304, 308, 311; Wellcome, I, 188)

ALEXIS OF PIEDMONT

The thyrde and last parte of the Secretes of the reverende Maister Alexis of Piemont, by him collected out of divers excellent Authors, with a necessary Table in the ende, contayning all the matters treated of in this present worke. Englished by Wylliam Warde.

London: Imprinted by Henry Denham, for John Wyght. (Colophon:) 1566.

Second English edition. 4to. 1 leaf, 75 (recte 74) numbered folios, 9 leaves (index). Woodcut printer's device on title page. Woodcut capitals. Black letter. Few headline shaved, and some sixteenth-century marginal annotations in English; otherwise crisp copy. Bound with: Alexis of Piedmont. The first, second, and fourth books (London, 1568, 1563, 1569).

THE SECOND English edition (first, 1562), translated by William Warde. The foliation omits leaf 16, but the catchword agrees and the text is complete. This work contains much information on practical chemistry, including the dyeing and bleaching of fabrics, gilding of metals, and preparations of salts (e.g., sodium chloride, ammonium chloride), acids (e.g., sulphuric, nitric), and alkalies (e.g., potassium carbonate, sodium hydroxide). Folio 69v describes the preparation of the "mother of all waters" that will dissolve all metals: it consisted of a mixture of fuming nitric and sulphuric acids, made by the destructive distillation of dry nitre and concentrated sulphuric acid. Very rare. (Durling, 121 [imperf.]; Ferguson Coll., 26; Partington, I, 28; S.T.C. 306; Watt, I, 20n)

ALEXIS OF PIEDMONT

A verye excellent and profitable Booke conteining sixe hundred foure score and odde experienced Medicines, apperteyning unto Phisick and Surgerie, long tyme practysed of the expert and Reverend Mayster Alexis, which he termeth the fourth and finall booke of his secretes, and which in hys latter dayes hee dyd publishe unto a universall benefit, having unto that tyme reserved it onely unto himselfe, as a most private and precyous treasure. Translated out of Italian into Englishe by Richard Androse. . . .

London: Imprinted by Henry Denham. 1569.

First English edition. 4to. 4 leaves, 56, 64, 56 pp., 12 leaves (index). Title page with elaborate woodcut border (fore-edge shaved) and large woodcut coat of arms on verso. Historiated woodcut capitals. Black letter. Few neat sixteenth-century marginal annotations in English; otherwise crisp copy. Bound

with: Alexis of Piedmont. The first, second, and third books (London, 1568, 1563, 1566).

THE FIRST English edition of the fourth part, published after the Italian author's death, translated by Richard Androse. Of pharmaceutical chemical interest, it contains almost seven hundred remedies and medicines for curing all types of afflictions and diseases of the human body. "The fourth part is the least common" (Ferguson [*Books of Secrets*], writing in 1884: it is now very rare). Not in Blocker, Edelstein, Ferguson, Reynolds, Thorndike, Waller, Wellcome, etc. (Durling, 122; Duveen, 16 [imperf.]; Ferguson Coll., 26; Ferguson, *Secrets*, I, pt. 3, pp. 37–38; Neu, 3594 [imperf.]; Osler, 1780 [imperf.]; Partington, II, 28; S.T.C. 309; Watt, I, 20n)

ALGAERUS, Laurentius M.

Q. B. F. F. Q. S. Disputatio Physica de Frigore quam consensu amplissimae facultatis philosoph. in Regia Academia Upsalensi. Praeside Dn. Andrea Spole . . . Placidiae eruditorum ventilationi submittit . . . Laurentius M. Algaerus Smolandus, in Auditorio Gustaviano Majori ad d. 28 Maj. Anno 1684.

Uppsala: Excudit Henricus Curio . . . (1684).

First edition. Sm. 4to. 3 leaves, 55, (1) pp., 1 leaf. Good copy in modern patterned boards.

A DISSERTATION ON the phenomenon of cold, of chemical interest. Of Algaerus, who presented this dissertation under Spole, nothing appears to have been recorded. Spole (1630–1699) was professor of mathematics at the University of Lund (1667–76) and from 1679 until his death at the University of Uppsala. There are numerous references to earlier and contemporary writers on cold (e.g., Lucretius, Aristotle, Scaliger, Olaus Magnus, Legrand, Sperling, and Rohault). Curiously, Boyle is not mentioned. On pages 47–48 there is a discussion of the effect of cold on barometers and thermometers (unknown to W. E. Knowles Middleton). A very rare work, unknown to the bibliographers.

ALGAROTTI, Francesco

Dialoghi sopra la Luce, i Colori, e l'Attrazione. Quae legat ipsa Lycoris. Del Conte Francesco Algarotti Ciamberlano di S. M. il Re di Prussia, e Cavaliere dell'Ordine del Merito. Berlin: (Colophon:) Nella Reale Stamperia di Gio: Goffredo Michaelis. 1750.

First Berlin edition. 8vo. 2 leaves, xi + 349 + (1) pp. Large copperplate vignette on title page. Copperplate headpiece and capital on first page of dedication. A very fine copy, in pristine condition, in contemporary calf, spine richly gilt, gilt-lettered maroon morocco label.

COUNT ALGAROTTI (1712–1764) first published this popularization of Newton's discoveries as *Il Newtonianismo per le Dame, ovvero Dialoghi sopra la Luce e i Colori* (Naples, 1737). It covers Newton's work on light, colors, and attraction. Many editions appeared from Naples, Milan, Livorno, and Venice, and the work was translated into French (Paris, 1738), English (London, 1739), German (Brunswick, 1745), Dutch (Utrecht, 1767), Swedish (Stockholm, 1782), and other languages. "Il se proposa de mettre à la portée des gens du monde les découvertes et le système de Newton, comme Fontenelle y avait mis les oeuvres de Descartes. . . . Ce livre fit beaucoup de bruit, et lui fit obtenir l'honneur d'être invité par Maupertuis et Clairaut à les accompagner dans leurs expéditions scientifiques" (*Biogr. Gén.*). The dedication to the King of Prussia is in French and is dated from Potsdam, 24 August 1749. This is the only separate edition published in Berlin, and the text is in Italian. An extremely rare edition, which is not in Babson or Gray. (Wallis, 194.7: two copies only, Delft Tech Hogeschool, and Stockholm Academy of Sciences)

ALLAIN, P. A.

Traité de Chimie Élémentaire d'après les Équivalents ayant l'Hydrogène pour Unité. . . .

Paris: Chez J. B. Baillièrre, . . . Londres: Chez H. Baillièrre . . . 1848.

First edition. 8vo. vii, (1), 332 pp. + 8 pp. (advertisements, dated January 1847). With 3 folding lithographed plates of chemical apparatus (Charpentier sculp.), including 30 figures. Fine copy, uncut, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

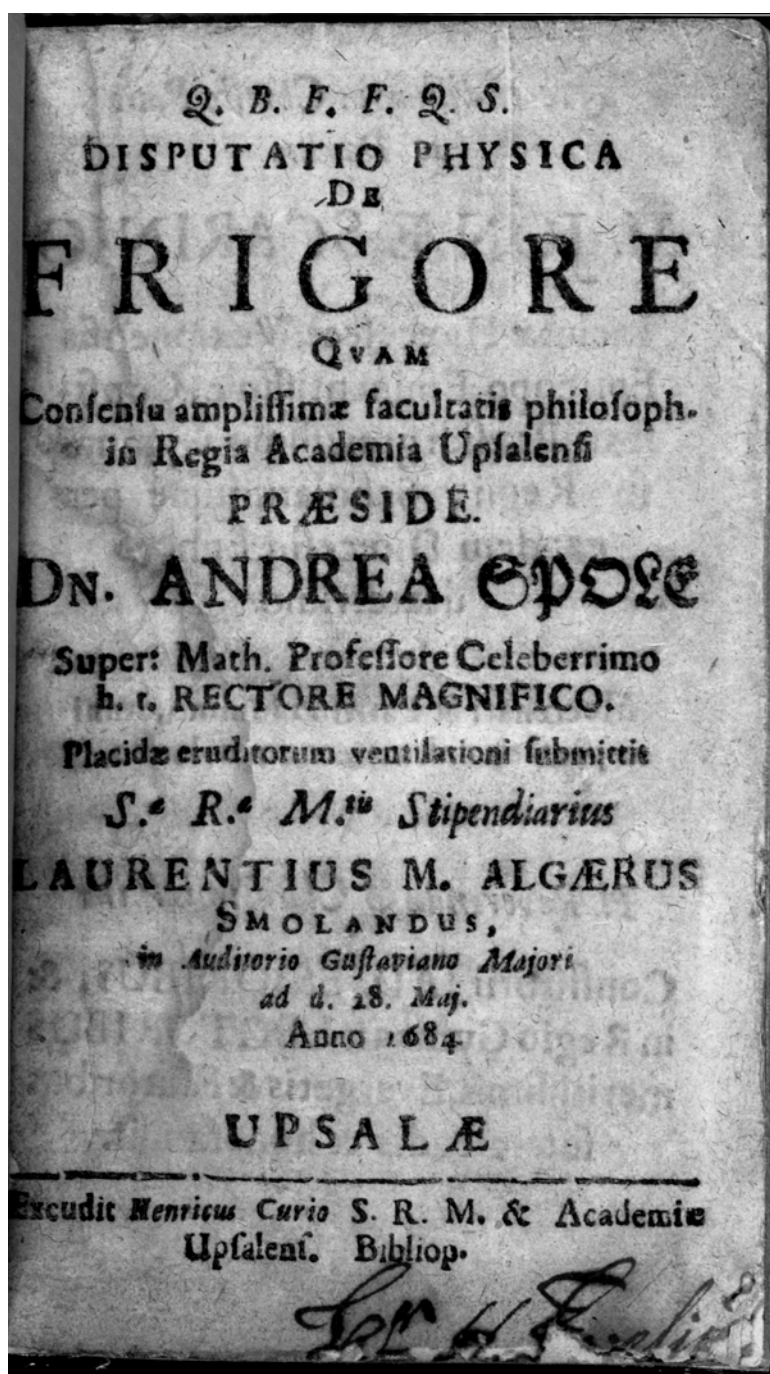
ONE OF the earliest books in which hydrogen (rather than oxygen) is employed as the chemical equivalent, its value being defined as unity. Berzelius, Gay-Lussac, Thomson, Wollaston, et al., had earlier taken the atom of oxygen as unity, but Dalton employed hydrogen as the standard element. Allain, an assistant to Cahours, Dumas, Payen, and Péligot, taught chemistry at the École Centrale des Arts et Manufactures in Paris. Bolton (p. 266), possibly in error, gives the date of this work as 1847. Not in Cole, Duveen, Edelstein, Partington, Wellcome, etc.

ALLAN, Robert

A Manual of Mineralogy comprehending the more recent discoveries in the mineral kingdom.

Edinburgh: Printed for Adam and Charles Black . . . 1834.

First edition. 8vo. lxxiii, (1), 351, (1) pp. Woodcut text diagrams, and 15 folding engraved plates of crystals. Old stamp on verso of title (King's Inn Library, Dublin). Fine copy in original speckled calf, rebacked, maroon morocco label gilt.



Algærus. Disputatio Physica de Frigore. Uppsala, 1684.

A COMPREHENSIVE TREATISE on mineralogy and mineralogical chemistry, dedicated to the famous chemist William Henry. "The first work giving a connected view of the newly-discovered minerals, taken from English and foreign journals" (Zeitlinger). Minerals are classified according to their crystallographic habit and chemical composition, with numerous references to works by Berzelius, Haidinger, Haüy, Jameson, Mohs, et al. An eminent mineralogist, fellow of the Royal Society of Edinburgh and member of the Geological Society of London, the author (1806–1863) was the son of the Scottish mineralogist Thomas Allan (1777–1833), who published *Mineralogical nomenclature* (Edinburgh, 1814). Very scarce. Not in D.S.B., Hoover, Ward & Carozzi, Zittel, or the usual chemical bibliographies. (Smith, 11; Sotheran, Cat. 795 [1925], 9386; Wellcome, II, 32)

ALLAN, Thomas

Mineralogical Nomenclature, alphabetically arranged; with synoptic tables of the chemical analyses of minerals.
Edinburgh: Printed for Archibald Constable and Company, etc. 1814.

First edition. 8vo. xxii pp., 29 leaves, and 27 double-page tables (unpaginated). Fine copy in contemporary half calf, marbled boards, spine gilt. Presentation copy inscribed in ink on title page "G. Wilmot," and on verso of half title: "The gift of Mr. Allan the Author."

ALLAN (1777–1833), Scottish mineralogist and Fellow of the Royal Societies of London and Edinburgh, amassed a large collection of minerals, contributed the article on "Diamond" to the *Encyclopaedia Britannica*, and published geological works. His tables on the chemical composition and other properties of minerals are valuable. Sir Humphry Davy presented the first systematic courses on geology in England, which were attended by Allan, who later published a *Sketch of Mr. Davy's Lectures on Geology delivered at the Royal Institution* (London, 1811? 12mo.). For details on Allan, see D.N.B. The present work is a completely revised and greatly enlarged edition of the author's *Alphabetical List of the Names of Minerals* (Edinburgh, 1808). Smith (p. 11) lists the third edition only (Edinburgh: A. Constable, 1819). Scarce. Not in D.S.B., Hoover, Waller, Wellcome, Zittel, or the usual chemical bibliographies. (Poggendorff, I, 32; Ward & Carozzi, 46; Watt, I, 21s)

ALLEN, Benjamin

The Natural History of the Chalybeate and Purgive Waters of England, with their particular Essays and Uses. Among which are treated at large the Apoplexy & Hypochondriacism. To which are added, some Observations on the Bath Waters in Somersetshire. Dedicated to the Right Honourable the Earl of Manchester. By Benjamin Allen, Med. Bac.

London: Printed and sold by S. Smith and B. Walford, at the Prince's Arms in St. Paul's Church-Yard. 1699.

First edition. 8vo. 20 leaves, 184 pp. With 2 woodcuts of Scarborough water salt crystals on page 184. Bound without the 4 leaves of advertisements (as in other copies), in contemporary gilt-ruled calf, rebacked, maroon label, spine dated. A significant association copy, with bookplate of Sir William Blizard (1743–1835), surgeon, and signatures of Randle Wilbraham Falconer (1816–1881), medical writer, and James Keir (1735–1820), famous chemist and translator of Macquer's chemical dictionary (1771). On these former owners, see the D.N.B.

ALLEN (1663–1738) also published another book, *The Natural History of the Mineral-Waters of Great Britain* (1711). Both works are of chemical (as well as medical) interest as they give details on the chemical reagents and experimental methods used to analyze mineral waters. A note on the front pastedown endpaper of this copy states: "B. Allen took his degree of B.M. at Cambridge in 1688. He was of Queen's College." A rare balneological work, of importance in the history of analytical chemistry. (Duveen, 17; Ferchl, 7; Ferguson Coll., 30; Neu, 78; Partington, II, 696, 727; Waring, 775; Wellcome, II, 32; Wing, A1018)

ALLEN, Benjamin

The Natural History of the Mineral-Waters of Great Britain. To which are added, some Observations of the Cicindela, or Glow-worm. By Benjamin Allen, Med. Bac.

London: Printed for the Author, and Sold by William Innys, at the Prince's Arms in St. Paul's Church-Yard. 1711.

First edition. 8vo. 16 leaves, 104 pp. With copperplate frontispiece depicting crystals from several mineral waters. Very good copy in contemporary paneled calf, maroon morocco label, gilt. From the library of Thomas Yeates (1768–1839), orientalist and assistant in the British Museum, with his signature in margin of title page. Old stamp of "John Gough, Kendal" on page 56. Gough (1757–1825) was the blind teacher of the great chemist John Dalton and the scientist-historian William Whewell (see D.N.B.).

A COMPREHENSIVE WORK, printed for Allen in small number, on thirty British mineral waters, with discussions of their chemical analysis and medicinal uses. The *Observations on the Cicindela, or Glow-worm, and the Nature of Light*

(pp. 101–104) are of interest in the history of bioluminescence but were unknown to E. Newton Harvey. The preface is dedicated to the celebrated physicians Martin Lister and Tancred Robinson. A rare book with an important provenance. Not in the usual chemical and medical bibliographies. (Blake, 11; Ferchl, 7; Waring, 775; Watt, I, 22n; Wellcome, II, 32)

ALLEN, William, BOSTOCK, John, and AIKIN, Arthur

Syllabus of a Course of Chemical Lectures delivered at Guy's Hospital. By William Allen, F.R.S. & F.L.S. John Bostock, M.D., F.R.S., F.L.S. &c. Arthur Aiken, Sec. Soc. Arts, &c. F.L.S.

London: E. Cox and Son, St. Thomas's Street, Southwark. 1822.

First edition. 8vo. vii, (1), 72 pp. An interleaved copy with notes in pencil and ink by early-nineteenth-century students on some pages. Original maroon half morocco, marbled boards, spine gilt-lettered. From the library of Professor Franz Sondheimer, with his bookplate on front pastedown endpaper.

ALLEN (1770–1843), a Quaker, was lecturer on chemistry (1802–26) at Guy's Hospital, London. He later conducted a pharmacy from which the famous firm of Allen and Hanbury is descended. He was elected F.R.S. (1807), and his biography is in the D.N.B. Bostock and Aikin, both of whom are well-known to chemical historians, also lectured at Guy's Hospital. They collaborated with Allen in these lectures, which were among the earliest to be delivered on chemistry in England. Very rare. Not in Bolton, D.S.B., Duveen, Edelstein, Ferchl, Ferguson, Ferguson Coll., Partington, Poggendorff, Smith, Waller, Watt, etc. (Sondheimer, 663)

ALLETZ, Pons Augustin

L'Albert Moderne, ou Nouveaux Secrets Éprouvés, et Licites, recueillis d'après les découvertes les plus récentes. Les uns ayant pour objet de remédier à un grand nombre d'accidens qui intéressent la santé: les autres, quantité de choses utiles à savoir pour les différents besoins de la vie: d'autres, enfin tout ce qui concerne le pur agrément, tant aux champs qu'à la ville. Le tout divisé en trois parties, & rangé par ordre alphabétique.

Paris: Chez la Veuve Duchesne, Libraire, rue St. Jacques, au Temple du Goût. 1769.

Fourth edition? 12mo. 2 leaves, xxii, 329 pp., 1 leaf. Good copy in contemporary mottled calf, spine gilt.

A FAMOUS BOOK of secrets of chemical interest, the compiler of which was unknown to Ferguson. Although nowhere in the book is his name revealed, it is usually attributed to Alletz (1703–1785), a French advocate of Montpellier, who published several dictionaries on agricultural and other subjects. The first edition (Paris, 1768), published by the widow of Duchesne (Wellcome, II, 33), was quickly followed in 1769 by another *édition* (pp. xxii, (2), 384), and that was followed also in 1769 by a so-called *seconde édition* (actually the third), which was “Augmentée de plusieurs Secrets nouveaux” with pages viii, 429, 9 leaves. The present is probably the fourth edition, and the book appeared in numerous later editions throughout the eighteenth century. Ferguson (*Books of Secrets*, I, part 4, p. 32) states: “The compiler explains that he has named his book out of opposition to the old Secrets of Albertus Magnus and of Albertus Parvus; he criticises these older collections, and points out that his collection is more respectable, and free from superstition. . . . This *Modern Albert* is more rational, and the author has furnished as sound information as he well could. . . . The alphabetical order is interesting as it is one of the first books of secrets arranged in this way.” This edition is not in the usual early chemical bibliographies. Wellcome (II, 33) lists what is probably a second issue of this edition, with identical pagination but dated 1770.

ALMELOVEEN, Theodoor Jansson van

Theodori Janssonii ab Almeloveen Inventa Nov-Antiqua. Id est brevis Enarratio Ortus & Progressus Artis Medica; ac praecipue de Inventis vulgo novis, aut nuperrime in ea repertis. Subjicitur ejusdem Rerum Inventarum Onomasticon. Ad Virum Clarissimum Iacobum Vallan. Amstelaedami, Apud Janssonio-Waesbergios. 1684.

First edition. 8vo., in 2 parts. Part I: 16 leaves, 249 pp., 3 leaves. Part II: 3 leaves, 85 pp. With engraved title, and woodcut of sphere on both printed titles. Very good copy in contemporary speckled calf, spine richly gilt.

ALMELOVEEN (1651–1712), a nephew of Jansson the printer, whose name he bore, became doctor of medicine in 1681, settled in Gouda in 1687, was appointed professor of history and Greek at Harderwyck, and in 1702 also became professor of medicine. “A remarkable contribution to the history of discovery was made in a volume published in 1684, entitled *Inventa. Nov-Antiqua* . . . The author discusses, with profuse learning and with a strong bias towards antiquity, the question how far the discoveries in medicine of the moderns were anticipated by the ancient physicians . . . The *Onomasticon* is . . . a list of the most striking discoveries that were known to the ancients. One naturally compares it with the lists of Pastregicus, Contarino, Textor, and

others, to which it is superior, especially in exact references to the authorities" (Ferguson). Chapter XXVIII (pp. 223–238) deals with the discovery of the circulation of the blood by Harvey and his predecessors (e.g., Caesalpinus). The *Nov-Antiqua* discusses the antiquity of chemistry and related pharmaceutical topics, and the *Onomasticon* comprises a list of chemical and other discoveries. Writing in 1888, Ferguson described this book as "not at all common": it is now very scarce. Not in Caillet, Cushing, Duveen, Ferguson, Osler, Smith, Watt, et al. (Ferguson, *Books of Secrets*, Part V, pp. 6–8; Ferguson Coll., 31; Hirsch, I, 97; Neu, 85; Pagel, *William Harvey's Biological Ideas*, pp. 120–121; Thorndike, VIII, 443; Waller, 12506; Wellcome, II, 35)

ALSTON, Charles

Index Medicamentorum Simplicium Triplex. Conscriptus a Carolo Alston.

Edinburgh: W. Sands, A. Murray, & J. Cochran . . . G. Hamilton & J. Balfour. 1752.

First edition. Sm. 4to. xi, (i), 172 pp. Very fine copy, uncut and with wide margins, in the original boards. Bound with another copy of Alston, Charles, *A Dissertation on Quick-Lime and Lime-Water* (Edinburgh, 1752).

A GUIDE TO the materia medica prepared for Alston's students at the University of Edinburgh. Pages vii–xi list the source works on materia medica, and pages 1–118 give references to these sources for each of the hundreds of chemicals and other substances used in the preparation of medicines. Pages 119–172 list the many "simples" and their uses in treating diseases, etc. Surprisingly, not listed by Waring (*Bibliotheca therapeutica*, 1878). Not in Bolton, Cushing, Duveen, Ferchl, Ferguson, Ferguson Coll., Garrison & Morton, Morgan, Osler, Partington, Poggendorff, Smith, Waller, etc. (Blake, 12; Neu, 92; Sondheimer, 31; Watt, I, 24w; Wellcome, II, 37)

ALSTON, Charles

A Dissertation on Quick-Lime and Lime-Water. By Charles Alston, M.D. The King's Botanist in Scotland, Fellow of the Royal College of Physicians, and Professor of Medicine and Botany in the University of Edinburgh. The Second Edition, with Additions.

Edinburgh: Printed by W. Sands, A. Murray, and J. Cochran. Sold by G. Hamilton & J. Balfour. 1754.

Second edition. 12mo. (in 4s) 5 leaves, 79 pp. Woodcut printer's ornament (thistle) on title page. Fine, crisp copy in contemporary speckled calf, spine gilt-ruled, with maroon lettering label. From the library of Hugh, Earl of Eglinton (viz. Hugh Montgomerie [1739–1819], twelfth Earl of Eglinton, captain in the army during the American war), with his armorial bookplate on the front pastedown endpaper. Bound with

Whytt, Robert, *An Essay on the Virtues of Lime-Water* (Edinburgh, 1755), and 2 other works by Alston.

THE FIRST edition appeared two years earlier, in 1752, in a small book of only sixty pages. The present edition is enlarged by the addition of more chemical experiments on the reactions of quicklime, slaked lime, and limewater. Alston carried out some quantitative experiments on solutions of limewater (calcium hydroxide) exposed for a long time to the air and observed that a crust of dense material was formed. He correctly inferred that the crust contained "Air, or something attracted from it," but his experiments led to no definite conclusions. The crust was, in fact, calcium carbonate, formed by absorption of carbon dioxide from the atmosphere. These experiments were carefully studied by Joseph Black and, as Partington points out, "might have given a hint to Black" in his epochal experiments on the composition of magnesia, which he was carrying out at about the same time. In his discussion and the descriptions of his quantitative experiments, Alston refers to many works by earlier and contemporary chemists (e.g., Helmont, Boyle, Charras, Boerhaave, Lemery, Hales, Hoffman, Geoffroy, Black, and Macquer). The works of Alston and Whytt contributed much to mid-eighteenth-century chemical knowledge. Very scarce. Not in Bolton, Cushing, Duveen, Ferchl, Ferguson, Morgan, Neu, Osler, Poggendorff, Reynolds, Smith, Waller, Waring, etc. (Partington, III, 136; Watt, I, 24w; Wellcome, II, 37)

ALSTON, Charles

A Second Dissertation on Quick-Lime and Lime-Water.

By Charles Alston, M.D. The King's Botanist in Scotland, Fellow of the Royal College of Physicians, and Professor of Medicine and Botany in the University of Edinburgh.

Edinburgh: Printed by W. Sands, A. Murray, and J. Cochran. Sold by G. Hamilton & J. Balfour. 1755.

First edition. 12mo. (in 4s) 3 leaves, 64 pp. Woodcut printer's ornament (flower) on title page. Fine, crisp copy in contemporary speckled calf, spine gilt-ruled, with maroon lettering label. Bound with Alston, Charles, *A Dissertation on Quick-Lime and Lime-Water* (Edinburgh, 1754), another work by Alston, and one by Whytt.

THIS WORK was written as a sequel to the author's first *Dissertation*, published a year earlier in 1754, which was criticized by Robert Whytt in his *An Essay on the Virtues of Lime-Water* (Edinburgh, 1755). Alston here adduces further experiments and observations on the chemical nature of quicklime, slaked lime, limewater, and potash. He attempts to refute Whytt's arguments against the inferences he (Alston) had drawn from his earlier experiments. Arguments for and against lime and limewater prepared by the calcination of limestone or oyster shells are given. Whytt

avored lime made from shells. Alston describes his experiments on the addition of freshly prepared quicklime to lime-water to make it "stronger" (i.e., more alkaline). He also demonstrated that solutions of limewater become less alkaline on standing exposed to the air (owing to the absorption of atmospheric carbon dioxide and the precipitation of chalk). He inquires whether the powder precipitated by the addition of salt of tartar (potassium carbonate) to lime-water is the same as "calcareous earth" (i.e., chalk, calcium carbonate). He also inquires whether the dissolution of quicklime (calcium oxide) in water imparts to the water a "subtile active Principle." All of Alston's experiments are accurately and quantitatively carried out, and his work is historically important in conjunction with the investigations that Joseph Black was conducting at about the same time on magnesia. A rare book. Not in Cushing, Duveen, Ferguson, Morgan, Neu, Osler, Reynolds, Smith, Waller, Waring, Wellcome, etc. (Bolton. 267; Partington, III, 136; Watt, I, 24w)

ALSTON, Charles

A Third Dissertation on Quick-Lime and Lime-Water.
By Charles Alston, M.D. *The King's Botanist in Scotland, Fellow of the Royal College of Physicians, and Professor of Medicine and Botany in the University of Edinburgh.*
Edinburgh: Printed by Sands, Donaldson, Murray, and Cochran. Sold by G. Hamilton and J. Balfour. 1757.

First edition. 12mo. (in 4s) 3 leaves, 46 pp. Woodcut printer's ornament (flower) on title page. Fine, crisp copy in contemporary speckled calf, spine gilt-ruled, with maroon lettering label. Bound with Alston, Charles, *A Second Dissertation on Quick-Lime and Lime-Water* (Edinburgh, 1755), another work by Alston, and one by Whytt.

THE THIRD and final dissertation by Alston. Pages 1–8 provide detail on the use of limewater to dissolve stones in the bladder and abate the presence of blood in the urine. Pages 9–46 are entirely on chemistry, with detailed descriptions of Alston's further experiments to determine the composition of quicklime and its reactions with other chemicals. There are numerous references to the works of Joseph Black. On page 8, for example, Alston says: "Why Quick-lime combined with alkaline Salts so highly increases their dissolving and corrosive Qualities, is a Problem which few Chymists have attempted to explain: and I know no Experiments that bid so fair for a Solution of it, as those of my learned Friend the ingenious Dr Joseph Black, now Professor of Medicine in the University of Glasgow, which are published in the *Edinburgh Physical Essays*, vol. 2. art. 8. and seemed to command the Assent of every impartial Inquirer." There are also references to the works of Hales, Macquer, Boerhaave, Quincy, Whytt, et al. This third dis-

sertation is very rare. Not in Bolton, Cushing, Duveen, Ferchl, Ferguson, Morgan, Neu, Osler, Reynolds, Smith, Waller, Waring, Wellcome, etc. (Partington, III, 136; Watt, I, 24w)

ALYON, Pierre Philippe

*Cours Élémentaire de Chimie Théorique et Pratique, pour servir à l'éducation des Enfants de S.A.S. Monseigneur le Duc d'Orléans. Ouvrage dans lequel on a rassemblé la plupart des procédés agréables & utiles qui dérivent de cette Science. Par M.A***, Lecteur de S.A.S. Monseigneur le Duc d'Orléans. . . .*
Paris: Chez Royez, Libraire, Quai des Augustins. 1787.

First edition. 8vo. viii, 439, (1) pp. Large folding plate of minerals and their properties (facing p. 1), folding plate of chemical symbols (facing p. 422), and plate of chemical apparatus with 7 figures. Fine copy, in original quarter calf, gilt, patterned boards.

BORN IN the Puy de Dôme district, Alyon (1758?–1816), a protégé of Fourcroy, was a distinguished pharmaceutical chemist and instructor to the children of the Duke of Orleans. Based on the antiphlogistic doctrine of Lavoisier and his adherents, this work comprises an introduction to the theory and practice of chemistry. The first part (pp. 1–213) contains a brief history of chemistry and its theories, with descriptions of inorganic and organic compounds. Chemical experiments and the preparation of compounds are described in the second part (pp. 215–424). An enlarged second edition appeared (Paris, 1799, 2 vols.; Cole, 18). Not in Duveen, Edelstein, Partington, Wellcome, etc. (Bolton, *First Supplement*, 66; Ferchl, 8; Poggendorff, I, 36; Smith, 12)

ALYON, Pierre Philippe

Saggio sulle Proprietà Medicinali dell'Ossigeno e sull'applicazione di questo principio nelle malattie veneree, scabbiose, ed erpetiche . . . Seconda edizione considerabilmente accresciuta dall'Autore. Prima traduzione Italiana.
Florence: Presso Guglielmo Piatti. 1803.

First Italian edition. 8vo. 216 pp. Very good copy in contemporary quarter calf gilt, marbled boards.

THE *Essai sur les propriétés médicinales de l'oxygène* (Paris, 1797; 2nd ed., Paris, 1799), on the medicinal and physiological properties of oxygen, was deservedly well received. Editions in German (Leipzig, 1798), Spanish (Madrid, 1798), and Portuguese (Lisbon, 1799) appeared. The present Italian edition, from the second French edition (1799) as stated on the title page, was made by an anonymous translator. There are numerous references to Lavoisier, Fourcroy, Berthollet, Priestley, Scheele, et al., relating to respiration,

combustion, animal heat, disinfection, nitric acid, and other subjects. Born in the Puy de Dôme district, Alyon (1746–1816) was a distinguished pharmaceutical chemist who also wrote a chemical textbook: *Cours élémentaire de chimie théorique et pratique* (Paris, 1787; 2nd ed., Paris, 1802, 2 vols.). The present rare Italian edition is not in the usual early chemical and medical bibliographies. (Wellcome, II, 38)

AMBURGER, Johann Andreas August

Les eaux de Geilnau. Eaux minérales des plus remarquables qui existent en Allemagne, non-seulement à cause de leur excellent goût, mais encore pour leur grande efficacité dans la guérison de quantité de maladies et d'infirmes corporelles. Analysées décrites d'abord par . . . Docteur Amburger . . . Relation enrichie des nouvelles expériences de nombre de médecins . . . et publiée par le Docteur Marschall . . . Trad. de l'allemand par le Prof. A. S. d'Arnex . . .
Offenbach: de l'imprimerie de C. L. Brede. 1819.

First French edition. 8vo. 51, (1) pp. Woodcut on page 51. Very good copy in early half calf, marbled boards, brown morocco label. Bound with Corvinus, Johann Friedrich, *Deux memoires sur les gas* (Lausanne, 1782); and Levade, Louis, *Observations et réflexions sur . . . médecine* (Vevey, 1777).

A BALNEOLOGICAL WORK in which Amburger (1750–1809), a physician at Offenbach, describes the chemical analyses and curative properties of the ferruginous waters of Geilnau. Testimonials from numerous physicians are included. The original German edition appeared in 1815 and was translated into Dutch the same year (see Wellcome, II, 39). The translator of this French edition, A. S. d'Arnex, was employed by the city of Berne. Rare. Not in the usual bibliographies.

ANDERSON, Thomas

Elements of Agricultural Chemistry. . . .
Edinburgh: Adam and Charles Black. 1860.

First edition. 8vo. 1 leaf, viii, 299, (1) pp. Very fine copy, entirely uncut, in original publisher's green, blind-stamped, embossed cloth, spine gilt-lettered. From the "Essex Institute. Library of Francis Peabody. Presented by Mrs. Martha Peabody" (printed library label on front pastedown endpaper, with release stamp of 1967), and with signature in ink of Francis Peabody on recto of first free endpaper.

A PUPIL OF Liebig and first teacher of chemistry at the extramural medical school in Edinburgh, Anderson (1819–1874) succeeded Thomas Thomson in 1852 as Regius Professor of Chemistry at Glasgow. He was Hope prizeman (1839–40) and M.D. (Edinburgh, 1841) and gained high

honors from English and Scottish scientific societies for his extensive work in agricultural and organic chemistry. Anderson investigated nitrogenous bases in bone oil, discovering lutidine, collidine, picoline, and pyridine. He correctly concluded that these compounds form a homologous series. Designed to be of practical use to farmers and all who deal with the soil, this excellent work is not mentioned by Partington or by C. A. Browne (*A Source Book of Agricultural Chemistry*, 1944). Anderson's biography is in the D.N.B. and the D.S.B., the latter describing the present title as his "major treatise." Not in Duveen, Edelstein, Morgan, Smith, Sondheimer, etc. (Bolton, 268; D.S.B., I, 156)

ANDRÉ, François

*Chymical Disceptations: or, Discourses upon Acid and Alkali. Wherein are Examined the Objections of Mr. Boyle against these Principles. Together with a Reply to a Letter of Mr. S. Doctor of Physick, & Fellow of the Colledge of***, wherein many Errors are corrected, touching the Nature of these two Salts. By Fran. Andre, Dr. in Physick, of the Faculty of Caën. Faithfully rendred out of French into English. By J. W. . . . To which is added, by the Translator, a Discourse of Phlebotomy, shewing the Absolute Evils, together with the Accidental Benefits thereof, in some Cases.*
London: Printed for Tho. Dawks, . . . and Benj. Allport. 1689.

First English edition. 8vo. 8 leaves, 166, 30 pp., 1 leaf (advertisement). License leaf facing title and separate half title and title to *Errores phlebotomiae*. Title to *Errores* is a cancel, with original title remaining as a stub. Fine, crisp copy, in original unlettered sheep.

THE ENGLISH translation by "J. W." (identity unknown) of the *Entretiens sur l'acide et sur l'alkali* (Paris, 1677; 2nd ed., 1680), by François André. Presented in dialogue form between Eubulus (a supporter of the acid-alkali theory) and his learned friend Pyrophilus, the text describes several experiments. The acid-alkali theory maintained that all matter is composed of the three spagyric principles (salt, sulphur, and mercury), each of which is made up of acid and alkali "at liberty or intangl'd" (p. 7). Vigorously opposed by Boyle (*Reflections upon . . . alcali and acidum*, 1675), his views are presented on pages 83–166. André states that he was "almost wholly persuaded of the Verity of the Hypothesis of Acid and Alkali" but admits having "been extremely shaken by the Reflections of . . . Mr. Boyle . . . and the Objections which he makes are so strong, that it seems impossible to bring a solution thereof" (p. 84). Extremely rare. (Ferguson Coll., 34; Fulton, 332; Waring, 101; Watt, I, 30s; Wing, A3113A)

ANDRÉ, François

Dialogi sopra l'Acido, e sopra l'Alkali, con un 'Esame di qualche Reflessioni del Sig. Boyle sopra questi Principii, et una risposta ad una lettera del Sig. Saunier Dottore di Medicina, appartenente alla natura di questi due Sali. Seconda editione, riveduta, & accresciuta dal Sig. di S. Andrea Dottore di Medicina della Facolta di Caen. Tradotti dal Francese in Italiano, et dedicati all'Eccellentiss. Signor Dottor Osualdo Rosa Medico dello Spedale di S. Francesco nella Citta di Padova.

Venice: Appresso Girolamo Albrizzi. 1697.

First Italian edition. 8vo. 112 pp. Historiated woodcut capitals. First 16 leaves somewhat browned owing to quality of paper; otherwise fine copy, partly uncut, in original pasteboards.

THE ITALIAN translation of the revised second, final, and best edition of *Entretiens sur l'acide et sur l'alkali* (Paris, 1680) by François André. The dialogue between Eubulo and Pirofilo covers pages 5–68, and the *Riflessioni* of Boyle occupies pages 69–87. Added to this translation is a reply to a letter by Dr. Saunier on the physical and chemical nature of acids and alkalies (pp. 88–107). The translator, Lorenzo Bacchetti, was a professor of theoretical medicine. Ferchl erroneously gives the date of publication as 1696 and the translator's name as Stefan [*sic*] Bacchetti. Extremely rare. Unknown to Fulton and the usual authorities. (Ferchl, 9)

ANDRÉ, François

Entretiens sur l'Acide et sur l'Alkali. Avec un Examen de quelques Reflexions de M. Boyle sur ces principes, & une Réponse à une Lettre de M. Saunier Docteur en Medecine, touchant la nature de ces deux Sels. Seconde Edition, reveuë & augmentée. Par M. de S. Andrée . . .

Paris: Chez Laurent d'Houry, ruë Saint Jacques, devant la Fontaine Saint Severin, au Saint Esprit. 1687.

Second edition, second issue. 12mo. 6 leaves, 189, (1) pp. Very good copy in original calf, gilt, fore-edges of covers worn.

ANDRÉ (or Saint André, fl. 1670–1725) was an iatrochemist and physician who was on the faculty of medicine at the University of Caen. The first edition (Paris, 1677) was revised and enlarged three years later (Paris, 1680) and published by Lambert Roulland. The sheets of the 1680 edition were reissued not by Roulland but by Laurent d'Houry as the present “seconde édition” (i.e., issue), which is identical to that of the 1680 Roulland printing, including signature Aiiij, which is signed Biiij. The present issue has a reset title leaf dated 1687, conjugate with signature avi. The text deals with the theory of acids and alkalies and is in part (pp. 121–154) a response to the concepts proposed by Rob-

ert Boyle in his *Reflections upon the Hypothesis of Alkali and Acidum* (London, 1675). At the end (pp. 155–189) is a reply to a letter from a “Mr. Saunier, docteur en medecine” (otherwise unknown) on the physical and chemical properties of acids and alkalies, which was not included in the English translation (London, 1689). This extremely rare second issue appears to be unrecorded. A copy of the first edition (1677) is in the British Library (Goldsmith, 456), and Fulton mentions it (Boyle Bibl., 332). The 1680 first issue is recorded by Cole, 1156; Krivatsy, 10110; Smith, 14.

ANDREA, Johann Leonard

Q. D. B. V. Dissertatio Inauguralis de Montibus Ignivomis sive Vulcanis, quam . . . praeside Job. Henrico Mullero, . . . pro summis in philosophia honoribus legitime impetrandis, publicae commilitonum ventilationi exponit Job. Leonhard. Andreae, Hensfelda-Noricus., ad d. 25. Junii, A.C. 1710. Altdorf: Literis Magni Danielis Meyeri. (1710).

First edition. 4to. 32 pp. Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A DISSERTATION ON volcanoes, attempting to explain their formation and activity by the occurrence of subterranean chemical reactions. Johann Heinrich Muller (1671–1731), professor of physics and mathematics at the University of Altdorf, presided over this work by Andrea, on whom no biographical information has been found. The writings of Bayle, Kircher, Gassendi, Varenius, et al., are reviewed, and the author concludes that the reaction of niter, sulphur, naphtha, bitumen, and other combustible substances causes explosions deep in the earth, with the generation of great heat and the eruption of volcanoes. On page 15 there is a reference to *The temperature of the subterranean regions, in the Cosmicall Qualities of Things* (Oxford, 1672), by Robert Boyle. The writings of contemporary authors are also discussed (e.g., Friedrich Hoffmann and Hamel). No bibliographical reference to this rare work has been found.

ANDREE, John

An Account of the Tilbury Water. . .

London: Printed by M. Jenour; and sold by J. Clarke under the Royal Exchange, and W. Meadows at the Angel in Cornhill. 1737.

First edition. 4to. 2 leaves, 38 pp., 1 leaf (blank). Small woodcut (cherub) on title page. Fine, crisp copy, in half calf antique, marbled boards, maroon morocco label, gilt.

DEDICATED TO Sir Hans Sloane, president of the Royal Society, this is the only monograph on the mineral waters discovered in 1724 by a certain Mr. Kellaway at West

Tilbury in Essex. The systematic chemical analyses carried out on these waters by Andree (1699?–1785) are described (pp. 9–22), with reference to Boerhaave's *Elementa Chemiae*. They are significant in the history of qualitative and quantitative inorganic analysis. The remainder of the book is concerned with the curative virtues of Tilbury water. Other editions appeared in 1740, 1764, 1779 (Blake, 14), and 1781 (Ferguson Coll., 36). Andree, an eminent physician (M.D., Rheims, 1739), who practiced in London (L.C.P., 1741), published several books. An early advocate of inoculation against smallpox, he was one of the founders of, and first physician at, the London Infirmary (1740–64), which later became the London Hospital. Not in Blake, Bolton, Cushing, Osler, Waller, or the usual chemical bibliographies. (Blocker, 8; Duveen, 21; Munk, II, 148; Neu, 99; Waring, 802; Watt, I, 31d; Wellcome, II, 44)

ANDREWS, Thomas

The Bakerian Lecture. On the Continuity of the Liquid and Gaseous States of Matter. . . . From the Philosophical Transactions.—Part II for 1869.

London: Printed for Taylor and Francis. 1869.

First separate edition. 4to. 1 leaf, 16 pp. (numbered 575–590). With 1 engraved plate (slightly damp-stained). Very good copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated. Presentation copy, inscribed on title page: “Prof. Everett. With the regards of the Author.”

A PAPER OF fundamental importance in physical chemistry and physics, in which Andrews (1813–1885) describes his experiments on the critical temperature of liquids and gases. He “is best known for his studies on the continuity of the gaseous and liquid states, and in particular for his discovery of the critical temperature of carbon dioxide in 1861” (D.S.B.). Andrews was a very skilled experimenter, and although Faraday, Cagniard de la Tour, Regnault, and Natterer had earlier investigated the subject, it “continued in an essentially obscure and chaotic state until Andrews supplied the necessary elucidation in the form of the familiar set of pressure-volume isotherms above and below the critical temperature. The notion of critical temperature thus introduced by Andrews then led directly and inevitably to the liquefaction of the so-called permanent gases by Pictet, von Wroblewski, and Cailletet” (Williams). The recipient of this copy, Joseph David Everett (1831–1904), F.R.S., was professor of natural philosophy at Queen's College, Belfast (see D.N.B.). (D.S.B., I, 161; Partington, IV, 609; T. I. Williams, *A Biographical Dictionary of Scientists*, 1969, pp. 12–13)

ANGLADA, Joseph

Traité de Toxicologie Générale envisagée dans ses rapports avec la physiologie, la pathologie, la thérapeutique et la médecine légale . . . Revu et publié par Charles Anglada . . . Paris: Chez Baillière . . . et Montpellier: Chez Sevalle. 1835.

First edition. 8vo. 5 leaves, 356 pp. Large folding printed “Tableau Toxicologique” at the end. Fine copy in original quarter morocco gilt, marbled boards.

AN IMPORTANT work on toxicology, by Anglada (1775–1833), professor of therapeutics and materia medica at the University of Montpellier. Posthumously published by his son, Charles Anglada (1809–1878), who praises his father in the preface, the book was a standard work of the period. The first part (pp. 1–148) traces the history of toxicology. Anglada also wrote works on mineral waters (see Ferchl, Poggendorff, et al.). Bolton (*First Supplement*, p. 68) lists the *Tableau* but not the book itself. Wellcome (II, 47) describes another edition (Brussels, 1837). Rare. Not mentioned in the usual chemical or medical bibliographies.

ÅNGSTRÖM, Anders Jonas

De Theoria Lucis Calorisque Dissertatio. Cujus partem priorem venia Ampl. Facult. Philos. Upsal. P. p. Mag. Andr. Jon. Angstrom et Petrus Abrah. Govenius Norlandi in Audit. Gustav. die XI Dec. MDCCCXXXIX. . . .

Uppsala: Excudebant Regiae Academiae Typographi. (1839).

First edition. 4to. 2 leaves, pp. 1–8, 1 leaf (divisional title, identical with the first title, but with Ingialdas Ritzèn replacing P. A. Govenius), pp. 9–20. Very fine copy, entirely uncut and with wide margins, in crimson quarter morocco antique, marbled boards, spine lettered and dated in gilt. From the library of the famous nineteenth-century Swedish physicist Gustaf Gabriel Hällström, with his signature in pencil (“G. G. Hällström, Okt. 1919”) on each title page.

THE VERY rare doctoral dissertation of the great Swedish physicist Ångström (1814–1874), on the optics of circular and elliptical refraction and the dispersion of heat energy when light of various wavelengths impinges on nonplanar surfaces of transparent substances. In a mathematical discussion Ångström explains these phenomena, with references to the earlier works of Mariotte, Pictet, Scheele, Herschel, Prevost, Ampère, et al. The author spent his life studying light and the emission spectra of the elements. His monumental *Recherches sur le spectre solaire* (Uppsala, 1868) established him as one of the leading scientists of the nineteenth century. No reference to this very important doctoral dissertation has been found in the usual bibliographical sources, and it is not mentioned by title by the author's biographer in the D.S.B. (I, 166–167).

ANNALS OF CHYMISTRY

The Annals of Chymistry and Practical Pharmacy. . . .
London: Longman, Brown, Green, and Longmans, Pater-
noster-Row. 1843.

First edition. 8vo. 1 leaf, 592 + 84 pp. Folding lithographic frontispiece (Liebig's laboratory at Giessen), 4 engraved plates (2 folding), tables, and text diagrams. Fine, absolutely complete copy, in contemporary half calf, marbled boards, maroon morocco label.

ALL PUBLISHED of this rare journal that was issued weekly by subscription. It comprises volume I, numbers 1–18 (1 Oct. 1842–27 Jan. 1843), plus two extra numbers for March–April 1843 (agreeing with the *British Union Catalogue of Periodicals*). At the end of the eighteenth number it was announced that further issues would appear monthly thereafter, but, mysteriously, output ceased after just two issues of the second volume. A fascinating compilation of contemporary knowledge. The view of Liebig's laboratory used as the frontispiece was the most reproduced laboratory picture of the nineteenth century. Duveen (p. 23) cites only the first 584 pages, and his copy is incomplete, lacking pages 585–592 (index to vol. I) as well as the 84 pages for March–April 1843. "There is no copy of this short-lived chemical journal in the Library of the Chemical Society" (Zeitlinger, who describes it as "very scarce" in 1919). Not in Cole, Edelstein, Wellcome, etc. (Bolton, 1077; Bolton, *Catalogue of Scientific and Technical Periodicals, 1665–1882*, p. 52 [no. 419]; Sotheran, Cat. 773 [1919], 3214)

ANTONI, Alessandro Vittorio Papacino d'

Esame della Polvere dedicato a Sua Sacra Reale Maestà. . . .
Turin: Nella Stamperia Reale. 1765.

First edition. 8vo. 4 leaves, 264 pp., 2 leaves. With 9 folding engraved plates (containing 26 figures). Woodcut coat of arms on title page. Lower blank margin of title leaf restored; otherwise fine, crisp copy, on thick paper, in contemporary mottled calf, gilt, rebaked with original spine laid on, maroon morocco label.

ENTERING MILITARY service at an early age, the tactician Antoni (1714–1786) was major general in the Sardinian Army and in 1755 was appointed director of the Royal School of Artillery and Fortification in Turin. In this study of gunpowder, his first published work, he describes many experiments, some of which anticipate the discoveries of Count Rumford. The nature, composition, and force of gunpowder; the velocity of projectiles; the law of impulsion; and related matters are covered. For many years this book was the standard work on these subjects. It was translated into French (Paris, 1773), and an English version appeared as *A Treatise on Gunpowder* (London: T. & J. Egerton, 1789).

"I have not been able to trace any information concerning the original Italian work" (Philip, *Bibliography of Firework Books* [1985, p. 9]). Very rare: only one copy in N.U.C. Not in the usual chemical bibliographies. (Duveen, *Supplement*, 14; Poggendorff, I, 51; Smith, 371)

ANTONI, Alessandro Vittorio Papacino d'

Examen de la Poudre, traduit de l'Italien par M. le Vicomte de Flavigny.

Amsterdam: Chez Marc-Michel Rey; Geneva: Chez Emmanuel du Vilard; Paris: Chez Ruault, Jombert fils. 1773.

First French edition. 8vo. 4 leaves, 240 pp. With 9 folding engraved plates (containing 26 figures). Good copy in contemporary calf, rebaked, spine gilt-lettered and dated. Old stamp on title page: Royal Artillery Library Island Bridge.

THE FRENCH translation by de Flavigny of the *Esame della Polvere* (Turin, 1765). The plates are carefully re-engraved copies of those in the first Italian edition. (Bolton, 270; Brunet, 8704; Duveen, 25; Neu, 3047 [wrong date: 1772]; Philip, 8; Sotheran, Cat. 702 [1910], 5785)

ANTONIO, Francisco

Mercurio Philosophico dirigido aos Philosophos de Portugal, com a noticia dos artigos, que na Diêta Imperial da Philosophia na Sessão V. se consultaraõ, e mandaraõ propôr à physica experimental da Real Casa das Necessidades, a fim de estabelecer huma perfeita paz entre a Philosophia moderna, e antiga. Por Philiarco Pherepono.

Em Augusta (Lisbon): Na Imprensa de Martinho Veith. 1752.

First edition. 4to. 79, (1) pp. Paper slightly embrowned; otherwise fine copy with wide fore and lower margins (some uncut), in contemporary marbled boards, rebaked in modern matching calf, maroon morocco label gilt.

A WORK IN which the philosophical and scientific doctrines of the "ancients" are reconciled with those of the "moderns." The writings of the ancients (e.g., Aristotle) are compared and contrasted with the moderns (e.g., Galileo, Copernicus, Gassendi, and Descartes). The peripatetic doctrine of Aristotle is compared with the modern concept of atoms (e.g., of Newton, Leibnitz, Gassendi, et al.). Other important scientists discussed include Boyle, Cassini, Flamsteed, Torricelli, and Whiston. The works of many major alchemists and chemists are also mentioned (e.g., Albertus Magnus, Paracelsus, Helmont, Fludd, Lull, and Campanella). Little is known of Antonio, who here defends the experimental method in scientific investigation. A very rare Portuguese book that examines the first principles on which the whole fabric of science is based. Not traced in any available bibliography.

APPIER, Jean

La Pyrotechnie de Hanzelet Lorrain ou sont représentés les plus rares & plus approuvez secrets des machines & des feux artificiels. Propres pour assiéger battre surprendre & deffendre toutes places.

Pont à Mousson: Par I. & Gaspard Bernard. 1630.

First edition. 4to. 4 leaves, 264 pp. With elaborate allegorical engraved title page and 133 copperplates (some full page) of machines and pyrotechnic devices. Near-fine copy in contemporary calf, covers gilt-ruled, spine gilt, maroon morocco label.

THE SON of an engineer who was in charge of the fortifying of Nancy, Appier (alias Hanzelet Lorrain, 1596–1647) was a printer and engraver. Earlier he published a similar but shorter work containing only a hundred plates, in collaboration with François Thyboureil, with the title *Recueil de Plusieurs Machines Militaires, et feux Artificiels, pour la Guerre & Récréation* (Pont à Mousson, 1620). “The *Pyrotechnie* is an entirely new work. The plates are bold and instructive” (Ferguson [*Books of Secrets*, II, 3rd Suppl., 45]). It is a “much finer [work] . . . Appier’s influence on subsequent pyrotechnic works is immense” (Philip). The beautiful engravings by Appier show the “state of the art” of defensive and offensive machines of war, including rockets, mortars, and numerous explosive devices, as well as a wide variety of recreational fireworks. This sumptuously illustrated edition contains a full-page plate (p. 253) of a ship sending up fireworks. In his researches into the bibliography of Henri van Etten’s *Recreations Mathématiques* (1628), Trevor Hall (*Mathematical Recreations*, 1969) describes the links between Appier’s *Pyrotechnie* (1630) and the *Traité des Feux Artificiels* (1629) of François Malthe. (Brock, *Pyrotechnics*, 158, 182; Brock, *History of Fireworks*, 234; Cockle, *Military Books*, 937–938; Duveen, *Supplement*, 167; Ferguson Coll., 39; Goldsmith, A607; Philip, *Bibliography of Firework Books*, A140.4, p. 11; Watt, I, 465d)

AQUINO, Carlo d’

Nomenclator Agricultrae . . .

Rome: Typis Antonii de Rubeis, in via Seminarii Romani. 1736.

First edition. 4to. 4 leaves, 178 pp., 7 leaves (index). Large engraved title vignette and many historiated woodcut capitals. Fine unpressed copy with wide margins, in original vellum, manuscript title on spine. From the library of the great engineer and chemist James Watt (1736–1819), with his characteristic signature (“Watt”) in ink on the first endpaper.

A DICTIONARY of agricultural terms of chemical and botanical interest and a beautiful example of Italian fine printing. The author, Aquino (1654–1737), a Neapolitan member

of the Society of Jesus, lived in Rome. In the preface he refers briefly to two of his earlier works: *Lexici militaris* (Rome, 1724; Blake, 17) and *Vocabularium architecturae aedificatoriae* (Rome: A. de Rubeis, 1734; Wellcome, II, 51). Aquino “was eminent for his proficiency in rhetoric (and) as a poet and historian” (Gorton). That James Watt owned this copy of an agricultural work shows his wide range of interests. Rare. (Gorton, *General Biographical Dictionary*, London, 1851, vol. I, sign. H2; Watt, I, 39d)

ARAGO, Dominique François Jean, and DAGUERRE, Louis Jacques Mandé

Le Daguerreotype.

(In: *Comptes Rendus . . . de l’Académie des Sciences*, IX, pp. 250–267).

4to. 2 leaves, 903, (1) pp. (the whole vol.). Fine copy, uncut and largely unopened, in original wrappers, printed paper label on spine. Contained in a protective folding cloth-boards case, spine gilt-lettered.

THE FIRST printing of the first disclosure of the chemical process, invented by Daguerre (1787–1851), for making daguerreotypes, the earliest practical photographic process. The present detailed report, made by Arago on 19 August 1839 to the Académie des Sciences, gives a history of research on photographic methods beginning with the camera obscura described by Giovanni Baptista Porta in 1558. The chemical contributions of Joseph Nicéphore Niépce (1765–1833), inventor of photography and photomechanical reproduction, are summarized. In Daguerre’s process copperplates coated with light-sensitive silver iodide were exposed to sunlight for up to twenty minutes, then developed by exposure to mercury vapor. The silver iodide not exposed to light was removed by washing the plate with a solution of sodium thiosulphate, then with water, thus fixing the image permanently. This volume also reprints two letters from Daguerre to Arago (pp. 423–430, 512–513) on photography. Daguerre’s own book on the history and practice of the daguerreotype (Horblit, 21b) did not appear until about 20 August 1839. As the daguerreotype was a single direct positive photograph on a silvered copperplate, no copies could be made. Outstanding achievement that it was, Daguerre’s method was later (about 1852) superseded by the collodion process invented by the Englishman Frederick Scott Archer (1813–1857). No other invention of the time so captured the imagination of the public as the daguerreotype. “Through the efforts of Arago, the daguerreotype was acquired by the French government in exchange for pensions to Daguerre and Niépce’s son” (T. I. Williams). (Gernsheim, *Daguerre*, 96–97; Poggendorff, I, 510; P.M.M., 318; Williams, *A Biographical Dictionary of Scientists*, 126)

**ARAGO, Dominique François Jean, and
MUIRHEAD, James Patrick**

Historical Eloge of James Watt. By M. Arago . . . Translated from the French with additional notes and an appendix by James Patrick Muirhead . . .

London: John Murray. Edinburgh: William Blackwood and Sons. 1839.

First edition. 4to. xiv, 261, (1) pp. With frontispiece portrait of Watt (E. Finden sculpt.). Fine copy, uncut with very wide margins, in original half morocco, cloth boards, spine gilt-lettered and dated. Presentation copy to the agricultural chemist James Finlay Weir Johnston (1796–1855); inscribed in ink on first flyleaf: “To James Johnston Esquire, Willow Park, With the Compliments of A. Macdonald. December 1842.”

ONE OF a few copies printed in quarto “large paper” for Muirhead (1813–1898), not for sale, which he presented to his friends. The original *elogie* by the French physicist Arago (1786–1853) was published in the *Mémoires de l'Académie des Sciences* (Paris, 1839). It appears here in translation (pp. 1–153). The rest of the volume comprises a long appendix containing four sections: I. Henry Lord Brougham, on the historical discovery of the composition of water (by Watt); II. Lord Francis Jeffrey, on the character of Watt; III. Proceedings of the public meeting (18 June 1824) for erecting a monument to Watt, the result of which was the Chantry Monument in Westminster Abbey; and IV. Arago, on machinery considered in relation to the welfare of the working classes. This volume represents the first fruits of the entrusting to Muirhead, by James Watt (the inventor's son), of the preparation of a full biography. (Bolton, 253; Partington, III, 344)

**ARAGO, Dominique François Jean, and
MUIRHEAD, James Patrick**

Historical Eloge of James Watt. By M. Arago . . . Translated from the French with additional notes and an appendix by James Patrick Muirhead . . .

London: John Murray. Edinburgh: William Blackwood and Sons. 1839.

First edition. 8vo. x, 261, (1) pp. With frontispiece portrait of Watt (E. Finden sculpt.). Last 2 leaves misbound; otherwise fine copy, uncut, in original boards backed in cloth, with original cloth spine and printed paper label laid on.

THE OCTAVO edition of the first extensive biography of Watt. With the exception of the smaller size, this is identical in every respect to the quarto “large paper” format. The claims of Cavendish, Lavoisier, Monge, Watt, and others as the discoverers of the composition of water (the so-called

Water Controversy) are discussed by Partington (III, 344–351, 436–456). Muirhead argues that Watt discovered that water is a compound of hydrogen and oxygen. (Edelstein, 2417; Roller & Goodman, I, 43)

ARCHIMEDES

Opera quae extant. Novis demonstrationibus commentariisque illustrata. Per Davidem Rivaltum a Flurantia . . .

Operum Catalogus sequenti pagina habetur.

Paris: Apud Claudium Morellum, via Iacobaea, ad insigne Fontis. 1615.

First Rivault edition. Folio. 22 leaves, 549, (1) (i.e., 551) pp. Title page in red and black, with printer's woodcut device. Text in Greek and Latin (partly in double columns). Illustrated with over 600 woodcut diagrams and figures. Fine copy, in original blind-ruled calf, rebacked, maroon label, spine dated. From the library of Lucius Cary, second Viscount Falkland (1610?–1643), politician, philosopher, and poet (see D.N.B.), with his signature incised (by fingernail?) on verso of last flyleaf.

AN EXTREMELY influential edition of the *Opera*, edited by David Rivault (ca. 1571–1616), in Greek and Latin and containing a life of Archimedes. From this edition the more or less complete German translation was made by Johann Christoph Sturm in 1670. Rivault, who taught mathematics to the young Louis XIII, succeeded Lefebvre as preceptor in chief. “The title of ‘the greatest mathematician, physicist, and engineer of antiquity’ has been accorded to Archimedes of Syracuse (287–212 B.C.), and his work influenced every department of science” (Thornton & Tully [1971, p. 14]). “Archimedes . . . who studied in Alexandria, invented the method of determining specific gravity by the hydrostatic balance, which he used to detect the adulteration by silver of a gold wreath (usually called a crown) made for Hieron, king of Syracuse” (Partington [I, 206]). Archimedes, who ranked with Newton and Gauss, was one of the greatest geniuses of the ancient world. He invented the Archimedean screw for raising water (still used in Egypt) and significantly improved our knowledge of the mathematical principles of levers, specific gravity, equilibrium, measurements of cylinders and spheres, spirals, etc. Brunet considered this one of the two greatest editions of Archimedes, for its beauty, rarity, and importance. Newton owned a copy (Harrison, p. 89). (Brunet., I, 384; Goldsmith, A630; Graesse, I, 180; Riccardi, V, 8; Watt, I, 39x)

ARCLAIS DE MONTAMY, Didier Françoise D'

Traité des Couleurs pour la Peinture en Émail et sur la Porcelaine; Précédé de l'Art de Peindre sur l'Émail, et suivi de plusieurs Mémoires sur différents sujets intéressants, tels que le travail de la Porcelaine, l'Art du Stuccateur, la manière d'exécuter les Camées & les autres Pierres figurées, le moyen de perfectionner la composition du verre blanc & le travail des Glaces, &c. Ouvrage posthume de M. D'Arclais De Montamy, Premier Maître d'Hôtel de S.A.S. Monseigneur Le Duc D'Orleans, Premier Prince du Sang.
Paris: G. Cavelier. 1765.

First edition. 12mo. lii, 287 pp. Fine, crisp copy, in contemporary mottled calf, spine richly gilt, maroon morocco gilt-lettered label.

ARCLAIS DE MONTAMY (1702–1765) superintended the enameling works owned by the Duke of Orleans for most of his life. He wrote the present definitive work on all aspects of the chemical technology of applying colors to enamel, glass, stucco, and other decorative materials, but died before it was published. The book was seen through the press by Diderot and was reprinted in his works (Tome VIII, in the edition of Briere). It is one of the milestone works of mid-eighteenth-century chemical technology. Pages ix–xiv give brief biographical details on the author. A German translation appeared two years later: *Abhandlung von den Farben zum Porcellan und Emailmahlen* (Leipzig, 1767). Ferchl states that Arclais de Montamy translated the *Lithogeognosia* of Johann Heinrich Pott into French, but that work was in fact translated by Baron d'Holbach. Not in Blake, Bolton, Duveen, Ferguson, Ferguson Coll., Neu, Partington, Smith, Waller, Watt, etc. (Duncan, 329; Edelstein, 2963; Ferchl, 12; Poggendorff, I, 57; Wellcome, II, 54)

ARCUEIL, SOCIÉTÉ d'

Mémoires de Physique et de Chimie, de la Société d'Arcueil. . .
Paris: J. J. Bernard. 1807, 1809, 1817.

First edition. 3 vols., 8vo. I: 2 leaves, iv, 382 pp.; folding printed table (facing p. 22), and engraved plate (Sellier Sc.). II: 498 pp., 1 leaf (errata); folding printed table (facing p. 88), and 2 engraved plates (Moisy Sculpt.). III: vi pp., 1 leaf, pp. 5–618 (misnumbered 518), pagination erratic; large printed folding table (facing p. 602). Imprint: Mme. Ve. H. Perronneau. Very fine, crisp copy, in essentially mint condition, in gilt-ruled half calf antique, original marbled boards, green morocco labels gilt, by Bernard Middleton. From the Radcliffe Library, Oxford, with engraved armorial bookplate and Bodleian cancellation stamp in each volume.

A COMPLETE SET of this important publication. Founded in 1807 by Berthollet and Laplace, the Société d'Arcueil was named after the suburb of Paris where they lived. Other members of this small group were Arago, Bérard, Biot, Chaptal, De Candolle, Collet-Descotils, Dulong, Gay-Lussac, Humboldt, Malus, and Thénard. The society met biweekly and was visited by Berzelius, Davy, Wollaston, and other famous chemists. These memoirs contain many papers of great scientific importance, notably Gay-Lussac's *Sur la combinaison des substances gazeuses* (Vol. II, pp. 207–234), which enunciates the law named after him. One of Dulong's memoirs describes his discovery of nitrogen trichloride, an unstable liquid that exploded, costing him an eye and three fingers. An important memoir by Malus contains the discovery of the polarization of light by reflection. Volume III was in press in 1813, a copy in the Bibliothèque Nationale having a title page so dated, but printing of the volume was delayed until 1817. This set contains the rare pages 513–613 of volume III, which are usually missing as the sheets were lost. Very rare. (D.S.B., II, 74; Duveen, 25; Edelstein, 2714; Ferchl, 40; Partington, III, 499, IV, 79; Poggendorff, I, 167; Smith, 459; Sondheimer, 1463; Sotheran, Cat. 773 [1919], 147 ["very rare"]; Sparrow, 28)

ARDEMANI, Giovanni Battista

Tesoro delle Gioie. Trattato curioso, nel quale si dichiara brevemente le virtu, qualita e proprieta delle Gioie, come Perle, Gemme, Avori, Unicorni, Bezaari, Cocco, Malacca, Balsami, Contr'herba, Muschio, Ambra, Zibetto. E dell'altre cose piu famose, e pregiate di tutti li diligenti Scrittori Antichi, Moderni, Arabi, Greci, Latini, Italiani, Sacri, e Moderni. Lodate, stimate, e conosciute salutevoli, e Medicinali. Raccolto dall'Academico Ardente Etereo. Revisto, & accresciuto dall'Academico Casinense Inquieto.
Venice: Appresso Francesco Ginami. 1662.

First Ginami edition. 12mo. 4 leaves, 212 pp. Small piece lacking from fore-edge of signature I5 (pp. 201–202), with loss of 3 or 4 words; otherwise good copy, in old half vellum, marbled boards, dark-blue morocco label, gilt. From the library of the celebrated Argentinian engineer Mario Pedro Arata, with his bookplate and signature on verso of title page.

A RARE WORK (first: Venice, 1602) on precious stones and other minerals, with sections on medicinal stones of chemical interest. Ardemani (dates unknown) published several editions of the present book under the pseudonyms Cleandro Arnobio or Ardente Etereo (as here). Not in the usual bibliographies. (British Library, *17th Cent. Italian*, I, p. 45)

ARISTOTLE

Operum Aristotelis Stagiritae Philosophorum Omnium Longe Principis, . . . Graece & Latine . . . ex bibliotheca Isaaci Casauboni . . . Accesserunt ex libris Aristotelis . . . fragmenta quaedam. Adjecti sunt etiam Indices duo . . .

Lyons: Apud Jacobum Bubonium. 1590.

First Casaubon edition. Folio, 2 vols. in 1. I: 10 leaves, 755, (1) pp. II: 2 leaves (second blank), 595, (1) pp., 32 leaves. Text in Latin and Greek in double columns. Large woodcut printer's device on each title page. Numerous woodcut initials, head- and tailpieces. Fine copy with wide margins, in original unlettered vellum, each cover with blind-stamped ornament. Signature on title page of first volume of Andrew Fletcher of Saltoun (1655–1716), famous Scottish patriot (see D.N.B.).

AN EXCELLENT sixteenth-century edition of the complete works of Aristotle, translated from Greek into Latin and edited by the celebrated French scholar Isaac Casaubon (1559–1614). A preface by the translator and a life of Aristotle precede the main text. Aristotle (384–322 B.C.), of Stagira, who was a pupil of Plato and best known as a naturalist and biologist, founded the Peripatetic School in the Lyceum at Athens. His writings cover the entire field of human knowledge. The doctrines he taught pervaded the whole of scientific thought for about two thousand years, until they were finally overthrown by experimental science starting in the mid-1600s. The significance of his theories in science, and especially in chemistry, are discussed by Partington (I, 69–122). “This edition contains three indexes: 1. Containing the names of the authors who have written upon Aristotle; 2. Of the principal subjects discussed in the work; and 3. A general index of persons and things” (Watt [I, 45h]). The imprint of volume II reads: Apud Guillelmum Laemarium. Not in Durling, Wellcome, etc. (British Library, *S.T.C. French Books, 1470–1600*, p. 24; Dibdin, I, 315)

ARNALDUS DE VILLANOVA

Opera omnia. Cum Nicolai Taurelli Medici & Philosophi in quosdam libros Annotationibus: indice item copiosissimo.

Basel: Ex Officina Pernea per Conradum Waldkirch. 1585.

First Waldkirch edition. Folio. 6 leaves, 1036 pp., 22 leaves. Roman and italic letter, in double columns numbered 1–2072. Large woodcut printer's device on title page and ornamental woodcut capitals. Few minor damp stains; otherwise very good copy in contemporary English calf, with arms of John Price (d. 1674?) stamped in blind on both covers, ties renewed. From the celebrated Hopetoun Library, with bookplate.

ARNALD (ca. 1235–1311), born in Aragon, Spain, was one of the great authorities among the alchemists. He devoted himself to the study of chemistry, medicine, and physics

and also learned Arabic and Greek. It was through him that the full tradition of the Arabian alchemists and their theories entered the mainstream of European thought. His writings were a strange mixture of mysticism and true science, and he accepted the concept of the transmutation of the elements and modified the sulphur-mercury theory of Geber. The first edition of his collected works appeared as *Opera* (Lyons, 1504), edited by Thomas Murchius (fl. 1495) of Genoa (see Stillwell, 816). The present edition, annotated by Nicolaus Taurellus (1547–1606), is one of the best collections of his works and includes a biography of Arnald by Symphorien Champier (1472–1539). (British Library, *S.T.C. German Books, 1455–1600*, p. 46; Caillet, 401; D.S.B., I, 291; Durling, 310; Ferchl, 13; Ferguson, I, 46 [not in Young Coll.]; Watt, I, 47e; Wellcome, I, 475)

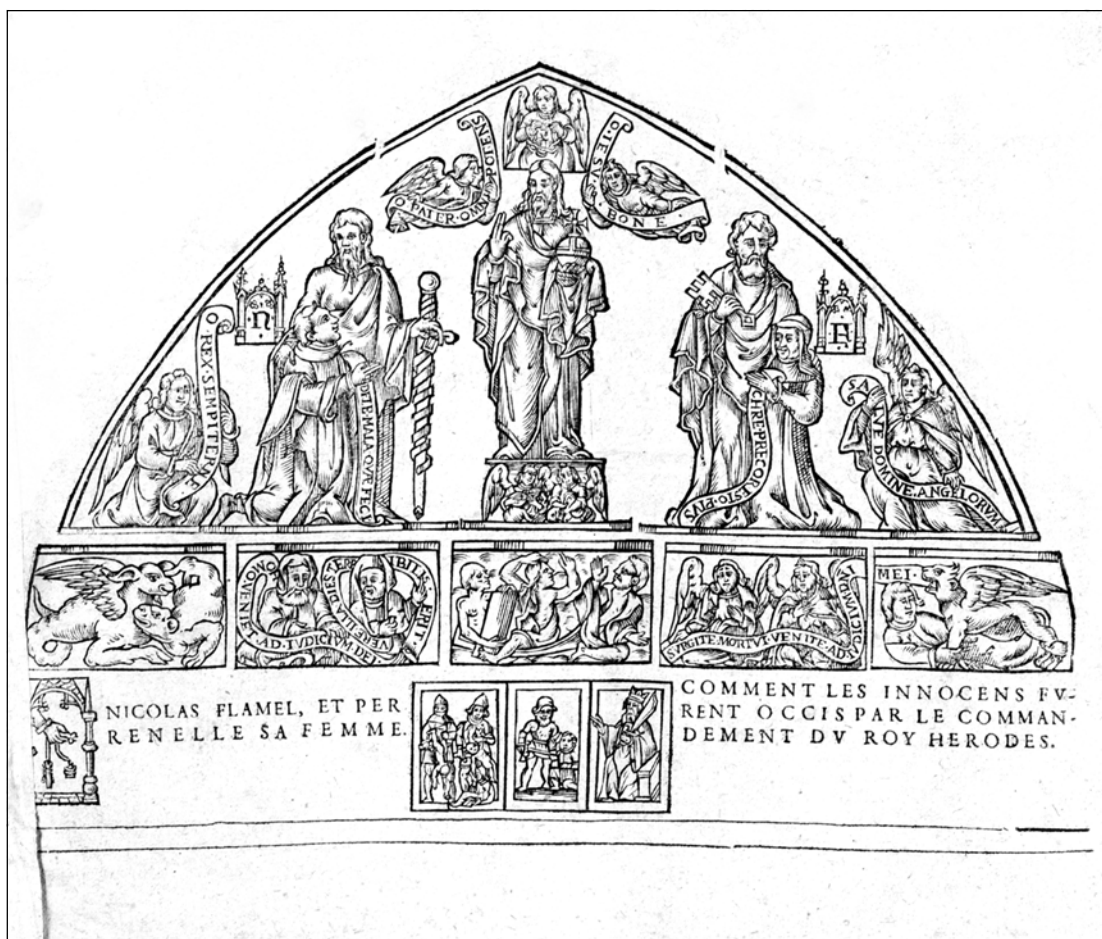
ARNAUD, E. R.

Introduction à la Chymie, ou à la vraie Physique. Où le lecteur trouvera la définition de toutes les Opérations de la Chymie; La façon de les faire, & des Exemples en suite très rares sur chaque Opération; & le tout dans un très-bel ordre. . . .

Lyons: Chez Claude Prost, en rue Mercière, à l'Occasion. 1650.

First edition, first issue. 8vo. 20 leaves, 112 pp. Small woodcut on title page and several woodcuts in text. Fine copy in original unlettered vellum.

NOTHING IS known of Arnaud (fl. 1650), a disciple of Paracelsus, not even his Christian names. From the title and dedication we learn that he was a medical doctor at Lyons. This excellent introduction to iatrochemistry is clearly written and is free from mysticism and magic. It deals with the history of chemistry (pp. 1–38), chemical equipment (pp. 39–62), and the operations of calcination, sublimation, solution, extraction, distillation, fixation, etc. (pp. 63–112). Arnaud strongly recommended chemical (as opposed to Galenical) medicines, here described, and he gives a list of seventy-five of the authors whose works he consulted. Cole, Partington, and Thorndike briefly discuss the book. Only the second issue (Lyons: Claude Prost, 1655), identical in collation (including errors in signing), is in Duveen, Ferguson Coll., Goldsmith, Krivatsy, and Neu. Rare. (Bolton, *First Supplement*, 71; Caillet, 398; Cole, 24; Edelstein, 83 (wrong date: “1670”); Ferchl, 13; Ferguson, I, 47; Partington, III, 9; Thorndike, VIII, 128; Wellcome, II, 58)



Arnauld. *Trois Traitez*. Paris, 1612.

ARNAULD, Pierre

Trois Traitez de la Philosophie Naturelle non encore imprimez. Sçavoir le secret livre du tres-ancien Philosophe Artephius, traitant de l'Art occulte & transmutation Metallique, Latin François. Plus les figures hieroglyphiques de Nicolas Flamel ainsi qu'il les a mises en la quatriesme arche qu'il a bastie au Cimetiere des Innocens à Paris, entrant par la grande porte de la ruë S. Denys, & prenant la main droite, avec l'explication d'icelles par iceluy Flamel. Ensemble, le vray livre du docte Synesius Abbé Grec, tiré de la Bibliothegue de l'Empereur sur le mesme subject, le tout traduit par P. Arnauld sieur de la Chevallerie Poitevin. . . .

Paris: Chez Guillaume Marette ruë Saint Jacques, au Gril, pres saint Benoist. 1612.

First edition. 4to. 103, (1) pp. Folding woodcut plate of Flamel's hieroglyphics and 8 text woodcuts. Paper slightly but uniformly embrowned (as usual); otherwise very fine copy with wide margins, in seventeenth-century unlettered reversed calf, rebacked.

A COLLECTION OF alchemical works of prime importance for containing the text by Nicolas Flamel (d. 1418). It was because of Flamel (and his wife Perrenelle) that the search for the philosopher's stone became the mania of the fifteenth century. This influence was attributed to his reputation for successfully transmuting base metals into gold and also to his intriguing use of symbolical figures, known as the figures of Abraham the Jew, which he had painted on the arches of the Cimetière des Innocents in Paris, where they survived until the eighteenth century. The present book contains the first reproduction of one of these arches with a careful description, emphasizing the importance of the respective colors. Artephius's "secret book" is given in French and Latin on opposite pages. Two separate editions appeared in 1612: the present with 103 pages, and another of only 98 pages (reissued in 1659 and 1682). Rare. (Caillet, 426; Duveen, 27; Ferchl, 13; Ferguson, I, 48 [not in Young Coll.]; Ferguson Coll., 47; Goldsmith, A916; Hall, 28; Mellon, 66; Neu, 133; Rosenthal, 53; Smith, 20; Watt, I, 48k)

ARND, Johann

Principium Principiorum, quibus Leges Naturales solent demonstrari, breviter exhibet. Joannes Arnd, Dantiseanus.
Rostock: Typis Nicolai Schwiegerovii, Ampl. Sen. Typogr. 1712.

First edition. 4to. 8 pp. Woodcut capital and tailpiece. Fine, crisp copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A TRACT ON the relationship between theological doctrine and the laws of nature, with references to the works of Thomas Hobbes, Samuel Pufendorf, et al. Arnd (fl. 1700) was a noted Danzig scholar. Extremely rare. Unknown to the usual bibliographers.

ARPPE, Adolph Edvard

De Jodeto Bismutico Specimen Academicum . . . publice examinandum proponit Adolphus Edvardus Arppe Philosophiae Magister Savono-Carelus. In Auditorio Philos. die 5 Junii 1844.

Helsingfors: Ex Officina Typographica Freneckelliana. (1844).

First edition. 8vo. 1 leaf, 43, (1) pp., 1 leaf (errata). Fine copy, uncut, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

AN IMPORTANT dissertation on bismuth and its compounds, and especially those which contain iodine (e.g., the triiodide and oxyiodide). The preparation, properties, and analyses of various compounds are described, with references to the works of contemporary chemists (e.g., Berzelius, Gay-Lussac, Graham, and Rose). Early examples of balanced chemical equations are given (pp. 19, 36, 37). A pupil of Wöhler, Arppe (1818–1894) became professor of chemistry at Helsingfors. In addition to his study of bismuth compounds he investigated morphine, other alkaloids, cochenille, pyrotartaric acid, and various minerals. He discovered thymol in oil of horsemint and showed that it was a phenol. Partington (IV, 400–401) briefly discusses Arppe's researches but does not mention the present rare work. Not in Waller, Wellcome, etc. (Ferchl, 14; Poggendorff, I, 65; Waring, 288)

ARTIS AURIFERAE

Artis Auriferae, quam Chemiam vocant, volumen primum: quod continet Turbam Philosophorum, aliosq(ue) antiquiss. autores. . . . Volumen secundum. Quod continet Morieni Romani scripta de Re Metallica, atque de Occulta summaq: antiquorum Medicina, cum aliis Authoribus, quos versa pagina indicat.

Basel: Excudebat Conr. Waldkirch, expensis Claudii de Marne, & Joan. Aubery. 1593.

Second (first Waldkirch) edition. 2 vols., 8vo., in 1. I: 8 leaves, 631, (1) pp., 16 leaves. Large woodcut facing p. 1. Woodcut capitals, head- and tailpieces. II: 525, (1) pp., 11 leaves. With 20 large woodcuts in text. Lacking 8 leaves (viz. Pp2, Pp6, Qq3, Ss2, Tt2, Tt8, Vv1, AA8) of volume II; otherwise very good copy, free from the usual browning, in contemporary reversed calf, rebounded to match, green morocco label gilt. Twelve flyleaves have contemporary neat annotations on alchemical processes, presumably in the hand of John Southworth (early eighteenth century; see flyleaf facing last page of index, vol. II), who was given this volume by James Logan (1674–1751). Logan, a "man of science" (D.N.B.), was William Penn's agent in America.

"ONE OF the chief collections of standard alchemical authors. . . . Perna printed in 1572 (Basel) *Auriferae Artis* . . . in two volumes. . . . Of the tracts in the first volume he says that the first ten and the last were from manuscripts. In 1593, Conrad Waldkirch at Basel reprinted both volumes in a . . . handsomer form" (Ferguson). Bolton lists the contents. Some tracts were printed as early as 1550, but several appear here for the first time. C. G. Jung made extensive use of the 1593 edition in his famous *Psychologie und Alchemie* (1944). Durling, Duveen, Edelstein, Heym, Neu, Thorndike, Waite, et al., list the 1572 and/or 1610 editions but not the present one, which is extremely rare. The two volumes are seldom found together and are often imperfect. (Bolton, 951–952; Ferchl, 14; Ferguson, I, 52 [not in Young Coll.]; Ferguson Coll., 46; Hoover, 55; Macphail, p. 136 [not in Mellon Coll.]; Smith, 22 [vol. II only]; Wellcome, I, 500)

ARTIS AURIFERAE

Artis Auriferae, quam Chemiam vocant, volumina duo, quae continent Turbam Philosophorum, aliosq; antiquis. auctores, . . . Volumen secundum. . . . Volumen tertium. Quod continet Lullii, aliorumq; scripta quaedam maiori ex parte hactenus non edita Cum indice rerum & verborum locupletissimo.
Basel: Typis Conradi Waldkirchi. 1610.

Third edition. 3 vols., 8vo., in 2. I: 8 leaves, 405, (1) pp., 11 leaves (index). One half-page woodcut. II: 346, 8 leaves (index). Woodcut on title; 20 half-page symbolic alchemical woodcuts (pp. 137, 142, 148, 154, 160, 165, 171, 179, 184, 190, 198, 206,

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Hermes Bird.

63. Go lytyl Quiar and recommaunde me
 To my *Mayster* wyth humbyl affeccion,
 Be sekynge hym lowly of mercy and pete
 Of thys rude makynge to ha compassion:
 And as towchyng thys Translacyon
 Owte of the *Frenshe*, how so ever the *Englysh* be,
 All thyng ys sayd under correccyon,
 VVyth supportation of your benygnyte.

FINIS.



Ashmole. Theatrum Chemicum Britannicum. London, 1652.

212, 215, 223, 229, 235, 240, 246, 252). III: 1 leaf, 185, (1) pp., 2 leaves (index). Woodcut on title; one small text woodcut (p. 69). Some browning throughout owing to quality of German paper of the period, two “indecent” woodcuts partly covered with red color (vol. II, pp. 160, 198), and occasional English annotations in pencil; otherwise very good copy in old calf (rubbed), maroon morocco labels gilt. An important association copy from the library of Dr. Thomas South, with his alchemical bookplate, and the inscription in ink: A. J. & M. Atwood, 1859, in both volumes.

THE FINAL and best edition, enlarged by the addition of a third volume, of this important collection of alchemical authors. The third volume contains writings by Lull (eight titles), Albertus Magnus, Arnaldus, and Johannis Pauperum. The contents of volumes I and II are listed by Ferguson. Dr. South was the father of Mrs. Atwood (1817–1910), who wrote the sensational *Suggestive Inquiry into the Hermetic Mystery* (1850), a pioneer work in the interpretation of alchemy. South, a gentleman of leisure and means, possessed an exceptionally fine library of old and rare alchemical books. Very rare. (Bolton, 952; Caillet, 477; Duveen, 29–30; Edelstein, 89; Ferchl, 14; Ferguson, I, 51–52; Ferguson Coll., 46; Heym, *Ambix*, I [1937], 55; Neu, 143; Smith, 21; Waite, 278; Wellcome, I, 501 [lacks vol. II])

ARTS AND MANUFACTURES

A History of Useful Arts & Manufactures.

Dublin: Printed by A. O’Neil, 17, Chancery-Lane. 1822.

First edition. 12mo. 175, (1) pp. Woodcut frontispiece, and 6 woodcut plates. Fine copy internally, in original gilt-ruled unlettered sheep (worn), joints cracked but firm.

AN INTERESTING trade book by an anonymous author on the history of shipbuilding and the production of iron, gold, silver, mercury, copper, tin, lead, coal, and diamonds. The fine wood engravings are of a ship-of-the-line in full sail (frontispiece), a blacksmith, the iron bridge at the Menai Straits, gold beaters, silver miners, “Doctor Herschell’s telescope,” and diamond washers. Probably intended for young readers. Not located in the usual bibliographies.

ASHMOLE, Elias

Theatrum Chemicum Britannicum. Containing Severall Poeticall Pieces of our Famous English Philosophers, who have written the Hermetique Mysteries in their owne Ancient Language. Faithfully Collected into one Volume, with Annotations thereon, By Elias Ashmole, Esq. . . .

London: Printed by J. Grismond for Nath. Brooke, at the Angel in Cornhill. 1652.

First edition. 4to. 8 leaves, 486 pp. (281–284 omitted from pagination), 5 leaves (4 index, 1 errata). Title in red and black

with alchemical engraving. Folding engraved plate (p. 117), 2 woodcuts, and 12 mostly full-page engravings (by Ro. Vaughan). As usual, lacking the plate between pp. 436–437 (inserted in very few copies); otherwise fine complete copy, in nineteenth-century green blind-stamped morocco (by H. Faulkner, London), all edges gilt. From the library of Chester H. Thordarson, University of Wisconsin, with bookplate.

“THE MOST important English alchemical text. Complete copies are extremely rare, most copies lacking at least one or more plates” (Duveen). Edited by the antiquarian Ashmole (1617–1692), a founding member of the Royal Society, whose library and curiosities formed the Ashmolean Museum in Oxford, this book contains about thirty English alchemical treatises, mostly of the fourteenth and fifteenth centuries. A projected second part was never published. Texts include *The Ordinall of Alchimy* by Thomas Norton, *The Compound of Alchymie* by George Ripley, *The Philosophers Stone* by John Gower, Chaucer’s *Canon’s Yeoman’s Tale*, and works by John Dastin, Abraham Andrewes, Thomas Charnock, William Bloomfield, Edward Kelley, and John Dee. “Very rare, and difficult to get complete” (Ferguson). (Bolton, 952; D.S.B., I, 317; Duveen, 31; Edelstein, 91; Ferchl, 15; Ferguson, I, 52 [not in Young Coll.]; Ferguson Coll., 49; Krivatsy, 449; Mellon, 101; Neu, 146; Poggendorff, I, 70; Smith, 22 [Newton’s copy]; Thorndike, VII, 155; Verginelli, 21; Waller, 11048; Watt, I, 49x; Wellcome, II, 63; Wing, A3987)

ASHMOLE, Elias, and LILLY, William

The Lives of those Eminent Antiquaries Elias Ashmole, Esquire, and Mr. William Lilly, written by themselves; containing, first, William Lilly’s History of His Life and Times, with Notes, by Mr. Ashmole: secondly, Lilly’s Life and Death of Charles the First: and lastly, The Life of Elias Ashmole, Esquire. By Way of Diary. With Several Occasional Letters, by Charles Burman, Esquire.

London: Printed for T. Davies, in Russel-Street, Covent Garden. 1774.

First collected edition. 8vo. 7, (1) + 399, (1) pp. Engraved frontispiece with large medallion portraits of Lilly and Ashmole (J. Lodge sculp.). Astrological woodcuts in text (pp. 214, 241, 249, 280). Fine copy, in original speckled calf, maroon morocco label. Armorial bookplate (R. Cooper sculp., 1724): Hon. George Baillie. Small signature on title page: G. Baillie.

ACCORDING TO Ferguson, Ashmole’s diary contained in this work was published in 1717, and Lilly’s in 1715, with notes and continuation by Ashmole. The “Advertisement to the Reader” is signed “T. D.” (i.e., the publisher, T. Davies). The section on Lilly’s life (pp. 1–168) is followed by that on Charles I (pp. 169–282), dated 23 July 1651. The life of Ashmole (pp. 283–399) contains an appendix that reprints

several letters to and from Ashmole, including a letter from John Evelyn (dated 7 December 1677), which was hand delivered by Dr. Robert Plot and refers to his *Natural History of Oxfordshire* (Oxford, 1677). An important source of information on Lilly and Ashmole, who were eminent in different fields but shared mutual interests. No reference to Charles Burman, the editor, has been located. Very scarce. Not in Blake, D.S.B., Edelstein, Neu, Partington, etc. (Duveen, 110; Ferchl, 78; Ferguson, I, 132; Watt, I, 172m; Wellcome, II, 63)

ASK, Jonas Elias

Specimen Academicum, de Mineræ Ferreae per Magnetem Investigatione, . . . Praeside . . . Mag. Erico Burman, . . . Publicae censurae submittit . . . Jonas El. Ask, Westrobotniensis. . . . XX Decembr. Anno MDCCXXVIII. . . .
Uppsala: Literis Wernerianis. (1728).

First edition. 12mo. 4 leaves, 23, (1) pp. Fine copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A DISSERTATION in which Ask (fl. 1720) describes magnets and the magnetic properties of iron-containing minerals; presented under the direction of the professor of astronomy at Uppsala, Erich Burman (1692–1729). The history of the subject is traced, with references to the works of Agricola, Descartes, Kircher, Rohault, et al. The tract is of some mineralogical and chemical interest. Not in Ekelöf, Gartrell, Wheeler Gift, etc. Rare. (Poggendorff, I, 348)

ASKELÖF, Johann Gustav

Dissertatio Chemica de Sulphate Sodae. . . . Praeside Mag. Johanne Gadolin. . . . Pro Gradu Philosophiae Publicae Censurae Subjicit Johannes Gustavus Askelöf, Ostrogothus. In Auditorio Majori die XIX Decembr. MDCCCIV. . . .
Åbo: Typis Frenckellianis. (1804).

First edition. 4to. 1 leaf, 16 pp. Mint copy, in maroon quarter cloth antique, marbled boards, spine labeled: Gadolin. 11
Dissertations. 1792–1805.

A DISSERTATION ON the history, preparation, physical, and chemical properties of sodium sulphate; presented by Askelöf under the direction of Gadolin, professor of chemistry at Åbo. The solubility of sodium sulphate in water at different temperatures is described, and the preparation of sodium bisulphate is discussed with references to the researches of Bergman, Berthollet, Fourcroy, Richter, Wenzel, et al. Unknown to the usual bibliographers. (Waring, 686)

AUBERT, Jacques

Iacobi Aurberti Vindonis de Metallorum ortu & causis contra Chemistas brevis & dilucida explicatio.
Lyons: Apud Iohannem Berion. 1575.

First edition. 8vo. 69, (1) pp., 1 leaf (blank). Woodcut ornament on title page. Italic and roman letter. Few early annotations on title; otherwise fine copy in old quarter vellum, boards, tan morocco label, gilt. Bound with Du Chesne. *Ad Iacobi Aurberti . . . de ortu et causis metallorum* (Lyons, 1575).

A NATIVE OF Vendôme, Aubert (d. 1586) was a celebrated physician at Lausanne who published several medical works against Paracelsus and the iatrochemists. The present book on the formation of metals in their ores and the use of metallic medicines is strongly anti-Paracelsian. Aubert cites the works of Agricola, Albertus Magnus, Aristotle, Galen, Hippocrates, et al. It brought forth an immediate counterblast from the young physician Du Chesne (1544?–1609), who published *Ad Iacobi Aurberti . . . de ortu et causis metallorum . . .* (Lyons, 1575). This famous controversy is of considerable importance in the history of chemistry and geology (see Adams, *The development of the geological sciences*, p. 290). Partington (II, 167) does not cite this title but mentions Aubert's work in connection with Du Chesne's criticism. Bolton gives the title inaccurately, as well as the place of publication (Lugduni-Batavorum = Leyden, not Lyons). A rare book, especially when in fine condition. (Bolton, 953; Debus, *Chemistry, Alchemy and the New Philosophy, 1550–1700*, 1987, II, 192; D.S.B., IV, 209; Durling, 334; Duveen, 33; Edelstein, 103; Ferchl, 16; Ferguson, I, 54; Ferguson Coll., 51; Honeyman, 162; Hoover, 57; Neu, 152; Poggendorff, I, 72; Sondheimer, 61; Thorndike, VI, 247; Watt, I, 54b; Wellcome, I, 514)

AUBERY, Jean

Les Bains de Bourbon Lancy et Larchambaud de I. Aubery Bourbonnois Docteur en Medecine, Medecin de Monseigneur le Duc de Monpensier au Roi.
(Paris:) Chez Adrian Perier, rue S. Iaques. 1604.

First edition. 8vo. 8 leaves (including fine engraved title), 228 numbered leaves, 4 leaves (last blank). Woodcut initials, head- and tailpieces. Minor watermark on some leaves; otherwise fine, crisp copy, in quarter calf antique, marbled boards, maroon morocco label, spine dated.

“ONE OF the rarest French books on mineral waters. Book II begins at f. 68 and is of particular interest for it deals with the origins of the waters, their mineral content and the subterranean fire, etc.” (Duveen). The waters are shown to contain a variety of chemicals (e.g., alum, bitumen, iron compounds, niter, salts, and sulphur). Jean Aubery, born

circa 1569 at Moulins, studied medicine at Montpellier and later practiced in Paris. In 1606 he became one of the physicians to the king. (Duveen, 32–33; Goldsmith, 990; Neu, 151; Waller, 516)

AUDA, Domenico

Breve Compendio di Maravigliosi Secreti Approvati con felice successo nelle Indisposizioni Corporali. Diviso in quattro libri. Nel Primo. Si tratta di Secreti Medicinali. Nel Secondo. Di Secreti appartenenti a diverse cose. Nel Terzo. Di Secreti Chimici di varie Sorti. Nel Quarto. D'Astrologia Medicinale. Con un Trattato per conservarsi in sanita. . . . Con nova Aggiunta dell'istesso Autore.
Venice: Appresso li Zinni. 1673.

Third 12mo. edition? 10 leaves, 316 pp. Good copy in original vellum. From the library of Denis Duveen, with bookplate on first free endpaper.

THE AUTHOR of this “brief compendium of marvellous secrets” (first: Rome, 1655), Auda (fl. 1650), was head of the Hospital of San Spirito in Rome. After spending eleven years in various parts of France, Lombardy, and Italy, he came to the pharmacy of the Hospital of San Spirito. “Its apothecary, the Reverend Fra Hippolito Mancini, besides being most learned in medicine, surgery and pharmacy, was an oracle of the chemical art and an outstanding botanist” (Thorndike, VIII, 87–88). The third part of this popular compilation describes chemical secrets (pp. 157–222). Numerous editions appeared, all printed in Italy. Twelve editions published between 1663 and 1736 are listed in Wellcome (II, 68–69), but not the present one of 1673. There is a copy of this Venice edition in the British Library, but with the imprint “appresso Benedetto Milocho” and identical pagination. Duveen and Neu also list this imprint. No other copy of the present “Zinni” imprint has been traced. All editions are rare. (British Library, *17th Cent. Italian*, I, 54; Duveen, 33; Ferguson, *Books of Secrets*, II, 1st Suppl., 36; Neu, 155)

AUGURELLO, Giovanni Aurelio

Ioannis Aurelii Augurelli P. Ariminensis Chrysopoeiae Libri III. Et Geronticon Liber Primus. Apud Inclytam Basileam. (Colophon: Basileae apud Ioannem Frobenium Mense Augusto. 1518).

Second (first Basel) edition. 4to. 112 pp. With fine woodcut border around title and large woodcut printer's device on final page. Fine copy in contemporary richly blind-tooled pigskin.

“AN ALCHEMICAL poem which was composed in the early years of the sixteenth century . . . Pavanello, who has given an analysis of it with quotations, is of the opinion that

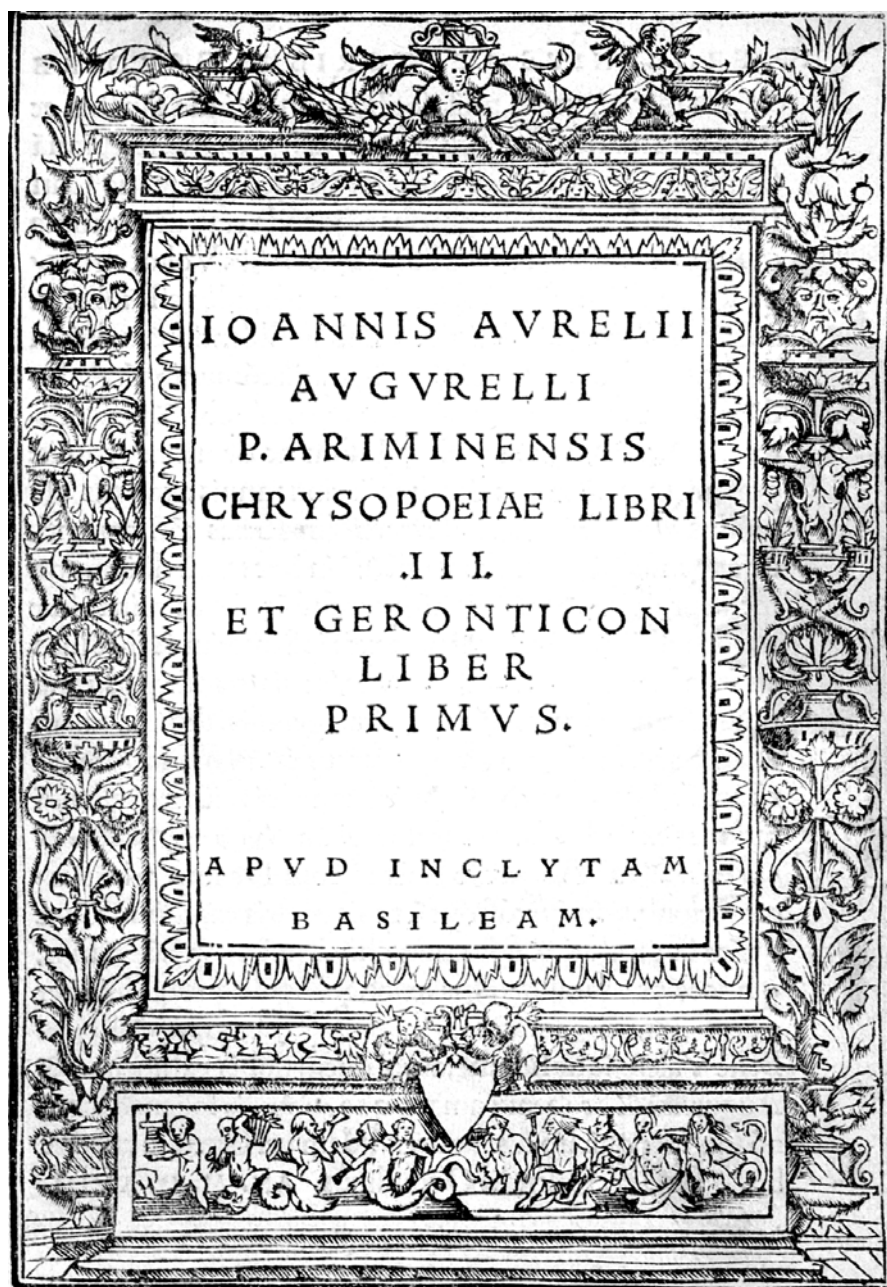
Augurellus began it about 1500, and there are references in it to the siege of Padua in 1509. The first edition, however, was at Venice in 1515. Three years later Froben issued another at Basel. The poem was dedicated to Pope Leo X, whose Maecenate in Medicean Rome extended to alchemy as well as poetry” (Thorndike). “His Poem on the Art of making Gold, appears to have been much consulted by Alchemists, since it has been reprinted in Grattorolo's Collection of Alchymical Authors. Basle, 1561, fol. In volume iii of the *Theatrum Chemicum*. Strasburg, 1613, and in Manget's *Bibl. Chémica*” (Watt). Augurello (1454–1537) was a native of Rimini. The dedicatee, Pope Leo X, is said to have rewarded the poet with a large empty purse, saying that he who knew so well how to make gold could easily fill it. The present edition contains a preface by the printer and publisher, Johannes Froben. A rare book: Duveen owned only an edition appended to Sendivogius (Geneva, 1639). Not in Bolton, Caillet, Guaita, Neu, Mellon, Morgan, Partington, Waller, etc. (Ferchl, 16; Ferguson Coll., 53; Ferguson, I, 55; G. Pavanello, *Un maestro del quattrocento, Giovanni Aurelio Augurello* [Venice, 1905]; Smith, 24 [1515 ed.]; Thorndike, V, 535; Watt, I, 54e; Wellcome, I, 528)

AURIVILLIUS, Pehr Fabian

Aminnelse-Tal öfver Chemiae Professoren i Upsala och Riddaren af Kongl. Wasa Orden, Herr Magister Torb. Bergman, hållet i Herr Arkebiskopens och Procancellarens samt några Herrar Professorers Närvaro vid Vestgötha Nations Sammankomst den 15 Jun. 1785. . . .
Uppsala: Tryckt Hos Directeuren Johan Edman. (1785).

First edition. 8vo. 1 leaf, 53, (3) pp. Woodcut funerary vignette on p. 1. Fine copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

THE EULOGY of Torbern Olof Bergman (1735–1784), the greatest Swedish chemist of the period, by P. F. Aurivillius (1756–1829), professor of chemistry and medicine at the University of Uppsala. It is the earliest eulogy and includes the first list of Bergman's works (cf. B. Moström, *Torbern Bergman: A Bibliography*, p. 5), preceding by almost a year the eulogy by P. J. Hjelm. The funerary vignette on page 1 is identical to that in the *Justis parentalibus . . . Torberno Bergman* (Uppsala, 1785), by Christoph Dahl. Bolton (p. 177) lists only the Latin translation (Leipzig, 1787). Rare. (Cole, 112; Edelstein, 215)



Augurello. Ioannis Aurelii Augurelli. Basileam, 1518.

AURIVILLIUS, Pehr Fabian

Oratio Parentalis quam in Memoriam Viri Amplissimi et Celeberrimi M. Torberri Bergman in Academia Upsaliensi Chemiae Mineralogiae et Pharmaceutices Professoris . . . Ex Suecico in Latinum Sermonem Translata.

Leipzig: In Bibliopolio I.G. Mulleriano. 1787.

First edition. 4to. 46 pp. Very fine large paper copy, unpressed and uncut, in modern vellum-backed speckled boards.

THE FIRST Latin translation of the earliest eulogy and biography of the great chemist Torbern Olof Bergman; originally published in Swedish by Aurivillius (Uppsala, 1785). Rare. (Bolton, 177; Moström, p. 5)

AVELIN, Carol Gustaf

Specimen Academicum, de Inclinatione Magnetica, cujus partem priorem, . . . sub praesidio, Mag. Samuelis Duraei, . . . offert Carolus Gust. Avelin, Dalekarlus. . . . IIX. Martii, Anni MDCCLXIII.

Uppsala. (1763).

First edition. 4to. 2 leaves, 18 pp. Fine copy. Bound with Wimermark, Sven, *De Diversa Radiorum* (Uppsala, 1776), and 30 other dissertations.

ON MAGNETISM and the inclination and declination of magnets. The author (dates unknown) traces the history of the subject from its discovery by Robert Norman (fl. 1590), a mathematical instrument maker and writer on the compass, who first observed the magnetic inclination of 71 degrees, 50 minutes, at London in 1576. Avelin also discusses the works of William Gilbert, Mark Ridley, Edmund Halley, et al. On pages 6–18 he lists data on magnetic inclination. Neither Avelin nor this work are mentioned by Ekelöf, Mottelay, Wheeler Gift, etc. Unknown to the usual bibliographers.

AVELIN, Carol Gustaf

Specimen Academicum, de Inclinatione Magnetica, cujus partem posteriorem, . . . sub praesidio Mag. Samuelis Duraei, . . . pro gradu, Stipendiarius Nessel, Carolus Gust. Avelin, Dalekarlus. . . . XXIV. Aprilis. Anni MDCCLXVII.

Uppsala: Litteris Joh. Edman, Reg. Acad. Typogr. (1767).

First edition. 4to. 1 leaf, pp. (19)–39, (1). With engraved plate depicting 3 figures. Fine copy. Bound with Wimermark, Sven, *De Diversa Radiorum* (Uppsala, 1776), and 30 other dissertations.

THE SEQUEL to Part I, published in 1763, of Avelin's investigations on magnetic inclination and declination. The author here discusses the work of Daniel Bernoulli, Euler,

Musschenbroek, Whiston, et al., giving a mathematical analysis of the subject on pages 30–34 and listing his observations on pages 35–37. Avelin's researches on magnetism have remained unknown to bibliographers and historians of science.

AVELLAN, Nicolao

Animadversiones in Novam Nomenclaturae Chemicae Methodum . . . Publico examini, subjicit Johannes Gadolin, . . . Respondente Nicolao Avellan, Tavastensi. In audit. majori die XV Nov. MDCCLXXXVIII.

Abo: Typis Frenckellianis. (1788).

First edition. 8vo. 2 leaves, 26 pp., 1 leaf (blank). Fine copy, uncut with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

AN IMPORTANT dissertation in which the new chemical nomenclature proposed in 1787 by Lavoisier and his co-workers is critically examined. The praeses, Gadolin (1760–1852), did not completely adopt the antiphlogistic theory until 1796. Here he is only partly converted to the new theory, and he states (in agreement with Macquer) that phlogiston is the matter of light and (in agreement with Lavoisier) that gaseous oxygen contains the matter of heat. Dedicated to Berthollet, Fourcroy, Guyton de Morveau, and Lavoisier; the publications of Bergman, Crell, Gren, Kirwan, Scheele, Stahl, et al., are cited. Very rare. Unknown to Duveen and Klickstein, who list no Scandinavian work on the new nomenclature as early as this. Not in N.U.C. or the Supplement and not in the usual chemical bibliographies. (Cole, 499; Ferchl, 169; Partington, III, 629)

AVELLAN, Nicolao

Tentamen Speciminis Chemicae Opticae, . . . praeside . . . Petro. Adriano Gadd, . . . Pro Gradu Philosophico Nicolaus Avellan, Phil. Cand. & Amanuensis Laborat. Chemic. Die XV April MDCCLXXII in Audit. Maj. a.m. Publice ventilandum sistit.

Abo: Typis Johannis Christophori Frenckell. (1772).

First edition. 4to. 16 pp. Fine copy, uncut with wide margins, in maroon quarter cloth antique, marbled boards, spine labeled in gilt: Gadd. Nine Dissertations. 1759–1778.

A DISSERTATION ON the transmission of white light through colored solutions of inorganic salts and vegetable dyes. Of particular importance are descriptions of self-luminous substances (e.g., white phosphorus and various phosphors, including the Bolognian stone), which remained unknown to E. N. Harvey (*History of Luminescence*, 1957). Colors produced by burning pyrotechnic mixtures are also discussed. The action of light in darkening silver chloride is of

interest in the history of photography. In addition to references to Newton's *Opticks*, the author cites the works of Homberg, Juncker, Kunckel, Lemery, Neumann, Pott, et al. A student of Pehr Adrian Gadd (1727–1797) at Åbo, Avellan gives quantitative details of the experiments he carried out. He later worked under Gadolin, who succeeded Gadd at Åbo. Rare. Not in the usual bibliographies. (Ferchl, 169; Partington, III, 179; Poggendorff, I, 826)

AVICENNA

Avicenne perhypatetici philosophi: ac medicorum facile primi opera in luce(m) redacta: ac nuper quantum ars niti potuit per canonicos emendata. Logyca. Sufficiencia. De celo & mundo. De anima. De animalibus. De intelligentijs. Alpharabius de intelligentijs. Philosophia prima. . . (Colophon:) Venice: Sumptibus heredu(m) Octaviani Scoti, per Bonetu(m) Locatellu(m). 16 May 1508.

First collected edition. Folio. 42 + 117 numbered leaves, 1 unnumbered leaf. Gothic letter. Numerous woodcut capitals, and 2 geometrical woodcut text diagrams (ff. 38, 40). Large woodcut on final leaf. Some leaves with minor foxing; otherwise fine copy in contemporary vellum (small piece missing from bottom of spine).

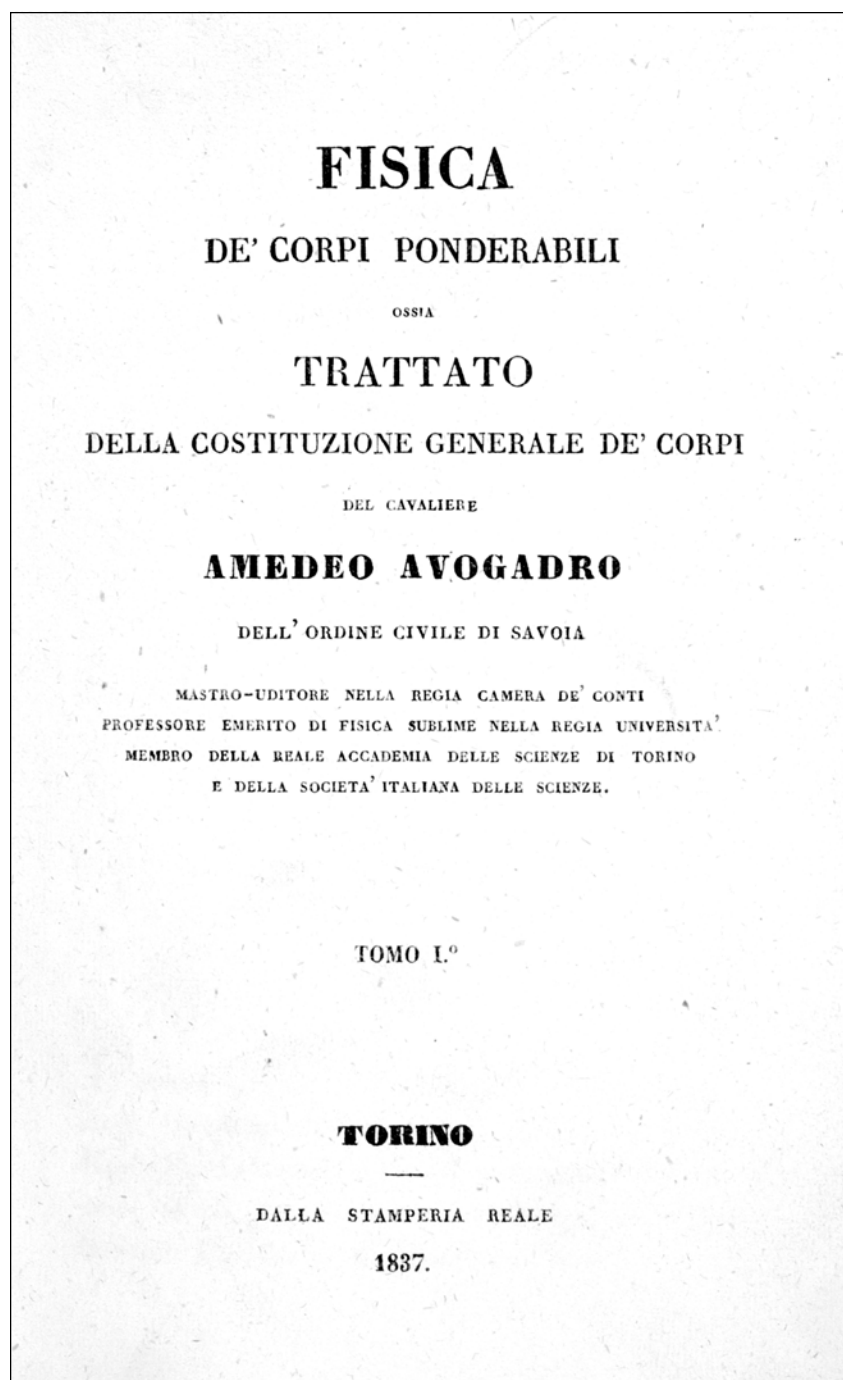
THE VERY rare first collected edition of the scientific and philosophical works of Avicenna (980–1037), whom Sarton (I, 711) describes as “the most famous scientist of Islam and one of the most famous of all races, places and times; one may say that his thought represents the climax of medieval philosophy.” Avicenna wrote over a hundred books, but most of them have perished. He was an experienced physician, and his celebrated *Canon medicinae* is “the most famous medical text ever written; it is a complete exposition of Galenism. . . . It dominated the medical schools of Europe and Asia for five centuries” (Garrison & Morton [No. 43]). Ferguson (I, 60) gives the titles of a number of the alchemical and chemical writings that pass under the name of Avicenna, but some are known to be spurious. A beautifully printed postincunabulum. Not in Cushing, Durling, D.S.B., Osler, Waller, Wellcome, etc. (British Library, *S.T.C. Italian Books, 1465–1600*, p. 335; Graesse, I, 264; Hirsch, *Chymia*, 3 [1950], 128; Thornton & Tully, 27)

AVOGADRO, Amedeo

Fisica de' Corpi Ponderabili ossia Trattato della Costituzione Generale de' Corpi del Cavaliere Amedeo Avogadro . . . Turin: Dalla Stamperia Reale. 1837–41.

First edition. 4 vols., 8vo. I (1837): 2 leaves, xxxi, (1), 910 pp.; 9 folding lithographic plates. II (1838): xv, (1), 980 pp.; 5 folding plates. III (1840): xiii, (1), 932 pp.; 2 folding plates. IV (1841): xiii, (1), 926 pp., 1 leaf (blank), 53, (1) pp.; 2 folding plates. Very fine set in contemporary green quarter sheep, covers with ornamental gilt dentelles, spines richly gilt. Bookplate: Jaco Calleri Damonte Graja (Piemont).

A MONUMENTAL TREATISE and the only major publication of Avogadro (1776–1856). It contains most of his important researches on the properties of matter, crystallography, heat, sound, etc. One of the founders of physical chemistry in the early nineteenth century, Avogadro is remembered for the law (then called a hypothesis) that states: “Equal volumes of all gases under the same conditions of temperature and pressure contain the same number of molecules.” This law provided a much-needed key to the solution of the composition and properties of gases. Avogadro showed that by applying his theory, chemists could discover the numbers of atoms in molecules, and then the atomic weights could be calculated from the ratio of combining masses. The present work contains a very substantial enlargement of Avogadro's famous memoir, first published in 1811 in the *Journal de Physique*, in which he promulgated his hypothesis. Originally educated as a lawyer, in 1800 he became interested in mathematics and physics. Avogadro was impressed by the recent discoveries of Alessandro Volta, and Avogadro's first scientific research (with his brother Felice) was on electricity in 1803. One of the great milestones of chemical literature, complete sets are very rare. Not in Smith, Wellcome, etc. (Bolton, 276; D.S.B., I, 350; Duveen, *Supplement*, 21; Edelstein, 111; Partington, IV, 216; Roller & Goodman, I, 63)



Avogadro. Fisica de' Corpi Ponderabili. Turin, 1837-1841.

B., F.

Eröffnetes Geheimniss der Probier-Kunst, des Müntz-Wesens, und Guarteins-Verrichtung bey dem Auffwiegen auff Seyger-Hütten. Aus langer und fleisziger Erfahrung zusammen getragen und in eine kurtze, doch richtige Ordnung gebracht. Von F. B.
Leipzig: Verlegts Joh. Christian Martini, Anno 1720.

First edition. Tall 8vo. 144 pp. Title page printed in red and black. Very good copy in original speckled pasteboards. Nineteenth-century engraved bookplate on front endpaper ("Bibl. Hammer, Stockholm").

A VERY RARE *Probier Büchlein*, or treatise on the assaying of metallic ores, with numerous chemical symbols throughout. The identity of the author "F. B." is unknown. The tall but narrow format indicates that the book was intended to be carried in the owner's pocket for use in the field. Not traced in available bibliographies.

BABINGTON, William, and ALLEN, William

A Syllabus of a Course of Chemical Lectures read at Guy's Hospital. . . .
London: Printed by W. Phillips, George Yard, Lombard Street. 1802.

First edition. 8vo. vii, (1), 146 pp. With folding table of Chemical Nomenclature (divided into 4 parts). Neat contemporary notes in pencil and ink on first endpapers and pencil notes in a few margins. Name clipped from top blank corner of title leaf; otherwise very good, crisp copy, in original blue boards, spine slightly worn.

THE SYLLABUS of the complete course of chemistry in which Babington and Allen first collaborated. Babington had previously published a shorter version (London, 1789). Although primarily designed for medical students in training at Guy's Hospital, the course also contains applications of the principles of chemistry to other fields. Babington (1756–1833), a physician and apothecary at Guy's Hospital, F.R.S. (1805), became interested in mineralogy, the mineral babingtonite (a complex silicate) being named after him. From 1807 onward he held meetings in his home, from which the Geological Society had its origins, and he became president of the society in 1822. Allen (1770–1843) was a chemist and Quaker who later conducted a pharmacy (from which the firm of Allen and Hanbury is descended). Rare. Not in the usual bibliographies. (Cole, 28; Partington, III, 707; Wellcome, II, 80)

BABINGTON, William, MARCET, Alexander, and ALLEN, William

A Syllabus of a Course of Chemical Lectures read at Guy's Hospital. By William Babington, . . . Alexander Marcet, . . . and William Allen, . . .
London: Printed by William Phillips, George Yard, Lombard Street. 1816.

Second edition. 8vo. vii, (1), 145, (3) pp. With engraved frontispiece of Chemical Theatre, Guy's Hospital, dated Sept. 29, 1816 (by Ashby & Ball). Very good copy, interleaved with blank paper (1817 watermark), in gilt-ruled half calf antique, marbled boards, black morocco label.

BABINGTON RESIGNED from Guy's Hospital in 1811, and Allen and (from 1807) Marcet (1770–1822) continued delivering lectures on chemistry to medical students. In the preface to this greatly expanded edition (first: London, 1811; Duveen, 35) the authors state that "Chemical Science . . . is not yet sufficiently advanced to admit of a perfect arrangement of its parts, and as the new Nomenclature . . . appears from Sir Humphry Davy's late brilliant discoveries, to have in some instances been at variance with facts, it has been deemed desirable in this Course of Lectures to guard against too strict an observance or hasty adoption of systematic views of arrangement." For this reason the Synoptic Table of Nomenclature of the former edition has been replaced by a list of "Simple Bodies" (i.e., chemical elements, on final leaf). Rare. Not in Bolton, Duveen, Watt, Wellcome, etc. (Cole, 29; Partington, III, 707)

BACCI, Andrea

De Gemmis et Lapidibus Pretiosis, eorumque viribus & usu tractatus, Italica lingua conscriptus: nunc vero non solum in Latinum sermonem conversus, verum etiam utilissimis annotationibus & observationibus auctior redditus a Wolfgango Gabelchovero, medicinae doctore . . . Cui accessit disputatio, de generatione auri in locis subterraneis, illiusque temperamento.
Frankfurt: Ex officina Matthiae Beckeri, impensis Nicolai Steinii. 1603.

First Latin edition. 8vo. 231, (1) pp., 12 leaves (last blank). Ornamental woodcut initials, head- and tailpieces. Some embrowning of leaves (characteristic of period); otherwise crisp copy in contemporary vellum. Bound with Jossius, Nicander. *Tractatus novus . . . de voluptate et dolore* (Frankfurt, 1603).

THE ORIGINAL edition (*Le XII pietre pretiose*, Rome, 1587) is here translated into Latin by Wolfgang Gabelchover (b. ca. 1570), who has added notes and commentary. Of chemical interest are discussions of the generation and transmutation of gold and of the tricks and deceptions of contemporary alchemists, who sold worthless synthetic "gems" to the public. "Bacci . . . published . . . in Italian a treatise on

the twelve precious stones in the breastplate of the high priest after the similar work of Epiphanius, together with other gems and a discussion of the unicorn and its most singular virtue" (Thorndike). Watt (I, 60i) lists only an edition of Frankfurt, 1628. Not in the usual chemical bibliographies. (Ferguson Coll., 57; Hoover, 71; Partington, II, 27; Thorndike, VI, 316; Ward & Carozzi, 94; Wellcome, I, 608)

BACCI, Andrea

De Thermiss Andreae Baccii Elpidiani, . . . libri septem. Opus locupletissimum, non solum Medicis necessarium, verumetiam studiosis variarum rerum Naturae perutile. In quo agitur de universa aquarum natura, deque differentiis omnibus, ac mitionibus cum terris, cum ignibus, cum metallis. De Lacubus, Fontibus, Fluminibus. De balneis totius orbis, & de methodo medendi per Balneas. Deque lavationum, simul atque exercitationum institutis in admirandis Thermiss Romanorum. . . .

Venice: Apud Vincentium Valgrisiuum. 1571.

First edition. Folio. 32 leaves, 509, (1) pp. Roman and italic letter. Double-page woodcut between pp. 443 and 444 (plan of Baths of Diocletian). Fine, crisp copy, in original limp vellum.

THE "CLASSIC WORK on mineral waters, dealing with all the spas of the then known world" (Duveen). Bacci (1524–1600), of St. Elpidio in the Anconian Marches, was a professor of botany and physician to Pope Sixtus V, but he dissipated his fortune and was pursued by creditors until he sought asylum with Cardinal Ascognio Colonna. By far his most chemically important book is the *De Thermiss*. Bacci quotes many ancient authors and states that some mineral waters contain sulphur, alum, metals, salts, soda, vitriols, bitumen, and petroleum, while others contain gold, tin, lead, and zinc. Wines and their medicinal uses are also discussed, as are analytical chemical tests. Libavius refers to this work in his *Alchymia* (1606, p. 153). A beautifully printed book, which Brunet describes as a "belle édition d'un ouvrage estimé." Other editions: Venice, 1588; Rome, 1622; Basel, 1622; Padua, 1711. Not in Bolton, Cushing, D.S.B., Edelstein, Ferguson, Osler, Smith, Thorndike, or Waller. (British Library, *S.T.C. Italian Books, 1465–1600*, p. 66; Castiglioni, 895; Duveen, 35; Durling, 426; Ferchl, 18; Ferguson Coll., 57; Neu, 172; Partington, II, 27; Poggendorff, I, 84; Sotheran, Cat. 702 (1910), 5900 ["Rare"]; Ward & Carozzi, 93; Watt, I, 60i; Wellcome, I, 600)

BACCI, Andrea

De Thermiss Andreae Baccii Elpidiani, . . . libri septem. . . . Accessit nunc liber octavus de nova Methodo Thermarum explorandarum, deque Minera, & viribus Fontium Medica-

torum, quorum plerique in hoc Opere desiderabantur: ex Clarissimorum Virorum scriptis editis, & edendis. Editio novissima . . .

Padua: Sumptibus Jo. Baptistae Conzatti. 1711.

Folio. 4 leaves, xxviii, 365, (1) pp., 1 leaf (blank). Large folding engraved plate following page 248 (plan of Baths of Diocletian). Large woodcut tailpieces on pages 105 and 365. Fine copy in original calf, gilt.

THE FINAL and "most complete edition" (Duveen), augmented by the important eighth book (pp. 287–365) in which the chemical analyses of mineral waters are updated from Bacci's time. The addition contains excerpts from the *Actis Eruditorum Lipsiae* (1664–1709) and also from the works of J. B. DuHamel, D. Fontanelle, H. ab Heers, F. Hoffmann, F. Blondel, J. B. Grundel, P. A. Boscherini, D. Burlet, T. G. Nobili, the *Actis de Trevoux*, etc. Hoefer and Thorndike discuss Bacci's work on wines, and Partington gives further information on his nonchemical activities. (Blake, 26; Duveen, *Supplement*, 451; Partington, II, 27; Watt, I, 60i; Wellcome, II, 80)

BACCI, Andrea

De Venenis, et Antidotis [prolegomena] seu communia praecepta ad humanam vitam tuendam saluberrima. In quibus diffinitiva methodus Venenorum proponitur per genera, ac differentias suas, partes, & passiones, praeservandi modum, & communia ad eorum Curationem Antidotes complectens. De canis rabiosi morsu, et ejus curatione. . . .

Rome: Apud Vincentium Accoltum. Impensis Joannis Martinelli. 1586.

First edition. 4to. 4 leaves, 83, (1) pp. Italic and roman letter. Fine copy in eighteenth-century sprinkled calf, gilt, maroon label. Bookplate (nineteenth century): Joseph Luce.

BACCI LECTURED on poisons at the University of Rome in the first year of the pontificate of Sixtus V. Dedicated to Cardinal Decio Azzolino and edited by Ercole Bacci, this work on poisons and their antidotes discusses both earlier and contemporary writers on these subjects. Bacci repeats many long-held beliefs: e.g., that the unicorn's horn sweats when placed near poison and a candle held by a vulture's foot is extinguished. He denies that a fixed time can be set for the action of poisons at the will of the poisoner and advises anyone who suspects that he has eaten poison to vomit as soon as possible. Many types of poison from the animal, vegetable, and mineral kingdoms are described, and the book is of toxicological and chemical interest. In his discussion of the bite of a mad dog and its cure, he describes several cases of hydrophobia, including one that developed thirty-six days after the bite. (British Library, *S.T.C. Italian Books, 1465–1600*, p. 66; Durling, 428; Partington, II, 27; Thorndike, V, 484; Watt, I, 60j; Wellcome, I, 604)

BACHE, Franklin

A System of Chemistry for the Use of Students of Medicine.
By Franklin Bache, M.D. Member of the Academy of Natural Sciences of Philadelphia.

Philadelphia: Printed and Published for the Author. William Fry, Printer. 1819.

First edition. 8vo. (in 4s). xvi, 624 pp. With 2 folding printed tables (facing pp. 426 and 583). Very good copy in original tree calf, maroon gilt-lettered label, spine gilt-ruled.

THE EARLIEST textbook of Bache (1792–1864), who was born in Philadelphia and was a great grandson of Benjamin Franklin. Bache graduated from the University of Pennsylvania in 1810, then studied under Benjamin Rush. In the 1820s and 1830s he taught chemistry at private schools of medicine, and after several other teaching positions he became professor of chemistry at Jefferson Medical College, Philadelphia (1841–1864). He wrote and edited other important works, on which see W. D. Miles (*American Chemists and Chemical Engineers*, Washington, 1976, pp. 15–16). In 1833 Bache and G. B. Wood published the important *Dispensatory of the United States*, a reference book that has been revised to the present time. In the *System of Chemistry* Bache says: “My object . . . has been to present, to the Student of Medicine, an elementary work on Chemistry, in which the more important bearings of the science on his profession might constantly be kept before his view” (Preface). “The book is most praise-worthy. Its merits are numerous” (E. F. Smith, *Old Chemistries*, New York, 1927, pp. 86–87). Very scarce. Not in D.S.B., Duveen, Morgan, Partington, Poggendorff, Sondheimer, Waller, Wellcome, etc. (Bolton, 277; Edelstein, 115; Ferchl, 18; Miles, 15; Smith, 26)

BACON, Francis

Baconiana. Or Certain Genuine Remains of Sr. Francis Bacon, . . . In Arguments Civil and Moral, Natural, Medical, Theological, and Bibliographical; Now the First time faithfully Published. An Account of these Remains, and of all his Lordship's other Works, is given by the Publisher, in a Discourse by way of Introduction.

London: Printed by J. D. for Richard Chiswell, at the Rose and Crown in St. Paul's Church-Yard. 1679.

First edition. 8vo. Engraved frontispiece portrait (excellent impression) of Bacon (F. H. Van Hove sculp.). 6 leaves, 270 pp., 1 leaf (blank), 104 pp. Fine copy in contemporary mottled calf, gilt dentelles on both covers, tastefully rebacked, spine gilt-lettered and dated.

A COMPLETE COPY with the divisional title *Baconiana Politico-Moralia* (signature B1, usually lacking). Signature

A4 (often blank) with Imprimatur (recto) and Errata (verso). The 104-page commentary on Bacon's *Philosophy, Mechanic Inventions, and Writings*, by Thomas Tenison (1636–1715), the publisher who later became archbishop of Canterbury, is bound at the end. The sections of this work (each with divisional title dated 1679) are *Baconiana Politico-Moralia*, *B. Physiologica*, *B. Medica*, *B. Theologica*, *B. Bibliographica*, and *Characters of the Lord Bacon*. Pages 2, 74, 76, 152, 154, 176, 178, 184, 186, 260, and 262 are blank. The *Physiological Remains* (pp. 77–151) on metals and nonmetals, with comments by Dr. (Andrew?) Meverel, a friend of Bacon, is of considerable chemical interest. Tenison says that he could not find any information on Meverel, who was “doubtless a chymist.” On page 117 Meverel says: “I can truly and boldly affirm, that there are no such principles as Sal, Sulphur, and Mercury, which can be separated from any perfect Metals.” This statement is very significant, predating by over forty years similar claims by Boyle in *The Sceptical Chymist* (London, 1661). (Gibson, 237b; Partington, II, 411; Wing, B269)

BACON, Francis

History Naturall and Experimentall, of Life and Death. Or of the Prolongation of Life. Written in Latine by the Right Honorable Francis Lo. Verulam, Vis-Count St. Alban.

London: Printed by Iohn Haviland for William Lee, and Humphrey Mosley. 1638.

First authorized edition in English. 12mo. 15 leaves, 435, (1) pp. Complete with imprimatur leaf facing title page (dated Decemb. 29, 1637). Very good copy in calf antique with original calf sides laid on, maroon morocco label, spine dated. Presentation copy to Lord Joseph Lister (1827–1912), founder of antiseptic surgery; inscribed on flyleaf: “Mr. Gullross to Mr. Lister. Nov. 1868.”

THE FIRST authorized translation, by William Rawley, of *Historia vitae et mortis* (London, 1623; Gibson 147). It is entirely different from the edition made by an anonymous translator and published by Humphrey Moseley (d. 1661) earlier in 1638 (Gibson 153). In the address to the reader Rawley repudiates the earlier translation, describing it as “lame and defective.” Apart from its medical content, the book contains Bacon's views on topics of chemical interest (e.g., combustion, calcination of metals, niter and gunpowder, freezing mixtures, acids, salts, mineral waters, oils, camphor, opium, and expiration). Partington (II, 390–413) discusses the work. This is a particularly interesting copy as it was given to Lord Lister when he was surgeon at Glasgow Infirmary (1861–1869). (Gibson, 154; Krivatsy, 555; Osler, 684; S.T.C., 1158; Watt, I, 60x)

BACON, Francis

Instauratio magna. (Novum Organum sive Indicia Vera de Interpretatione Naturae).

London: Apud Joannem Billium Typographum Regium. (1620).

First edition, second state (errata on last page). Folio. 5 leaves, 172, 181–360, 36, (2) pp. (pagination skips, text complete). Beautiful engraved title page by Simon de Passe (1595–1647). Historiated woodcut capitals, head- and tailpieces. Occasional neat old marginal annotations and underlining; otherwise fine copy in original calf, gilt dentelle on each cover, skillfully re-backed with richly gilt spine laid down, all edges gilt. Signature of Sir Philip Warwick (1609–1683) on engraved title page.

A MONUMENTAL WORK on the philosophy of science, the systematic organization of knowledge, and the inductive method of reasoning, the importance of which can hardly be exaggerated. Sir Francis Bacon (1561–1626), whose career was intimately associated with the political and legal intrigues of the courts of Elizabeth I and James I, composed this work as the crowning achievement of his life. Recognizing the limitations of Aristotelian, scholastic, and medieval thought, Bacon profoundly influenced Robert Boyle, Huygens, Leibniz, Locke, and later authors, including the French encyclopedists and Voltaire. Enthusiastically received by the learned in Great Britain and on the Continent, this work describes (by means of a series of aphorisms) the method by which knowledge was to be universalized. The aphorisms are divided into two books, followed by *Parasceve, ad historiam naturalem, et experimentalem*, the natural history proper. The *Catalogus historiarum particularium* enumerates the different branches of science. The publication of this great book gave an enormous impetus to the progress of experimental science and to the founding of the Royal Society. This copy has a distinguished provenance, having once been owned by Sir Philip Warwick, who was secretary to Charles I (see D.N.B.). (Dibner, 80; D.S.B., I, 373; Gibson, 103b; Horblit, 8b; Partington, II, 390; P.M.M., 119; S.T.C., 1163; Sparrow, 17; Thornton & Tully, 59)

BACON, Francis

The Life of Francis Bacon, Lord Chancellor of England. By Mr. Mallet.

London: Printed for A. Millar, against St. Clement's Church, in the Strand. 1740.

First edition. 8vo. Viii, 197, (3) pp. Title in red and black, with large copperplate vignette containing portrait of Bacon (J. Mynde sculp.). Crisp copy in pristine condition, in original speckled calf, gilt, maroon morocco label. From the library of the Earl of Chichester, with bookplate.

AN EXCELLENT biography of Bacon, by the poet and miscellaneous writer David Mallet (1705?–1765), of whom Dr. Samuel Johnson said: "Why, sir, Mallet had talents enough to keep his literary reputation alive as long as he himself lived; and that, let me tell you, is a good deal." In addition to this beautifully produced octavo edition, the work appeared in folio (London: A. Millar, 1760) and duodecimo (London, 1768). It was also included in Mallet's *Works of Bacon* (London: A. Millar, 1740, and later editions). The *Life* (pp. 1–166) is followed by a catalogue of Bacon's writings (pp. 167–197) and a list of books sold by A. Millar. French translations appeared (La Haye, 1742; Amsterdam, 1755). Scarce. Not in the usual bibliographies. (Ferchl, 19; Gibson, 480a; Watt, II, 637v)

BACON, Francis

Novum Organum or True Suggestions for the Interpretation of Nature by Francis Lord Verulam.

London: William Pickering. 1844.

First Pickering edition. 8vo. 2 leaves, 336 pp. Title and half title in red and black, and elaborate architectural engraved border to title page. Superb copy in brown calf by J. Clarke (signed on front flyleaf), triple gilt rules on covers, spine richly gilt in compartments, inner dentelles gilt, all edges gilt, marbled endpapers. Engraved nineteenth-century armorial bookplate: Henry Collins.

A VALUABLE ENGLISH translation of the *Novum Organum* (London, 1620), splendidly printed by William Pickering (1796–1854), who was notable for his production of fine books. This volume is printed in Caslon type, which Pickering began to employ in 1840. Its "success . . . led to the wider use of Caslon in other works of antiquarian character [and] was used by Pickering in a number of publications from 1844 onwards" (R. B. McKerrow, *Introduction to Bibliography*, Oxford, 1928, p. 303).

BACON, Francis

Of the Advancement and Proficiency of Learning or the Partitions of Sciences, IX Bookes. Written in Latin by the Most Eminent, Illustrious & Famous Lord Francis Bacon Baron of Verulam Vicont St Alban Counsilour of Estate and Lord Chancellor of England. Interpreted by Gilbert Wats.

Oxford: Printed by Leon. Lichfield, Printer to the University, for Rob. Young, & Ed. Forrest. 1640.

First edition, second issue. Large 4to. 19 leaves, 60, (14), 477, (1) pp., 10 leaves. Pagination erratic. Frontispiece portrait of Bacon and fine engraved title page (both by William Marshall), woodcut and typographic head- and tailpieces, ornamental woodcut capitals. Fine, crisp copy, in original blind-ruled calf. From the library of Andrew Fletcher (1655–1716), famous Scottish patriot (see D.N.B.), with his name neatly scratched in the leather on the inside fore-edge of front cover.



Bacon, Francis. *Instauratio magna*. London, 1620.

THE FIRST edition in English of *De Augmentis Scientiarum* (London, 1623), which itself was a greatly extended version of *The Two Bookes of . . . the proficiencie and advancement of Learning* (London, 1605). The first English version of part I of the monumental *Instauratio Magna* (London, 1620) is also contained in this important volume. Translated and edited by the Oxford scholar Gilbert Watts (d. 1657), this edition is a survey of the sciences employing the famous classification based on an analysis of the faculties and objects of human knowledge. Diderot's great *Encyclopédie* was founded upon this same classification of Bacon. The index of authors cited lists several writers of interest in the history of alchemy (e.g., Agrippa, Croll, Fludd, and Paracelsus). Not in D.S.B., Partington, Thorndike, etc. (Gibson, 141b; Osler, 685; S.T.C., 1167; Thornton & Tully, 59; Watt, I, 60v; Wellcome, I, 616)

BACON, Francis

Of the Advancement and Proficiencie of Learning; or the Partitions of Sciences Nine Books. Written in Latin by the most Eminent, Illustrious and Famous Lord Francis Bacon Baron of Verulam, Viscount St. Alban, Counsellour of Estate and Lord Chancellor of England. Interpreted by Gilbert Wats.

London: Printed for Thomas Williams at the Golden Ball in Osier-Lane. 1674.

Second (first London) edition. Folio. 17 leaves, 38 pp., 7 leaves, 322 pp., 10 leaves. Engraved frontispiece portrait of Bacon (fine impression). Very fine, crisp, near-pristine copy, in contemporary paneled calf, tastefully rebacked, maroon morocco label, gilt, spine dated. Unidentified eighteenth-century armorial bookplate with motto "Tuum-est" on front paste-down endpaper.

AN EXACT reprint of the Oxford 1640 edition, with the errata corrected. A monument of Jacobean English, Anthony Wood (1632–1695) said that Gilbert Watts had "so smooth a pen in Latin and English that no man of his time exceeded him." The book opens the modern era of British philosophy, and it was immediately accepted as a masterpiece. It contains some of the finest writing in English prose. Through his philosophical concepts Bacon pointed the way to organized scientific research. His famous dictum "fiat experimentum" (let there be experiment) was the stimulus required to direct natural philosophers away from abstract theories and toward the designing of experiments to test the validity of theories and discover new knowledge, particularly of the physical world. (Blocker, 17; Cushing, B14; Gibson, 142; Sondheimer, 69; Thornton & Tully, 59; Waller, 19366; Watt, I, 60v; Wellcome, II, 82 [imperf.]; Wing, B312)

BACON, Francis

The Philosophical Works of Francis Bacon, Baron of Verulam, Viscount St. Albans, and Lord High-Chancellor of England; Methodized, and made English, from the Originals, with occasional notes, to explain what is obscure; and shew how far the severall plans of the author, for the advancement of all the parts of knowledge, have been executed to the present time. . . .
By Peter Shaw, M.D.

London: Printed for J. J. and P. Knapton, D. Midwinter and A. Ward, A. Bettesworth and C. Hitch, J. Pemberton, J. Osborn and T. Longman, C. Rivington, F. Clay, J. Batley, R. Hett, and T. Hatchett. 1733.

First edition. 3 vols., 4to. I: 1 leaf (general title), title to vol. I, dedication to Horatio Walpole numbered (*iii)–*v (misbound between pp. 602 and 603), pp. iii–lxxix, (1)–603, (1). II: 26 leaves, pp. (1)–590, 1 leaf. III: lxx pp., 1 leaf (errata), (1)–632 pp., 30 leaves (index, last blank). Fine, crisp set, in contemporary gilt-ruled calf, strongly rebacked, maroon and green morocco labels. Neat inscription in ink on verso of first free endpaper: "Abbet Upcher, Rector of Kirby Cane, March 4th 1851. The gift of his Grandfather the Lord Berners—of Kirby Cane Hall—1848."

A VALUABLE EDITION of Bacon's works, in which all his Latin writings are translated into English and edited with commentary by Peter Shaw (1694–1763), who was later physician to George II and George III. Bacon's contributions to philosophy and science are classified and interpreted, particularly as they relate to chemistry, physics, medicine, and other disciplines. A second edition appeared (London, 1737) with contents, signatures, and collation of the three volumes as in this edition but with differently worded title pages. Shaw, who was a competent chemist, also edited collected editions of Boerhaave and Boyle. Not in Blake, Blocker, Cushing, Wellcome, etc. (D.S.B., XII, 366; Ferguson, II, 381; Gibson, 250; Partington, II, 760; Thornton & Tully, 60; Watt, II, 850c)

BACON, Francis

Sylva Sylvarum: or, a Naturall Historie. In ten centuries. Written by the Right Honourable Francis Lo. Verulam Viscount St. Alban. Published after the Authors death, by William Rawley Doctor in Divinitie, one of his Majesties Chaplaines. Hereunto is now added an Alphabeticall Table of the principall things contained in the whole Worke.

London: Printed by John Haviland for William Lee, and are to be sold by Iohn Williams. 1635.

Fourth edition. Folio. 12 leaves, 260 pp., 16 leaves, 47, (1) pp., 2 leaves (last blank). Page 35 misnumbered 39; pp. 104 and 109 correctly numbered (cf. Gibson). Engraved frontispiece portrait of Bacon at age 66 (erroneously stating his death in 1636, rather than 1626). Beautiful engraved title page (Tho. Cecill

sculp.), dated 1631. The *New Atlantis* has a separate divisional title, signatures, and pagination. Fine, crisp copy, in contemporary unlettered calf, joints and spine repaired. From the library of Cromwell Mortimer (d. 1752), with his signature dated 1720 on the first flyleaf.

THE LAST work written by Bacon, posthumously edited by William Rawley (1588?–1667). It was intended to form part of the third section of his great projected “Renewal of the Sciences,” on the phenomena of the universe. At the end is Rawley’s edition of *The New Atlantis*, one of Bacon’s most popular works, being a fable describing a “Colledge instituted for interpreting Nature,” which is credited with having suggested the founding and program of the Royal Society. The first edition (London, 1626) was followed by a number of editions up to 1685, as well as translations into French (1631) and Latin (1648, 1661). The former owner of this copy, Cromwell Mortimer, a prominent physician who studied under Boerhaave (M.D., Leyden, 1724), assisted Sir Hans Sloane, edited the Royal Society’s *Transactions*, and wrote on chemistry (see D.N.B. and *Munk’s Roll*). (Gibson, 174; Osler, 683; S.T.C., 1172; Thornton & Tully, 60; Wellcome, I, 613)

BACON, Francis

Sylva Sylvarum, or, a Natural History, in ten centuries. Whereunto is newly added, The History Natural and Experimental of Life and Death, or of the Prolongation of Life. . . . Whereunto is added Articles of Enquiry, touching Metals and Minerals. And the New Atlantis. . . . With an Alphabetical Table of the Principal Things contained in the Ten Centuries. London: Printed by J. R. for William Lee, and are to be Sold by the Booksellers of London. 1670.

Ninth edition. Folio. 11 leaves, 14, 194 (195–196 omitted), 197–204, “203,” “206,” 205–215, (1) pp., 14 leaves, 64 pp., 1 leaf, 221–227, (1) pp., 1 leaf (blank), 31, (1) pp. Engraved frontispiece portrait of Bacon, and engraved title page (Tho. Cecill sculp.), dated 1669, both neatly laid down. Divisional title pages to *The Life of . . . Bacon* (dated 1670), *History . . . of Life & Death* (dated 1669), *Articles . . . touching Metals & Minerals* (dated 1669), and *New Atlantis* (undated). Each section with separate signatures. Fine copy, in contemporary calf, rebounded, spine gilt-lettered and dated.

THE FINAL form of this work, containing the first appearance of Rawley’s *Life of Bacon* (14 pp.). The *History . . . of Life and Death* first appeared with the sixth edition (London, 1651) of *Sylva Sylvarum*. Of considerable chemical interest is *Articles . . . touching Metals & Minerals*, which first appeared with the eighth edition (London, 1664). Bacon discusses metal alloys, the refining of metals, their chemical reactions with acids and alkalis, corrosion, etc. One further edition was published (London, 1676), of

which three more issues appeared in 1677, 1683, and 1685. (Blocker, 17; Gibson, 179a; Partington, II, 390; Watt, I, 60y; Wing, B331)

BACON, Francis

The Works of Francis Bacon, Baron of Verulam, Viscount St. Alban, and Lord High Chancellor of England. In three volumes. To which is prefixed, a Life of the Author, by Mr. Mallet.

London: Printed for A. Millar in the Strand. 1753.

Second and best edition by Mallet. 3 vols., folio. I: Engraved frontispiece portrait of Bacon (Geo. Vertue sculpsit 1728), general title, volume title, 4 leaves, xxxv, (3), 762 pp., 2 leaves (table) between pp. 34 and 35. II: Engraved frontispiece (similar to engraved title page of *Novum Organum*, 1620), volume title, pp. iii–viii, 2 leaves, 614 pp., 27 leaves. III: Engraved frontispiece (Bacon’s tomb, G. Vertue sculp.), volume title, pp. iii–xx, 750 pp., 19 leaves; 2 leaves (table) between pp. 40 and 41. All title pages in red and black. Magnificent set, in contemporary full calf, elaborate gilt dentelles on all covers, tastefully rebounded and gilt, spines dated.

THE FIRST edition edited by David Mallet (1705?–1765) appeared in four folio volumes (London: A. Millar, 1740). Dedicated to the celebrated physician of George II, Richard Mead (1673–1754), the advertisement in volume I states that the present edition is “more methodical, more elegant, and every way more complete, than any preceding.” Each volume carries a large, beautifully engraved book label (dated 1754 in ink), being the mark of presentation to Frederick Montagu (1733–1800) when he attended Trinity College, Cambridge. A prominent politician under George III, Montagu was Lord of the Treasury (1782–83) and privy councillor in 1790. These volumes also carry the engraved bookplate of a descendant, Frederick J. O. Montagu. Wellcome (II, 82) lists the editions of 1740 and 1765 only. (Watt, I, 61e)

BACON, Roger

De Arte Chymiae scripta. Cui accesserunt opuscula alia ejusdem Authoris.

Frankfurt: Typis Joannis Saurii, Sumptibus Joannis Theobaldi Schönwetteri. 1603.

First edition, first issue. 12mo. 408 pp. Woodcut ornament on title. Fine copy in early-nineteenth-century blind-stamped half calf, marbled boards, maroon morocco label. From the library of Henry Cavendish, with his ownership stamp on verso of title leaf.

THE CHEMICAL writings of Roger Bacon, comprising seven tracts listed by Ferguson. The sheets of this edition were reissued with a new title page (Frankfurt: J. Saurius, 1606).

The book reappeared with the title *Thesaurus Chemicus* (Frankfurt: J. C. Unckel, 1620, 12mo.), but “in the reissue . . . the title-page and rest of sheet A (i.e., first 24 pp.) were set up afresh. There is no other difference between the two editions” (Ferguson). An edition of Frankfurt, 1612, in 12mo. is mentioned by Baumer (*Bibliotheca Chemica*, 1782, p. 77). A precious and important association copy, which belonged to the great English scientist Henry Cavendish (1731–1810), F.R.S., discoverer of the composition of water and celebrated experimenter in chemistry and physics. Very rare. (Bolton, 959; D.S.B., I, 384; Duveen, 38; Ferchl, 18; Ferguson, I, 63; Ferguson Coll., 58; Neu, 180; Poggendorff, I, 85; Smith, 27; Watt, I, 61m; Wellcome, I, 620)

BACON, Roger

The Mirror of Alchimy, Composed by the thrice-famous and learned Fryer, Roger Bachon, sometimes fellow of Martin Colledge: and afterwards of Brasen-nose Colledge in Oxenforde. Also a most excellent and learned discourse of the admirable force and efficacie of Art and Nature, written by the same Author. With certaine other worthie Treatises of the like Argument. . . .

London: Printed for Richard Olive. 1597.

First English edition. 4to. 2 leaves, 84 pp. Woodcut device on title. Several outer margins slightly wormed (not affecting text), and corners of signatures I3 and I4 frayed (with loss of a few words of text). Title and first 3 leaves (signature A) in photographic facsimile, and final leaf (signature L4, pp. 83–84) in nineteenth-century manuscript in ink. A working copy, apart from the defects, in fairly good condition; bound in half morocco antique, marbled boards, spine gilt-lettered and dated.

AN ANONYMOUS translation of the *Speculum Alchymiae* (Nuremberg, 1541), by the great English philosopher Roger Bacon (1214?–1294), “who studied at Oxford and Paris, where he probably graduated doctor” (D.N.B.). “Among the great rarities of alchemical literature” (Ferguson, *J. Alchem. Soc.*, II, 6, p. 4). Bacon’s “skill in mathematics, experimental science and mechanical invention was so remarkable for his time that . . . he acquired the reputation . . . of being a magician” (Ferguson). He was “the first Englishman who is known to have cultivated alchemical philosophy” (Waite). An amplified version is found in William Salmon’s *Medicina Practica* (London, 1692) and a condensed version in the *Collectanea Chymica* (London, 1684). Perfect copies are extremely rare. There is no copy of this edition in the famous Mellon, Smith, Waller, or Wellcome collections. Not in Durling, Edelstein, Ferchl, Partington, Poggendorff, etc. (Bolton, 959; D.S.B., I, 384; Duveen, 37; Ferguson, I, 65 [not in Young Coll.]; Ferguson Coll., 59; Honeyman, 186; Hoover, 72; Neu, 186; S.T.C., 1182; Waite, 279; Watt, I, 61m)

BACON, Roger

The Most Famous History of the Learned Fryer Bacon; shewing His Parentage and Birth. How he came to be a Scholar and to study Art-Magick; with the many wonderful Things he did in his Life-time, to the Amazement of the whole World; in making a Brazen Head, to have Walled all England with Brass: With his Penitent Death, also, The Merry Waggeries of his Man Miles: And the Exploits of Vandermaster, a German, and Fryer Bungy, an English Conjuror. With the manner of their woful Deaths, as a Warning to others. Being all very profitable and pleasant to the Reader.

London: Printed for Tho. Norris, at the Sign of the Looking-glass on London-Bridge. (Not dated).

First edition. 4to. 12 leaves (unpaginated; i.e., A–C4). Large, rather crudely executed woodcut on title page. Few leaves shaved and edges frayed, B1 lacking piece from lower inner margin (with loss of some text), minor age stains; otherwise good copy in late-eighteenth-century half calf, marbled boards, spine unlettered.

THE FIRST edition of the shorter version of the history of Roger Bacon and his associates, providing details of his life not available in more formal biographies. The anonymous author has based the work on *The Honorable Historie of Prier Bacon and Prier Bongay* (London, E. White, 1594, 4to.; *ibid.*, Elizabeth Allde, 1630, 4to.; S.T.C. 12267 and 12268, respectively) and on *The Famous History of Frier Bacon . . .* (London, W. Thackery, n.d., 4to.). Although tentatively dated “c. 1700” in the Wing catalogue, to judge by the style of the title woodcut, the typography, and the poor quality of the paper, the book could have been printed in the 1640s. Extremely rare. Not in Ferguson, Ferguson Coll., Watt, Wellcome, etc. (Wing, M2887, including this copy)

BACON, Roger

Opus Majus ad Clementem Quartum, Pontificem Romanum. Ex Ms. Codice Dubliniensi, cum aliis quibusdam collato, nunc primum edidit S. Jebb, M.D.

London: Typis Gulielmi Bowyer. 1733.

First edition. Folio. 15 leaves, 477, (1) pp., 2 leaves. With 2 folding engraved plates (facing pp. 67 and 343) and 1 double-page printed table (between pp. 130 and 131). Title page printed in red and black. Fine large paper copy (36.68 × 23.83 cm.), in original blind-tooled paneled calf, strongly and tastefully rebaked to match, spine gilt, morocco label.

THE *Opus majus* is one of the greatest scientific and philosophical works of the Middle Ages. Dedicated to Dr. Richard Mead, it comprises *De Centris Graviorum*, *De Ponderibus*, *De Valore Musices*, *De Arte Experimentalis*, *De*

The Most Famous
HISTORY
 OF THE
Learned Fryer Bacon:

SHEWING

His Parentage and Birth. How he came to be a Scholar and to study Art-Magick; with the many wonderful Things he did in his Life-time, to the Amazement of the whole World; in making a *Brazen Head*, to have Walled all *England* with Brass: With his Penitent Death,

ALSO,

The Merry Waggeries of his Man *MILES*: And the Exploits of *VANDERMASTER*, a *German*, and *Fryer BUNGT*, an *English* Conjuror. With the manner of their woful Deaths, as a Warning to others.

Being all very profitable and pleasant to the Reader.



London: Printed for Tho. Norris, at the Sign of the Looking-glass, on London-Bridge.

Bacon, Roger. Most Famous History. London, (not dated).

Radiis, Solaribus, De Coloribus per Artem Fiendis, De Visione Reflexa, De Scientia Perspectiva, etc. The *Perspectiva*, published over a century earlier (Frankfurt, Wolfgang Richter, 1614), comprising book five of the *Opus majus*, was not printed in its entirety until it appeared in this edition. Another edition appeared (Venice, Francesco Pitteri, 1750), edited by Giovanni degli Agostini and Johannes Illuminatus. Samuel Jebb (1694?–1772), editor of this monumental work, was a physician and scholar (see D.N.B.). The *Opus majus* remained as a manuscript in Trinity College, Dublin; written probably at the end of the sixteenth century (containing diagrams by the astrological writer Sir Christopher Heyden), until Jebb's fine edition. A rare and important book. Not in Duveen, Edelstein, Neu, Osler, Smith, Waller, etc. (Blake, 26; Bolton, 278; Brunet, I, 602 ["Édition recherchée"]; Caillet, 618; Cushing, B20; Dibner, *Heralds of Science*, 76; D.S.B., I, 384; Ferchl, 18; Ferguson, I, 65 [not in Young Coll.]; Ferguson Coll., 59; Poggendorff, I, 85; Sparrow, *Milestones of Science*, 18; Thornton & Tully, 39; Watt, I, 61n; Wellcome, II, 83)

BACON, Roger

The Philosopher's Stone; or Grand Elixir, Discover'd by Friar Bacon; and now Publish'd as a Counterpart to the Degradation of Gold by an Anti-Elixir. With a few Notes, by No Adept. Saepe latet Vitium, proximitate Boni.

London: Printed by H. Woodfall: sold by J. Roberts, in Warwick-Lane; and A. Dodd, without Temple-Bar. 1739. (Price One Shilling)

First edition of this translation. 4to. 56 pp. Fine, crisp, wide-margined copy, in half calf antique, marbled boards, spine gilt-lettered and dated. Old stamp ("Bradford Public Libraries") on verso of title and page 49.

"THE FOLLOWING Piece is a Translation from the original Latin of Roger Bacon's *Speculum Alchemiae*, or *Mirror of Alchymy*" (Preface). The anonymous translator published the book in support of Boyle's *An Historical Account of a Degradation of Gold* . . . (London, 1739; Fulton, 137), which had recently appeared (first ed., 1678; Fulton, 136). On almost every page there are detailed and extensive footnotes, containing references to the works of Boyle, Becher, Stahl, Homberg, et al. An extremely rare book, unknown to Fulton. The British Library copy was acquired only in the 1960s. Not in the usual early chemical bibliographies. (Ferguson Coll., 59)

BAECK, Matthias, and PAHLMAN, Johannes Adolphus

Dissertatio de Aqua Medicata Kuppisensi quam, Venia Ampliss. Fac. Philos. Aboëns. Publicae censurae subjiciunt Mathias Baeck, Philosophiae & Medicinae Doctor, Imperialis Collegii Medici Fennici Membrum, et Johannes Adolphus Pahlman, Nylandus, in Auditorio Philosoph. die XXVII Junii MDCCCXVIII, horis a.m. consuetis.

Abo: Typis Frenckellianis. (1818).

First edition. Large 4to. 1 leaf, 16 pp. Fine, large, uncut copy, in maroon quarter morocco, marbled boards, spine gilt-lettered and dated.

A RARE FINNISH dissertation on the Kuppis well and the chemical analysis of its water, with references to the works of Bergman, Berzelius, Hisinger, et al. The water evidently contained a great many elements (e.g., calcium, magnesium, sodium, iron, and manganese) and salts (e.g., chlorides, sulphates, and carbonates). The analysis was carried out by the addition to the water of reagents that are still in use today (e.g., limewater, barium chloride, silver nitrate, potassium ferrocyanide, and ferrous sulphate). An interesting work, apparently unrecorded.

BAGLIVI, Giorgio

De Praxi Medica ad priscam observandi rationem revocanda, libri duo. Accedunt dissertationes novae. I. De anatome, morsu, et effectibus tarantulae . . . II. De usu, et abusu vesicantium. III. Experimenta varia anatomico infusoria. IV. De circulatione sanguinis in rana. V. Historia morbi, et sectionis cadaveris Marcelli Malpighii . . . VI. Appendix de apoplexiis . . .

Lyons: Sumptibus Anisson, & Joann. Posuel. 1699.

Second (first Lyons) edition. 8vo. 8 leaves, 407, (1) pp. Engraved plate (depicting 2 tarantulas) facing page 289. Very good copy in contemporary calf, rebounded in morocco, maroon label gilt, spine dated. From the Wellcome Library, with release stamp on verso of title leaf.

BAGLIVI (1668–1707), a prominent iatromathematician, physician to Pope Innocent XII, and professor of anatomy in the Sacred College in Rome, was an exponent of the experimental method taught by Francis Bacon. He "had a short but brilliant career, . . . wrote *Praxis medica* and . . . devoted much time to experimental physiology" (Garrison-Morton). The present edition is a reprint of the first (Rome, 1696) and is "a lucid program of what medicine should be in the future" (D.S.B.). Baglivi's famous work on the tarantula and its venom (pp. 281–344), his biochemical experiments on animals (pp. 345–401), and the postmortem dissection he carried out on Malpighi (pp. 402–404) are

here described. The chemical importance of this and other works by Baglivi is covered by Partington. The Lyons edition is much rarer than the first, which is cited by D.S.B., *Heirs of Hippocrates* (no. 472), Neu, 191, etc. An English translation appeared as *The practice of physick* (London, 1704; see, Osler, 1882). Waller (no. 605) and Watt (I, 62) cite the Leiden, 1700 edition only. (Garrison-Morton, 68; Partington, II, 448; Wellcome, II, 84)

BAILLIE, John

A Letter to Dr. — in Answer to a Tract in the Bibliothéque Ancienne & Moderne, relating to some Passages in Dr. Friend's History of Physick. With Remarks upon the Ages of the Greek Physicians, the Introduction of Chymistry into Physick, the Antiquity of Compound Medicines, the Age of Fallopius, &c. . . .

London: Printed for J. Roberts in Warwick-lane. 1728.

First edition. 8vo. (in 4s). 2 leaves, 80 pp. Half title and title lightly embrowned; otherwise very good copy, in quarter cloth antique, plain boards. From the library of Garth Huston, M.D. (1926–1987), with bookplate.

A DEFENSE OF *The history of physick* (London, 1725–26), by the chemist and physician John Friend (1675–1728). John Baillie, of whom nothing is recorded, was evidently a physician of some standing as he defends Friend's work against an anonymous French author who claimed that Friend had taken his information without acknowledgment from the *Histoire de la médecine* (Geneva, 1696) of Daniel Le Clerc (1652–1728). This tract contains much of interest on the history of chemistry. The Wellcome copy lacks the half title, and Watt gives the wrong date (1727). Very rare. (Watt, I, 63n; Wellcome, II, 86)

BAILLY, Jean Sylvain

Lettres sur l'Origine des Sciences, et sur celle des Peuples de l'Asie, Adressées à M. de Voltaire par M. Bailly, & précédées de quelques Lettres de M. de Voltaire à l'Auteur. . . .

London: Chez M. Elmesly, et Paris: Chez Freres Debure. 1777.

First edition. 8vo. 2 leaves, 348 pp. Very good copy in contemporary mottled calf gilt, rebounded, dark-blue morocco label, spine dated. From the library of Élie Antoine Octave Lignier (1855–1916), with his signature in ink on verso of first free endpaper (see D.S.B., VIII, 354). Armorial bookplate: Henry & Mary Ponsonby.

BAILLY (1736–1793), an eminent astronomer, played an important role in the French Revolution. Elected president of the National Assembly on 17 June 1789 and mayor of Paris the same year, he eventually fell victim to the mob and was

guillotined in 1793. He was a friend of Lavoisier (see Duveen and Klickstein, numerous references), who was executed in 1794. Bailly published many works on astronomy (see Poggendorff). The present book on the origins of the astronomical and mathematical sciences in Asia is of special importance for the comments, rebuttals, and correspondence of Voltaire, which are here reprinted in extenso. The controversy represented in this exchange of letters resulted from the publication of Bailly's *Histoire de l'astronomie ancienne* (1775). In particular Voltaire could not accept Bailly's argument that an antediluvian astronomy prepared the way for the astronomy of recorded history. Of some chemical interest, with references to Buffon, Mairan, Reaumur, et al., the last two chapters on the central heat of the earth and the cooling of the terrestrial globe are original contributions. A sequel appeared in 1778. (Bengesco, 2008; Blake, 27; Caillet, 650; Cioranescu, 9200; D.S.B., I, 402; Haber, *Age of the World from Moses to Darwin* (1966), 132–135; Houzeau & Lancaster, I, 25; Lalande, 560; Poggendorff, I, 89; Sotheran, Cat. 875 [1946], 306 ["Rare"]; Waller, 12205; Watt, I, 64y; Wellcome, II, 87)

BAIRO, Pietro

Secreti Medicinali . . . Ne quali contengono i rimedii che si possono usar in tutte l'infermità che vengono all'huomo, cominciando da capelli fino alle piante de piedi. . . .

Venice: (Appresso F. Sansovino. 1562.)

First Italian edition, second issue. 8vo. 8 leaves, 262 numbered leaves, 2 leaves (last blank). Woodcut device on title, historiated and decorative woodcut initials and headpieces. Printed in italics. An immaculate copy in original overlapping limp vellum, old ink lettering on spine. Bookplates: Hohenstein Tetschen and Starkenstein libraries.

AN IMPORTANT book of medical secrets, of pharmaceutical chemical interest, by Bairo (or Bayro, 1468–1558), a distinguished physician of Turin who was consulted by persons of the highest rank and who ultimately became private physician to Charles II, duke of Savoy. Originally appearing as *De medendis humani corporis malis enchiridion* (Basel: P. Perna, 1560), the book was translated into Italian by Giovanni Tatti (pseudonym of Francesco Sansovino). In his note to the reader Tatti states that this posthumous publication of the work of Bairo "is rare and the secrets not feigned but true and drawn from Galen, Avicenna, Mesue, Hippocrates, and other great men" (Thorndike). Further editions appeared in 1585, 1592, and 1602. The first issue of 1561 is in the British Library, Duveen, Ferguson (*Books of Secrets*), Neu, Thorndike, and Wellcome. The present second issue is extremely rare and is listed only by Durling and Wellcome. In the first issue folios 119–120 were duplicated, 167–168 were omitted, and the colophon was dated

1561. The present second issue has correct foliation, a colophon dated 1562, and a reset title page. Otherwise the two issues are made up of the same sheets. (British Library, *S.T.C. Italian Books*, 68; Durling, 447; Duveen, 39; Ferguson, *Secrets*, II, 1st suppl., 28; Neu, 205; Thorndike, VI, 217; Wellcome, I, 643)

BAKEWELL, Robert

An Introduction to Mineralogy: comprising the natural history and characters of minerals; and a description of rocks, both simple and aggregated; with a new tabular arrangement of earthy minerals, on a plan designed to facilitate the knowledge of that class of substances. To which is prefixed: a series of conversations explaining the principles of the science, and the elements of crystallography. . . .

London: Printed for Longman, Hurst, Rees, Orme, and Brown. 1819.

First edition. 8vo. xx, 668 pp., 1 leaf. With 5 folding engraved plates of crystals. Fine, uncut and unpressed copy, in modern quarter cloth, boards, spine gilt-lettered.

BAKEWELL (1768–1843), a celebrated geologist, carried out extensive mineralogical surveys of England and Ireland. His *Introduction to geology* (London, 1813) was deservedly famous, and the present work on mineralogy is a sequel. The author established himself in London as a geological instructor and subsequently extended his surveys to the Alps, publishing an account of his travels in 1823. His biography appears in the D.N.B. and D.S.B. Bakewell possessed detailed knowledge of chemistry and crystallography, and in the present work minerals are classified and discussed according to their chemical composition. Poggendorff (I, 91) and Watt (I, 65g) list other titles by Bakewell, but not this. Very scarce. Not in Hoover, Thornton & Tully, Ward & Carozzi, Waller, Wellcome, Zittel, or the usual chemical bibliographies. (D.S.B., I, 413; Smith, 29)

BALDO, Baldi

Baldi Baldii Florentini Medicinae Practicae in Almo Urbis Gymnasio Professoris Ordinarii. Disquisitio Iatrophysica ad textum 23. libri Hippocratis de Aere, Aquis, & Locis; Num in eo legi debeat . . . id est, biliosissimum, vel turbidissimum. In qua de Calculorum Causis, ac de Aquae Tiberis bonitate strictim disseritur. Et Questio de majori nunc, quam praeterito saeculo, Calculosorum in Urbe frequentia, elucidatur. Rome: Ex Typographia Ludovici Grignani. 1637.

First edition. 4to. 6 leaves, 69 pp., 1 leaf. Fine, crisp copy, in contemporary vellum. Inscription in ink on title reads "Marcus Antonius frasso Sardus Territarius Aromatarius," dated 1725. A few neat marginal notes in ink in an early hand.

BALDO, or Baldius, was an eminent physician and medical writer of the seventeenth century who was a native of Florence. Watt (65z) says that he published "many works which bear a high character" and gives the titles of several, but not the present one. Thorndike (VII, 539; VIII, 65, 70) discusses several of Baldo's works but omits any reference to the present publication. Duveen describes this as "a rare treatise on the waters of the Tiber" but gives no further details. In this work the author discusses the formation of calculi in the various organs of the body (e.g., kidney, bile, and bladder), with his theory of their origin. He also refers to the explanations for the formation of calculi given by such authorities as Aristotle, Galen, Hippocrates, Fernel, Scaliger, and Sennert. There are discussions of salts, tartar, earths, etc., which are of chemical interest, and, of course, the virtues of the water of the Tiber River in alleviating the suffering caused by calculi are extolled. A rare book, which is not listed by most of the early chemical bibliographers. (Duveen, 41; Neu, 213; Wellcome, I, 6839)

BALDUIN, Christian Adolf

Aurum Aurae, Vi Magnetismi universalis attractum, per inventorem anagrammatizomenum: Sic (infra, supra) Sol Duplus Abundat in Auris.

Colonia ad Spream (Berlin): Impensis Ruperti Völckers, Bibliop. 1674.

First "Elsholtz" edition. 8vo. 53, (3) pp. (last blank). Very good copy in original vellum. Bound with Elsholtz, J. S., *Destillatoria Curiosa* (Berlin, 1674).

"THE TITLE 'Sic Sol Duplus Abundat in Auris' is an anagram for Christianus Adolphus Balduinus, omitting the letter h. This tract (according to the epilogue by Jo. Sig. Elsholz) was published the previous year, but without the name of the place; and as it was not to be had at the booksellers he took the liberty of reprinting it, hoping that the author, whoever he was, would not be offended. It was somewhat enlarged in the edition of the following year" (Ferguson). A very curious alchemical work "on the extraction of an astral gold from the atmosphere by universal magnetism, potable gold, the virtues of the atmospheric gold in the three kingdoms of Nature, and other similar matters" (Partington). Balduin (or Baldewein, 1632–1682), an alchemist and member of the Academia Naturae Curiosorum in 1673, took the name Hermes and published in the *Miscellanea Curiosa* of this society several alchemical tracts, including one on a "Hermetic phosphorus," a phosphor long known as Balduin's phosphorus. He was elected F.R.S. in 1676. Not in Bolton, Caillet, Ferchl, Harvey, Krivatsy, Watt, etc. (Duveen, 41; Edelstein, 132; Ferguson, I, 67; Ferguson Coll., 62; Neu, 214; Partington, II, 338; Wellcome, II, 91)

BALDUIN, Christian Adolf

Aurum Superius & Inferius Aurae Superioris & Inferioris Hermeticum, . . .

Amsterdam: Apud Joannem Jansonium à Waesberge. 1675.

Second (first Amsterdam) edition. 12mo. 10 leaves, 96 pp., 7 leaves (last page blank). Folding engraved frontispiece (by C. Dekker, dated 1675) and 2 folding copperplates by C. Dekker (at p. 41, dated 1673; and p. 92, dated 1674). Very good copy in original calf, rebacked with unlettered spine laid on.

THE SECOND, slightly enlarged edition of *Aurum Aurae, Vi Magnetismi* (Berlin, 1674). In 1675 two 12mo. editions appeared: this and another containing 173 pages of text. It is probable that the present edition with fewer pages is the second, this being again enlarged later in 1675 with a Frankfurt and Leipzig imprint as the third edition. The final seven unnumbered leaves comprise *Phosphorus Hermeticus, Sive Magnes Luminaris*, with a separate divisional title, in which is described the preparation of the second known phosphor (partly calcined impure calcium nitrate containing a trace of sulphur or calcium sulphide). Balduin sent a specimen of it in a gilded silver box to Henry Oldenberg, Secretary of the Royal Society. The *Phosphorus Hermeticus* was first published in the *Miscellanea Curiosa* for 1673–74 before appearing in the present edition. For further details see E. N. Harvey, "Petit traité fort rare de la Pierre philosophale" (Caillet). Bolton (p. 959) lists only the 173-page third edition of 1675. Not in Krivatsy, Poggendorff, etc. (Caillet, 662; Duveen, 41; Ferchl, 20; Ferguson, I, 68; Ferguson Coll., 62; Harvey, *History of Luminescence*, pp. 321–322; Neu, 215; Partington, II, 338; Smith, 29; Verginelli, 22; Wellcome, II, 91)

BALDUIN, Christian Adolf

Hermes Curiosus, Sive Inventa et Experimenta Physico-Chymica Nova . . .

Nuremberg: n.p. 1683.

4to. 12 unnumbered leaves (sign. A–C4). Fine copy with wide margins, in calf antique, spine gilt-lettered and dated.

"A RARE WORK describing twelve hermetic preparations by the author" (Duveen). Ferguson (I, 68) describes two 12mo. editions of 1680 and mentions editions of 1667 (12mo.) and 1679 (8vo.). Partington (II, 338) lists an edition (Nuremberg, 1683) with fifty-eight pages in 12mo. Although it contains references to Balduin's phosphor on pages 9, 13, 14, 15, and elsewhere, this work is not mentioned by E. N. Harvey. This is the copy described by Duveen in his *Bibliotheca Alchemica et Chymica*, and it bears his crimson bookplate on the front pastedown endpaper. Not in Caillet, Edelstein, Ferguson, Ferguson Coll., Krivatsy, Smith, Thorndike, etc. (Duveen, 41; Wellcome, II, 91)

BALNEIS

De Balneis Omnia quae extant apud Graecos, Latinos, et Arabas, tam medicos quam quoscumque ceterarum artium probatos scriptores: qui vel integris libris, vel quoquo alio modo hanc materiam tractaverunt: nuper hinc inde accurate conquisita & excerpta, atque in unum tandem hoc volumen redacta. In quo aquarum ac thermarum omnium, quae in toto fere orbe terrarum sunt, Metallorum item, & reliquorum Mineralium naturae, vires, atque usus exquisitissime explicantur: indicibus quatuor apposis . . .

Venice: Apud haeredes Lucaeantonii Juntae. 1553.

First edition. Folio. 14 + 497 folios. Woodcut device on title page. Roman letter. Numerous historiated woodcut capitals, and 5 full-page woodcuts. Fine copy, with wide fore- and lower margins, in old vellum.

THE MOST complete collection of early writings on balneology, of chemical interest. Edited by Tomaso Giunta, this beautifully printed and illustrated work incorporates tracts and selections from more than seventy authorities, including Agricola, Avenzoar, Avicenna, Bacci, Cardan, Gesner (the first edition of his work on the hot springs of Germany and Switzerland), Galen, Petrus de Abano, Pliny, Savonarola, Viottus, and Vitruvius. In addition to an extensive history of balneology and an exact description of the approximately two hundred then known baths, this book is an excellent example of fine printing from the famous Giunta press. The remarkable full-page woodcuts depict public baths, a map of the baths along the Adriatic, and a view of the workings of an ancient Roman bath. The ten leaves following the colophon were added as an afterthought. "Rare et recherché" (Brunet). Not in the usual chemical bibliographies. (Brunet, I, 628; Durling, 1101; Duveen, 42; *Heirs of Hippocrates*, 126; Neu, 1102; Osler, 1902; Wellcome, I, 652)

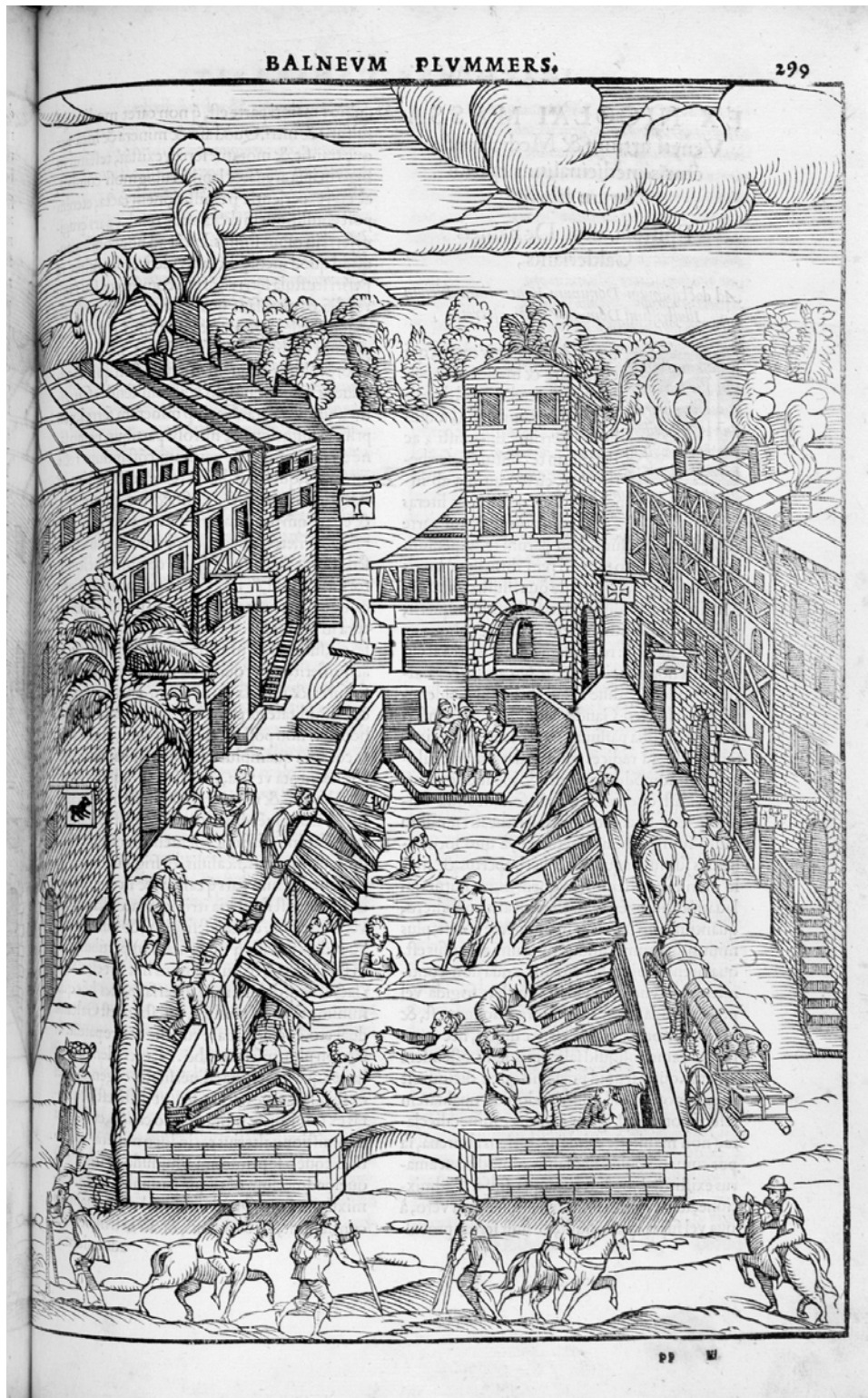
BAÑARES, Gregorio

Filosofia Farmacéutica, ó la Farmacia reducida á sus Verdaderos Principios, que en beneficio de la salud pública y de los jóvenes que se dedican á esta ciencia. . . .

Madrid: En la Imprenta Real. 1804.

First edition. 2 vols., 8vo. I: 15 leaves, 304 pp. II: 3 leaves, 239, (1) pp. Magnificent copy in contemporary crimson morocco, spines richly gilt, gilt dentelles on covers, all edges gilt, green morocco labels, green silk pastedown and free endpapers.

A COMPREHENSIVE SPANISH work on pharmaceutical chemistry. The first volume is entirely on pure chemistry, while only pages 52–176 of volume II are on pharmacy per se. There is a very detailed index (II, pp. 177–238). The work of Lavoisier on oxygen is discussed in volume I (pp.



Balnis. De Balneis Omnia. Venice, 1553.

34 et seq.), and there are numerous references to the publications of other contemporary chemists. Bañares (1761–1824) was a professor of botany and materia medica and a member of the Royal College of Apothecaries in Madrid. Blocker (p. 20) and Wellcome (II, 94) list the second edition (Madrid: Impr. Real, 1814, 2 vols., 8vo.) but not the first. (Palau, 23401)

BANCROFT, Edward

Experimental Researches concerning the Philosophy of Permanent Colours; and the best means of producing them, by dyeing, calico printing, &c. . . .

London: Printed for T. Cadell, Jun. and W. Davies. 1794, 1813.

First edition. 2 vols., 8vo. I: xlvii, (1), 456 pp. With half title. Some dust marking; otherwise very good copy, uncut and unpressed, in modern gilt-ruled quarter calf, marbled boards, black morocco label gilt. II: 3 leaves, 518 pp. Very good copy bound uniformly with, but slightly shorter than, volume I.

THE FIRST complete edition of an important book on dyeing and calico printing, in which the author announced important discoveries. Born in Massachusetts, Bancroft (1744–1821) practiced medicine in Guiana, then emigrated to England, where he obtained an M.D. and in 1773 was elected F.R.S. At the outbreak of the American Revolution he was employed by the British as a double agent and also acted as a spy for Benjamin Franklin. He was cultivated by eminent scientists (including Priestley) and by politicians. In 1785 he secured special rights by act of Parliament for the importing and use of a certain kind of oak bark in calico printing. A valuable account and discussion of the theory of colors and methods of fixing them is contained in the present work. “He introduced the important distinction between ‘substantive’ dyes and ‘adjective’ dyes” (Partington). The preface to volume I of the second edition (1813) states that only a thousand copies of volume I of the 1794 edition were printed and that secondhand copies were being sold at up to six times their original price. Volume I is now extremely rare. Not in Blake, D.S.B., Waller, Wellcome, or the usual chemical bibliographies. (Edelstein, 2778; Ferchl, 21; Lawrie, No. 26; Partington, III, 515; Poggendorff, I, 96; Watt, I, 68t)

BANCROFT, Edward

Experimental Researches concerning the Philosophy of Permanent Colours; and the best means of producing them, by dyeing, calico printing, &c. . . .

London: Printed for T. Cadell and W. Davies. 1813.

Second edition of vol. I, first edition of vol. II. 2 vols., 8vo., in 1. I: lxi, (1) pp., 2 leaves, 542 pp. II: 1 leaf, 518 pp. Contents

leaf of volume II and index (pp. 487–518) are bound in volume I. Half titles missing; otherwise good copy in nineteenth-century mottled half calf, marbled boards, maroon morocco label gilt, spine dated. From the library of the Chemical Society of London, with old stamp on first title page and cancellation stamp.

THE GREATLY enlarged, updated, and most complete edition of volume I (first: 1794) of this important work, containing a long “Introduction, concerning the origin and progress of dyeing and calico printing.” “Stahl, Hellot, and Macquer divided dyes into two classes, according as they were capable of being fixed on cloth with or without mordants, and Bancroft distinguished them as adjective and substantive dyes” (Ernst von Meyer). One of the most definitive and comprehensive works on dyeing of the period. An American reprint (Philadelphia: T. Dobson, 1814, 2 vols., 8vo.) is listed by Bolton (p. 280) and Smith (p. 30). Two German translations also appeared: *Neues englisches Färbebuch . . . Deutsch von Buchner* (Berlin, 1817–18, 2 vols.; see Bolton, *First Supplement*, 75); and *Neues englisches Färbebuch . . . versehen von Dr. Dingier und Dr. von Kurrer* (1817–18, 2 vols.; see Lawrie, No. 27). Not in Bolton, D.S.B., Morgan, Smith, Waller, etc. (Duveen, 639; Edelstein, 2779; Ferchl, 21; Lawrie, No. 26; Partington, III, 515; Poggendorff, I, 96; Sotheran, Cat. 800 [1926], 12724 [“Scarce”]; Watt, I, 68t; Wellcome, II, 94)

BANIERES, Jean

Examen et Réfutation des Elemens de la Philosophie de Neuton de M. De Voltaire, avec une Dissertation sur la Réflexion & la Réfraction de la Lumiere. Dedié à Monseigneur le Due de Chartres. Par M. Jean Banieres.

Paris: Rue S. Jacques, Chez Lambert, à la Sagesse, Durand, à Saint Landry. 1739.

First edition. 8vo. 2 leaves, xcvi, (10), 308, (4) pp. Title in red and black, with copperplate vignette. With 13 engraved headpieces (some repeated) and 5 folding engraved plates (bound in a companion volume: Le Ratz de Lanthenec, *Examen et réfutation de quelques opinions*, Paris, 1739). Fine copy in contemporary speckled calf, rebounded, green morocco label.

A CRITICAL EXAMINATION and refutation by Banieres (1700–?) of Voltaire’s immensely popular *Elémens de la philosophie de Neuton* (Amsterdam, 1738). “As an introduction, the preface comprises a dissertation on the reflection and refraction of light. He defines light, explains its properties, measures distances, and feels that Newton’s system is a very gratuitous supposition. He shows that there are indivisible atoms and these are the elements of light. He believes that the seven primary colors correspond with the seven tones of music” (Babson). This rare book is of some

chemical interest for its pronouncements on atoms, the interaction of light with matter, etc. (Babson, 39; Gray, 44; Sotheran, Cat. 789 [1924], 5734; Wallis, 44)

BAPST VON ROCHLITZ, Michael

(Vol. I): *Artzney Kunst und Wunder Buch. Darinnen neben allerley Alchymistischen und Iatrochymischen Wercken, Kunststücken und Experimenten vornemlich angezeigt wird . . . Der erste Theil.*

Leipzig: In Vorlegung Henning Grossen, n.d. (1590).

(Vol. II): *Der ander Theil. Des Wunderbarlichen Leib und Wundartzneybuchs. Darinnen neben vielen Heilsamen experimenten und Künstlichen Stücken, auch vornemlichen zubefinden, wozu das Blut der Menschen, Vogel, Fische, Thiere, und gewürme, dienstlichen, etc. . . .*

Eisleben: In Vorlegung Henningi Grossen. 1597.

(Vol. III): *Des Wunderbarlichen Leib und Wundartzneybuchs. Dritte Theil. In Welchen, neben vielen Denckwürdigen, Nützlichen, und Heilsamen dingen Kunststücken, und experimenten, . . .*

Eisleben: In Vorlegung Henningi Grossen. 1597.

First edition. 3 vols., 4to. I: 2 leaves, 240 folios, 5 leaves. Title in red and black. Black letter. Folio 65 omitted but text complete. Folio 240 misnumbered 140. II: 12 leaves, 462 pp., 1 leaf (dated 1604, in different type). Title in red and black within woodcut border. Black letter. Page 75 misnumbered 76. III: 4 leaves, 210 folios, 5 leaves (last blank). Black letter. Folio 125 omitted (text complete), and folio 176 misnumbered 175. Superb set in near-pristine condition, in full vellum antique, spines lettered and dated in ink.

AN ENCYCLOPEDIA work on alchemy and iatrochemistry. Bapst (1540–1603) became pastor at Mohorn, Saxony, and published religious, medical, and scientific books. Gmelin and Hofer describe him as a theosophical alchemist and mention other titles. Durling and Ferchl list similar titles but not the present work, which is of the greatest rarity and is not mentioned in the usual bibliographies. (Edelstein, 141)

BARBA, Alvaro Alonso

Alvaro Alonso Barba, Eines Spanischen Priesters, und Hoherfabrnen Natur-Kündigers Docimasie oder Probir- und Schmelz-Kunst, Darinnen besonders Von der Röst-Schmelz- und Scheide-Kunst, wie auch denen hierzu erforderlichen Defen gehandelt wird. Aus dem Frantzösischen in das Teutsche übersetzt und mit einem Anhang, wie man die nothwendige Salia, das Ertz zu schmelzen, und die Metallen zu scheiden, machen, und zurichten soll, vermehrt; Allen Berg-Bau-Liebenden, Ingleichen auch andern Ertz- und Natur-Kündigern zum besondern Nutzen, und Vergnügen heraus gegeben Von Matthia Godar. Mit nothwendigen Kupfern versehen.

Vienna: bey Peter Conrad Monath. Gedruckt bey Johann Thomas Trattner, Univ. Buchdr. 1749.

First Viennese edition. 8vo. 8 leaves, 155 + (1) pp., 2 leaves. Large finely etched folding frontispiece, and 7 folding engraved plates. Each of the plates is preceded by a leaf of explanatory text (not part of the pagination). Very good, crisp copy, in contemporary vellum.

THERE WERE two German translations of this classic work, one from the English (Hamburg: G. Schultz, 1676; Frankfurt: Fleischer, 1726 and 1739), and the present one from the French, by Matthias Godar. A later German edition followed (Vienna: Paul Kraus, 1767). All the German editions were in 8vo. This very rare Viennese edition is not mentioned by Bolton, Caillet, Duveen, Hoover, Neu, Poggendorff, Smith, Waller, Watt, Wellcome, etc. (D.S.B., I, 449; Ferguson, I, 70 [not in Young Coll.]; Partington, II, 40)

BARBA, Alvaro Alonso

Arte de los Metales, en que se enseña el Verdadero Beneficio de los de Oro, y Plata por Azogue. El modo de fundir los todos, y como se han de refinar, y apartar unos de otros. . . . Nuevamente ahora añadido. Con el tratado de las antiguas minas de España, que escribió Don Alonso Carrillo y Laso, . . .

Madrid: En la Imprenta de Bernardo Peralta. A costa de Francisco Assensio. (1729).

Second Madrid edition. 4to. 4 leaves, 224 pp., 2 leaves. Woodcut text figures (furnaces, stills, mining equipment). Title leaf backed, few minor stains; otherwise very good copy, in contemporary Spanish tree calf, gilt, maroon morocco label.

THE FIRST American book on mining and metallurgy, a reprint of the exceedingly rare first edition (Madrid, 1640); containing in addition the *Tratado curioso: Descripción breve de la antiguas minas de Espana* (pp. 195–224) of Alonso Carrillo, which originally appeared in 1724. The Spanish priest Barba (1569–ca. 1640) in 1588 was sent by the

Church to Peru, where he ministered to the natives and studied mineral deposits, mining, and the treatment of silver ores by amalgamation. The work is in five books. "The first deals with the generation of metals . . . the second with the extraction of silver by mercury; the third with the process he discovered in 1607 for the extraction of gold, silver and copper by boiling with salt solution and mercury in a copper vessel; the fourth with the extraction of these metals by fusion; and the fifth with the refining and separation of these metals" (Partington). Barba cites alchemical literature on the origins of earths, minerals, and salts, adding clear descriptions. He excelled in the "treatment of silver ores by amalgamation, using processes that he himself had discovered and that were in large measure responsible for the wealth of the province" (D.S.B.). Included is the earliest printed report on oil wells in Peru and Bolivia. Rare. (D.S.B., I, 448; Ferchl, 21; Ferguson Coll., 63; Honeyman, 197; Palau, 23623; Partington, II, 39; Sabin, 3253; Watt, I, 70a; Wellcome, II, 96)

BARBA, Alvaro Alonso

Arte de los Metales, en que se enseña el Verdadero Beneficio de los de Oro, y Plata por Azogue. El modo de fundirlos todos, y como se han de refinar, y apartar unos de otros. Compuesto por . . . Alvaro Alonso Barba . . . Nuevamente ahora añadido. Con el tratado de la antiguas minas de España, que escribió Don Alonso Carrillo y Laso, . . .
Madrid: En la oficina de la Viuda de Manuel Fernandez. A costa de Manuel de Godos . . . (n.d., 1770).

Fourth Madrid edition. 4to. 228 pp., 2 leaves (index). With woodcut capitals, head- and tailpieces. Woodcut figures in text (furnaces, stills, mining equipment). Near-fine copy in original vellum, contemporary ink-lettering on spine. Old ink signature (Mario Bandecral, Lima) on inner margin of title page.

A REPRINT OF the Madrid (1729) edition, with identical woodcuts in the text. This edition omits the fulsome dedication of 1729 by Francisco Assensio to Don Diego Arias Davila Croy Pacheco Coloma Halluvin, Marquès de Casa-Sola. The *Tratado curioso* of Alonso Carrillo (pp. 199–228) follows the text by Barba. All early Spanish editions are rare and, when found, are frequently defective. One thousand copies of a facsimile of this 1770 edition were published in 1925 by the Plimpton Press, Norwood, Massachusetts. Other editions printed in Spain: Madrid, 1640; Cordoba, 1675 and 1680; Madrid, 1729, 1768, 1770 (present edition), 1811, 1842, and 1852. South American editions in Spanish: Lima, 1817, 1842–43; Santiago de Chile, 1877–78. Translations into English, French, German, and Italian also appeared. (D.S.B., I, 448; Hoover, 82; Medina, V, 4437; Palau, 23624; Partington, II, 39; Wilson, Mineral Books, 1995, p. 58)

BARBA, Alvaro Alonso

The First Book of the Art of Mettals, in which is declared the manner of their generation; and the concomitants of them. Written in Spanish by Alvaro Alonso Barba, Master of Art, Curate of St. Bernards Parish in the Imperial City of Potosi, in the Kingdom of Peru in the West-Indies, in the year 1640. Translated in the year 1669. By the R. H. Edward Earl of Sandwich.

London: Printed for S. Mearne. 1674.

Bound with: *The Second Book of the Art of Mettals, wherein is taught the common way of refining silver by quicksilver. With some new rules added for the better performance of the same. . . .*

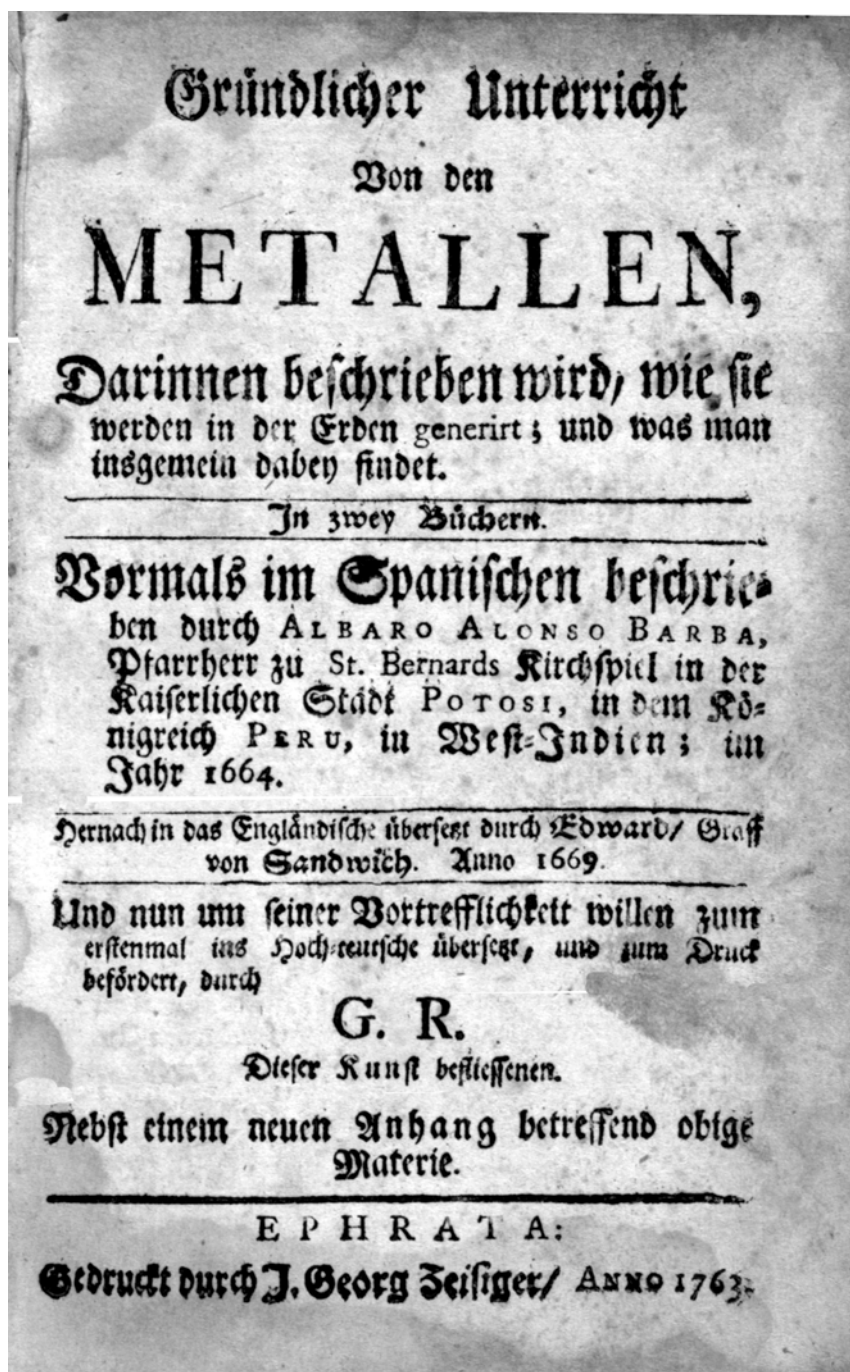
London: Printed for S. Mearne. 1674.

Second (first complete) English edition. 2 vols., 8vo., in 1. I: 2 leaves, 156 pp. II: 1 leaf, 91, (1) pp., 1 leaf (blank). With 1 copperplate (furnace and mercury still). Published simultaneously, both volumes have separate signatures and pagination. Fine copy in calf antique, maroon morocco label.

THE *Arte de los metales* (Madrid, 1640) was kept secret in Spain; however, a copy was obtained by Edward Montagu, first Earl of Sandwich (1660), when ambassador extraordinary to Spain. He translated two of its five "books" into English in 1669. The first edition of the translation (London, 1670; Wing, B679 & 681) contained errors, which are corrected in the second and best edition. The translator, Edward Montagu (1625–1672), a famous general and admiral who fought with the parliamentary army but later became loyal to Charles II, was killed when his ship was blown up by the Dutch in Solebay. Montagu's body was found near Harwich and buried in Westminster Abbey. Samuel Pepys was his secretary (see D.N.B.). (D.S.B., I, 448; Duveen, 42; Ferchl, 21; Ferguson, I, 70 [not in Young Coll.]; Ferguson Coll., 63; Hoover, 83; Neu, 221; Palau, 23630; Partington, II, 39; Sabin, 3254; Smith, 30; Sondheimer, 74; Sotheran, Cat. 773 [1919], 2883 ["Rare"]; Watt, I, 70a; Wellcome, II, 96; Wing, B680 & B682)

BARBA, Alvaro Alonso

Gründlicher Unterricht Von den Metallen, Darinnen beschrieben wird, wie sie werden in der Erden generirt; und was man insgemein dabey findet. In zwey Büchern. Vormalis im Spanischen beschrieben durch Alvaro Alonso Barba . . . Hernach in das Engländische übersetzt durch Edward, Graff von Sandwich. Anno 1669. Und nun um seiner Vortrefflichkeit willen zum erstenmal ins Hoch-teutsche übersetzt, und zum Druck befördert, durch G.R. Dieser Kunst beflissenem. Nebst einem neuen Anhang betreffend obige Materie.
Ephrata: Gedruckt durch J. Georg Zeisiger. 1763.



Barba. Gründlicher Unterricht von den Metallen. Ephrata, 1763.

First American edition. 8vo. 198, (4), 14 pp. Full-page woodcut plate of furnace, retorts, etc. (p. 187), and woodcut of miner (p. 118). Usual overall toning (typical of American paper of the period); otherwise very good copy, in original unlettered calf (small piece missing from top of spine, corners worn).

THE FIRST printing of Barba's treatise in colonial America, and the first in the Western Hemisphere. It is a liberal German translation of the 1669 English version by Edward, Earl of Sandwich, published in London, 1670 (Wing, B679 & 681). The appendix (14 pp.), not in the original, contains recipes for health, cures, and colors, and directions for carrying out difficult tasks (e.g., cutting glass). The woodcut of the miner was used as early as 1748 at the Ephrata Cloister, but the motto was altered by the time Zeisiger used the block in 1763. Zeisiger worked for the Bruderschaft press, the first in Ephrata. This book is one of only two with his imprint, both printed the same year, after which he ceased production. The thick laid paper was made at the Ephrata Cloister and bears the crown watermark (Gravell no. 198). The binding is typical of Lancaster or Cloister bindings of the period. Very rare. (Arndt, 267; Blake, 30; D.S.B., I, 449; Evans, 9333; Rink, 769)

BARBA, Alvaro Alonso

Metallurgie, ou l'Art de Tirer et de Purifier les Métaux, traduite de l'Espagnol d'Alphonse Barba avec les dissertations les plus rares sur les mines & les opérations métalliques. . .
Paris: Chez Pierre-Alexandre Le Prieur. 1751.

First complete French edition. 2 vols., 12mo. I: 28 leaves, pp. 360, 371–393, (3), 387–456; 8 leaves (collation complete). II: 6 leaves, 456 pp., 10 leaves. Pristine copy in original speckled calf, spines richly gilt, maroon labels. From the library of Louis XV, with old stamp in margin of each title page.

THE COMPLETE French translation of Barba's work, by Lenglet Dufresnoy, who used the pseudonym Gosford in signing the dedication to Grassin, director general of the French Mint. The first volume comprises the translation of Barba's five "books," plus a list of Peruvian mines (not in the Spanish editions of 1640 and 1729) and extracts from Vargas on metals. The second volume contains reprints (some of which are extracts) from earlier and contemporary metallurgical works by Malus, Bertereau, Granger, Bourgueville, Arcons, Browne, Merret, Jussieu, Reaumur, Homberg, Du Fay, Amand, Chambon, et al. Several of the works were excerpted from the *Philosophical Transactions* of the Royal Society, 1665–1678, while others first appeared in the *Mémoires de l'Académie des Sciences*, 1701–1719, or in the *Histoire de l'Académie*, 1727–1728. This very fine copy, undisturbed in its original binding, is probably of the first issue that was published without the two folding plates

found in the second issue, published later in 1751, which also appeared with a La Haye imprint in 1752 with the two plates. One of the most important translations of Barba, the present French edition is especially valuable for the additional reprints of early metallurgical works, most of which are now extremely rare. Not in Annen, Blake, Caillet, Duveen, Edelstein, Honeyman, Poggendorff, Ward & Carozzi, etc. (Bolton, 281; D.S.B., I, 449; Ferchl, 21; Ferguson, I, 70 [not in Young Coll.]; Ferguson Coll., 64; Hoover, 86; Neu, 222; Partington, II, 39; Smith, 31; Watt, I, 70a; Wellcome, II, 96)

BARBA, Alvaro Alonso

Traité de l'Art Métallique, extrait des oeuvres d'Alvare-Alfonse Barba, célèbre artiste dans les mines du Potozi, auquel on a joint un memoire concernant les mines de France; avec un tarif qui démontre les opérations qu'il faudroit faire pour tirer de ces mines l'or & l'argent qu'en tiroient les Romains, lorsqu'ils étoient maîtres des Gaules. Ouvrage enrichi de figures en taille-douce.
Paris: Chez Guillaume Saugrain. 1730.

First French edition. 12mo. 12 leaves, 264 pp., 20 leaves. Large folding engraved frontispiece (J. B. Scotin sculp.), depicting mining and smelting operations, and 7 folding copperplates of chemical and metallurgical equipment. Pristine copy in original calf, spine richly gilt, brown morocco label.

AN ABRIDGEMENT of Barba's classic work, the first to appear in the French language. The translator, C. Hautin de Villars, "un très habile transmutateur" (Caillet) who "knew Spanish well" (Ferguson), included his important *Mémoire concernant les mines de France* (pp. 223–264). Although the title page is dated 1730, the colophon reads "De l'Imprimerie d'André Knapen, 1729." At least four variants of the title page of this edition exist, the imprints of which are different: 1) André Knapen (Wellcome); 2) Saugrain Père (Duveen, Neu); 3) Pierre Prault (Honeyman); and 4) Guillaume Saugrain (this copy). No priority of issue has been established. The sheets of this edition were reissued three years later with a reset title page (Paris: Pierre Witte & Didot, 1733). (Caillet, 706 ["rare et recherché"]; D.S.B., I, 449; Duveen, 43; Ferchl, 21; Ferguson, I, 70 [not in Young Coll.]; Ferguson Coll., 63; Honeyman, 203 [imperf.]; Kress, 3847; Neu, 223; Palau, 23638; Partington, II, 39; Sabin, 3255; Sotheran, Cat. 832 [1932], 6345 ["Rare"]; Ward & Carozzi, 114; Watt, I, 70a; Wellcome, II, 96)

BARBA, Alvaro Alonso, PLATTES, Gabriel, and HOUGHTON, Thomas

A Collection of Scarce and Valuable Treatises, upon Metals, Mines, and Minerals. In four parts. Part I and II. Containing the art of metals, written originally in Spanish. By . . . Alvaro Alonso Barba, . . . Translated by the Earl of Sandwich, in the year 1669. Part III. Containing that invaluable piece of Mr. G. Plattes, viz. a discovery of all sorts of mines from gold to coal. Part IV. Houghton's compleat miner. London: Printed by C. Jephson, . . . for Olive Payne. 1738.

First edition, first issue. 12mo. 6 leaves, 170 pp., 4 leaves, pp. (171)–215, (1), 2 leaves, 66 pp., 1 leaf (advertisement). Engraved plate (facing p. 169) and full-page woodcut on page 57 (Houghton). Separate divisional titles to Barba (pt. II), Plattes, and Houghton. Excellent, crisp copy, in original calf, gilt. Armorial bookplate of the Hopetoun Library.

THE RARE first issue of this set of important works on mining and metallurgy. It was reissued in 1739, with a second edition in 1740. This is the third printing (first, 1670; second, 1674) of Edward Montagu's English translation of Barba. The work by Plattes (first, 1639) contains the earliest description in English of the parting of gold and silver with nitric acid. Houghton's *Compleat miner* (first, 1681) contains the laws and customs of the Derbyshire lead mines, with a useful glossary of mining terms (pp. 61–66). In her "advertisement" the enterprising woman publisher Olive Payne writes: "Having for some Years observed a great Demand for Books of this Kind (and for these Treatises in particular) which . . . are . . . better than any on the Subject . . . [I] was induced to the present Undertaking; . . . Barba's Book is . . . so scarce . . . there is but one Copy of the Spanish Edition in England, . . . in Sir Hans Sloan's Library; Plattes's Discovery is very much esteemed, . . . also Houghton is valuable for his Laws relating to Mines." (D.S.B., I, 448; Ferchl, 21; Ferguson, I, 70 [not in Young Coll.]; Honeyman, 205; Hoover, 225; Neu, 220; Palau, 23631; Partington, II, 39; Sotheran, Cat. 806 [1927], 13984)

BARBARIGO, Girolamo

Saggi Fisici di Girolamo Barbarigo. Padua: Presso i Fratelli Conzatti. 1779.

First edition. 8vo. xx pp. (including first blank leaf); 34 pp., 1 blank leaf; 107, (1) pp.; 158 pp., 1 blank leaf. Woodcut on title. Superb copy in pristine condition, uncut, with wide margins, in quarter calf antique, marbled boards, maroon morocco label gilt, spine dated, original marbled wrappers bound in. Old stamp on half title and title page: Biblioteca Camaldolese, Rua.

A COLLECTION OF four essays by Barbarigo (1723–1782), professor of physics at the University of Padua, dealing

mainly with the chemistry of gases. They are titled *Compendio delle teorie ed esperienze del Signor De-Buffon intorno al fuoco, ed al calore, Saggio sul fuoco e sul flogistico, Saggio sperimentale sull'aria*, and *Saggio teorico sull'aria*. The last two essays (occupying the larger part of the volume) cover new discoveries in the chemistry of gases. Priestley is mentioned on almost every page, and there are references to Black, Boyle, Cavendish, Fontana, Lavoisier, Macbride, Newton, Senebier, Volta, and many other earlier and contemporary chemists. A quotation from Benjamin Franklin ("I own I have too strong a penchant to the building of hypotheses; they indulge my natural indolence") precedes the title. A rare and important book, apparently unknown to chemical historians, not in the usual bibliographies. (Ferchl, 21 [under "Barbarigo"]; Poggendorff, I, 98)

BARBARO, Ermolao

Castigationes Plinii et Pomponii Melae. Rome: E. Silber, 1492 & 1493.

First edition. Folio (in 6s and 8s), 2 parts in 1 vol. 348 leaves. 39 lines and headlines. Roman and Greek letter, 4-line initial spaces with guide letters. Minor worming to spine; otherwise very good copy with wide margins (some uncut), in mid-eighteenth-century mottled half sheep, marbled boards, orange morocco label, spine gilt-ruled and dated.

FIRST EDITION of an important work of some chemical interest in the famous controversy regarding errors in the *Historia Naturalis* of Pliny the Elder, in which the physician and philologist Leoniceno (1428–1524) took the opposing side. Barbaro (1454–1493), a physician (M.D., Padua, 1477) and one of the leaders of humanism, also possessed a wide knowledge of Greek and ancient literature. "In 1490 Leoniceno inaugurated a famous controversy on the errors of Pliny the Elder . . . he sent to Politian a critique of Ibn Sina, in which he noted . . . that Pliny . . . confused the two herbs ivy and cistus because of the similarity of their Greek names; Politian commended Leoniceno's castigation of Ibn Sina but politely challenged his criticism of Pliny. Leoniceno responded with a tract, *On the errors of Pliny and others in medicine* (1492), in which he not only defended his original point but charged Pliny with many other errors" (D.S.B., VIII, 249). Leoniceno's book created a storm of protest. In the present work Barbaro responded indirectly. He "freed the text from some five thousand errors of copyists and printers, but did not wish anyone to think that Pliny himself had erred and affirmed that his reputation could in no way be overthrown. Without mentioning Leonicenus by name, Barbarus expressly refuted . . . some of his criticisms of Pliny" (Thorndike, IV, 601). The colophon in the first part is dated 8 December 1492, and in the second it is dated 13 February 1493. The

polytimetos. Et paulo post margariā pro marginā. ¶ fo. ccxlv. mollentibus pro
 molientibus. & inuecti p inueta. ¶ fo. cclix. sphyleraton pro sphyrelaton. ¶ fo.
 cclxvi. eximant pro exilimāt. ¶ fo. cclxxiii. ἐυρησται pro ἐυρησται. Et statim
 post ἀπρος pro ἀπρος. ¶ fo. cccxxi. sciros a Grecis pro scyros. ¶ fo. cccxxiii.
 calasti pro catblasti. ¶ fo. cccxxiii. trullo pro trullio. ¶ fo. cccxxviii. qua ma/
 lum dementia pro que. ¶ fo. cccxxix. scirus p scyrus. ¶ fo. eod de sciro dictū
 est pro de scyro dictum est.

F I N I V N T : H E R M O L A I : B A R .
 Patriarchæ Aquileiensis Plinianæ Castigationes : Item Aeditio in
 Plinium secunda : Item Emendatio in Melam Pomponium :
 Item Obscuræ cum Expositionibus suis uoces in Plini-
 niano Codice. Impressit formis Eucharius Ar-
 genteus Germanus Romæ Idibus Feb.
 M. CCC. xciii. Alexandri Sexti
 Pont. Max. Principatus
 Anno Primo : *



Registrum.

a. b. c. d. e. f. g. h. i. k. l. m. n. o. p. q. r. s. t. u. x. y. z. quaterni. aa. bb. qua-
 terni. cc. quinternus. A. B. C. D. E. F. G. H. I. quaterni. K. L. terni.
 a. b. c. d. e. quaterni. f. ternus. g. quaternus.

printer was the German Eucharius Argenteus (i.e., E. Silber). Not in British Library, Durling, etc. (Goff, B-100; Klebs, 143.1; Stillwell, 592; Wellcome, I, 665)

BARBE, Simon

Le Parfumeur François, qui enseigne toutes les manieres de tirer les Odeurs des Fleurs; & de faire toutes sortes de compositions de Parfums. Avec le secret de purger le Tabac en poudre; & le parfumer de toutes sortes d'Odeurs. Pour le divertissement de la Noblesse, l'utilité des personnes Religieuses, & necessaire aux Baigneurs & Perruquiers. Amsterdam: Chez Paul Marret, Marchand Libraire dans le Beurs-straat. 1696.

First Amsterdam edition. 12mo. 25 leaves, 170 pp., 10 leaves (last blank). Title page in red and black. Fine engraved frontispiece. Very good copy, in modern dark-brown cloth simulating morocco, spine gilt-lettered.

AN EXTREMELY rare book on perfume making and the chemical and physical processes employed to extract fragrances from flowers. The author, Barbe (fl. seventeenth century), lists the forty ingredients used in perfumery and the flowers from which they are taken. The nine sections of this work cover powders for the hair, soaps, essences and oils, pomades, mouthwashes, perfumed waters, sachets, scents for the skin, etc. The final section describes methods for treating tobacco to make various kinds of snuff and the aroma of tobacco smoke more pleasant. The first edition (Lyons: T. Amaulry, 1693; Krivatsy, 643) was followed by the present printed in Amsterdam. Ferguson (*Books of Secrets*, II, 3rd suppl., 56–57) briefly describes an undated (1700?) Amsterdam edition. Other editions: Lyons, 1698; Paris, 1699. Translated into English as *The French perfumer* (London, 1696; Wing 689A), second (1697) and third (1700) editions (or issues?) appeared (Wing B689B and B689C). The British Library copy of the present edition apparently lacks the frontispiece of a perfumer's shop, with a lady and gentleman making a purchase from the shop-keeper. (Goldsmith, B205)

BARCHUSEN, Johann Conrad

Elementa Chemiae, quibus Subjuncta est Confectura Lapidis Philosophici Imaginibus Repraesentata. Leyden: Apud Theodorum Haak. 1718.

Second edition. 4to. 6 leaves, 532 pp., 10 leaves. Title page in red and black with engraved vignette, engraved headpiece, and 24 copperplates (7 folding). Fine copy, in original mottled calf, spine richly gilt, maroon morocco label.

THE REVISED and considerably enlarged version of the *Pyrosophia* (Leyden, 1698), with the text simplified and up-

dated. This edition is much sought after for its remarkable illustrations comprising the large folding plate of the chemical laboratory at Utrecht, four plates of apparatus and furnaces (as in the 1698 edition), and the additional nineteen curious plates depicting seventy-eight symbolic representations of alchemical processes. These figures, "intended to be a practical introduction to alchemy" (Ferguson), have been reproduced by C. G. Jung (*Psychology and Alchemy*, London, 1953). The plates are discussed by John Read (*Prelude to Chemistry*, London, 1936, pp. 151–152). (Blake, 31; Bolton, 281; Caillet, 716; Cole, 40; D.S.B., I, 451; Duveen, 43; Ferchl, 22; Ferguson, I, 71; Partington, II, 701; Smith, 31; Verginelli, 24; Waller, 11050; Wellcome, II, 99)

BARCHUSEN, Johann Conrad

Historia Medicinae, in qua, si non omnia, pleraque saltem, Medicorum ratiocinia, dogmata, hypotheses, sectae, &c. quae ab exordio Medicinae usque ad nostra tempora inclaruerunt, pertractantur.

Amsterdam: Apud Joannem Wolters. 1710.

First edition. 8vo. 10 leaves, 632 pp., 18 leaves. Title page in red and black with engraved vignette. Fine engraved allegorical frontispiece (by D. Coster after Van Wyck), armorial engraving on dedication leaf, and 2 woodcut diagrams in text. Few leaves lightly water stained; otherwise very good copy in original unlettered vellum. From the library of the chemist Professor Maurice Stacey, F.R.S. (Sotheby auction, 14 May 1973).

A VALUABLE HISTORY of medicine containing information on iatrochemistry and the iatrochemists themselves. It comprises a series of medico-historical dissertations, written in the form of discussions between the author and several contemporary scholars and physicians. Ferguson describes this as "one of the most notable" of Barchusen's works and "an interesting collection of essays." The first half deals with medicine in antiquity and the Middle Ages, including thirty pages on Chinese medicine; the second half covers modern medicine from Paracelsus to Stahl, with special emphasis on the iatrochemists. Of particular interest are passages on blood transfusion (p. 489) and on John Mayow (pp. 275–276). Some copies have the names R. & G. Wetstenius in the imprint. A revised second edition appeared with the title *De medicinae origine et progressu dissertationes* (Utrecht, 1723; *Heirs of Hippocrates*, 728). (Blake, 31; D.S.B., I, 451; Ferchl, 22; Ferguson, I, 72 [not in Young Coll.]; Partington, II, 701; Thorndike, VII, 239, VIII, 359–360; Waller, 12601; Watt, I, 71c; Wellcome, II, 99)

BARCHUSEN, Johann Conrad

Johannis Conradi Barchusen Compendium Ratiocinii Chemici More Geometrarum Concinnatum.

Lugduni Batavorum: Impensis Theodori Haakii. Bibliop. 1712.

First edition. 8vo. 4 leaves, 70 pp., 1 leaf (errata). Very good copy in modern leather-like brown cloth. Bound with Barchusen, J. C., *Synopsis Pharmaciae* (Lugduni Batavorum, 1712).

FERGUSON DESCRIBES this interesting work as “not a practical treatise on chemical preparations, but an exposition of chemical principles and theory. It consists of nineteen Definitiones, seven Postulata, and six Pronunciata, each of which have a short Explanatio added, and then follow fifty-two Propositiones each with a Demonstratio appended. It is quite an exceptional book in the literature of the time.” The book is a very early attempt to put chemical theory onto a rational mathematical basis, with definitions, postulates, theorems, etc. As such, it is an important milestone in the systematization of chemical theory, which has been largely overlooked by chemical historians. Rare. Not in Caillet, Duveen, Edelstein, Ferguson Coll., Neu, Osler, Smith, Wellcome, etc. (Blake, 31; Bolton, 281; D.S.B., I, 451; Ferchl, 22; Ferguson, I, 71; Partington, I, 701; Poggen-dorff, I, 100; Waller, 11049a; Watt, I, 71d)

BARCHUSEN, Johann Conrad

Johannis Conradi Barchusen Synopsis Pharmaciae, Methodum pleraque medicamenta, sive a Veteribus sive ab Recentioribus excogitata, componendi juxta & conficiendi tradens. Editio Tertia. Accedunt duo indices, quorum alter remediorum dosin: alter Medicamina cuius corporis affectui singulariter dicata, monstrat.

Lugduni Batavorum: Apud Theodorum Haak. Bibliopol. 1712.

Third edition. 8vo. Engraved title page (J.G. del.), 13 leaves, 260 pp., 4 leaves (index). Title page in red and black, with fine copperplate vignette depicting a botanical garden. Very good copy in modern leather-like brown cloth, spine gilt-lettered and dated. Bound with Barchusen, J. C., *Compendium Ratiocinii Chemici* (Lugduni Batavorum, 1712).

AN IMPORTANT pharmaceutical chemical work in the form of a dictionary, with detailed descriptions of chemical terminology, preparations of chemicals, the uses of laboratory apparatus, prescriptions for curing patients, etc. Pages 189–199 comprise an extensive table of doses of chemicals and drugs that can safely be administered to infants, children, and adults. Pages 200–259 tabulate the external and internal uses of various pharmaceutical preparations. The first edition appeared with the title *Pharmacopoeus Synopticus*

(Frankfurt, 1690, 12mo.), and the second appeared in two formats: Utrecht, 1696, 8vo.; and Leyden, 1698, 4to. Watt describes this as one of his “principal works,” citing only the 1690 edition. The third edition is rare and is not mentioned in the usual early chemical bibliographies. (Blake, 31; D.S.B., I, 451; Ferchl, 22)

BARCHUSEN, Johann Conrad

Pyrosophia, succincte atque breviter Iatro-Chemiam, rem Metallicam et Chrysopoeiam pervestigans. Opus Medicis, Physicis, Chemicis, Pharmacopoeis, Metallicis &c. Non inutile.

Leyden: Impensis Cornelii Boutestein. 1698.

First edition. 4to. 8 leaves, 469, (1) pp. (Last page: Addenda et Corrigenda). Title page in red and black with large woodcut vignette, and 5 fine copperplates (1 large and folding) of chemical apparatus, etc. Superb copy in pristine condition, in contemporary half calf, gilt, speckled boards, crimson label. Small red stamp (eighteenth century) on verso of title: R. Gr. v. Veltheim.

BARCHUSEN (or Barckhausen, 1666–1723) taught chemistry and medicine (M.D., 1698) at the University of Utrecht from 1694, where the city fathers provided him with a laboratory. “The *Pyrosophia* is a formal, systematic textbook that deals with the principles of chemistry, both theoretical and practical, and then attempts to demonstrate their applications to natural philosophy, medicine, metallurgy, and alchemy. The bulk of the book is descriptive, preparative iatrochemistry . . . the syllabi of his laboratory courses for 1695 to 1697 . . . show an increasing tendency to emphasize chemistry as the analysis and synthesis of bodies by fire . . . All the syllabi contain sections devoted to metallurgical assay and to alchemy. In this last part, the students were shown how most alleged transmutations could be explained in terms of displacement reactions of metals” (D.S.B.). The large folding plate shows the interior of the laboratory at Utrecht, with Barchusen (?) seated at a table holding a balance. This splendid copy belonged to the Count Veltheim family, whose members included directors of mines in Germany (see Poggen-dorff). (Bolton, 281; D.S.B., I, 451; Ferchl, 22; Ferguson, I, 71; Hoover, 88; Krivatsy, 687; Partington, II, 701; Poggen-dorff, I, 100; Thorndike, VIII, 618; Wellcome, II, 99)

BARCHUSEN, Johann Conrad

Synopsis Pharmaciae, methodum pleraque medicamenta, sive a veteribus sive ab recentioribus excogitata, componendi juxta conficiendi tradens. Editio tertia. Accedunt duo indices, quorum alter remediorum dosin: alter medicamina cuius corporis affectui singulariter dicata, monstrat.

Leyden: Apud Theodorum Haak, Bibliopol. 1712.

Third edition. 8vo. Engraved title page, 13 leaves, 260 pp., 4 leaves (index). Letterpress title in red and black with copperplate vignette of a botanical garden. Very good copy. Bound with Barchusen, J. C., *Compendium Ratiocinii Chemici* (Leyden, 1712).

THE TITLE-VIGNETTE is a smaller version of that which appears on the title page of Barchusen's *Elementa Chemiae* (Leyden, 1718). An important pharmaceutical chemical work in the form of a dictionary, containing detailed descriptions of terminology, preparation of chemicals, uses of laboratory equipment, etc. An extensive table (pp. 189–199) lists doses of chemicals and drugs that can be safely administered to patients of all ages. The external and internal uses of various pharmaceutical preparations are tabulated (pp. 200–259). The first edition has the title *Pharmacopoeus Synopticus* (Frankfurt, 1690, 12mo.), and the second printing appeared in two formats: Utrecht, 1696, 8vo.; Leyden, 1698, 4to. One of his “principal works” (Watt, citing only the 1690 edition). (Blake, 31; D.S.B., I, 451; Ferchl, 22)

BARÈRE, Bertrand

Convention Nationale. Rapport et Projet de Décret sur l'établissement d'une Commission nationale des poudres et armes de la République; présentés au nom du Comité de Salut public, par B. Barère, dans la Séance du 13 Pluviôse. Imprimés par ordre de la Convention nationale. (Paris:) De l'Imprimerie Nationale. (1794).

First edition. 8vo. 48 pp. Fine copy in old vellum. Bound with Lavoisier, A. L., *L'Art de fabriquer le salin et la potasse* (Paris, 1779), and several other works on saltpeter.

ISSUED WITHOUT a formal title page, this report to the French revolutionary Convention Nationale proposes the formation of a commission to study the best methods for the production of large quantities of saltpeter for the manufacture of gunpowder. Saltpeter was then in short supply, and a significant increase in its production was of the greatest importance to the newly formed republic. Presented during the session of “13 Pluviôse” (2 February 1794), this very rare work is unrecorded by the usual bibliographers. Barère was a member of the National Assembly.

BARÈRE, Bertrand

Convention Nationale. Rapport fait au nom du Comité de Salut Public, sur l'état de la fabrication révolutionnaire du salpêtre & de la poudre, & sur la nécessité de supprimer l'agence nationale, ci-devant Régie des poudres et salpêtres; par Barère. Séance du 17 messidor, l'an deuxième de la République française, une & indivisible. Imprimé par ordre de la Convention Nationale. Paris: De l'Imprimerie Nationale. (1794).

First edition. 8vo. 19, (1) pp. Fine copy. Bound with Barère, B., *Convention Nationale. Rapport et projet de décret . . .* (Paris, 1794).

IN THIS report to the Convention Nationale, Barère praises the rapid progress made in the production of saltpeter by the citizens of France. He proposes that the manufacturers of saltpeter unite under the direction of a national agency for the benefit of the Republic. The Convention Nationale considered the merits of Barère's arguments, and his proposal was adopted. A rare work, apparently unrecorded.

BARJONA, Emmanuel Jose

Metallurgiae Elementa, quae amplissimi philosophici ordinis jussu ad usum academicum elucubravit . . . Coimbra: Typis Academicis. 1798.

First edition. 8vo. xii, 302 pp. With 4 folding engraved plates (containing 36 figures). Fine copy in original half morocco, gilt, marbled boards.

AN INTERESTING Portuguese work on the chemistry of metals and their analysis, for the use of students at the University of Coimbra, by the professor of metallurgical chemistry, Barjona. The different forms in which metallic ores occur, the extraction of metals, their physical and chemical properties, and related subjects are described. A discussion of various processes for analyzing metals and their ores by the dry and wet ways is given (pp. 119–297). The calcination of metals and the investigations of Cavendish, Kirwan, and Lavoisier are mentioned. The figures depict chemical apparatus, furnaces, and other equipment used in metallurgical research. Very rare. Not in the usual bibliographies. (Bolton, *First Supplement*, 77)

BARLET, Annibal

Le Vray et Methodique Cours de la Physique Resolutive, vulgairement dite Chymie. Representé par Figures generales & particulieres, pour connoistre la Theotechnie Ergocosmique, c'est à dire, l'Art de Dieu, en l'Ouvrage de l'Univers. . . . Avec l'Indice des Matieres de ce Volume, & quelques Additions. . . . Paris: Chez N. Charles, aux dépens & distribution de l'Auteur. 1657.

Second edition. 4to. 4 leaves, 8 leaves (“Additions”), 626 pp., 11 leaves. Fine woodcut frontispiece, woodcut folding plate (at p. 224), and 4 folding tables. With 38 full-page woodcuts of laboratory scenes, apparatus, and operations. Very fine and large copy, in full nineteenth-century blind-stamped calf, by Riviere. From the library of the celebrated hermeticist Dr. Thomas South, with his alchemical bookplate, and signed “A.T. & M. Atwood, 1859” on first free endpaper.



Barlet. Le Vray et Methodique Cours. Paris, 1657.

THE ENLARGED second and best edition (first, 1653) written to accompany Barlet's (fl. 1657) lectures given in his laboratory in Paris. Many woodcuts show a chemist identified as "Hermes" (i.e., Barlet) and assistants conducting experiments before several auditors, including perhaps John Evelyn, who took a course of these lectures in 1646, and the Aberdeen physician Matthew Mackaile, who attended others. The first part is mystical and is illustrated by obscure plates. The second part is practical and is devoted to the preparation of pharmaceutical chemicals and processes, e.g., calcination, dissolution, sublimation, and digestion. Instructions are given for distilling alcohol and for testing mineral waters using plant extracts; see R. J. Forbes, *Art of Distillation* (pp. 211–214), with three reproductions. The manuscript of Evelyn's lecture notes with illustrations of Barlet's laboratory apparatus survives in Christ Church, Oxford, and is discussed by F. S. Taylor (*Annals of Science*, 8 [1952], 285–292). (Bolton, *2nd Supplement*, 47; Caillet, 730; Cole, 41; Duveen, 44; Edelstein, 146; Ferchl, 22; Morgan, 37; Neu, 234; Partington, III, 13; Thorndike, VIII, 129; Waller, 11051; Wellcome, II, 10)

BARNER, Jacob

Chymia Philosophica Perfecte Delineata, docte enucleata & feliciter demonstrata à multis hactenus desiderata nunc vero omnibus philatris consecrata cum brevi sed accurata & fundamentali salium doctrina. Medicamentis etiam sine igne culinari facile parabilibus, nec non exercitio chymiae appendicis loco locupletata . . .

Nuremberg: Sumtibus Andreae Ottonis. 1689.

First edition. 8vo. 8 leaves, 560 pp., 28 leaves. Title in red and black. Engraved frontispiece, 8 fine copperplates of chemical apparatus, and woodcuts in text. Very good copy, in contemporary paneled calf, rebound. From the celebrated science library of John Stuart, third Earl of Bute (1713–1792), Sotheby auction, 4 July 1961, lot 460.

ONE OF the most popular chemical textbooks of the late-seventeenth century. A pupil of Daniel Sennert and adherent of Van Helmont, Barner (1641–1686) was professor of chemistry and medicine at Padua from 1670, after which he moved to Leipzig. He believed that the process of fermentation results from the interaction of acids and alkalies in the body, by which oils are changed into spirit. This is Barner's most important book, although he published several other works that are discussed by Ferguson and Partington. His *Prodromus Sennerti novi seu delineatio novi medicinae systematis* (Augsburg, 1674) professes to teach all medicine in six weeks! It was the *Chymia philosophica* that introduced the adolescent Georg Ernst Stahl to chemistry, and that great man claimed to have committed it in its entirety to memory. (Bolton, 283; Duveen, 45; Ferchl, 23;

Ferguson, I, 74 [imperf.]; Ferguson Coll., 66; Neu, 240; Partington, II, 377; Poggendorff, I, 103; Smith, 33; Wellcome, II, 102)

BARRETT, Francis

The Lives of Alchemystical Philosophers; with a critical catalogue of books in occult chemistry, and a selection of the most celebrated treatises on the theory and practice of the hermetic art.

London: Printed by Macdonald and Son, . . . for Lackington, Allen, & Co. 1815.

First edition. 4to. 1 leaf (half title), 384 pp., 1 leaf (index), 2 leaves (advertisements: listing *The Magus; or, Celestial Intelligencer*, by Francis Barrett, and 18 works by other authors). Engraved plate (facing p. 296) depicting a schematic alchemical distillation. Fine crisp copy, top edge gilt, other edges uncut, finely bound in gilt-ruled blue morocco, spine gilt-lettered and dated. A review copy inscribed in ink on the recto of the first flyleaf in an early-nineteenth-century hand: "To the Editor of the Quarterly Review." From the library of Sir Francis Palgrave (1788–1861), medieval historian and barrister (see D.N.B.), with inscription in ink on title page: "Francis Palgrave his book."

THERE ARE two states of the title page, one being dated 1814 with slightly different wording (see Ferguson). The title dated 1815 (as here, on better paper, attached to the stub of the 1814 title page) is the one usually met with. Generally ascribed to Barrett (e.g., by Watt, a contemporary), Ferguson thought little of this work. Despite its defects, it lists about 750 alchemical books (pp. 95–112), many of which are now hard to find, as well as biographies of 45 adepts. A reissue by Redway (London, 1888), edited by A. E. Waite, appeared with the same title, in the preface of which Waite states that he doubts the attribution to Barrett as the 1815 edition "far transcends the . . . capacities of that credulous amateur . . . It is . . . a work of much sense . . . a bibliographical rarity . . . highly prized by its possessors." A number of original translations appear here for the first time (see Ferguson, *Journal of the Alchemical Society*, II [6], 14). (Bolton, 175; Duveen, 45; Edelstein, 150; Ferchl, 320; Ferguson, II, 41; Heym, *Ambix*, I, 49; Smith, 33; Waller, 15770; Watt, I, 77s; Wellcome, II, 103)

BARROW, John

Dictionarium Polygraphicum: Or, The Whole Body of Arts Regularly Digested . . .

London: Printed for C. Hitch and C. Davis . . . and S. Austen . . . 1735.

First edition. 2 vols., 8vo. I: Engraved frontispiece (Toms sculp.), 2 pp., unpaginated (signatures B–Mm8, Nn6), with 30 folding copperplates. II: 1 leaf, unpaginated (signatures B–Kk8,

L16), with 24 folding copperplates. Very good copy in contemporary speckled calf, rebounded, red and green gilt-lettered labels, spines richly gilt. Eighteenth-century armorial bookplate on front pastedown endpapers: James Norris Norf:-(olk).

AN EARLY scientific dictionary containing information on many subjects of interest in chemistry and chemical technology as known in the eighteenth century. Included are detailed descriptions on processes for dyeing, pigment and paint making, bleaching, glassmaking, gilding, etching, refining metals, making inks, etc. This is also a compendious "book of secrets" covering a wide range of arts and crafts. The author's name was unknown to Ferguson. Although the book was published anonymously, the author was John Barrow (dates unknown), who revealed his identity in the second edition (London, 1758). In his *Books of Secrets*, however, Ferguson says that this "work is intermediate between that of Dr. Harris and the *Polygraphice* of Salmon, . . . These are not mere receipt-books, but rather technical encyclopaedias, giving the rationale as well as the practical execution of a process or an art." Very rare. Not in the usual early chemical bibliographies. (Collison, 105; Duncan, 679; Ferguson, *Books of Secrets*, Part II, 44; Wellcome, II, 104)

BARROW, John

Dictionarium Polygraphicum: Or, The Whole Body of Arts Regularly Digested. Containing, I. The arts of designing, drawing, painting, . . . II. Carving, . . . casting . . . in plaister, wax, metal . . . III. . . Painters, sculptors, . . . IV. . . Hieroglyphical representations . . . V. The production, nature, refining, compounding, transmutation and tinging all sorts of metals and minerals of various colours. VI. The arts of making, working, painting or staining all sorts of glass and marble . . . imitating . . . precious stones . . . VII. Dying all sorts of materials, . . . also bleaching . . . VIII. The art of tapestry-weaving . . . IX. A description of colours, natural and artificial . . . X. The whole art of pyrotechny, or fireworks; and the Chinese method of making porcelain . . . Second edition, corrected and improved by John Barrow, author of the Universal Dictionary of Arts and Sciences. . . . London: Printed for C. Hitch and L. Hawes . . . J. Hinton . . . and L. Davis and C. Reymers . . . 1758.

Second edition. 2 vols., 8vo. I: Engraved frontispiece (Toms sculp.), 4 leaves, 432 pp., 1 leaf (advertisements), with 30 folding copperplates. II: 1 leaf, 398 pp. With 25 folding copperplates (plate A, facing p. 128, not numbered). Clean, crisp copy in contemporary tan calf, rebounded, with red and green labels, spine gilt-ruled.

THE ENLARGED second and final edition, containing important sections of chemical interest not in the first edition (e.g., porcelain and pyrotechny). Some of the plates are identical to those of the first edition, but the new plates illus-

trate articles not in the 1735 edition. Despite extensive articles on dyeing and colors, this work was unknown to Edelstein and Lawrie. Ferguson (*Books of Secrets*) did not know of this edition, and Duncan gives the wrong date (1785). Not in Wellcome or the usual early chemical bibliographies. Not in Brock (*History of Fireworks*). Very rare. (Collison, 105; Duncan, 679)

BARROW, John

Sketches of the Royal Society and Royal Society Club. By Sir John Barrow, Bart., F.R.S.
London: John Murray. 1849.

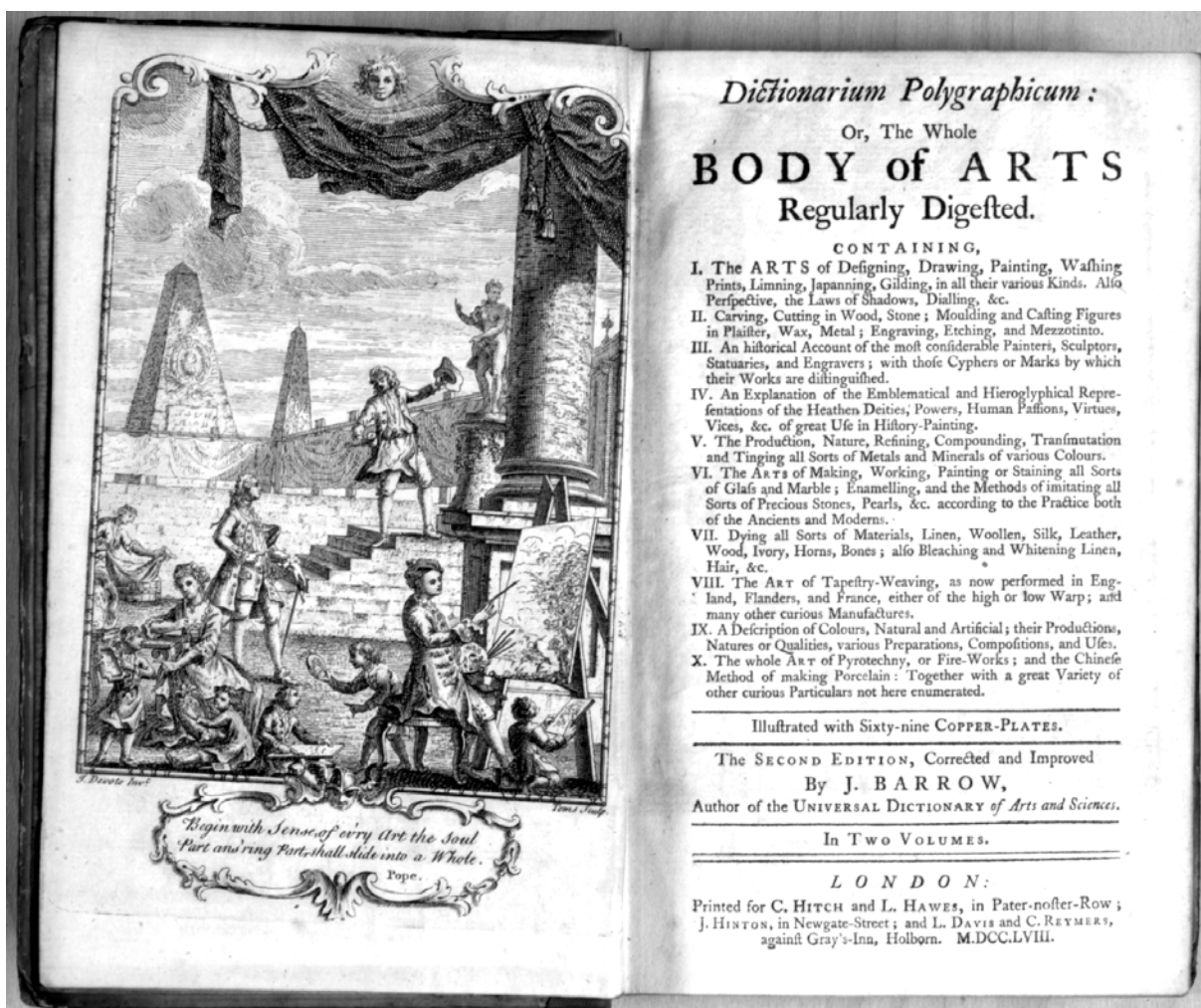
First edition. 8vo. vi pp., 1 leaf (contents), 1 leaf (list of illustrations), 212 pp. Engraved frontispiece portrait of Barrow and folding plate (facsimile of a letter). Extra-illustrated by insertion of 111 fine engravings (seventeenth to nineteenth centuries), comprising 92 portraits and 19 views, with specially printed list of arrangement. Magnificent copy in full olive-green polished calf, top edge gilt, spine richly gilt in compartments, 3 maroon morocco labels, covers gilt-ruled, inner dentelles gilt. Presentation copy to Sir George Thomas Staunton (1781–1859), with inscription in ink from the author inserted following the title leaf: "To Sir George Staunton, Bart., with Kind Regards; and with grateful Remembrance of His Excellent Father this Volume is presented By Sir John Barrow."

A PRIVATELY PRINTED work giving an authoritative account of the Royal Society Club and its illustrious members. Barrow (1764–1848), secretary of the Admiralty, led a much-traveled life (see D.N.B.). Intended by the author to be supplementary to his *Autobiography*, this work contains accounts of many notable scientists (e.g., Joseph Banks, Humphry Davy, Henry Cavendish, William Hyde Wollaston, Smithson Tennant, Thomas Young, and Charles Hatchett). Details of the life and works of Barrow by his "early and constant friend, Sir George Staunton," the dedicatee, are given on pages 205–212. Sotheran described a copy in 1910, without the extra illustrations, as "scarce." Presentation copies, extra-illustrated (as here), are very rare. Not in D.S.B., Ferchl, Osler, Poggendorff, Waller, Wellcome, or the usual early chemical bibliographies. (Sotheran, Cat. 702 [1910], 6016)

BARTHOLIN, Erasmus

De Naturae Mirabilibus Quaestiones Academicæ.
Copenhagen: Sumptibus Petri Hauboldi, Acad. Bibliop. Literis Georgii Gødiani, Reg. Maj. Typogr. 1674.

First edition. 4to. 4 leaves, 200 pp. Title page in red and black, with woodcut printer's device. Engraved plate facing page 19 (snow crystals). Uniformly slightly browned (as usual); otherwise fine copy in gilt-ruled speckled calf antique.



Barrow. *Dictionarium Polygraphicum*. London, 1758.

THE DANISH mathematician and physicist Erasmus (or Rasmus) Bartholin (1625–1698), son of Caspar Bartholin (1585–1629) and brother of Thomas (1616–1680), traveled in England, France, and Italy, where he received his M.D. (Padua, 1654). Returning to Copenhagen he became professor of mathematics (1656), professor of medicine (1671), and later royal physician. His most important scientific contribution was the discovery of the double refraction of light in Iceland spar, which was of great theoretical interest to Huygens and Newton. *De naturae mirabilibus* is a collection of reprinted essays and addresses on the shape of snow crystals, microscopic pores in substances, Cartesian physics, chemical and physical (including electrostatic and magnetic) attraction, chemical and physical theories and experiments, and other subjects, all of which had originally appeared between 1660 and 1673. His investigation of the various geometric shapes of snowflakes (illustrated in the plate) is a classic in the history of crystallography. (D.S.B., I, 481–482; Krivatsy, 770; Roller, 39; Thorndike, VIII, 219–221; Waller, 10732; Ward & Carozzi, 127; Watt, I, 80a)

BARTHOLIN, Thomas

De Luce Animalium Libri III. Admirandis historiis rationibusque novis referti.

Leyden: Ex Officina Francisci Hackii. 1647.

First edition. 8vo. 6 leaves, 396 pp., 4 leaves. Title in red and black, with woodcut printer's device. Very fine copy, in original speckled calf, gilt.

THE "MOST IMPORTANT early work on luminescence" (Harvey, p. 15) and the second book on the subject, Gesner's *De lunariis* (1555) being the first. The great Danish physician Bartholin (1616–1680) describes every luminescent phenomenon known in 1647 "whether real or imagined, organic or inorganic" (Harvey). Bartholin is remembered for his discovery of the thoracic duct in man and for his discovery that the lymphatics form a separate physiological system. For the most detailed account of the present work, see E. N. Harvey (*History of Luminescence and Phosphorescence*, 1957, pp. 107–115, 463–465), who illustrates the title page (fig. 7). Rare. (Blocker, 23; Eales, 431; Ferchl, 24; Partington, II, 549, III, 160; Poggendorff, I, 109; Watt, I, 80b)

BARTHOLIN, Thomas

De Luce Hominum & Brutorum Libri III. Novis rationibus, & raris historiis secundum illustrati.

Copenhagen: Typis Matthiae Godicchenii, Impensis Petri Hauboldi, Regiae Academiae Bibliopolae. 1669.

Second edition. 8vo. 12 leaves, 531, (1) pp., 22 leaves. Title in red and black, with woodcut printer's device. Paper lightly embrowned (as usual); otherwise fine copy in original vellum, with I.D.O. stamped in gilt on front cover and 1669 in gilt on back cover. Signature of E. F. G. Herbst on first flyleaf. Bound with: Gesner, Conrad, *De raris et admirandis herbis* (Copenhagen, 1669).

THE SECOND (first Copenhagen) edition of the "outstanding book of luminescence of the seventeenth century" (Harvey, p. 107), carefully revised and corrected by Bartholin from the first edition (Leyden, 1647) and with a slightly different title. Harvey discusses the chemical and biological contents in detail. Rare. (Harvey, 108–115; Waller, 723; Watt, I, 80e; Wellcome, II, 108)

BARTHOLIN, Thomas

De Nivis Usu Medico Observationes variae. Accessit D.

Erasmii Bartholini de Figura Nivis Dissertatio; cum Operum Authoris Catalogo.

Copenhagen: Typis Matthiae Godicchii, Sumptibus Petri Haubold, Bibl. 1661.

First edition. 8vo. 12 leaves, 232 pp., 4 leaves + 3 leaves, 42 pp., 8 leaves. With 1 copperplate (depicting the hexagonal nature of various snowflakes). Title in red and black, with woodcut printer's device. Paper lightly embrowned (as usual); otherwise very good copy, in original speckled calf, rebounded with original spine laid down, red morocco label, spine dated. Bookplate: Otto Oren Fisher.

A FASCINATING WORK on the medical use of snow as an analgesic and one of the earliest contributions to local anesthesia. Chapter 23 (pp. 132–134) deals with snow used as an analgesic in surgery to deaden the feeling of the part to be cut. The author states that he was taught this method by Marco Aurelio Severino at Naples to avoid gangrene. It is interesting to note that refrigeration anesthesia did not come into widespread use until the Russians employed it extensively during the Finnish campaign of 1939–40. The second part comprises a treatise by Thomas Bartholin's younger brother, Erasmus (1625–1698), on the shape of snowflakes and is a pioneer work in crystallography, preceding by ten years Steno's great *Prodromus*, which is usually considered to have founded the modern science of crystal geometry. Partington discusses this work and its chemical content. Erasmus Bartholin discovered the double refraction of light in Iceland spar. The third part comprises a bibliography of Thomas Bartholin's publications (forty-five titles). Rare. Unknown to the authors of the articles on Thomas and Erasmus Bartholin in D.S.B. (Blocker, 23; Cushing, B114; Eales, 434; *Heirs of Hippocrates*, 326; Neu, 254; Osler, 1923, 1933, 1956; Partington, II, 500, 509; Reynolds, 311; Waller, 726; Watt, I, 80d; Wellcome, II, 107)

BARTHOLOMAEUS ANGLICUS

Liber de proprietatib(us) reru(m) Bartholomei anglici.

(Colophon:) Strassburg: Georg Husner, 11 August. 1491.

Folio. 257 unnumbered leaves. Double columns, 52 lines, gothic letter, headline on recto leaves. Capital spaces with guide letters. Fine, tall, crisp copy, with wide fore and lower margins (some uncut), in contemporary vellum.

BARTHOLOMAEUS ANGLICUS (fl. ca. 1220–1250) was a monk born in England, who became professor of divinity at the University of Paris and about 1225 joined the recently founded Franciscan order. For centuries after his death he was famous as the compiler of this highly esteemed encyclopedia on the nature of things, which in addition to containing the theological knowledge of his time is especially important for the medical and scientific information gleaned from Arabic, Greek, and Jewish writers. “The immense popularity of this pioneer work is shown by the very large number of manuscript copies of it to be found in European libraries” (*Encyc. Brit.*). Divided into nineteen “books,” it covers many scientific subjects, including astronomy, biology, botany, chemistry, geography, geology, medicine, metallurgy, mineralogy, physics, and technology. The first important encyclopedia of the Middle Ages, about twenty incunable editions appeared, and the text was widely studied during the sixteenth century, apparently even by Shakespeare. Georg Husner also printed the celebrated *Opus postillarum et sermonum de tempore* (Strassburg, 1483) of Jordanus de Quedlinburg. Thorndike (II, 401–435) devotes a whole chapter to Bartholomaeus and his book. Rare. (British Library, *S.T.C. German Books, 1465–1600*, p. 67; G. W., 3412; Goff, B-140; Hain, 2509; Klebs, 149.11; Stillwell, B125)

BARTOLI, Daniello

Del Ghiaccio e della Coagulatione Trattati . . .

Rome: Per il Varese. 1681.

First edition. 4to. 4 leaves, 230 pp., 4 leaves (index). Large woodcut on title, repeated on final leaf of index. Several large woodcut tailpieces and historiated capitals. Very good copy, in nineteenth-century half calf, gilt, marbled boards.

THE LAST of the three scientific works by Bartoli. The first was *La Tensione e la Pressione* (Rome, 1677), and the second was *Del Suono, de' Armonici e dell'Udito* (Bologna, 1680). All of Bartoli's books are rare, particularly the present, which deals with ice and the phenomenon of freezing. He rejects Boyle's theories of freezing (in *New Experiments and Observations touching Cold*, 1665), but his discussions of blood, in which he refers to Harvey and Lower, preceded Boyle's *Memoirs for the Natural History of Humane Blood* (1684) by

three years. There are many references to contemporary chemists, physicists, and physicians. Of particular interest are Bartoli's accounts of atomic theories, molecules, alchemy, freezing mixtures (from niter, nitric acid, etc.), and the composition of salts from plants and animals. In addition, there are descriptions of acids, alkalies, fire, water of crystallization, the freezing of mercury, alcohol and other spirits, etc. The book was again published (Bologna: G. Recaldini, 1682) with the same collation. (British Library, *17th Century Italian*, I, 79; D.S.B., I, 484; Krivatsy, 859; Poggendorff, I, 110; Wellcome, II, 109)

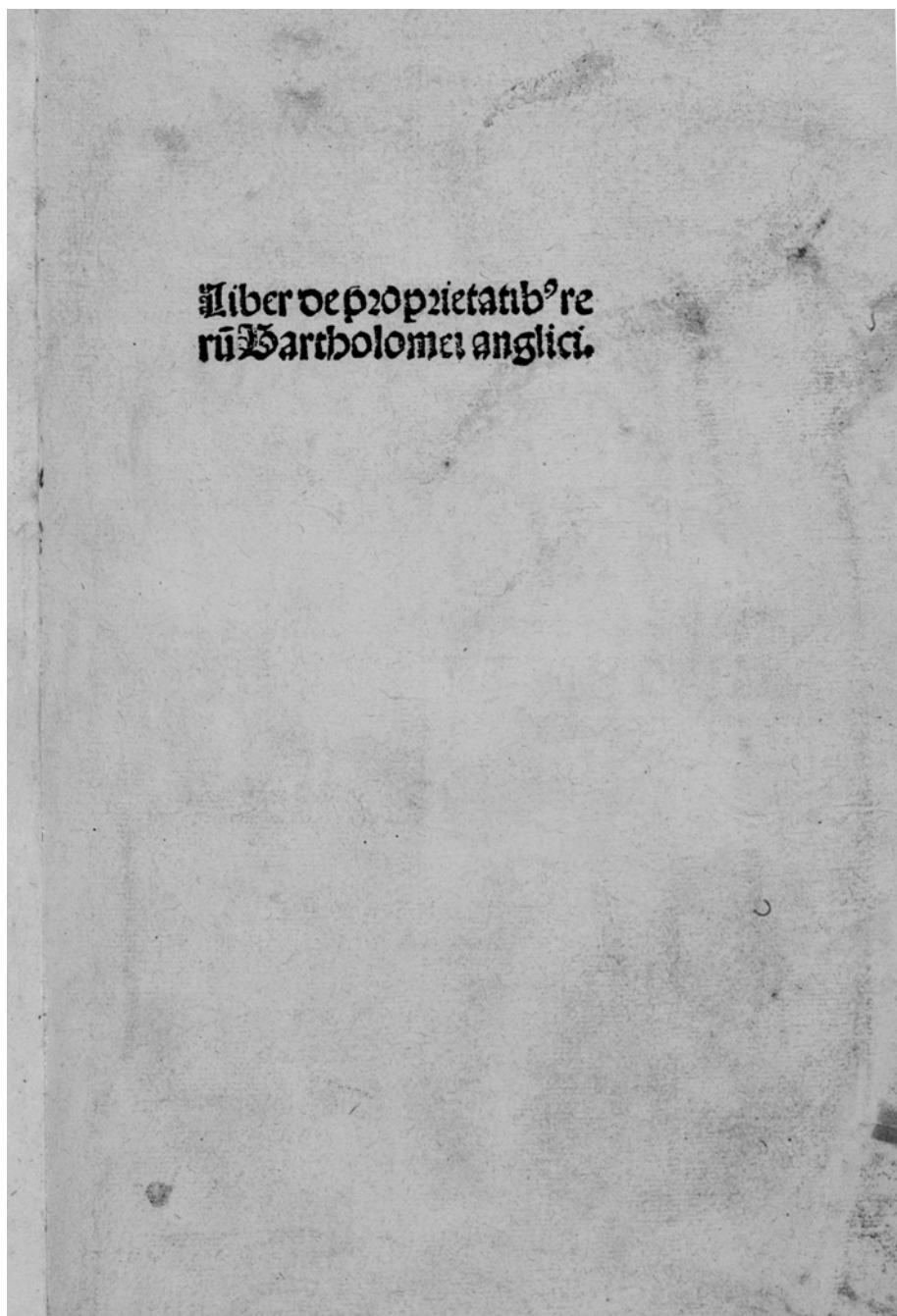
BARTOLI, Daniello

La Tensione e la Pressione disputanti qual di loro sostenga l'Argentovivo ne' Cannelli doppo fattone il Vuoto. . . .

Bologna: Per Gioseffo Longhi. 1677.

Second (first Bologna) edition. 12mo. 282 pp. With 2 folding woodcut plates (depicting 16 figures of barometric experiments). Very good copy, in original vellum.

BORN IN Ferrara, Bartoli (1608–1685) was a Jesuit scholar who studied under Riccioli, and became rector of the Collegio Romano, the principal Jesuit university. “In the scientific field he did much to expound and popularize the work of contemporary physicists, particularly barometric experiments and the concept of atmospheric pressure. . . . Bartoli's scientific expositions were generally objective, clear, and attractively written; they evidence wide reading and a spirit of true inquiry. Bartoli sought to link the speculative and experimental approaches in science” (D.S.B.). This important early work on experiments with the newly invented mercury barometer frequently refers to the investigations of Torricelli and other physicists. The atomic theory is also discussed (p. 260). The first edition (Rome: Nicolo Angelo Tinassi, 1677, 12mo., iv, 284 pp.; British Library, *17th Century Italian*, I, 80) was quickly reprinted in Bologna (as here) and again in Venice (Apresso Gio. Francesco Valuasense, 1678, 12mo., 288 pp.; Fulton, 334). Unknown to Middleton and Riccardi. This edition not in British Library, Krivatsy, Watt, etc. (D.S.B., I, 484 [Rome, 1677]; Poggendorff, I, 110; Sotheran, Cat. 789 [1924], 4398 [“Rare”]; Wellcome, II, 109)



Bartholomaeus Anglicus. Liber de proprietatib. Strassburg, 1491.

BARTOLO, Sebastiano

Thermologia Aragonia, sive Historia Naturalis Thermarum in Occidentali Campaniae ora inter Pausilippum, & Misenum Scatentium, iam Aevi iniuria deperditarum, & Petri Antonii ab Aragonia Studio, ac munificentia restitutarum . . . de Pyrosophiae, & Hydrosophiae Arcanis . . . exalationibus terra, ac insuper de Calore, & Luce . . . Authore Sebastiano Bartolo . . .

Naples: Ex Typographia Novelli de Bonis. 1679.

First edition. 2 vols., 8vo., in 1. I: 8 leaves, 144 pp. II: 8 leaves, 160, (12) pp. With 5 woodcuts in text (2 full page). Few leaves with minor browning; otherwise very good copy in original vellum, old ink lettering on spine.

A POSTHUMOUSLY PRINTED treatise on hot mineral springs, of considerable chemical interest, by the Neapolitan physician Bartolo (ca. 1635–1673 or 1676). In addition to the descriptions of chemicals found in mineral waters, the work is important because it includes the first attempt to determine temperature by calibrating thermometers using two fixed points—the melting point of ice and the boiling point of water. The “last three decades of the seventeenth century saw attempts to base thermometer scales on two fixed points. The first suggestion for the use of snow and boiling water for this purpose was published in 1679 by a professor at Naples, Sebastiano Bartolo, in a posthumous book on hot springs . . . Bartolo’s connection with the thermometer has not been given enough attention” (Middleton, who illustrates Bartolo’s thermometer, which appears on signatures L2r and L2v of volume II of this work). The copies listed by Krivatsy and Wellcome both lack the important second volume, here present. A milestone in the literature of the scientific measurement of temperature. Rare. Not in Duveen, Manget, Partington, Thorndike, Wolf, etc. (British Library, *17th Century Italian*, I, 81; Ferchl, 24; Krivatsy, 863; Poggendorff, 110–111; Middleton, *History of the Thermometer* [1966], 52–54; Wellcome, II, 109)

BASILIIUS MAGNUS

Hexameron Magni Basilii per Joannem Argyropolum e greco in latinu conversum. Cum Gratia & Privilegio.

(Colophon: Rome apud Iacobum Mazochium. 12 December 1515.)

First edition. Folio (in 6s). 45 leaves. Title within fine woodcut border. Title printed in black letter and Roman, the text in Roman. Woodcut capitals. Fine, crisp, wide-margined copy, in modern blind-stamped, calf-backed, oak-grained patterned boards.

A BOOK OF legendary rarity on Byzantine science, comprising a collection of separate treatises on Christian atti-

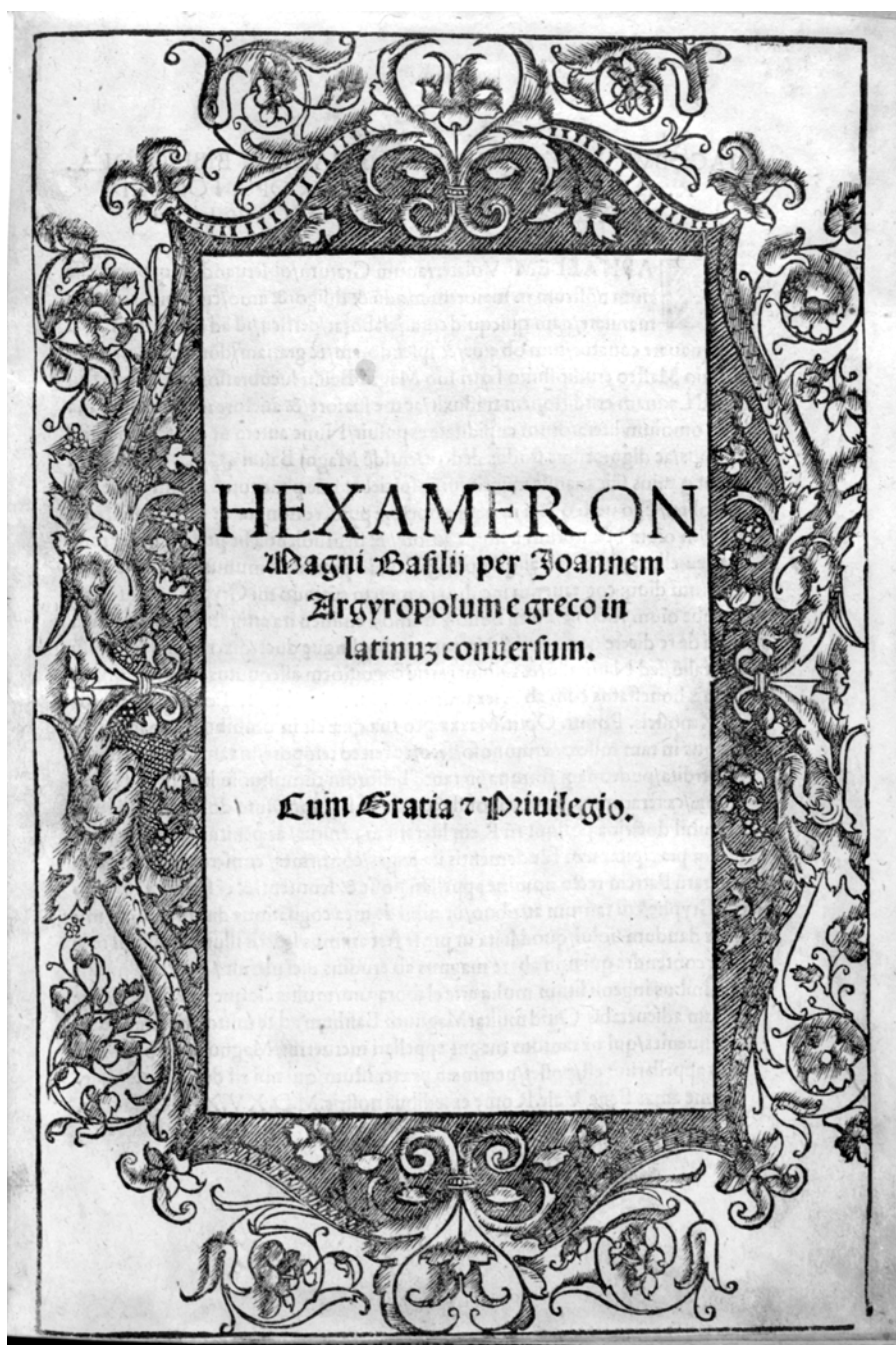
tudes toward natural science as taught by the ancient Greek philosophers and scientists. Based on the Biblical six days of Creation, the *Hexameron* was one of the most influential works of the ancient world. “Basil died on the first day of January, 379 A.D., and was born about 329. When or where the nine homilies which compose his *Hexameron* were preached is not known. . . . The general tenor of Basil’s treatise may be described as follows. He accepts the literal sense of the first chapter of Genesis as a correct account of the universe, and, when he finds Greek philosophy and science in disagreement with Biblical narrative, inveighs against the futilities and . . . conflicting theories . . . of the philosophers. . . . But at all other times he is apt to follow Greek science rather implicitly, accepting without question its hypothesis of four elements and four qualities . . . it is evident that his audience are possessed by a lively scientific curiosity, and that they wish to hear a great deal more about natural phenomena than Isaiah or any other Biblical author has to offer them” (Thorndike [I, 481–486], who devotes an entire chapter to this work). Numerous Latin translations appeared, and the book had a great influence on medieval Europe. The translator was Joannes Argyropoulos (1416?–1486?), and the *Encyclopaedia Britannica* describes this as one of Basil’s “most important works.” Not in the British Library. (Ascareli, *Annali Tip. di Giacomo Mazzacchi*, 98; Hoffmann, I, 416; Sander, 809)

BASILIIUS VALENTINUS

Basil Valentine His Triumphant Chariot of Antimony, with Annotations of Theodore Kirkringius, M.D. With the True Book of the Learned Synesius a Greek Abbot taken out of the Emperour’s Library, concerning the Philosopher’s Stone. London: Printed for Dorman Newman at the Kings Arms in the Poultry. 1678.

First English edition of Kerckring’s translation. 8vo. 8 leaves, 176 pp. With 5 full-page copperplates of chemical apparatus. Separate divisional title page to *Synesius*, with small alchemical woodcut. Title leaf strengthened at edges, some leaves slightly browned or dusty; otherwise a good copy in contemporary unlettered calf, strongly rebacked.

THE ENGLISH version of the definitive Latin edition (Amsterdam, 1671), with the commentary by Kerckring. The translator was Richard Russell, who also translated other alchemical books (e.g., Geber). “The work brings together many of the facts of the chemistry of antimony, its combinations and use in medicine. The descriptions of the preparations of compounds of antimony are comparatively clear” (Cole). An earlier English version (Oxford, 1660, 1661) also appeared, which was the translation by “I. H.” (John Harding, or John Heydon?) of Fabre’s Latin edition (Toulouse, 1646). (Bolton, 1063; Cole, 42; Cushing, B149;



Basilus Magnus. Hexameron. Rome, 1515.

D.S.B., XIII, 560; Duveen, 49; Edelstein, 156; Ferguson, I, 82 [not in Young Coll.]; Ferguson Coll., 723; Hall, 36; Hoover, 98; Mellon, 134; Neu, 281; Partington, II, 192; Smith, 36; Waller, 11056; Watt, II, 925s; Wellcome, II, 111; Wing, B1023)

BASILIVS VALENTINUS

Basilivs Innovatus. Das ist: Fr. Basilii Valentini, Ordin. Benedict. Chymische Schrifftten. Anjetzo zum Vierdten mahl zusammen gedruckt, aufs fleissigste aus einigen alten MS. gecorrigiret, mit vielen in vorigen Editionen ausgelassenen Passagen und Tractaten, auch etlichen Figuren, vermehret. Mit einem generalen vollständigen Register versehen, und in Drey Theile verfasst: nebst einer neuen Vorrede, worinnen von Lesung und Critique der Alchymistischen Schrifftten, ihren Scribenten, neuen Projections-Historien, der Materia Prima Philosophica, dem Leben des. Basilii, und was in dieser Edition besonders praestiret worden, einige Nachricht mitgetheilet wird von Bened. Nic. Petraeo, Med. D. Hamburg: In Verlegung Samuel Heyls. Gedruckt mit sel. Georg Königs Schrifftten. 1717.

Fourth collected German edition. 8vo. 80 leaves, 1133, (1) pp., 76 leaves. Title page in red and black. Engraved frontispiece with portrait of Basilivus Valentivus, and 20 allegorical copperplates. Woodcut of retort (p. 830), and alchemical symbols (pp. 998–1056). Fine copy, in original unlettered vellum.

BASIL VALENTINE was supposedly a Benedictine monk of the fifteenth century, but was most probably the pseudonym of Johann Thölde (fl. 1600–1614), a chemist and salt-boiler of Frankenhausen in Thuringia. Thölde “edited” the works of Basilivus Valentivus and included much new chemical information that was completely unknown in the fifteenth century. “Kopp concluded that the works are not of the fifteenth but of the end of the sixteenth or the beginning of the seventeenth century and are ‘deliberate forgeries,’ Basil Valentine being fictitious. Schorlemmer concluded that the works . . . were written by Thölde” (Partington). Other editions: Hamburg, 1677, 1694, 1700, 1740, 1775; Leipzig, 1769. Some are listed by Bolton, Duveen, Ferguson, Neu, Smith, Waller, et al. (D.S.B., XIII, 560; Ferchl, 26; Ferguson Coll., 719; Partington, II, 194; Poggendorff, I, 113; Wellcome, II, 111)

BASILIVS VALENTINUS

Currus Triumphalis Antimonii . . . Opus Antiquioris Medicinae & Philosophiae Hermeticae studiosis dicatum. E Germanico in Latinum versum opera, studio & sumptibus Petri Joannis Fabri Doctoris Medici Monspeliensis. Et notis per-petuis ad marginem appositis ab eodem illustratum. Toulouse: Apud Petrum Bosc. 1646.

First Latin edition. 8vo. 13 leaves, 398 pp. Woodcut on title page. Few very minor damp stains; otherwise an excellent copy, in contemporary vellum, with 2 maroon morocco labels.

THE LATIN translation of *Triumph Wagen Antimonii* (Leipzig, 1604), by the physician to Louis XIII, Pierre Jean Fabre (fl. 1600–1650), who paid for its publication. “The *Triumphal Chariot of Antimony* has been hailed as the first monograph on a chemical element.” Read [*Prelude to Chemistry*, p. 187 et seq.] discusses this famous work. The author (Johann Thölde) describes the preparation of metallic antimony (from the native sulphide) and also several of its compounds (e.g., trichloride, oxychloride, oxide, and potassium antimoniate), with their medicinal uses. This volume also includes Roger Bacon, *De oleo stibii*; Georg Phaedro, *Theoria et practica lapidis*; Isaac Holland, *Opus Saturni*; Basil Valentine, *Conclusiones*; several anonymous works, e.g., *De particulari et universali tinctura*, *Considerationes septemdecim de materia lapidis in usum*, *Brevis tractatus de antiqua chymicorum philosophia*, and *Theoria et practica arboris aureae et argenteae*; and several other alchemical works, all of which are extremely difficult to find in the original editions. A most valuable collection. The allegorical *Antiquissimum Bellum Egvitum* (pp. 190–201) was translated into French (1672 and again in 1689) and eventually appeared as part of *The Hermetical Triumph* (1723). Rare. (Duveen, 48; Ferchl, 25; Ferguson, II, 486 [not in Young Coll.]; Ferguson Coll., 723; Goldsmith, B316; Neu, 283; Osler, 4147; Partington, II, 181, 192; Thorndike, VII, 156; Watt, II, 925s; Wellcome, II, 111)

BASILIVS VALENTINUS

Les Douze Clefs de Philosophie de Frere Basile Valentin, Religieux de l'Ordre Saint Benoist. Traictant de la vraye Medecine Metalique. Plus l'Azoth, ou le moyen de faire l'Or caché des Philosophes. Traduction Francoise. Paris: Chez Pierre Moët. 1660.

First Moët edition, second issue. 2 vols., 8vo., in 1. 176 + 196 pp. With 13 finely engraved plates (by J. Gobille), illustrating the 12 keys. Large alchemical woodcut on page 52. The tract *Azoth* . . . *Reveu, corrigé & augmenté par M. L'agneau Medecin* has a separate title (dated 1659) with woodcut and its own signatures and pagination, as well as 14 woodcuts of alchemical symbolism. Minor foxing of some leaves; otherwise an excellent copy, in contemporary gilt-ruled speckled calf, rebounded, red and blue labels.

THE FIRST translation of the twelve keys into French (Paris, 1624; D.S.B., XIII, 560) was reset page for page by Moët in the present edition, the first issue of which appeared in 1659. It is dedicated to Sir Kenelm Digby, who is well known to have been interested in alchemy. In this second issue page 176 is correctly numbered but is misprinted as



Basilus Valentinus. Les Douze Clefs de Philosophie. Paris, 1660.



Basilus Valentinus. Azoth ou le Moyen. See Les Douze Clefs de Philosophie. Paris, 1660.

G. Neville
Historical
Chemical
Library

167 in the first. Pages 4 and 5 are wrongly numbered 2 and 3, as in the first issue. It is evident, therefore, that the second issue comprises the sheets of the first, but with a reset title page. “*Traité d’alchimie fort rares*” (Guaita). Almost all bibliographies cite only the 1659 issue, and the much rarer 1660 issue is not in the British Library. Some copies occur lacking the *Azoth*, which was evidently sold separately. Not in Bolton, Ferchl, Poggendorff, Wellcome, etc. (Caillet, 798, 800; Duveen, 48; Edelstein, 155; Ferguson, I, 77 [imperf.]; Ferguson Coll., 719 [imperf.]; Goldsmith, B318; Guaita, 1039, 2182; Hall, 33, 34; Neu, 269, 270; Partington, II, 191; Smith, 35; Waller, 11058; Watt, II, 925r)

BASILIIUS VALENTINUS

The Last Will and Testament of Basil Valentine, Monke of the Order of St. Bennet. Which being alone, He hid under a Table of Marble, behind the High-Altar of the Cathedral Church, in the Imperial City of Erford: leaving it there to be found by him whom Gods Providence should make worthy of it. To which is added Two Treatises. The First declaring his Manual Operations. The Second shewing things Natural and Supernatural. Never before Published in English.

London: Printed by S. G. and B. G. for Edward Brewster, and are to be sold at the sign of the Crane in St. Paul’s Church-Yard. 1671.

Third English edition, second issue. 8vo. 12 leaves, 534 (i.e., 504) pp.; 9 divisional title pages (dated 1670), pagination continuous. Folding woodcut “Table of Chymicall & Philosophicall Charecters” and 15 large text woodcuts. Very good copy, copiously annotated with drawings of chemical apparatus, alchemical symbols, and commentary on the margins and flyleaves in a legible seventeenth-century hand (unidentified). Bound in paneled calf antique, covers blind-ruled, spine richly gilt.

THE FINAL early English edition (first, 1657; second, 1658), being the sheets of the first issue (1670) with a reset title page (with slightly different wording). The *Letztes Testament* was first published in German (Jena, 1626), with additional matter in later editions. Translated into Latin by Michael Maier in 1617, the text formed the first and longest part of his *Tripus Aureus*. John Webster (1610–1682) translated this English edition and refers to it in his *Metallographia* (1671, p. 33), where he praises Basilius highly. The contents of *The Last Will* are discussed at length by Read (*Prelude to Chemistry*, pp. 193–211). (Cushing, B150; D.S.B., XIII, 560; Duveen, 49; Edelstein, 157; Ferguson, I, 82 [not in Young Coll.]; Ferguson Coll., 722; Hall, 35; Mellon, 129; Neu, 272; Partington, II, 193; Smith, 35; Sotheran, Cat. 800 [1926], 10113 [“Rare”]; Watt, II, 925t; Wellcome, II, 111; Wing, B1018)

BASILIIUS VALENTINUS

Offenbahrung der verborgenen Handgriffe auff das Universal gerichtet: Item Conclusions oder Schlussreden aller seiner Schrifftten und Tractaten. Von Schwefel, Vitriol und Magneten, beydes der Philosophischen als der Gemeinen: auss jenen entspringt das Universal: auss diesen die Particular. Darbey mit angefügt, Corneli Drebbel zu Leyden in Hollandr Tractatus Von Natur der Elementen, und wie sie Wind, Regen, Blitz und Donner verursachen, und worzu sie nützen.

(Erfurt:) In verleg. Johan Birckners Buchh. 1624.

First edition. 8vo. 1 leaf, (1), 88 pp., 2 leaves (last blank). Gothic letter, with small woodcuts on pages 5 and 71. Some leaves embrowned (characteristic of period); otherwise very fine copy, in contemporary blind-stamped vellum. Bound with works by A. Mizauld, G. Henisch von Bartfeld, G. Ripley, et al.

ONE OF the rarest works of the legendary Basil Valentine (i.e., Johann Thoelde, fl. 1600; see D.S.B.), in which are summarized his researches on sulphur, vitriol, magnets, the universal tincture, the philosopher’s stone, and related subjects. The preparations of other important mineral acids, aqua regia, alcohol, and sulphides and sulphates of various metals are also described. Appended to this treatise is the tract on the nature of the elements by Cornelius Drebbel (pp. 56–88), which originally appeared at Leiden (1608). Schmieder (p. 206), in 1832, refers to an octavo edition without having seen it. Partington (II, 192) cites this title in quarto format (from a copy in the British Library) but does not mention the octavo edition. Unknown to the usual bibliographers.

BASILIIUS VALENTINUS

Theodori Kerckringii Doctoris Medici Commentarius in Currum Triumphalem Antimonii Basilius Valentini, a se latinitate donatum.

Amsterdam: Sumptibus Andreae Frisii. 1671.

First Kerckring edition. 12mo. 12 leaves, 342 pp., 9 leaves. Five full-page copperplates of chemical apparatus. Beautifully engraved frontispiece (Romyn de Hooghe fecit 1671), and title-vignette. Very fine, crisp copy, in original vellum, old ink lettering on spine.

“THE FIRST Latin edition was that made by John Fabre (Toulouse, 1646), but the most important is that with the commentary by Theodor Kerckring (Amsterdam, 1671; 1685)” (D.S.B.). Kerckring (1640–1693), a physician and chemist in Amsterdam and Hamburg, F.R.S. (1677), opposed iatrophysics and microscopy. He prepared antimoniac acid by treating potassium antimonate with acid, and it was known as “*materia perlata Kerckringii*”; however, Libavius

had previously described this compound in his *Alchemia* (1597). Kerckring's commentary is in smaller type accompanying the text. A page-for-page reprint of the present edition, typographically different, was published by H. Wetsten (Amsterdam, 1685), copies of which are described by Duveen, Ferguson, Neu, and Osler. An edition of 1665, mentioned by Gmelin, is a ghost. (Caillet, 5735; Cushing, B148; D.S.B., XIII, 560; Duveen, *Supplement*, 26; Edelstein, 160; Ferchl, 25, 270; Ferguson Coll., 363; Mellon, 128; Partington, II, 192; Smith, 264 [imperf.]; Thorndike, VIII, 367; Watt, II, 925s; Wellcome, II, 111)

BASILIUS VALENTINUS

Tractat, Von dem grossen Stein der Ubralten, daran so viel tausendt Meister Anfangs der Welt hero gemacht haben: I. Nebenst seiner selbst eigenen klaren repetition und kurtzen Wiederholung, darinnen das rechte Liecht der Weisen nach Philosophischer Art für Augen gestellet, Benebenst einem Bericht, von den fürnembsten Mineralien und ihren Eigenschaften. II. De Microcosmo, oder der kieiinen Welt des Menschen. III. Von der grossen Heimligkeit der Welt, und ihrer Artzney, den Menschen zugehörig, . . . IV. Von der Wissenschaft und verborgenen Geheimmüssen der sieben Planeten. Den Filiis doctrinae zu guten publiciret, und jetzo gantz new durch den Druck aus Liecht bracht mit seinen zugehörigen Figuren, Dutch Johann Thölden, Hessum. (Leipzig:) In verlegung Barthel Voigts. 1626.

Sm. 8vo. 256 pp. Title page in red and black. Gothic letter. With 18 large alchemical woodcuts (many full page). Fine copy, in modern half calf, marbled boards, spine gilt-lettered and dated.

APPARENTLY THE fifth edition of this classic alchemical text (first: Eisleben, 1599) describing the twelve keys for preparing the philosopher's stone, edited by Johann Thoele. Also included are three other tracts by Basilius, as listed in the title. This traditional book of alchemical symbolism became one of the most frequently reprinted treatises of the seventeenth and eighteenth centuries. At the end are clear descriptions of several metals, nonmetals, and salts (e.g., copper, mercury, arsenic, sulphur, saltpeter, sal ammoniac, and potash). For an excellent account of the processes discussed in the twelve keys, see John Read, *Prelude to Chemistry* (London, 1936, pp. 196–210). All early editions are extremely rare. Not in Duveen, Ferguson, Wellcome, etc. (Ferguson Coll., 720; Neu, 275; Partington, II, 190; Waller, 11060)

BASILIUS VALENTINUS

Tractatus Chymico-Philosophicus de Rebus Naturalibus & Supernaturalibus. Metallorum & Mineralium.
Frankfurt: Sumptibus Jacobi Gothofredi Seyler. 1676.

First Latin edition, first issue. 8vo. 64 pp. Large copperplate vignette on title. Few leaves slightly embrowned, and old withdrawal stamp (Sion College Library) on verso of title leaf; otherwise fine copy in modern marbled boards, maroon morocco label.

THE LATIN translation of this important early work (first: Leipzig, 1603). The Ad Lectorem is signed "L. B.," presumably the unidentified translator. "Curieuses figures hermétiques sur le titre" (Caillet). Ferguson gives a detailed description of the beautiful alchemical title-vignette. Duveen (p. 49) lists the second issue of 1678. A third issue appeared in 1679 (Ferguson, I, 79; Wellcome, II, 111). Rare. (Caillet, 808; Ferchl, 25; Ferguson, I, 78; Neu, 286; Partington, II, 191; Poggendorff, I, 112–113; Watt, II, 925r)

BASILIUS VALENTINUS and SUCHTEN, Alexander von

Basilus Valentinus, a Benedictine Monk, Of Natural & Supernatural Things. Also, of the first Tincture, Root, and Spirit of Metals and Minerals, how the same are Conceived, Generated, Brought forth, Changed, and Augmented. Translated out of High Dutch by Daniel Cable. Whereunto is added Alex. Van Suchten Of the Secrets of Antimony. Translated out of High Dutch by D. C., a Person of great Skill in Chymistry.
London: Printed, and are to be sold by Moses Pitt at the White Hart in Little Britain. 1670.

First English edition, first issue. Two vols., 8vo., in 1. I: 238 pp., 1 leaf (title page, 1671 issue). II: 4 leaves, 122 pp., 1 leaf (adverts.). The *Suchten* has separate title (dated 1670), signatures, and pagination (although issued with the *Basilus*). Exceptionally fine copy, in original calf, spine richly gilt.

THE *Von dem natürlichen und ubernatürlichen Dingen* (Leipzig, 1603), one of the earliest Basil Valentine writings to be published by Johann Thoele, is here translated by Daniel Cable. A tract by Roger Bacon, *Of the medicine or tincture of antimony*, is followed by *A work of saturn*, attributed to John Isaac Holland. The sheets of the 1670 issue were reissued in 1671 with a reset title listing the works of Bacon and Holland. Suchten (fl. 1535–1576) published his work on antimony (Strassburg, 1570), and this English edition (which was also sold separately) contains extracts from other works on antimony, including the *Haligraphia*, which appeared long after Suchten's death. Bolton gives the wrong pagination for the Suchten volume. Duveen, Edelstein, Ferchl, Ferguson, and Neu list only the 1671

second issue. Very rare. Not in Cushing, D.S.B., Hall, Smith, Wellcome, etc. (Bolton, 1063; Duveen, 48; Edelstein, 153; Ferchl, 25; Ferguson, I, 82, II, 417 [not in Young Coll.]; Neu, 285, 3952; Partington, II, 156, 191; Sondheimer, 80; Watt, II, 925s; Wing, B1019, S6117)

BATE, George

Pharmacopoeia Bateana: Or, Bate's Dispensatory. Translated from the Second Edition of the Latin Copy, Published by Mr. James Shipton. Containing His Choice of Select Recipe's, their Names, Compositions, Preparations, Vertues, Uses and Doses, as they are Applicable to the whole Practice of Physick and Chyrurgery: The Arcana Goddardiana, and Their Recipe's intersperst in their proper Places, which are almost all wanting in the Latin Copy. Completed With above Five Hundred Chymical Processes; and their Explications at large, various Observations thereon, and a Rationale upon each Process. To which are Added in this English Edition, Goddard's Drops, Russel's Pouder, and the Emplastrum Febri-fugum: Those so much Fam'd in the World; As also several other Preparations from the Collectanea Chymica, and other Good Authors. By William Salmon, Professor of Physick. London: Printed for S. Smith and B. Walford, at the Prince's Arms, in St. Paul's Church-Yard. 1694.

First edition in English. 8vo. 8 leaves, 965 pp. (recte 963), 9 leaves. Copperplate (engraved by F. H. van Hove) of furnace and distillation apparatus, facing page 475. Note: pages 959–963 are misnumbered 961–965. Very good copy in contemporary unlettered paneled calf. Elaborate signature on first free endpaper (“John Freeman His Book 1697,” with 8 lines of notes in ink by the same hand): this is possibly John Freeman (fl. 1670–1720), historical painter and scene painter to Covent Garden (see D.N.B.).

BATE (1608–1669) received the M.D. degree from St. Edmund Hall, Oxford, in 1637 and became a Fellow of the Royal College of Physicians in 1640. He was court physician to Charles I, Cromwell, and Charles II and was elected F.R.S. Bate was buried in the church at Kingston-upon-Thames, and there is a monument to him in the chancel. The *Pharmacopoeia Bateana* (London: S. Smith, 1688; 2nd ed., 1691) originally appeared in Latin. This English translation by William Salmon (1644–1713) is from the second Latin edition. Later English editions appeared in 1700, 1706, 1713, and 1720. Bate's *Pharmacopoeia* was one of the most important works of the seventeenth century. Rare. (Cushing, 25; Neu, 297; Sondheimer, 1393; Watt, II, 829k; Wellcome, II, 113; Wing, B1088)

BATE, George

Pharmacopoeia Bateana: or, Bate's Dispensatory. Translated from the last Edition of the Latin Copy, publish'd by Mr. James Shipton. . . . Completed With above Six Hundred Chymical Processes; . . . The Fourth Edition. By William Salmon, M.D.

London: Printed for W. Innys, at the Prince's-Arms in St. Paul's Church-Yard. 1713.

Fourth edition. 8vo. 8 leaves, 744 pp., 8 leaves. Fine copy, in original paneled calf, rebacked, dark-green morocco label. Signature of Samuel Rewse (dated 1724, with notes in his hand); also signature of John Warren (d. 1747), apothecary to George II from 1733 until 1746, on first free endpaper.

THE WORDING of the title is substantially identical with that of the first English edition (1694). In the postscript (dated 7 July 1699) to the second edition (1700), Salmon states that he has reviewed the contents of the first edition and has corrected “Faults which had escap'd.” The postscript is the same in the fourth edition as it is in the second. The number of “Chymical Processes” has been increased from “above Five Hundred” to “above Six Hundred.” As in the first edition, this edition is dedicated to William III (1650–1702), even though Queen Anne (1665–1714) had ascended to the throne in 1702. Having come from the library of John Warren (see: Matthews, *The Royal Apothecaries*, 1967, pp. 146, 148, 179), this copy has an interesting provenance. (Blake, 33; Duveen, 51; Neu, 299; Watt, I, 83j)

BATE, George

Pharmacopoeia Bateana, in Libros Duos digester: Primo Compositiones Galenicæ, Altero Processus Chymici, Ordine Alphabetico exarantur: Viribus, Dosibusque illustrantur: Atque Catalogis & Indicibus accommodantur. Curâ & Operâ Thomæ Fuller . . .

London: Impensis Gul. & Joh. Innys ad Insignia Principis in Area Occidentali D. Pauli. 1719.

First edition by Fuller. 12mo. 17 leaves, 77, (17), 219, (25) pp. Very good copy, in original paneled calf, maroon label. Engraved bookplate (eighteenth century) of Radcliffe Library, Oxford, with duplicate stamp.

THE COMPLETELY revised version of the *Pharmacopoeia* of George Bate, brought up to date by Thomas Fuller (1654–1734), M.D. (Cambridge, 1681). In addition to the medicinal prescriptions of Bate and the improvements made by James Shipton in the seventeenth century, Fuller has included much recent information. The *Pharmacopoeia Hermetica*, with separate title page, describes the preparation of inorganic and organic compounds, with a two-page

table of chemical symbols used throughout the book. In some copies the main title is dated 1718. (Blake, 33; Duveen, 51; Ferchl, 168; Munk, I, 400; Neu, 294; Poggendorff, I, 817; Watt, I, 391y)

BATE, John

The Mysteries of Nature and Art. In four severall Parts. The first of Water-Works. The second of Fier-Works. The third of Drawing, Colouring, Limming, Paynting, Graving, and Etching. The fourth of Experiments. . . .

London: Printed by R. Bishop for Andrew Crook, at the Green Dragon in Paul's Church-Yard. 1654.

Third edition. 4to. 2 leaves, 221, (1) pp., 4 leaves (index), 3 leaves (advertisements). Divisional titles (each with woodcut) to second, third, and fourth parts; collation and pagination continuous. Numerous woodcuts in text (some full page). Engraved and letterpress titles laid down; otherwise fine copy in contemporary calf, gilt, rebacked.

THE GREATLY enlarged final and best edition of this curious work, preceded by shorter editions in 1634 and 1635. The experiments described and illustrated include instructions for making water clocks, weatherglasses, etc.; also experiments of "drawing water by the crane, by engines, of forcing water by ayre compressed and by engins, of motion by evaporating water, and by rarifying ayre . . ." Bearing in mind the early date of publication, the descriptions of engines driven by steam are of great technological interest. Instructions for making a "freezing mixture" are of special importance, as Robert Boyle is credited with making the first such experiments about thirty years after the first appearance of this work. The water clock made by the youthful Newton is similar to that depicted in this edition, and many notes in Newton's early notebooks are based on the present book. There is much of chemical interest, especially the section on fireworks. Writing in 1898, Ferguson (*Secrets*, II, 4th suppl., pp. 11–12) describes this edition as "rare, and . . . not readily procurable in really nice state." Nothing is recorded of the author. (Brock, 268; Duveen, 51; Ferguson Coll., 69; Krivatsy, 892; Middleton, *History of the Thermometer*, 1966, p. 18; Neu, 302; Partington, II, 113; Philip, 18; Watt, I, 83n; Wellcome, II, 113; Wing, B1092)

BATTUS, Karel

Secret-Boeck van veele diversche en Heerlijcke Konsten in veelderleye Materien, met veel Remedien teghen de innerlijcke en ytterlijcke gebreken der Menschen. Wt Latijnsche, Francoische, Hooghduytsche ende Nederduytsche Autbeuren vergadert. . . . Verrijckt met verscheyden Secreten van Wijnen, Verwen ende Schrijf-Konsten.

Amsterdam: By Jan Wilting, Boeck-verkooper op de Singel, by Jan Roonpoorts Tooren. 1656.

Third Amsterdam edition. 12mo. 573, (3) pp. Woodcut on title page. Black letter. Very good copy in contemporary overlapping vellum.

WRITING IN 1894, Ferguson said that this book of secrets is "one of the most attractive of all the collections . . . all the more so because such books are not common. . . . The work contains secrets referring to almost every imaginable topic, and the names of the authorities are frequently given" (Ferguson, *Books of Secrets*, II, 3rd Suppl., 39). Of chemical interest are secrets on fire, air, water, earth, cosmetics, wine, metals, gilding, sulphur, salt, glass, ink, pigments, dyes, distillation, nitric acid, alcohol, etc. "It is a comprehensive . . . collection of old physical, chemical and technical knowledge" (Ferguson, op. cit.). Battus (fl. 1569–1609?) includes many recipes and processes that were printed in the *Kunstbüchlin* (1537) and the *Ettliche Künste* (1563). Ferguson (*Some Early Treatises on Technological Chemistry, Supplement V*, 1916, pp. 42–48) describes the following editions, all of which are now of great rarity: Leeuwarden, 1594, 1664; Dordrecht, 1601, 1609; Amsterdam, 1634, 1650, 1656, 1661; Harlem, 1650, 1656. Not in Bolton, Caillet, Duveen, Ferchl, Ferguson, Neu, Partington, Smith, Thorndike, Watt, etc. Edelstein, Ferguson Coll., Ferguson, *Books of Secrets*, and Wellcome list other editions.

BAUDERON, Brice

Pharmacopée de Bauderon. Augmentée de plusieurs compositions nécessaires; & des facultez de chaque composition. Avec un traité des plus usitez & celebres medicamens chymiques. Par G. Sauvageon, D.M. Aggrégé au College des Medecins de Lyon. Nouvelle edition, reveuë & exactement corrigée de quantité de fautes qui s'étoient glissées dans les autres editions. Lyon: Chez C. Charles Carteron. 1681.

8vo. 8 leaves, 785, (1) pp., 9 leaves (index); 51, (1) pp.; 2 leaves, 97 pp., 4 leaves (index). Fine copy in contemporary calf, covers gilt-ruled, rebacked, spine gilt-lettered and gilt-ruled.

"G. SAUVAGEON revised in 1630 the *Pharmacopoeia* of Brice Bauderon (1540–1623) first printed in 1588, wrote on the powder of sympathy, and compiled a text-book: *Traicté Chymique* . . . Paris, 1643 . . . It defends chemical remedies, saying (with some truth) that these go back beyond Paracelsus to Lull, Arnald of Villanova, and Mesuë, but are more difficult to prepare than the Galenical. It refers to the 'learned public lectures in chemistry at the Jardin Royal' for fuller details, and deals with antimony, mercury, etc., ending with potable gold" (Partington). This edition contains the *Traicté des eaux distillées*, by Laurens Catelan, master apothecary of Montpellier; a rare work, unknown to R. J. Forbes (*History of distillation*), and of chemical importance. The *Traité chymique* by Sauvageon, appended to this

edition, has a separate title page, signatures, and pagination. Duveen and Neu list a variant issue with different names in the imprint (viz. Guillaume Chaunod and Cesar Chappuis) of the main title. The *Traité chymique* (by G. Sauvageon) in this copy has the Chaunod and Chappuis imprint. Thorndike (VIII, 126–129) discusses Sauvageon and his *Traité*. Not in Bolton, Edelstein, Ferguson, Ferguson Coll., Goldsmith, Osler, Poggenдорff, Smith, Sondheimer, Waller, Watt, Wellcome, etc. (Duveen, 52; Ferchl, 470; Neu, 312; Partington, III, 8; Thorndike, VIII, 126)

BAUDOIN, Dominique-François

Traité Théorique de l'Art du Savonnier, Dédruit des Procédés pratiques de la Fabrication de Marseille, Qui a remporté le Prix au jugement de l'Académie de Marseille, dans la Séance du 23 Août 1807. Par Dominique-François Baudoin, Négociant-Fabricant de Savon de cette Ville, fait en 1795. Revu et augmenté de Notes en 1806 and 1807. Le perfectionnement des Arts et les bonnes Moeurs assurent la prospérité des États.

Marseille: De l'Imprimerie de Bertrand père et fils. 1808.

First edition. 8vo. 14 pp., 1 leaf (errata), 333, (1) pp. With 2 engraved plates (facing p. 101, and final page). A very fine copy, unpressed and uncut, in the original wrappers; tastefully and strongly bound in half morocco, marbled boards, crimson gilt-lettered morocco label, spine gilt and dated. With small advertisement pasted on the verso of the first wrapper cover: L'Aréomètre Se trouve chez l'Auteur.

AN IMPORTANT book on the manufacture of all types of soap, originally written in 1795, but first published here with notes added in 1806 and 1807. It received a prize from the Académie de Marseille in August 1807. Baudoin designed his own factory in Marseille, and this book is entirely on the chemistry of soap manufacture. Rare. Not in Duveen, Ferchl, Ferguson, Morgan, Partington, Poggenдорff, Smith, Waller, Watt, Wellcome, etc. (Bolton, I, 79)

BAUDRIMONT, Alexandre Edouard

Introduction à l'Étude de la Chimie par la Théorie Atomique. Paris: Louis Colas & Crochard. 1833.

First edition. 8vo. 4 leaves, 208 pp. Fine copy in original mottled half calf, marbled boards. From the library of James Finlay Weir Johnston, with his signature in pencil (dated May 1834) on recto of half title.

BAUDRIMONT (1806–1880), M.D. (Paris, 1831), was physician in Valenciennes, *préparateur* in chemistry at the Collège de France, and later (1848) professor of chemistry at Bordeaux. In this (his first major) work, dedicated to Thenard, he discusses the most modern theories of chemistry, referring to Avogadro's hypothesis (p. 66 et seq.), which

he ascribes to Ampère and Gaudin (p. 75). Like Gaudin, Baudrimont was interested in working out atomic arrangements and molecular forms, employing both crystallographic and chemical data. In this work he foreshadowed the unitary theory "by saying that it is more correct to regard a ternary compound like lead sulphate as PbSO_4 rather than as composed of proximate constituents, SO_3 , PbO according to Berzelius's theory or as SO_4 , Pb according to Davy's theory" (Partington). Baudrimont also claimed to have anticipated the theory of types (in 1835). The chemistry of each of the elements then known, using quantitative analytical data, is discussed (pp. 109 et seq.). Pages 196–198 are very important as they show eleven chemical equations, among the earliest examples known. These include the correct formula for water (H_2O), which most chemists then formulated as HO . Equations for the hydrolysis of potassium cyanide to ammonia and potassium formate and the reaction of ammonia with benzoyl chloride to form benzamide are given. An important association copy: J. F. W. Johnston (1798–1855), the famous agricultural chemist, was a pupil of Berzelius. Scarce. (Bolton, 286; Cole, 44; Ferchl, 27; Partington, IV, 393; Wellcome, II, 116)

BAUDRIMONT, Alexandre Edouard

Traité de Chimie Générale et Expérimentale, avec les applications aux arts, à la médecine et à la pharmacie. . . . Paris: Chez J.-B. Baillièrre. 1844, 1846.

First edition. 2 vols., 8vo. I: xvi, 720 pp. + 40 pp. (publisher's catalogue). II: xxxii, 983, (1) pp. With folding engraved plate (I, 472), and 257 figures in text. Fine copy in original quarter calf, marbled boards, spines gilt.

THE VERY scarce magnum opus of Baudrimont. "In his textbook Baudrimont discussed atoms, molecular types, the composition of salts, Persoz' atomic weights, Avogadro's hypothesis, electrochemical theories, including his own view that electricity is molecular action, the type theory, unitary formulae, and the molecular theory" (Partington). Baudrimont was one of the few scientists before Cannizzaro to mention Avogadro by name in connection with the gas hypothesis (vol. I, p. 115). Baudrimont's concept of the molecule (vol. I, p. 9) is quoted by Mauskopf as of great interest, "for it explicitly reflects Ampère's concept and relates it to the conscious distinction between atoms and molecules." In volume I (pp. 301 ff.) Baudrimont explains his system of classification of numerical types, based on the natural order of numbers 1, 2, 3, 4 . . . followed by mechanical types, the first being indicated by the chemical formulae, the second by the crystallographic form. In his discussion of the history of chemistry, Baudrimont gives an excellent summary of Lavoisier's important researches. A significant

milestone work. Not in Cole, Duveen, Morgan, Smith, Wellcome, etc. (Bolton, 286; D.S.B., I, 518–519; Edelstein, 167; Ferchl, 27; Mauskopf, S. H., “The Atomic Theories of Ampère and Gaudin,” *Isis*, 60 [1969], 72–73; Partington, IV, 393–394)

BAUDRY

Traité des Eaux Minérales de Bourbonne les Bains, contenant une explication méthodique sur tous leurs usages. Par Mr. Baudry, Médecin des Hôpitaux du Roy, & Intendant des Eaux Minérales de ce Lieu.

Dijon: Chez J. Sirot, Imprimeur-Libraire, Place Saint Etienne. 1736.

First edition. 8vo. 19 leaves, 258 pp., 2 leaves. Woodcut on page 258. Fine, crisp copy in contemporary mottled calf, spine richly gilt in compartments, gilt-lettered maroon label. Presentation copy (from the author?) to Hugues Alexis Juvet (1714–1789), inscribed neatly in ink on title page: “Au Dr. Juvet Successeur de l’auteur.” Bound with: Duport, Antoine, *Questiones medicae circa Thermas Borbonienses* (Besançon, 1721).

BAUDRY, WHOSE forenames are unknown, was physician at the hospital and superintendent of the mineral hot springs at Bourbonne les Bains. The first ninety-three pages give a detailed history of these famous sulphur-containing, bituminous waters, with the methods used for their chemical analysis. The remainder of the book describes the diseases and physical conditions that are cured by bathing in these waters or imbibing them. A rare work, which is not mentioned by the usual bibliographies of chemistry and medicine. (Blake, 34; Wellcome, II, 117)

BAUHIN, Caspar

Caspari Bauhini Basil. D. eiusdemq. Academ. Anatom. et Botanic. Professor Ordin. De Lapidis Bezaar Orient. et Occident. Cervini item et Germanici, Ortu, Natura, differentiis, veròque usu ex Veterum & Recentiorum placitis Liber hactenus non editus.

Basel: Apud Conr. Waldkirch. Anno 1613.

First edition. 8vo. 12 leaves, 288 pp., 4 leaves. With 2 leaves between pages 66–67 (woodcut and descriptive text), 1 leaf between pages 98–99 (woodcut), and 1 leaf between pages 268–269 (woodcut). Superb copy, in contemporary blind-ruled vellum, with silken green ties. From the library of J. L. Bausch, M.D., celebrated seventeenth-century physician (see below).

BAUHIN (1560–1624) was born in Basel, studied at Padua and Montpellier, and was successively professor of Greek, anatomy, and botany, and finally of medicine in Basel. He became town physician and private physician to the Duke of Württemberg. He published very important works on botany and anatomy and was the first to establish a system

of botanical nomenclature in his *Pinax Theatri botanici* (1623), which was later extensively used by Linnaeus (cf. PMM). This pharmaceutical chemical work describes the supposed curative properties of mineral and organic bezoar stones, with numerous references to earlier and contemporary authors. Long accounts are given of stones from the Orient and the Americas (e.g., Peru and the West Indies), and this work is an important Americanum (overlooked until Alden’s *European Americana*, 1982). Second edition: Basel, 1625.

Having been owned by Johann Lorenz Bausch (1605–1665), this copy has an important provenance. It bears the signature, in ink, on the title page “J. L. Bausch, M.D. 1636.” Bausch was a noted physician and founder of the *Academia Naturae Curiosorum* (1652), which in 1677 became the Imperial Leopoldine Academy (of science). Bausch wrote important books on the eaglestone and bloodstone, and his research notes in ink appear in the margin of pages 52–53 of this copy. Not in Caillet, Duveen, Edelstein, Partington, Waller, etc. (Cushing, B171; D.S.B., I, 524; Ferchl, 27; Ferguson, I, 83; Hoover, 102; Neu, 316; Watt, I, 85; Wellcome, I, 731)

BAUMÉ, Antoine

Chymie Expérimentale et Raisonnée, . . .

Paris: Chez P. Franc. Didot le jeune, Libraire de la Faculté de Médecine, quai des Augustins. 1773.

First edition. 3 vols., 8vo. I: 2 leaves, clx, 482 pp. With 8 folding copperplates. II: 2 leaves, 671, (1) pp. With 2 folding copperplates. III: 2 leaves, 704 pp. With 2 folding copperplates. Fine engraved frontispiece portrait in volume I (signed C. N. Cochin delin. 1772. Aug. de St. Aubin sculp., Baumé facing right). Large engraved title-vignettes (by J. M. Moreau and J. J. le Veau) in each volume. Very fine set in original mottled calf, spines richly gilt, each volume with 2 maroon morocco labels.

THREE DISTINCT and separate editions (not issues) of this celebrated work were published in 1773 by the same printers. Although all three editions are very similar in appearance, the first is considered to be typographically the best. It contains a privilege and errata (pp. 699–702) and catalogue of chemical books (pp. 703–704) not present in the second and third editions. The subtle differences in each of the 1773 editions are described in detail by Cole. “One of the very latest and . . . best text books based on the Phlogiston theory by one of the most distinguished eighteenth century French chemists” (Duveen, who incorrectly dates this work 1783). Partington discusses the contents. At the end of volume III (pp. 616–630), in a chapter on the philosopher’s stone, Baumé refutes the claims of the alchemists. (Blake, 35; Bolton, 287; Cole, 45A; D.S.B., I, 527; Duveen, 53; Edelstein., 170; Ferchl, 27; Ferguson, I, 83–

84; Ferguson Coll., 71; Neu, 321; Partington, III, 91; Poggendorff, I, 116; Smith, 38; Watt, 1, 85p)

BAUMÉ, Antoine

Chymie Expérimentale et Raisonnée, par M. Baumé, Maître Apothicaire de Paris, Démonstrateur en Chymie, & de l'Académie Royale des Sciences . . .

Paris. Chez P. Franc. Didot le jeune, . . . 1773.

First edition. 3 vols., 8vo. I: 2 leaves, cxlvi, 482 pp. With 8 folding copperplates. II: 2 leaves, 671, (1) pp. With 2 folding copperplates. III: 2 leaves, 698 pp. With 2 folding copperplates. Fine engraved frontispiece portrait in volume I (unsigned, Baumé facing left). Large engraved title-vignettes (unsigned) in each volume. Very fine copy in the original mottled calf, spines richly gilt, each volume with 2 gilt-lettered maroon morocco labels.

“ONE OF the very latest and at the same time the best textbooks based on the Phlogiston theory by one of the most distinguished eighteenth century French chemists” (Duveen). Partington gives a detailed description of the contents. At the end of volume III (pp. 616–630) is a chapter titled “Réflexions sur la Pierre philosophale” in which Baumé refutes the claims of the alchemists. There are two issues of this work by the same printers with the same date. It is possible that the issue described by Ferguson as the “best” is the second, as it has Baumé’s portrait signed by Cochin, and the author is facing right (toward the title page). Also the title-vignettes are signed by Moreau le Jeune and reversed, and the mispagination in volume III (968 for 698) has been corrected. The so-called best issue contains a privilege, list of errata, and catalogue of books on chemistry, not present in this issue. Although Ferguson states that the portrait and plates in this issue are “inferior in execution,” they are here in the finest state and not in the least inferior. Possibly Baumé disliked his portrait in this (first?) issue, facing away from the title page and requested its reversal, at the same time taking the opportunity to correct errors and insert the errata in the other (second?) issue. In any event, no priority of issue has been established. It has been suggested that this is a pirated reprint, but this is unlikely. (Blake, 35; Bolton, 287; D.S.B., I, 527; Duveen, 53; Edelstein, 170; Ferchl, 27; Ferguson, I, 83–84; Ferguson Coll., 71; Neu, 321; Partington, III, 91; Poggendorff, I, 116; Smith, 38; Sondheimer, 87; Watt, I, 85p; Wellcome, II, 118)

BAUMÉ, Antoine

Chymie Expérimentale et Raisonnée, par M. Baumé, Maître Apothicaire de Paris, Démonstrateur en Chymie, & de l'Académie Royale des Sciences. Tome Premier (-Quatrième).

Paris: Chez P. F. Didot le jeune, . . . 1774.

Second edition. 4 vols., 12mo. I: 1 leaf, cxvi, 353, (1) pp. 7 folding copperplates. II: 1 leaf, 499, (1) pp. 3 folding copperplates. III: 1 leaf, 506 pp. IV: 1 leaf, 492 pp., 2 leaves. 2 folding copperplates. Preliminary leaves of volumes I and II slightly stained, and lower margin of final leaf of volume I missing (not affecting text); otherwise a good copy in contemporary speckled calf, spine gilt-ruled in compartments. From the library of the celebrated Portuguese scientist Dr. Constantino Antonio Botelho de Lacerda Lobo (1754–1820 or 1822), who taught at the University of Coimbra.

THE SECOND (first 12mo.) edition of this excellent work, published by P. F. Didot le jeune, who brought out the first edition in 1773. The last two leaves of volume IV carry the *Approbation* (1 April 1773) and *Privilege* (19 February 1750). As in the first edition, there are twelve copperplates of chemical apparatus, but these have been reengraved. Of considerable rarity, this edition is not mentioned by any of the usual early chemical bibliographies.

BAUMÉ, Antoine

Chymie Expérimentale et Raisonnée, . . .

Paris: Chez P. Franc. Didot le jeune, Libraire de la Faculté de Médecine, quai des Augustins. 1773.

Third edition. 3 vols., 8vo. I: 2 leaves, cxlvi, 482 pp. With 8 folding copperplates. II: 2 leaves, 671, (1) pp. With 2 folding copperplates. III: 2 leaves, 698 pp. With 2 folding copperplates. Fine engraved frontispiece portrait in volume I (unsigned, Baumé facing left). Large engraved title-vignettes (unsigned) in each volume. Very fine set in original mottled calf, spines richly gilt, each volume with 2 maroon morocco labels.

THE THIRD edition of this textbook, printed the same year as the first, with the pagination errors of the first and second editions corrected, but with a few errors of its own (see Cole for details). Although Ferguson states that the portrait and plates in this printing are “inferior in execution,” they are in the finest state in this copy. (Cole, 47C; Wellcome, II, 118)

BAUMÉ, Antoine

Dissertation sur l'Aether, dans laquelle on examine les différens produits du mélange de l'Esprit de Vin avec les Acides Minéraux. Par M. Baumé, Me-Apothicaire de Paris.

Paris: Chez Jean-Thomas Hérissant. 1757.

First edition. 12mo. 2 leaves (first blank), xii, 332 pp., 4 leaves. Folding printed table (facing p. 198) and folding copperplate of chemical apparatus (facing p. 318). Fine copy in contemporary speckled calf, spine gilt, maroon morocco label gilt.

THE IMPORTANT first book published by Baumé (1728–1804), a pupil of Geoffroy, who later became master apoth-

ecary and demonstrator in chemistry at the Collège de Pharmacie in Paris. He was lecture demonstrator to Macquer for twenty-five years, had a large manufacturing laboratory, and was one of the leading French chemists of his time. A milestone in the history of organic chemistry, the present work describes the preparation of ethers and esters by the reaction of sulphuric, nitric, and hydrochloric acids with ethyl alcohol and other compounds. There is an interesting historical survey (pp. 1–26). Not in Caillet, Cushing, Duveen, Ferguson Coll., Morgan, Neu, Sondheimer, Waller, Watt, etc. (Blake, 35; Bolton, 287; D.S.B., I, 527; Edelstein, 172; Ferchl, 27; Ferguson, I, 84 [not in Young Coll.]; Osler, 1965; Partington, III, 90, 94; Poggendorff, I, 116; Smith, 38; Sotheran, Cat. 702 [1910], 6051 [“Rare”]; Wellcome, II, 117)

BAUMÉ, Antoine

Éléments de Pharmacie Theorique et Pratique: contenant toutes les opérations fondamentales de cet art, avec leur définition, & une explication de ces opérations, par les principes de la chymie; la maniere de bien choisir, de préparer, & de meler les médicamens, avec des remarques & des réflexions sur chaque procédé; les moyens de reconnoître les médicamens falsifiés ou altérés; les recettes des médicamens nouvellement mis en usage; les principes fondamentaux de plusieurs arts dépendans de la pharmacie: tels que l'art du confiseur, & ceux de la préparation des eaux de senteur & des liqueurs de table. Avec une table des vertus & doses des médicamens. Par M. Baumé, Maître Apothicaire de Paris, & Démonstrateur en Chymie.

Paris: Chez la veuve Damonville, & Musier fils, . . . P. F. Didot jeune, . . . De Hansy, . . . 1762.

First edition. 8vo, xvi, 853, (1) pp., 1 leaf, 4 pp. (advertisements). With 2 folding copperplates of chemical apparatus (facing pp. 80 and 560). Very good copy in blind-ruled calf antique, spine gilt-lettered. Presented to the Medical and Chirurgical Society, Aberdeen, with inscription in ink at top of the title page. The donor, “Rob. Scott,” was probably Robert Eden Scott (1770–1811), professor of natural philosophy at Aberdeen. The donation was posthumous, as the date on the title reads “D 4 21” (i.e., Dec. 4, 1821). On Scott, see the D.N.B.

THE RARE first edition of one of the great books on practical pharmaceutical chemistry of the eighteenth century. Vegetable and animal chemistry are included, which are not covered in the author's classic *Chymie expérimentale et raisonnée* (Paris, 1773, 3 vols., 8vo.), which forms a sequel to this work. “The treatment is clear, detailed, and practical” (Partington). Baumé (1728–1804), who had a large manufacturing laboratory and collaborated with Macquer

in his lecture demonstrations for twenty-five years, kept this work up-to-date, an eighth edition appearing in 1797 in two volumes. This edition not in Bolton, Duveen, Edelstein, Morgan, Neu, Smith, Waller, Watt, etc. (Caillet, 847; Ferchl, 27; Ferguson, I, 84 [not in Young Coll.]; Partington, III, 91; Poggendorff, I, 116; Wellcome, II, 117)

BAUMÉ, Antoine

Manuel de Chymie, ou exposé des opérations et des produits d'un cours de chymie. Ouvrage utile aux personnes qui veulent suivre un Cours de cette Science, ou qui ont dessein de se former un Cabinet de Chymie. Par M. Baumé, Maître Apothicaire de Paris & Démonstrateur en Chymie. Paris: Chez Didot le jeune, Musier, fils, Dehansy, Pancoucke. 1763.

First edition. 12mo. xii, 495, (1) pp. Fine copy in contemporary gilt-ruled mottled calf, spine richly gilt, maroon lettering label. On the front pastedown endpaper are the eighteenth-century armorial bookplate of Jacques Chavane Conseiller au Parlement and the nineteenth-century book ticket of Paul Gavelle.

ONE OF the best concise textbooks of chemistry based on the phlogiston theory. “Bishop (Richard) Watson when appointed professor in Cambridge learnt his chemistry from . . . Baumé's *Manuel*, which he greatly esteemed” (Partington). An enlarged second edition appeared two years later (Paris, 1765). Rare. Not in Blake, Bolton, Caillet, Cushing, D.S.B., Duveen, Edelstein, Neu, Osler, Smith, Waller, Watt, etc. (Ferchl, 27; Ferguson, I, 84 [not in Young Coll.]; Ferguson Coll.; Partington, III, 90; Poggendorff, I, 116; Wellcome, II, 118)

BAUMÉ, Antoine

Manuel de Chymie, ou exposé des opérations de la chymie et de leurs produits. Ouvrage utile aux personnes qui veulent prendre une idée de cette Science, ou qui ont dessein de se former un Cabinet de Chymie. Seconde édition. Revue & augmentée. Par M. Baumé, Maître Apothicaire de Paris, & Démonstrateur en Chymie.

Paris: Apud Theoph. Barrois, Bibliopolam, ad Ripam Augustinianorum, No. 18. 1766.

Second edition. 12mo. xvi, 501 pp., 1 leaf. Very good copy in mottled half calf antique, marbled boards, spine gilt-ruled, maroon morocco gilt-lettered label.

A REISSUE OF the second edition (Paris: Didot, Jr., 1765. See Wellcome, II, 118), with a new title page. The “Theoph. Barrois” imprint is printed on a separate piece of paper, which has been placed over the “P. Fr. Didot, jeune” imprint (visible from the verso of the title page; see Wellcome,

II, 118). There was another issue in the same year with identical pagination but different imprint (Paris: La Combe, 1766). Not in Bolton, Caillet, Cushing, D.S.B., Duveen, Edelstein, Ferguson Coll., Morgan, Osler, Poggendorff, Waller, Watt, etc. (Blake, 35; Ferchl, 27; Ferguson, I, 84 [not in Young Coll.]; Neu, 326; Partington, III, 90 [1765 issue]; Smith, 38; Wellcome, II, 118)

BAUMÉ, Antoine

Manuel de Chymie, ou exposé des opérations de la Chymie et de leurs Produits. Ouvrage utile aux personnes qui veulent prendre une idée de cette Science, ou qui ont dessein de se former un Cabinet de Chymie. Seconde édition. Revue & augmentée. Par M. Baumé . . .

Paris: Chez P. Fr. Didot jeune, Libraire, Quai des Augustins. 1766.

Second edition, second issue. 12mo. xvi, 501, (3) pp. Fine copy in original calf, spine gilt-ruled in compartments, maroon morocco label. Engraved eighteenth-century armorial bookplate: Sir John E. Swinburne, Bart. Capheaton.

A REISSUE OF the second edition (Paris: Didot, Jr., 1765; Wellcome, II, 118), with a reset title page and several of the errata corrected. "This, the 'second edition,' makes only a few changes in the first. Included are answers to some criticisms of the first edition" (Cole). There was another issue in 1766 with identical pagination but different imprint (Paris: La Combe, 1766). (Blake, 35; Cole, 55; Ferchl, 27; Ferguson, I, 84 [not in Young Coll.]; Neu, 326; Partington, III, 90 [1765 issue only]; Smith, 38; Wellcome, II, 118)

BAUMÉ, Antoine

Manuel de Chymie, ou exposé des opérations de la Chymie et de leurs Produits. . . . Seconde Édition. Revue & augmentée. Par M. Baumé . . .

Paris: Apud Theoph. Barrois, Bibliopolem, ad Ripam Augustinianorum, No. 18. 1766.

Second edition, second issue, variant. 12mo. xvi, 501, (3) pp. Title page with perforation (not affecting text); otherwise very good copy in mottled half calf antique, marbled boards, spine gilt-ruled and dated, maroon morocco label.

A VARIANT OF the second issue of the second edition. The "Theoph. Barrois" imprint is printed on a separate piece of contemporary paper, which has been pasted over the "P. Tr. Bidat, jeune" imprint (visible from the verso of the title page). This variant is otherwise identical to the "Didot jeune" issue. It is not recorded by Cole or the usual bibliographers.

BAUMÉ, Antoine

A Manual of Chemistry, or a brief account of the operations of chemistry, and their products. Translated from the French of M. Baumé, Demonstrator in Chemistry at Paris, and Member of the Royal Academy of Sciences.

Warrington: Printed, by W. Eyres, for J. Johnson, . . . 1778.

First English edition. 12mo. (viii), 400 pp. Very good copy in contemporary gilt-ruled calf, rebacked, gilt-lettered black morocco label. From the library of the celebrated chemist Joseph William Mellor (1869–1938), with his bookplate (depicting Khunrath's famous owl) on the front pastedown endpaper.

THE FIRST English translation, by John Aikin, of the important *Manuel de Chymie*. In his preface Aikin says: "This translation is made from the second edition" (i.e., Paris, 1765). He adds: "I have ventured to add a few [notes] of my own, principally relating to . . . fixed air, with which Mr. Baumé appears not to have been acquainted." The preface is dated "Warrington, May 1, 1778" and signed "John Aikin." Duveen describes this first English edition as rare. Not in Blake, Bolton, Cushing, D.S.B., Ferguson Coll., Osler, Poggendorff, Waller, Watt, Wellcome, etc. (Duveen, 53; Edelstein, 173; Ferchl, 27; Ferguson, I, 84 [not in Young Coll.]; Morgan, 41; Neu, 327; Partington, III, 90; Smith, 38; Sondheimer, 89)

BAUMÉ, Antoine

A Manual of Chemistry, or a brief account of the operations of chemistry, and their products. Translated from the French of M. Baumé, Demonstrator in Chemistry at Paris, and Member of the Royal Academy of Sciences. The second edition corrected, with additions.

Warrington: Printed by W. Eyres, for J. Johnson, . . . 1786.

Second English edition. 12mo. 3 leaves, 399, (1) pp. Signatures A2 and A3 lacking; otherwise a very good copy with wide margins (lower edges uncut), in half calf antique, marbled boards, gilt-lettered black morocco label, spine gilt-ruled and dated.

THE FINAL edition of this important textbook. It is a close paginary reprint of the first English edition (Warrington, 1778) with the errors corrected and some additions. In this copy, as in others, the preface of the translator (John Aikin) has been removed. The second English edition is even rarer than the first of 1778. Not in Blake, Cushing, D.S.B., Duveen, Edelstein, Ferchl, Ferguson, Ferguson Coll., Morgan, Neu, Poggendorff, Sondheimer, Waller, Watt, etc. (Bolton, 287; Partington, III, 90; Smith, 38; Wellcome, II, 118)

BAUMÉ, Antoine

Observations sur le Rapport du Citoyen Guyton, ayant pour titre: Sur la question de savoir en quel état les salpêtres doivent être livrés dans les magasins de la République, et sur le mode d'en juger le titre; fait à l'Institut national, le 26 thermidor an V, et imprimé dans les Annales de Chimie, No. 69. Par le Citoyen Baumé, . . .

Paris: Chez H. Agasse, Imprimeur-Libraire, rue des Poitevins, no. 18. L'an VI de la République. 1798.

First edition. 8vo. 80 pp. Very good copy in contemporary quarter calf, speckled boards, with morocco label ("Melanges"). Bound with: Dubuisson, F. R. A., *Mémoire sur les Acides Natifs du Verjus* (Paris, 1783), and seven other chemical tracts.

A REPORT ON the three methods then employed for analyzing the saltpeter delivered to warehouses for making gunpowder. In 1794 Guyton de Morveau introduced a fourth and improved process, which was published in the *Annales de Chimie* (no. 69). Baumé comments on Guyton's process for determining the purity of saltpeter in a series of experiments. Saltpeter was crystallized in lead vessels and consequently contained impurities (e.g., sodium chloride and lead chloride). Volumetric experiments are described in which solutions of saltpeter are treated with lead nitrate or lead acetate (to precipitate lead chloride) and thus determine the percentage of chloride and lead in the saltpeter. There are references to the collaboration of Guyton with Lavoisier. The work of Guyton on saltpeter is discussed by Smeaton (*Ambix*, 1957, vol. 6, pp. 30–31) and briefly by Szabadvary (*History of Analytical Chemistry*, 1966, pp. 205–207). Neither author mentions the present work. A milestone in the literature of the analysis of saltpeter for gunpowder manufacture during the revolutionary period. Very rare. (Smith, 38)

BAUMÉ, Antoine

Opuscules chimiques, faisant suite à la chimie expérimentale et raisonnée. Par Baumé, apothicaire de Paris, membre de l'Institut national, etc.

Paris: Chez H. Agasse, imprimeur-libraire, rue des Poitevins, no. 18. L'An VI de la République. (1798).

First edition. 8vo. 2 leaves, 452 pp. With 2 printed tables between pages 254 and 255. Fine, crisp copy, in nineteenth-century quarter morocco, marbled boards. From the library of Professor Franz Sondheimer (1926–1981), with his bookplate on the front pastedown endpaper.

BAUMÉ'S LAST work, published as a continuation of his famous textbook *Chymie expérimentale et raisonnée*, which had appeared twenty-five years earlier. In the meantime the rise of the new chemistry of Lavoisier and his coworkers had

taken place, to which Baumé was utterly opposed. The first 152 pages consist of a dissertation entitled *Recherches sur la cause de la causticité des agens chimiques*, which is directed against Macquer, who had abandoned Meyer's theory of the acidum pingue and had adopted "the new system of the cause of the causticity of lime." The remainder of the book comprises different memoirs, including a long treatise, *Observations sur le rapport du Citoyen Guyton, ayant pour titre: Sur la question de savoir en quel état les salpêtres doivent être livrés dans les magasins de la République* (pp. 355–421), in which Baumé reproaches Guyton for having adopted Lavoisier's ideas. Pages 211–275 discuss different types of thermometers, their construction, and the liquids to be used in them. This important section is completely overlooked by W. E. Knowles Middleton in his *A History of the Thermometer* (1966). Other memoirs include discourses on nitric, hydrochloric, and sulphuric acids; arsenic; vegetable oils; production of heat and cold by chemical reactions; and the reaction of sodium chloride with lead nitrate and lead acetate. This work was translated into German: *Kleine chemische Schriften* (Frankfurt, 1800). One of Baumé's rarest works. Not in Caillet, Cushing, D.S.B., Duveen, Morgan, Neu, Osler, Waller, Watt, etc. (Bolton, 287; Ferchl, 27; Ferguson, I, 84 [not in Young Coll.]; Partington, III, 91; Poggendorff, I, 116; Smith, 38; Wellcome, II, 118)

BAUMER, Johann Wilhelm

Bibliotheca Chemica, adornata a Joan. Wilhelmo Baumer, in Academia Giessena . . .

Giessen: Apud Joan. Justum Fried. Krieger, Acad. Bibliopolam. 1782.

First edition. 8vo. 6 leaves, 116 pp. Woodcut on title page. Fine, crisp copy, uncut and unpressed, in quarter maroon morocco antique, cloth boards, spine gilt-lettered and dated, original plain brown wrapper bound in.

AN EARLY bibliography of chemistry containing about 750 titles. Works are divided into seven categories: 1) histories; 2) general; 3) physical chemistry; 4) analytical and metallurgical; 5) alchemical; 6) "mechanical" (i.e., chemical technology); and 7) pharmaceutical. "A brief but useful bibliography" (Ferguson). Baumer (1719–1788), professor of medicine and physics at Erfurt, was later appointed to the chair of medicine at Giessen. He published several books on minerals and precious stones, hydrography, geological subjects, medicine, and chemistry. A rare work, unknown to Hoefler, Kopp, Partington, and other historians of chemistry. Not in D.S.B., Duveen, Edelstein, Heym, Neu, Watt, etc. (Blake, 35; Bolton, 3; Cushing, B182; Ferchl, 28; Ferguson, I, 84; Ferguson Coll., 71; Smith, 39; Thornton & Tully, 311; Waller, 18065; Wellcome, II, 118)

BAUMES, Jean Baptiste Timothée

Essai d'un Système Chimique de la Science de l'Homme. . .
Nismes: J. B. Guibert et Comp. 1798.

First edition. 8vo. 101 pp., 1 leaf (errata), verso blank. Fine, crisp copy in patterned boards antique.

BAUMES (1756–1828), professor of medicine in Montpellier and a prolific author, attempted in this work to found a new pathological system based on the revolutionary discoveries in chemistry made in the last decade of the eighteenth century. The book is divided into two sections: *Chimie physiologique* and *Chimie pathologique*. In the latter he divides diseases into “désordres de l’oxygénation, de la calorification, de l’hydrogénisation, de l’azotisation, et de la phosphorisation.” A milestone in the early history of biochemistry, it was translated into German (Berlin, 1802) by C. J. B. Karsten. An Italian translation also appeared. Despite numerous textual references to the publications of Lavoisier, Fourcroy, Berthollet, Humboldt, Crawford, Girtanner, Nicholson, Vauquelin, et al., this work has been overlooked by chemical historians and bibliographers. Rare. Not in the usual early chemical and medical bibliographies. (Blake, 35; Hirsch, I, 386–387)

BAUMGARTEN, Samuel, et al.

Decas Disputationum Physicarum de Consensu et Dissensu Corporum Naturalium. Ex indultu amplissimi philosophorum ordinis in illustri electorali Wittenbergensi disquisitioni stitit publicae M. Samuel Pomarius, Silesius.
(Wittenberg, 1649).

First edition. 4to. 4 leaves plus a collection of 10 doctoral dissertations, as detailed below. Fine, crisp copy, in modern marbled boards, green leather gilt-lettered label.

AN IMPORTANT collection of ten doctoral dissertations on the consent and dissent of natural bodies. Samuel Baumgarten, whose name was latinized as Pomarius, gathered these works together, added a preface (dated 1649), and published them as a complete work comprising dissertations 1–10. The first work is Pomarius’s own dissertation under Johann Sperling (1603–1658), professor of physics at Wittenberg. With Pomarius as praeses, the next nine dissertations continued the same theme and are designated as “disputatio secunda, tertia, . . . decima.” The authors are as follows: Johannes Georgius Laurent, Georgius Roszteuscher, Elias Hilscherus, Christophorus Fickel, Christianus Foelckel, Johann-Sebastian Güth, Esaias Ansorge, Valentinus Müller, and Johannes-Matthaeus Stumpfius. Dissertations 1–4 are dated 1648, and 5–10 are dated 1649. “Baumgarten’s own *Treatise on the Consent and Dissent of Natural Bodies*, . . . hitherto much in demand . . . was re-

printed at Wittenberg in 1669 and again in 1682” (Thorndike, citing the second and third editions only). This very rare first edition was unknown to Thorndike, and no reference to it has been found in any available bibliography. Even in the early eighteenth century this book was rare, as J. J. Manget, in his *Bibliotheca Scriptorum Medicorum* (Geneva, 1731, II, Pt. 1, p. 525), mentions the 1669 edition only, in his entry for Pomarius.

BAYEN, Pierre

Opuscules Chimiques de Pierre Bayen . . .

Paris: Chez A.J. Dugour et Durand. An VI (1798).

First collected edition. 2 vols., 8vo. I: 2 leaves, lxxiv, 395, (1) pp. With 2 folding printed tables (facing pp. 369 and 385). II: 2 leaves, 468 pp. Good copy in contemporary tree calf, rebounded with original gilt spines laid on, maroon morocco labels gilt.

THE COLLECTED edition of the chemical researches of Bayen (1725–1798), pharmaceutical chemist, pupil of Rouelle, and member of the Institut Nationale. Edited posthumously by his nephew, P. Malatret, and dedicated to A. A. Parmentier, who wrote the eulogy of Bayen (I: pp. xxxiii–lxxiv). Included are (I: pp. 203–356) the four memoirs on the precipitation of mercury (1774–1775), in which Bayen states that when mercury is calcined it does not lose phlogiston but combines with a gas and increases in weight, thus rejecting the phlogiston theory three years before it was proved false by Lavoisier. Bayen helped make known the work of Jean Rey (c. 1582–1645), whose theory of calcination was similar to his own. He describes the decomposition of mercuric oxide by heat (I: p. 299) but did not recognize that he had produced oxygen, nor did he understand its role in the formation of the calx of mercury. (Blake, 36; Bolton, 288; D.S.B., I, 530; Duveen, 54; Edelstein, 174; Ferchl, 29; Ferguson, I, 85 [not in Young Coll.]; Guerlac, *Lavoisier—The Crucial Year*, 35, 73; Hoover, 105; Neu, 332; Partington, III, 394; Poggendorff, I, 119; Smith, 39; Sotheran, Cat. 832 [1932], 5014 [“Rare”]; Speter, *Lavoisier und seine Vorläufer*, 48–51; Watt, I, 86u; Weeks, *Discovery of the Elements*, 212–213 [illustration of title page of vol. II]; Wellcome, II, 120)

BAYEN, Pierre, and CHARLARD, Louis Martin

Recherches Chimiques sur l’Étain, faites et publiées par ordre du gouvernement, ou Réponse à cette Question: Peut-on sans aucun danger employer les Vaisseaux d’Étain dans l’usage économique? Par MM. Bayen . . . & Charlard . . .

Paris: De l’Imprimerie de Philippe-Denys Pierres, Imprimeur ordinaire du Roi & de la Police. 1781.

First edition. 8vo. viii, 285, (1) pp. Small woodcut device on title page. Fine copy in original tree calf, spine richly gilt and dated at foot, maroon morocco label.

A CLASSIC WORK on the chemistry of tin and the detection of traces of arsenic. The Collège de Pharmacie in Paris commissioned Bayen, Hilaire Martin Rouelle (1718–1779), who died before the work began, and Charlard (d. 1798) to “determine whether tin from various sources contains arsenic in large enough amounts to make the use of vessels of tin harmful to health. . . . [They] repeated the experiments of Marggraf and added new ones. Their conclusion was that tin contained no arsenic or only minute harmless traces. In the course of the many experiments, the nature and reactions of tin were examined in detail. The Avant-Propos contains a history of tin” (Cole). As in the Cole copy, a manuscript correction is found on page 75. The text was reprinted in Bayen’s *Opuscules chimiques* (Paris, 1798). Ferguson (I, 85) describes a German translation by J. G. Leonhardi (Leipzig, 1784). (Blake, 36; Bolton, 288; Cole, 64; D.S.B., I, 529; Duveen, 54; Edelstein, 175; Ferchl, 29; Neu, 333; Partington, III, 394; Poggendorff, I, 119, 421; Roller & Goodman, I, 90; Smith, 39; Wellcome, II, 120)

BAYLE, François

Problemata Physica et Medica. In quibus varii veterum & recentiorum errores deteguntur: praecipue circa quasdam Sanguinis evacuationes, tum sponte tum ante factas: & circa crises earumque causas: ac verae quorundam remediorum indicationes demonstrantur. . . .

The Hague: Apud Petrum Hagium Bibliopolam. 1678.

Second (first Hague) edition. 12mo. 4 leaves, 197, (1) pp., 5 leaves. Woodcut ornament on title page, and copperplate facing page 80. Very fine, crisp copy, in vellum antique, spine lettered in ink.

THE FAMOUS French physician and medical writer Bayle (1622–1709) was professor of philosophy at Toulouse. He was one of the first to apply physics to the study of medicine, then an extremely empirical art. This important work (first: Toulouse, 1677) deals with both physical and medical problems in 119 chapters, correcting long-held erroneous beliefs. The subjects covered include the modern sciences of chemistry, physics, general medicine, hematology, pathology, and physiology. There are extensive sections on blood, respiration, menstruation, etc., as well as discussions of blood circulation and other medical topics to which a knowledge of chemistry and physics has been applied. (Krivatsy, 973; Watt, I, 87b; Wellcome, II, 121)

BAYLE, Pierre

A General Dictionary, Historical and Critical: in which a New and Accurate Translation of that of the Celebrated Mr. Bayle, with the corrections and observations printed in the late Edition at Paris, is included; and interspersed with several thousand Lives never before published. The whole containing the History of the most illustrious Persons of all Ages and Nations, . . . By the Reverend Mr. John Peter Bernard; The Reverend Mr. Thomas Birch; Mr. John Lockman; and other hands. . . . Articles relating to Oriental History by George Sale, . . .

London: Printed by James Bettenham, for G. Strahan, et al. 1734–1741.

First “Birch” edition. 10 vols., folio. I: 21 leaves, 712 pp. II: 2 leaves, 718 pp. III: 2 leaves, 724 pp. IV: 2 leaves, 715, (1) pp. V: 2 leaves, 716 pp. VI: 2 leaves, 716 pp. VII: 2 leaves, 828 pp. VIII: 2 leaves, 832 pp. IX: 2 leaves, 716 pp. X: 2 leaves, 588 pp., 120 leaves (index). Title pages in red and black. Fine set, in original speckled calf, spines richly gilt, red and dark-blue morocco labels. Each volume with armorial bookplate: George Jacob Bosanquet, Esq. Broxbournebury.

AN IMPORTANT sourcebook for Enlightenment Scepticism. While Bayle (1647–1706), a Huguenot refugee in Holland, ostensibly wrote his *Dictionnaire historique et critique* (Rotterdam: R. Leers, 1697, 2 vols. in 4, folio) to correct mistakes in the Abbé Moréri’s *Le grand dictionnaire historique* (1674), his contemporaries appreciated his encyclopedia as a vast history of thought. For them it was a storehouse of all previous philosophical positions with unbiased commentary. Birch (1705–1766), F.R.S., was the principal editor and contributor to this English translation of Bayle’s masterpiece, which includes many biographies of eminent scientists. A second edition (London, 1734–38; 5 vols., folio) appeared with a different publisher. Bayle’s work “dominated enlightened thinking in every part of Europe” (P.M.M., 155b). This English edition was published by subscription. (Collison, *Encyclopedias* [1964], p. 105; Watt, I, 87e; Wellcome, II, 121)

BECCARI, Jacopo Bartolomeo

De Quamplurimis Phosphoris nunc primum detectis Commentarius.

Bologna: Ex Typographia Laelii a Vulpe. 1744.

First edition. 4to. 6 leaves, 85, (1) pp., 1 leaf (imprimatur). Title page in red and black. Very fine copy, unpressed and uncut with wide margins, in gilt-ruled half calf antique, marbled boards, crimson morocco label, spine dated.

THE FIRST professor of chemistry in Italy, at the University of Bologna, Beccari (1682–1766) was the founder of

modern Italian chemistry. He is best known for his discovery of protein as a component of vegetable substances and for his finding that silver salts are photosensitive (foreshadowing photography), both of which were published in the *Transactions of the Academy of Bologna*. One of the most important in the history of luminescence, the present work contains his observations on organic and inorganic materials, which he was the first to describe and classify. Beccari's monograph deals entirely with photoluminescence: i.e., excitation by exposure to light. Many of his experiments on the Bolognian phosphor (calcined native barium sulphate) were "quantitative, designed to determine the relation between the intensity, duration, and color of the exciting light. Only a very short exposure, one second, was sufficient to excite a luminescence which lasted thirty minutes. The brighter the exciting light the brighter the luminescence . . . if one part of the phosphor was illuminated only that part luminesced, without propagation of light to other regions" (Harvey). Beccari thought it logical to regard phosphors as electric bodies. (Ferchl, 29; Ferguson Coll., 72; Harvey, 156–158, 324–327; Partington, II, 339; Poggen-dorff, I, 123; Provenzal, 28; Smith, 39; Watt, I, 91j)

BECCARIA, Giovanni Battista

Dell'Elettricismo Artificiale, e Naturale Libri Due di Giambattista Beccaria De' CC. RR. delle Scuole Pie.

Turin: Nella Stampa di Filippo Antonio Campana. 1753.

First edition. 4to. 4 leaves, 245, (1) pp. Large woodcut printer's device on title page, and historiated capitals, headpieces, and tailpieces. Fine copy in contemporary quarter sheep, marbled boards, spine gilt.

THE FIRST edition of Beccaria's first work. An early supporter of Franklin's theory of the electrical nature of lightning, Beccaria (1716–1781) became an authority on atmospheric electricity and a prolific author on electrostatics. He occupied the chair of physics at Turin for over twenty years, carrying out experiments based on Franklin's studies. The results of his intensive investigation are presented in this work, which Franklin praised for expounding the elements of the new theory clearly and logically. Franklin's experiments were repeated, with variations and added observations on the different appearances of electrical discharges from positively and negatively charged points. Beccaria also modified certain secondary aspects of the theory. A long letter to the Abbé J. A. Nollet is included, with objections to Nollet's criticism of Franklin's system. The Parisian devotees of Franklin thought the letter quite successful and translated it into French, and thus Beccaria became the leading champion of the new system. One of Beccaria's goals was to discover the relationship between

common fire and electric fire and another was to discover what part electricity played in various luminescences. These subjects are of chemical interest and are discussed by E. Newton Harvey and Partington. (D.S.B., I, 547; Ekelöf, 29; E. N. Harvey, 291; Mottelay, 207; Poggen-dorff, I, 124; Sotheran, Cat. 702 [1910], no. 6078; Wellcome, II, 124; Wheeler Gift, 375 [with full-page illustration of title page])

BECCARIA, Giovanni Battista

Elettricismo Artificiale di Giambattista Beccaria delle Scuole Pie all'Altezza Reale del Signor Duca di Chablais.

(Colophon (p. 437): Turin, Il primo di Giugno nella Stamperia Reale, 1772).

Bound with: *Della Elettricità Terrestre Atmosferica a Cielo Sereno Osservazioni di Giambattista Beccaria delle Scuole Pie dedicate a sua Altezza Reale il Signor Principe di Piemonte.* (Colophon: Turin, n.d. [1775]).

Bound with: *Nuovi Sperimenti di Giambattista Beccaria delle Scuole Pie per confermare, ed estendere la meccanica del Fuoco Elettrico.*

Turin: Nella Reale Stamperia. 1780.

First editions. 3 vols., 4to., in 1. Vol. I: viii + 439 + (1) pp. Vol. II: 3 leaves, 54 pp., 1 leaf. Vol. III: 19 pp. Small copperplate pasted to page 19. With 11 detailed folding copperplates of electrical apparatus at the end. Fine copy in contemporary quarter calf, mottled boards, crimson gilt-lettered label, spine gilt-ruled.

THREE OF the author's most important works, in which he explains and enlarges Franklin's one-fluid theory of electricity by a number of significant experiments. Beccaria was the first to notice the phenomenon known as electric distillation, and his chapters on atmospheric electricity are especially important. "Beccaria's last major contribution to the science of electricity was *Elettricismo artificiale* (1772), a difficult, verbose compendium of Beccaria's work on the subject, explained with the help of Franklin's principles, vindicating electricities and the doctrine of atmospheres. In 1775 he brought out a short volume on atmospheric electricity in fair weather, *Dell'elettricità a cielo sereno* (J. L. Heilbron [in D.S.B.]). Beccaria invented many electrical instruments that are beautifully illustrated in the present volume of 1772, which is divided into 993 numbered paragraphs. The two works of 1772 and 1775 were translated into English and were published in 1776. The *Nuovi sperimenti* (1780) describes electrostatic discharges in oil between the immersed balls of an electroscope and is of chemical interest. (Dibner, *Early Electrical Machines*, pp. 49–52; Cushing, 26; D.S.B., I, 548; Ekelöf, 29; Poggen-dorff, I, 124; Sotheran, Cat. 773 [1919], no. 1526; Wellcome, II, 124; Wheeler Gift, 435bis)

BECCARIA, Giovanni Battista

A Treatise upon Artificial Electricity, in which are given Solutions of a Number of interesting Electric Phenomena, hitherto unexplained. To which is added, an Essay on the Mild and Slow Electricity which prevails in the Atmosphere during Serene Weather. Translated from the Original Italian of Father Giambatista Beccaria, Professor of Natural Philosophy in the University of Turin.

London: Printed for J. Nourse, Bookseller to His Majesty. 1776.

First English edition. 4to. 4 leaves, 475, (1) pp., 6 leaves. With 11 folding engraved plates. Fine copy in contemporary speckled calf, tastefully rebacked, maroon morocco gilt-lettered label, spine gilt-ruled. From the library of Elihu Thomson (1853–1937), distinguished inventor and electrical engineer, with his neat signature in ink on the title page. Canceled bookplate of the Franklin Institute Library (The Elihu Thomson Collection Given by Mrs. Elihu Thomson) on front pastedown endpaper.

THE ENGLISH translation of *Elettricismo artificiale* (Turin, 1772) and *Della Elettricità Terrestre atmosferica a Cielo sereno* (Turin, 1775), two of Beccaria's most important works. This copy has a distinguished provenance, having come from the library of Elihu Thomson, who was born in Manchester, England, in 1853. In 1858 he moved with his parents to Philadelphia, where he later taught chemistry and mechanics. Thomson's early years of research, and his association with Edwin J. Houston, led to scientific and financial success with the development of an arc-lighting system. His most notable discovery was that of alternating-current repulsion phenomena, and his work in that field laid the basis for successful alternating-current motors. Thomson made the first high-frequency generator (1890) and the first high-frequency transformer; other inventions included the three-coil generator, electric welding by the incandescent method, and the watt-hour meter. Thomson undoubtedly studied the present volume to obtain a thorough background in electrical phenomena, and the knowledge he obtained assisted him in obtaining more than seven hundred patents and numerous awards. This English edition is rare. (D.S.B., I, 548; Ekelöf, 30; Sotheran, Cat. 666 [1907], no. 301; Watt, I, 91h; Wellcome, II, 124)

BECHER, Johann Joachim

Actorum Laboratorii Chymici Monacensis, seu Physicae Subterraneae Libri Duo, quorum prior profundam subterraneorum genesin, nec non admirandam globi terr-aque-aerei super & subterranei fabricam, posterior specialem subterraneorum naturam, resolutionem in partes partiumque proprietates exponit, accesserunt sub finem mille hypotheses seu mixtiones chymicae, ante hac nunquam visae, omnia, plusquam mille experimentis stabilita, . . .

Frankfurt: Imp. Joh. Davidis Zunneri. 1669.

First edition. 8vo. 20 leaves, 633, (1) pp., 4 leaves (last blank). With fine folding copperplate frontispiece (dated 1668). Superb copy in pristine condition, in original speckled boards. Old stamp on verso of title and blank leaf at the end: Fuerstliche Hofbibliothek, Donaueschingen.

ONE OF the great books in the history of chemistry, in which Becher enunciates his theory of the composition of all matter. The combustibility of metals is attributed to the presence in them of an oily earth (*terra pinguis*), one of three such earths, along with the Paracelsian *tria prima*, of which metals (then thought to be mixtures) are composed. On calcining a metal, the *terra pinguis* escapes, leaving a calx. Partington (II, 644–652) discusses Becher's theory in detail. Georg Ernst Stahl, Becher's pupil, later developed the *terra pinguis* hypothesis into the theory of phlogiston, which dominated chemical thought for almost a century. Although the premise of *terra pinguis* was erroneous, as was the theory of phlogiston, it directed chemists toward an intensive investigation of combustion, the correct nature of which was eventually discovered by Lavoisier. (Bolton, 289; D.S.B., I, 550; Duveen, 56; Edelstein, 178; Ferchl, 30; Ferguson, I, 88; Ferguson Coll., 73; Hoover, 107; Neu, 339; Partington, II, 640; Poggendorff, I, 124; Thorndike, VII, 578; Thornton & Tully, 121; Waite, 280; Wellcome, II, 125)

BECHER, Johann Joachim

Aphorismi ex Institutionibus Medicis Sennerti, magna diligentia collecti, opera Joannis Joachimi Becheri, . . .

Frankfurt: Sumptibus Johannis Beyerri Typis, Balthasari Christophori Wustii. 1663.

First edition. 12mo. 12 leaves, 430 pp., 15 leaves. Large copperplate vignette on title page. Very good copy in original calf, maroon morocco label.

A COMMENTARY ON the *Institutionum medicinae libri quinque* (Wittenberg, 1611, and later editions) of Daniel Sennert, of iatrochemical interest. It is divided into five books, of which the fifth and longest is on pharmaceutical chemistry (pp. 238–430). Very rare. Not in the usual bibliographies. (Neu, 3793; Watt, I, 91k)

BECHER, Johann Joachim

Chymischer Glücks-Hafen, oder Grosse Chymische Concordantz und Collection, von funffzehnen hundert Chymischen Processen: durch viel Mühe und Kosten aus den besten Manuscriptis und Laboratoriis in diese Ordnung, wie hier folgendes Register aussweiset, zusammen getragen. . . .

Frankfurt: In Verlegung Johann Georg Schiele, Buchhändlers. 1682.

First edition. 4to. 4 leaves, 810 pp., 18 leaves. Title in red and black. Woodcuts (pp. 407, 472). Occasional very minor foxing owing to quality of paper; otherwise fine copy in contemporary

unlettered half sheep, later vellum boards. Book label: Sammlung Graf Speyer.

IN 1679 BECHER traveled from Holland to Great Britain, where he investigated mines in Scotland and Cornwall, visited the Isle of Wight, and shortly before his death arrived in London. The present work, his last, was completed on 24 March 1682 (see preface), and Becher died on 6 May. One of his most important books, it contains practical details on 1,500 chemical processes, including the preparation of numerous pure chemical compounds, as well as directions for making the philosopher's stone. This was a significant sourcebook for his pupil Stahl, who republished it (Halle, 1726), adding his own preface. It played an important role in the development of Stahl's phlogiston theory, which was an elaboration of Becher's combustion hypothesis. The combustibility of coal gas is first mentioned in this book. Not in Caillet, Edelstein, Krivatsy, etc. (Bolton, 289; D.S.B., I, 549; Duveen, 57; Ferchl, 31; Ferguson, I, 86. [not in Young Coll.]; Ferguson Coll., 73; Neu, 342; Partington, II, 642; Poggendorff, I, 124; Thorndike, VII, 582; Watt, I, 91n; Wellcome, II, 125)

BECHER, Johann Joachim

Chymischer Rosen-Garten, samt einer Vorrede und kurtz gefassten Lebens-Beschreibung Herrn. D. Bechers, zum Druck befördert von Friederich Roth-Scholtzen.

Nuremberg: bey Johann Daniel Taubers seel. Erben. 1717.

First edition. 8vo. 96 pp. Title in red and black, with copperplate vignette (Necromancer's hand, emerging from a cloud, squeezing a bunch of grapes over a goblet). Very good copy, in gilt-ruled unlettered quarter calf antique, marbled boards. From the library of Walter Pagel, with his signature in pencil on first flyleaf. Bound with: *D.D.K. Destillir-Kunst* (Leipzig, 1753) and two other works.

ALTHOUGH COMPLETE in itself, this work comprises extracts from Becher's *Chymischer Glücks-Hafen, oder Grosse Chymische Concordanz und Collection* (Frankfurt, 1682), edited by Roth-Scholtz, who gives a full biography of Becher in great and otherwise unobtainable detail (pp. 5–26). In addition, there is a valuable bibliography of Becher's works, listing titles that are difficult to find described elsewhere (pp. 27–51). The book contains many alchemical recipes (including those from other authors) for purifying and transmuting metals, preparing the philosopher's stone, useful salts, oils, etc. "Becher complains in it that some of his manuscripts were stolen when he was travelling from Amsterdam to The Hague" (Partington). Not in D.S.B., Duveen, Edelstein, Neu, Watt, etc. (Blake, 37; Bolton, 289; Ferchl, 31; Ferguson, I, 86; Ferguson Coll., 73; Partington, II, 643; Smith, 40; Wellcome, II, 126)

BECHER, Johann Joachim

Chymisches Laboratorium, oder Unter-erdische Naturkündigung, darinnen enthalten wird. I. Die tieffe Zeugung derer untererdischen Dinge . . . II. Neue Chymische Proben, einiger künstlichen gleich darstelligen Verwandlung derer Metallen . . . III. Ein nochmaliger Zusatz und Philosophischer Beweissthum, derer Chymischen, die Wahr- und Möglichkeit derer Metallen Verwandlung in Gold, . . . IV. Ein Chymischer Rätseldeuter, derer verdumckelten Wort-Sätze Urhebung . . .

Frankfurt: Gedruckt und verlegt durch Johann Haass. 1680.

First German translation, first issue. 4 parts in 1 vol. 8vo. I: 16 leaves (including engraved alchemical frontispiece), 732 pp., 1 leaf (blank). II: 192 pp. III: 175, (1) pp., 7 leaves. IV: 156 pp., 2 leaves. Some leaves lightly embrowned (as usual); otherwise fine copy in original vellum. Armorial bookplate: Emil Koefoed. Bound with: Becher, Johann Joachim, *Trifolium Becherianum Hollandicum* (Frankfurt, 1679).

THE TRANSLATION, by Becher himself, of his *Physicae subterraneae* (Frankfurt, 1669), the first two supplements (1671, 1675), and the *Oedipus chemicus* (1664). Each part has a separate title page (dated 1680), collation, and pagination. As the first appearance of these important works in the vernacular, they greatly influenced the German chemists of the time. The second issue, identical to this but with a new title page, appeared in 1690 (Bolton, 289–290; Neu, 341). Partington says that this set is "often incomplete," and the Wellcome Library has only the first part and second supplement (I and III above). Not in Duveen, Mellon, Poggendorff, etc. (D.S.B., I, 550; Edelstein, 179; Ferchl, 30; Ferguson, I, 88 [not in Young Coll.]; Ferguson Coll., 73; Partington, 640, 641; Thornton & Tully, 121; Wellcome, II, 125)

BECHER, Johann Joachim

Experimentum Chymicum Novum, quo Artificialis & instantanea Metallorum Generatio & Transmutatio ad oculum demonstratur. Loco Supplementi in Physicam suam subterraneam et Responsi ad D. Rolfincii Schedas de non Entitate Mercurii corporum. Opusculum multis experimentis practicis, nec non praecipuis Philosophorum dictis explicatis refertum, Lectori Philochymico non ingratum futurum.

Frankfurt: Sumptibus Joh. Davidis Zunneri. Typis Heinrici Friesii. 1671.

First edition. 8vo. 172 pp. Some leaves embrowned (as usual); otherwise fine copy, in blind-ruled calf antique, maroon morocco label.

THE FIRST supplement to the *Actorum laboratorii chymici . . . seu physicae subterraneae* (Frankfurt, 1669), which is included in later editions of that work. It is a defense of

alchemy against Werner Rolfinck (who opposed alchemy) and describes about twenty experiments dealing with supposed transmutations. Of interest is the list of books regarded by Becher as important in effecting transmutation and for the directions they give. Boyle's *Sceptical Chymist* is included in the list. (D.S.B., I, 550; Duveen, 56; Edelstein, 180; Ferchl, 30; Ferguson Coll., 75; Neu, 345; Partington, II, 640–641; Thorndike, VII, 581; Watt, I, 91m; Wellcome, II, 125)

BECHER, Johann Joachim

Institutiones Chimicae Prodromae i.e. Joannis Joachimi Becheri . . . Oedipus Chemicus Obscuriorum Terminorum & Principiorum Chemicorum, Mysteria Aperiens & resolvens. Opusculum, omnibus Medicinae & Chimiae Studiosis, lectu perquam utile & necessarium.

Frankfurt: Apud Hermannum à Sande. 1664.

First edition. 12mo. 8 leaves, 192 pp., 4 leaves. The second leaf is a letterpress title page with a large copperplate of Oedipus and the Sphinx; the seventh leaf is a full-page engraving of the Prague Medal. Some browning of paper (as usual); otherwise very good copy in original pasteboards. The pastedowns and free endpapers are covered with alchemical notes in ink by an unidentified seventeenth-century adept.

THE GENUINE first edition of one of Becher's earlier chemical works, in which he defines the obscure terminology used by contemporary chemists. Intended as an introductory manual for students of chemistry and medicine, it is dedicated to the famous physician Sylvius de le Boe. An important book that contains the germs of the ideas that were later (by G. E. Stahl) developed into the theory of phlogiston. A second edition containing almost identical pagination (i.e., 8 leaves, 202 pp., 4 leaves) appeared at Amsterdam, in 12mo., by Elizeus Weyerstraten, in two issues (1664 and 1665) and completely different engraved title page. Often reprinted, the text had a considerable influence on the chemical thought of the time. Manget included it in his *Bibliotheca Chemica Curiosa* (Geneva, 1702, I, p. 306 et seq.). Only the 1664 Amsterdam edition is listed by Bolton, Cushing, Duveen, etc. (D.S.B., I, 549; Ferchl, 31; Ferguson, I, 87; Ferguson Coll., 73; Kopp, II, 369; Lenglet-Dufresnoy, III, 117; Neu, 347; Partington, II, 641; Poggendorff, I, 124; Schmieder, 417; Thorndike, VIII, 137; Watt, I, 91k; Wellcome, II, 125)

BECHER, Johann Joachim

Kluger Haus-Vater, Verst ändige Hauss-Mutter, Vollkommener Land-Medicus, wie auch Wohlerfahrner Ross- und Vieh-Artzt, nebst einem deutlichen und gewissen Handgriff, die Haushaltungs-Kunst . . .

Leipzig: verlegt Friedrich Groschuff. 1704.

First edition. 12mo. 10 leaves, 816, (2), 817–1047, (1) pp., 40 leaves. Fine engraved frontispiece (farmers with distillation apparatus in background). Title in red and black. Pristine copy in original vellum.

AN IATROCHEMICAL and agricultural chemical work, designed for the use of town and country households, with sections on domestic economics, winemaking, care of all types of animals, raising of crops, etc. A separate divisional title page (*Gebeimes Jäger-Cabinet*), printed in red and black, dated 1704, with a woodcut of a dog chasing a hare (facing p. 816), precedes the section on hunting. This extremely rare book illustrates Becher's wide-ranging interests. Unrecorded by the usual bibliographers.

BECHER, Johann Joachim

Methodi Becherianae Didacticae Praxis, ejusdemque liber seu annus primus, primam vocabulorum connexionem continens, quae in affinitate primitivorum cum derivatis, lectione matutina, pomeridiana vero in praedictorum vocabulorum inflexione consistit, atque ita fundamentum toti methodi ponit.

Frankfurt: Impensis Johan Davidis Zunneri. 1669.

First edition. 8vo. 4 leaves, a–tt8, uu5; (1), 174 pp., 4 leaves; 40 leaves (last 2 blank). With fine engraved frontispiece portrait of Prince Maximilian of Bavaria ("T. Ph. Thelott sculp. Franckfurt"). Woodcut printer's device on title page. Few leaves lightly embrowned; otherwise fine copy in original speckled calf, rebounded, spine gilt-lettered.

A LATIN-GERMAN lexicon and grammar, containing numerous terms and definitions of chemical and medical interest; published in the same year as the author's *Physicae subterranae*. At the end, with separate divisional title page dated 1659 [sic], is *Paradigmata declinationum et conjugationum: tam regularium quam irregularium* (174 pp., 4 leaves). Ferchl (p. 31) lists a different work of similar title: *Methodus didactica seu clavis et praxeos super novum suum organon philologicum* (Frankfurt, 1669). Extremely rare. Unknown to the usual bibliographers.

BECHER, Johann Joachim

Mineralisches ABC. Oder Vier und Zwanzig Chymische Theses von der Geburt, denen Principiis, Unterschied, Vermischung, und Auflösung deren Mineralien, Metallen, und übrigen Unterirrdischen Dingen &c. Aus dem Lateinischen ins Teutsche übersetzt. Nun aber auf vieler Begehren zum Druck befördert durch Friederich Roth-Scholtzen, Siles. Nuremberg & Altdorf: bey Johann Daniel Taubers seel. Erben. 1723.

First edition in German. 8vo. 150 pp. With engraved frontispiece portrait of Becher (excellent impression). Very fine, crisp copy, in maroon boards antique.

THE TRANSLATION into German by Roth-Scholtz of the *Alphabetum Minerale* (i.e., part III of the *Tripus Hermeticus Fatidicus*, Frankfurt, 1689), which had been dedicated by Becher to Robert Boyle. The formation of metals in their ores, transmutation, Becher's theory of the composition of matter, acids, alkalies, salts, and related subjects are discussed, with numerous references to earlier and contemporary chemists. The text is liberally sprinkled with alchemical symbols. Rare. Not in Bolton, D.S.B., Edelstein, Ferchl, Ferguson, Ferguson Coll., Watt, etc. (Duveen, 59; Fulton, no. 295; Neu, 352; Partington, II, 642; Wellcome, II, 126)

BECHER, Johann Joachim

Närrische Weissheit und Weise Narrheit: oder ein hundert, so Politische als Physicalische, Mechanische und Mercantilische Concepten und Propositionen, deren etliche gut gethan, etliche zu nichts worden, sampt den Ursachen, Umständen und Beschreibungen derselben. . . .

Frankfurt: In Verlag Johann Peter Zubrods. 1682.

First edition. 12mo. 11 leaves, 203, (1) pp., 3 leaves (blank). Fine copy in nineteenth-century pebbled cloth, spine gilt-lettered and dated.

IN ADDITION to being famous for his theory of combustion, Becher was notable as a technologist and projector of various economical schemes. This work, the title of which translates as "Foolish Wisdom and Wise Foolishness," was written in London shortly before Becher died. In the preface, which contains much autobiographical information, Becher complains that he had been persecuted and driven into exile for advocating the exclusion of French goods from Germany. He gives a favorable account of his recent activities in Great Britain and Ireland. The first part briefly describes fifty-one discoveries and inventions, many of his own (and some in collaboration with Prince Rupert), which at first seemed unreasonable but nevertheless succeeded. Among them are experiments on the magnet, dyestuffs and dyeing, machinery for making textiles, mining and metallurgical processes, papermaking, barometers, microscopes, and telescopes. The second part describes fifty-one procedures and inventions that seemed possible but that did not succeed, including Count von Zinzendorff's method for making gold, Mersenne's submarine, and different flying machines. Other editions appeared in 1686, 1706, 1707, and 1725. The first edition is very rare. Not in Bolton, D.S.B., Duveen, Edelstein, Neu, Wellcome, etc. (Ferchl, 31; Ferguson Coll., 74; Partington, II, 642; Sotheran, Cat. 800 [1926], 10149)

BECHER, Johann Joachim

Natur-Kündigung der Metallen. Mit vielen Curiosen, Beweiss-thumben, Natürlichen Gründen, Gleich-nüssen, Erfahrungheiten, und bisshero Ohngemeinen Auffmerckungen vor Augen gestellet. Zur Erhaltung der Warheit, Erläuterung der Spagirischen Philosophi, und Gefallen der Liebhabern. . . . Frankfurt: In Verlegung Johan Wilhelm Ammons und Wilhelm Serlins. 1661.

First edition. 8vo. 8 leaves (including engraved title, *Metalurgia Becheri*, dated 1660), 347, (1) pp., 18 leaves. Engraved title in positive facsimile on seventeenth-century paper; otherwise fine copy in contemporary speckled boards.

"BECHER'S SECOND published work . . . [which] first contains his theory of the igneous principle forming part of metals, from which Stahl afterwards developed the phlogiston theory" (Zeitlinger). "It contains alchemical ideas based on the four element theory, and deals with the generation of metals and testing ores" (Partington). An important figure in the history of chemistry, Becher (1635-1682) was self-taught, traveled extensively, and became an M.D. (1661) and professor of medicine at Mainz. In 1664 he was physician to the elector at Munich, where he had the best laboratory in Europe. In addition to chemistry, his interests included economics, mathematics, philology, politics, and other subjects on which he published books. He went to England in 1679, met Boyle, and studied mining in Cornwall. Other editions appeared in 1679 and 1705. His first published work on chemistry was a slender volume of only eighty-three pages, entitled *Glauberus refutatus* (1661; Wellcome, II, 125). Very rare. (Bolton, 291; D.S.B., I, 548; Ferchl, 31; Neu, 353; Partington, II, 641; Smith, 40; Sotheran, Cat. 832 [1932], 5016; Thornton & Tully, 121)

BECHER, Johann Joachim

Opuscula Chymica Rariora, addita nova Praefatione ac Indice locupletissimo multisque Figuris aeneis illustrata a Friderico Roth-Scholtzio Siles.

Nuremberg & Altdorf: Apud Haeredes Joh. Dan. Tauberi. 1719.

First edition. 8vo. 6 leaves, 50, 310 pp. Title page in red and black, with engraved vignette. Frontispiece to *Tripus Hermeticus*, 1 text engraving at the beginning of this tract, and 16 copperplates (3 folding). Engraved armorial headpiece to dedication. From the library of Louis-Jean Le Thieullier (d. 1751), with engraved armorial bookplate. Near-fine copy, in original calf, gilt, maroon morocco label.

THE FIRST collected edition of eleven of Becher's tracts, most of which are now virtually unfindable. Each tract has a separate title page. Duveen states that "the last two works



Becher. Opuscula Chymica Rariora. Nuremberg & Altdorf, 1719.

are under separate title-pages with separate collations.” However, in this copy the pagination and collation are continuous. Duveen and Ferguson list the titles of the eleven tracts. The editor, Roth-Scholtz, gives a valuable bibliography of forty-four of Becher’s works (pp. 3–39) and a brief biography (pp. 40–50) in the first part. The texts include an account of his portable laboratory, and the beautifully engraved plates illustrate the Prague medal, furnaces, ovens, apparatus, chemical symbols, etc. This copy has a distinguished provenance, having come from the library of Le Thieullier, physician to the King of France, and member of the Faculty of Medicine in Paris. (Blake, 37; Bolton, 291; Duveen, 58; Edelstein, 186; Ferchl, 31; Ferguson, I, 87–88; Ferguson Coll., 73; Neu, 354; Partington, II, 642–643; Smith, 40; Watt, I, 91n; Wellcome, II, 126)

BECHER, Johann Joachim

Physica Subterranea Profundam Subterraneorum Genesis, è principiis hucusque ignotis, ostendens. Opus sine pari, primum hactenus & princeps, editio novissima. Praefatione utili praemissa, indice locupletissimo adornato, sensuumque & rerum distinctionibus, libro tersius & curatius edendo, operam navavit & Specimen Beccherianum, Fundamentorum, Documentorum, Experimentorum, subjunxit Georg Ernestus Stahl, . . .

Leipzig: Apud Joh. Ludov. Gleditschium. 1703.

First edition edited by Stahl. 5 parts in 1 vol., 8vo. I: 2 leaves (engraved frontispiece and title page in red and black), 14 leaves, 560 pp. II: 1 leaf (title to first supplement), pp. (561)–688 (pp. 655–56 omitted in numbering). III: 1 leaf (title to second supplement), pp. 691–822 (pp. 823–832 omitted, which is correct). IV: 1 leaf (title to third supplement), pp. (835)–1008, 18 leaves (index). V: *Specimen Beccherianum*, with separate title page (dated 1703) and pagination: 4 leaves, 304 pp., 8 leaves (index). An extremely fine copy, clean and spotless, without the usual browning of the paper, in original vellum, maroon morocco label, gilt.

THE FIRST edition revised by Stahl (Becher’s pupil), of fundamental importance in the history of the theory of phlogiston, which Stahl here develops in the first edition of his *Specimen Beccherianum*, appended to the present edition. Founded upon hypotheses put forward by Becher, the concept of the physical existence of phlogiston dominated chemical theory throughout most of the eighteenth century. Although later proved erroneous by the researches of Lavoisier, the phlogiston theory was valuable as it unified a large number of previously unconnected chemical facts. Rare. Not in Duveen, Mellon, Neu, Wellcome, etc. (Bolton, 292–293; Edelstein, 187; Ferchl, 30; Ferguson, I, 88–89; Ferguson Coll., 74; Honeyman, 258; Partington, II, 640, 660; Thorndike, VII, 582; Thornton & Tully, 121)

BECHER, Johann Joachim

Physica Subterranea Profundam Subterraneorum Genesis . . . Opus sine pari, . . . editio novissima . . . Specimen Beccherianum . . . subjunxit Georg Ernestus Stahl, . . .

Leipzig: Ex Officina Weidmanniana. 1738.

Final (second Stahl) edition. 4to. 8 leaves (including engraved frontispiece), 504 pp., 9 leaves; 2 leaves, 161, (1) pp., 4 leaves. Title in red and black. Some leaves lightly embrowned (as usual); otherwise fine, crisp copy, in original speckled calf, rebaked with original gilt spine laid down, maroon morocco label. From the library of John Stuart (1713–1792), third Earl of Bute (see D.N.B.), with bookplate on verso of title leaf.

THE FOURTH and final edition, the first in quarto format, of this famous and important work, preceded by those of 1669, 1681, and 1703. It is an exact reprint of the 1703 edition, revised and edited by Stahl, and celebrated as the edition in which the theory of phlogiston was first developed. Thomas Thomson “says that Becher was ‘the first person who can . . . be said to have attempted to construct a theory of Chemistry’; Boyle, who was responsible for hastening the downfall of alchemical and other opinions, did not attempt to set out a theory of chemistry” (Partington [II, 643], who quotes from this edition in his chapter on Becher). The wording of the title page of this edition is identical with that published in 1703. (Blake, 37; Bolton, 293; Cole, 68; D.S.B., I, 550; Duveen, 59; Edelstein, 188; Ferchl, 30; Ferguson, I, 89 [not in Young Coll.]; Ferguson Coll., 75; Mellon, 155; Neu, 340; Partington, II, 640, 660; Smith, 40; Thorndike, VII, 582; Wellcome, II, 125)

BECHER, Johann Joachim

Supplementum Secundum in Physicam Subterraneam. Id est . . . demonstratio philosophica, seu theses chymicae, veritatem, & possibilitatem transmutationis metallorum in aurum evincentes. . . .

Frankfurt: Impensis Joh. Davidis Zunneri. 1675.

First edition. 8vo. 24 leaves, 136 pp. Paper lightly embrowned (as usual); otherwise very good copy in original vellum.

THE SECOND supplement to the *Actorum laboratorii chymici . . . seu physicae subterraneae* (Frankfurt, 1669), which was included in later editions together with the third supplement, *Experimentum novum et curiosum de mineraria perpetua* (Frankfurt, 1680). The defense of alchemy begun in the first supplement of 1671 is continued in the present book, with descriptions of additional experiments on the possibility of transmuting base metals into gold. Rare. Not in Duveen, Edelstein, Ferguson, Ferguson Coll., Neu, etc. (D.S.B., I, 550; Ferchl, 30; Partington, II, 641; Poggendorff, I, 124; Watt, I, 91m; Wellcome, II, 125)

BECHER, Johann Joachim

Trifolium Becherianum Hollandicum oder . . . Drey Neue Erfindungen, Bestehende in einer Seiden-Wasser-Mühle und Schmelz-Wercke. . . in Holland vorgeschlagen und Werkstellig gemacht . . . aus der Niederländischen in die Hochteutsche Sprach übersezset. . .

Frankfurt: In Verlegung Johann David Zunners. 1679.

Second German edition. 8vo. 54 pp., 1 leaf (blank). Very good copy in original vellum. Bound with: Becher, Johann Joachim, *Chymisches Laboratorium* (Frankfurt, 1680).

THE FIRST edition, in Dutch, appeared at Amsterdam (1679), in quarto format of twenty pages. It was rapidly translated into German (preface dated 6 February 1679) and appeared in octavo format (Amsterdam, 1679, 64 pp.; Ferguson, I, 89; Wellcome, II, 125). This Frankfurt edition next appeared. The book describes Becher's plans for a "machine that would spool silk cocoons" (D.S.B.), which he sold to the city of Haarlem in 1679. It also describes the plan he submitted to the Dutch Assembly for extracting gold from sea sand by smelting, which had first been proposed in 1673. The tract ends with a discussion on the improvement of water mills. Rare. Not in Duveen, Neu, Smith, Wellcome, etc. (Bolton, 293; Edelstein, 190; Ferchl, 31; Ferguson Coll., 75; Partington, II, 642; Watt, I, 91m)

BECHER, Johann Joachim

Tripus Hermeticus Fatidicus, Pandens Oracula Chymica, seu I. Laboratorium Portatile . . . II. Magnorum Duorum Productorum Nitri & Salis Textura & Anatomia . . . III. Alphabetum Minerale, seu viginti quatuor Theses de subterraneorum & mineralium genesi, Textura & Analysis. His accessit Concordantia Mercurii Lunae. Omnia juxta Authoris Doctrinam & Principia in Physica sua subterranea ejusque supplementis conscripta . . . Exaratum in Cornubia ad extrema Angliae ora inter ipsa mineralia experimenta . . .
Frankfurt: Sumptibus Johannis Georgii Schiele. 1689.

First edition. 8vo. 186 pp., 5 leaves. Title in red and black. Engraved alchemical frontispiece, 13 copperplates (some folding) of furnaces, apparatus and symbols, and large engraving of the Prague Medal (obverse and reverse) on page 24. Very good copy, in original half vellum, marbled boards.

A RARE AND attractive book, which forms a sequel to the *Physicae subterraneae*. The beautifully engraved plates include Becher's famous portable laboratory, illustrations of sixty-four necessary instruments for it, and a list of essential chemicals with their symbols. The dedication to Edmund Dickinson (1624–1707), chemical operator to Charles II, is dated from Truro, Cornwall, where, with the help of Dickinson and Prince Rupert, Becher had gone to study mining and metallurgy. The third part, *Alphabetum minerale*, dated Truro 1682, is dedicated to Robert Boyle. "The book contains information gained by Becher on his visit to Cornwall in 1680" (Partington, who quotes frequently from this important work). Roth-Scholtz translated it into German as *Mineralisches ABC* (Nuremberg and Altdorf, 1723). Becher, "who profoundly influenced chemistry in England for decades" (Partington), sought entry to the Royal Society but was refused. Not in Bolton, Edelstein, Wellcome, etc. (D.S.B., I, 550; Duveen, 57–58; Ferchl, 31; Ferguson Coll., 75; Fulton, no. 289; Mellon, 141; Neu, 355; Partington, II, 641; Thornton & Tully, 122; Watt, I, 91n)

BECK, Lewis Caleb

A Manual of Chemistry; containing a condensed view of the present state of the science, with copious references to more extensive treatises, original papers, &c. Intended as a textbook for medical schools, colleges and academies. . .

Albany: Printed and Published by Webster and Skinners, at their Bookstore, corner of State and Pearl Streets. 1831.

First edition. 12mo. xii, 13–458 pp., 1 leaf (blank). Few neat marginal annotations and some leaves characteristically embrowned; otherwise fine copy, in original gilt-ruled sheep, red morocco label.

A NEW YORK CHEMIST and mineralogist, Beck (1798–1853) was professor of chemistry at the Vermont Academy of Medicine and at Rutgers when this text appeared. An influential work, which reached a fourth edition in 1844, it is based on the textbooks of Berzelius, Brande, Henry, Thénard, Thomson, and Turner. The author's elder brother, Theodric Romeyn Beck (1791–1855), who also taught chemistry and published the classic *Elements of medical jurisprudence* (Albany, 1823), assisted in the publication of this book, which is acknowledged by Beck in his preface. (Bolton, 293; Ferchl, 32; Miles, 27; Poggendorff, II, 126; Smith, 40)

BECKE, David von der

Davidis von der Becke/Mindani, Experimenta et Meditationes, Circa Naturalium Rerum Principia. Quibus Quae circa fixi & Alcalisati Salis, ante calcinationem in misto praeexistentiam, ac Causas Volatilisationis, obscura aut dubia esse poterant, clarè solvuntur. Nutu Illustrissimae Societatis Regiae Britannicae.

Hamburg: Ex Officina Gothofredi Schultzen/Anno 1674.

First edition. 8vo. 8 leaves (including engraved title page by H. von Hensbergen), 335, (1) pp. Errata on final unnumbered page. Woodcut geometrical diagram on page 221. Fine copy in contemporary speckled calf, spine richly gilt in compartments.

THE RARE first edition of von der Becke's principal work, dedicated to the Royal Society (London). David von der Becke (1648–1684) was born in Minden (Westphalia) and received his doctoral degree at Padua in 1671. He was a physician and iatrochemist and an ardent follower of van Helmont, who believed that water and alkali were the basis of all matter, with seeds or fire being the formal principle. He believed in the resuscitation of plants. This work was reprinted with additions in 1684 and 1688. This first edition was reviewed in the *Philosophical Transactions* (IX, 60–64). In addition to van Helmont, there are references to Boyle and *The Sceptical Chymist* (1661) on pages 281 and 283 and to the chemical works of other contemporary scientists. Duveen states that this work is “apparently unknown to the usual authorities,” but it is specifically mentioned by Watt (I, 91q), who refers to the Hamburg 1683 [*sic*] edition. It is also cited by Ferchl. Not in Bolton, Caillet, Ferguson, Ferguson Coll., Morgan, Osler, Poggendorff, Smith, Waller, etc. (Duveen, 60; Ferchl, 32; Hirsch, I, 412, and *Supplement*, 80; Neu, 357; Partington, II, 241; Thordike, VII, 236; Watt, I, 91q; Wellcome, II, 126)

BECKER, Dietrich David

Dissertatio Inauguralis Medica de Nitro . . . sub praesidio Dn. D. Ioannis Hieronymi Kniphofii . . . Pro gradu doctoris . . . publico eruditorum examini submittit Dietrich David Becker Hannoveranus. . . . MDCCLIII. die XXIV. Dec.
Erfurt: Stanno Heringiano Acad. Typogr. (1753).

First edition. 4to. 24 pp., 1 leaf. Historiated woodcut capital, head- and tailpieces. Fine copy in brown half morocco antique, marbled boards, spine gilt-lettered and dated.

THE DOCTORAL dissertation of Becker (dates unknown), physician and chemist, with the celebrated professor of anatomy, botany, and surgery Johann Jerome Kniphof (1704–1763) presiding. Chemical and physical properties of niter (potassium nitrate) are discussed, with references to earlier and contemporary chemists. On page 11 the vig-

orous reactions produced by the addition of carbon or sulphur to molten niter are described, the end products being potassium carbonate and potassium sulphate, respectively. After receiving an M.D. from Erfurt, Becker moved to Langensalza, where he practiced medicine and conducted alchemical experiments. He published *Der Chymische Wahrsager oder Beschreibung eines Rubinrothen* (Langensalza, 1755) and *Des Chymischen Wahrsagers Vertheidigung* (Langensalza, 1757). Very rare. Not in Blake, Cushing, Waller, Wellcome, or the usual chemical bibliographies. (Waring, 638: under Kniphof)

BECKMANN, Johann

A History of Inventions and Discoveries. By John Beckmann, . . . Translated from the German, by William Johnston.
London: Printed for J. Bell. 1797.

First English edition. 3 vols., 8vo. I: xii, 488 pp. II: 2 leaves, 443, (1) pp. III: 2 leaves, 491, (1) pp. Very fine copy, in pristine condition, in original tree calf, gilt dentelles on each cover, spines gilt, black morocco labels gilt.

THE FIRST English edition of the first considerable history of technology, being the translation of the major part of the *Beyträge zur Geschichte der Erfindungen* (Leipzig, 1782–1805, 5 vols.). Beckmann (1739–1811) was professor of philosophy at Göttingen, where a professorship in economic sciences was established for him in 1770. “A work in which he relates the origin, history and recent conditions of the various machines, utensils, &c., employed in trade and for domestic purposes” (*Encycl. Brit.*). Beckmann first used the term *technology* in 1772, and he is regarded as the founder of scientific technology. Many subjects of chemical importance are included: e.g., refining of metals, dyes, winemaking, drugs, explosives, soapmaking, and freezing mixtures. “It is a mine of information direct and incidental” (Ferguson). “Beckmann should . . . be credited with being the first reliable historian of inventions” (D.S.B.). Bolton, Edelstein, Ferguson (*Secrets*), Smith, and Waller list English editions of 1814, 1823, and 1846, but not the first English edition, which is very rare. Even Watt, a contemporary of the translator William Johnstone, did not know the date of the present edition. (D.S.B., I, 555; Ferchl, 32; Ferguson, I, 92 [not in Young Coll.]; Watt, I, 92a; Wellcome, II, 128)

BECKMANN, Johann

A History of Inventions and Discoveries. By John Beckmann, . . . Translated from the German, by William Johnston. . . . Second edition, carefully corrected, and enlarged by a fourth volume. . . .

London: Printed for R. Lea; et al. 1814.

Second English edition. 4 vols., 8vo. I: xvi, 488 pp. II: iv, 423, (1) pp. (N.B. pp. 419–423 misnumbered 483–486, 419). III: iv, 461, (1) pp. IV: iv, 682 pp. Old presentation inscription in ink on titles, few leaves slightly foxed; otherwise very attractive set in original gilt-ruled half calf, marbled boards, spines gilt-lettered. Contemporary printed label on each front cover of Lyme Regis Commercial Reading Room.

“THE SECOND edition printed in four octavo volumes, . . . is undoubtedly the best reproduction of the original. Not to speak of its . . . handsome appearance, it contains many notes full of interesting matter . . . and each volume is furnished with very valuable indexes both of authors and of subjects. This edition is superior to the first, as it contains a fourth volume . . .” (Ferguson, *Books of Secrets*). The range of Beckmann’s chemical work is indicated by some of the sections of volume IV, first printed in English here: tin, tinning, manganese, Prince Rupert’s drops, indigo, gilding, steel, sal ammoniac, Bologna stone, saltpeter, gunpowder, aqua fortis, Seignette’s salt, etc. A major early contribution to the history of chemical technology. The second English edition is rare. Not in D.S.B., Duncan, Harvey, Watt, Wellcome, or the usual chemical bibliographies. (Ferguson, I, 92 [not in Young Coll.]; Ferguson Coll., 72; Ferguson, *Books of Secrets*, III, 17)

BECKMANN, Johann

A History of Inventions, Discoveries, and Origins. By John Beckmann, . . . Translated from the German, by William Johnston. . . . Carefully revised and enlarged by William Francis, Ph.D., F.L.S., editor of The Chemical Gazette; and J. W. Griffith, M.D., F.L.S., licentiate of the Royal College of Physicians.
London: Henry G. Bohn. 1846.

Fourth edition. 2 vols., 8vo. I: xxiii, (1), 518 pp., 1 leaf, 32 pp. (Bohn’s catalogue of books). With engraved frontispiece of Beckmann (by J. J. Hinchliff). II: xii, 548 pp. With engraved frontispiece of James Watt (by Hinchliff). Fine copy in original blind-stamped green cloth, spine gilt-lettered. Review copy inscribed in ink on front free endpaper of volume I: “The Editor of the ‘Manchester Advertiser’ with the Publisher’s Compts.”

THE FINAL and best edition of this classic work, being a condensed version of the second and most complete edition (London, 1814) but omitting irrelevant details and updating the technological information. One of the items of Bohn’s Standard Library, it includes bibliographical footnotes and an index. (Bolton, 88; D.S.B., I, 555; Duveen, 61; Edelstein, 3777; Ferguson, I, 92 [not in Young Coll.]; Ferguson Coll., 76; Ferguson, *Books of Secrets*, I, part 1, p. 2; Ferguson, *History of Technology*, p. 16; Hoover, 33; Partington, II, xiii; Smith, 41; Waller, 12211; Wellcome, II, 128)

BECQUEREL, Alexandre Edmond

La Lumière ses Causes et ses Effets . . .

Paris: Firmin Didot Frères, Fils et Cie. 1867, 1868.

First edition. 2 vols., 8vo. I: 2 leaves, iii, (1), 431, (1) pp., 1 leaf. II: 2 leaves, 377, (1) pp., 1 leaf. With 8 plates (5 colored, 4 folding), and 76 figures in text. Magnificent set in pristine condition, top edges gilt, others uncut, in contemporary crimson half morocco, marbled boards, spines gilt in compartments.

BECQUEREL (1820–1891) carried out his most important researches in optics, and especially on luminescence. In the mid-nineteenth century he virtually monopolized the significant discoveries in this field. Made over a period of thirty years, his investigations are assembled in this monumental work, which deals almost exclusively with the experimental aspects of the subject. The first volume discusses the sources of light and contains sections on heat, refraction, electricity, and phosphorescence. The second volume covers the action of light and contains sections on its calorific and chemical effects, photography, vision, physiological consequences, etc. Of particular chemical importance is the section on photography (II, pp. 167–234), which includes Becquerel’s pioneering researches on color photography. “In photographic science his book *La Lumière* is of particular importance” (Eder). An outstanding copy of this milestone book. Partington (vol. IV) refers to other researches by Becquerel but not to the present work. “Scarce” (Zeitlinger [1926]). (Bolton, 294; British Optical Association Cat., p. 18; Cushing, B231; D.S.B., I, 556; Eder, *History of Photography*, pp. 265–266; Gernsheim, *History of Photography*, p. 524; Harvey, *A History of Luminescence*, pp. 218–219 [with reproduction of title page of vol. I in fig. 20]; Smith, 41; Sotheran, Cat. 800 [1926], 13403)

BECQUEREL, Alexandre Edmond

Recherches sur Divers Effets Lumineux qui résultent de l’action de la lumière sur les corps. Par M. Ed. Becquerel. Premier, deuxième et troisième mémoires.

Paris: Mallet-Bachelier, Imprimeur-Libraire . . . 1859.

First collected edition. 8vo. 1 leaf, 115, (1), 86, 385–510 pp. With 4 folding engraved plates and a series of pertinent papers by Henri Soleil, Ad. Wurtz, and Bertin at the end. Presentation copy inscribed in ink on title page: “A Monsieur Delaunay Membre de l’Institut hommage de l’auteur Edmond Becquerel.” Fine copy in contemporary dark-green quarter morocco, blind-stamped pebbled cloth.

THE SECOND son of Antoine-César Becquerel, Alexandre’s “most important achievements in science were in electricity, magnetism, and optics” (D.S.B.). Becquerel “used a spectroscope of the modern type” (Harvey). This is illustrated

in a plate, with the phosphorescent emission bands in the spectra of various compounds. This collection includes three pioneering studies on luminescent phenomena produced between 1857 and 1859. The phosphoscope is described here for the first time: it was invented by Becquerel to enable him to view substances in the dark and identify many new phosphorescent compounds. The recipient of this copy, Charles Eugene Delaunay (1816–1872), was a celebrated astronomer known for his important work in celestial mechanics (see D.S.B.). (D.S.B., I, 556; Harvey, *A History of Luminescence*, 351, 605; Sotheran, Cat. 789 [1924], 4420 ["Scarce"]; Wheeler Gift, 1439)

BECQUEREL, Antoine Cesar

Éléments d'Electro-Chimie appliquée aux Sciences Naturelles et aux Arts. . . .

Paris: Librairie de Firmin Didot Frères. 1843.

First edition. 8vo. 2 leaves, vi pp., 1 leaf (errata), 419, (1) pp. With 3 folding engraved plates of apparatus (Dulos del. et sculp.). Very fine copy in contemporary dark-green quarter morocco, marbled boards, spine gilt-lettered.

BECQUEREL (1788–1878), grandfather of Henri Becquerel (discoverer of radioactivity) and professor of physics at the Musée d'Histoire Naturelle, conducted numerous experiments on voltaic cells and was one of the founders of electrochemistry. He invented the thermoelectric needle and constructed various cells, including one using acid and alkali that attracted the notice of Daniell, Faraday, et al. The present work describes the cells Becquerel constructed, with their practical applications, and includes an important chapter on the new art of electrotyping, with details on its use in reproducing daguerreotypes. Becquerel's electrochemical theory was similar to that of Ampère. "He may fairly be regarded as one of the creators of electro-chemistry" (Zeitlinger). A milestone work, which was translated into German (Erfurt, 1845, 1848, 1857). A second French edition appeared (Paris, 1864). Partington (IV, 130–132) discusses the work of Becquerel in detail but does not mention this title. One of "his most important books" (D.S.B.). Not in Duveen, Edelstein, Ekelöf, Morgan, Smith, Waller, Wellcome, Wheeler Gift, etc. (Bolton, 294; D.S.B., I, 558; Ferchl, 33; Poggendorff, I, 128; Ronalds, 44; Sondheimer, 98; Sotheran, Cat. 702 [1910], 6090 ["Scarce"])

BECQUEREL, Antoine César

Éléments d'Electro-Chimie appliquée aux Sciences Naturelles et aux Arts. . . .

Paris: Librairie de Firmin Didot Frères, Fils et Cie. 1864.

Second edition. 8vo. 2 leaves, iv, 626, pp. Numerous tables and woodcut illustrations in text. Fine, crisp copy, uncut, in original dark-green quarter morocco, marbled boards (lower corners worn), spine gilt-lettered. Inscribed in ink on half title: "Témoignage d'estimé et d'amitié de l'auteur Becquerel." With old stamp ("Prof. J. Nicklès, Nancy") on half title. François Joseph Jérôme Nicklès (1820–1869), professor at Nancy (1854), published on electricity, magnetism, crystallography, and inorganic and organic chemistry.

THE ENLARGED and updated final edition of this important work, containing 50 percent more information than the first (1843). The section on the electrolysis of organic compounds has been greatly expanded. "La nouvelle édition de cet ouvrage a reçu de tels développements et des additions si nombreuses, qu'on peut considérer comme un ouvrage entièrement nouveau" (preface). Partington (IV, 130–132) discusses Becquerel's concepts in electrochemistry in relation to those of Davy and Faraday but does not mention this title. The second edition is very much rarer than the first. Not in Ekelöf, Gartrell, Wheeler Gift, or the usual chemical bibliographies. (Bolton, 294; D.S.B., I, 558; Ferchl, 33 ["1865"]; Smith, 41; Sotheran, Cat. 800 [1926], 10156)

BECQUEREL, Antoine César

Des Forces Physico-Chimiques et de leur intervention dans la Production des Phenomenes Naturels par M. Becquerel. . . .

Paris: Typographie Firmin Didot Frères, Fils et Cie. 1875.

First edition. 8vo. Xii, 648 pp. Woodcuts in text. Some leaves slightly embrowned owing to quality of paper; otherwise good copy in original maroon cloth, morocco label. Bookplate (canceled): Library U.S. Naval Academy.

A WORK ON the physical and chemical forces that operate in the natural world, including discussions on the electrochemical researches of de la Rive, Faraday, Fabroni, Wollaston, Oersted, Richie, Pouillet, Schoenbein, and other investigators. The author describes the work of Berzelius on chemicals isolated from plants and animals and compares them with compounds that occur in the mineral kingdom. Physical and chemical phenomena in the atmosphere are covered, as are those that occur in different terrestrial regions. The book contains numerous tables of physical and chemical data. An atlas (not present) was also published in quarto format, containing eleven plates and tables. The Sondheimer copy also lacked this slim volume. There is a good account of Becquerel in D.S.B. (I, 557), but the present title is not mentioned. (Bolton, 294; Poggendorff, III, 92; Sondheimer, 99)

BEDDOES, Thomas

Chemical Experiments and Opinions. Extracted from a Work Published in the Last Century.

Oxford: At the Clarendon Press. Sold by D. Prince and J. Cooke, and J. Fletcher, Oxford, and J. Murray, Fleet-Street, London. 1790.

First edition. 8vo. 1 leaf, xli, (1), 18, (2), 63, (1) pp., 1 leaf (blank). With engraved frontispiece containing 6 figures. Fine copy in half calf antique, marbled boards, two black morocco labels on spine.

BEDDOES (1760–1808), a student of Joseph Black and physician (M.D., Oxford, 1786), studied medicine in London and Edinburgh. He was a reader in chemistry at Oxford (1788–92), and during this period became acquainted with the *Tractatus quinque medico-physici* (Oxford, 1674) of John Mayow, already a rare book in the late eighteenth century. Beddoes was greatly impressed by the researches of Mayow and in the present work translated portions of the *Tractatus* into English. Beddoes “shows clearly how Mayow’s experiments anticipated Lavoisier’s work on combustion . . . [and] used his knowledge . . . to help in evaluating the work of the forgotten author” (Stansfield). Beddoes stressed the hitherto unappreciated importance of Mayow’s researches, ranking them with those of Robert Boyle and Stephen Hales for the formulation of a chemical model for respiration and his original observations on the chemistry of blood. “Beddoes was the first to call attention to the significance of the *Tractatus* and to Mayow’s anticipation of the discovery of oxygen” (Osler). “A rare and very remarkable work” (Duveen). Not in Blake, Bolton, Cole, Cushing, Edelstein, Norman, Partington, Smith, Waller, etc. (D.S.B., I, 564, IX, 245; Duveen, 61; Fulton, 139; Neu, 2713; Osler, 3361; Stansfield, Thomas Beddoes [1984], 40–41, 282; Watt, 1, 92t, II, 660p; Wellcome, IV, 93)

BEDDOES, Thomas

Contributions to Physical and Medical Knowledge, Principally from the West of England. Collected by Thomas Beddoes, M.D.

Bristol: Printed by Biggs & Cottle, for T. N. Longman and O. Rees, Pater-noster-Row, London. 1799.

First edition. 8vo. 26 pp. + 1 leaf + 428 + 429*–434* + 429–539 + (1) pp. + 2 leaves (advertisement and errata). Pages 209–210 comprise a folding table. Fine, crisp copy, in contemporary tree calf, rebacked, gilt-lettered maroon morocco label. From the library of Professor Franz Sondheimer (1926–1981), with his bookplate on the front pastedown endpaper.

A VERY RARE book, which is important as it contains Sir Humphry Davy’s first printed work. Partington (IV, 36)

notes that Beddoes records that Davy’s papers were sent to him (Beddoes) in April 1798, some months before October 1798, when Davy was appointed to Beddoes’s Pneumatic Institution in Bristol, where Davy later did important work on nitrous oxide. Beddoes also makes it plain that Davy’s essays were written in Cornwall, with no knowledge of the work that Rumford had done on heat. Davy’s contributions are “Essays on Heat, Light, and the Combinations of Light, with a New Theory of Respiration. On the Generation of Oxygen Gas, and the Causes of the Colors of Organic Beings” (pp. 1–147) and “An Essay on the Generation of Phosoxygen, or Oxygen Gas; and on the Causes of the Colors of Organic Beings” (pp. 149–205). Beddoes was the first to appreciate Davy’s genius in chemical research, and he was an effective early supporter. Pages 333–539 contain “Miscellaneous Reports and Observations concerning the respiration of Gases and Vapours” and are supplementary to the *Considerations on the Medicinal Powers of Factitious Airs* (Bristol, 1794–96) of Beddoes and Watt. Not in Cushing, Osler, Smith, Waller, Wellcome, etc. (Blake, 37; Bolton, 295; D.S.B., I, 564; Duveen, 62; Edelstein, 196; Ferchl, 33; Neu, 362; Partington, IV, 35; Poggendorff, I, 130; Watt, I, 92y)

BEDDOES, Thomas

Memoirs of the Life of Thomas Beddoes, M.D. with an Analytical Account of his Writings. By John Edmonds Stock, M.D. . . .

London: Printed for John Murray, etc. 1811.

First edition. 4to. 2 leaves, v, (1), 413, (3), lxxi, (1) pp. With engraved frontispiece portrait of Beddoes (by C. Warren, Nov. 15, 1810). Fine copy with wide margins, in original double gilt-ruled diapered calf, rebacked, maroon morocco label.

THE STANDARD early biography of Beddoes, based partly on his published works and partly on his unpublished writings. A useful account is given of the Clifton Pneumatic Institution founded by Beddoes. This includes the first experiments on nitrous oxide by the youthful Humphry Davy, who received his earliest training in chemistry and the preparation and handling of gases under Beddoes. The appendix includes brief unpublished papers on the chain of beings, the Linnaean system of vegetables, etc., and some correspondence with Erasmus Darwin on the origin of pit coal and on the latter’s Zoonomia. Following page 413 is a two-page bibliography of most of Beddoes’s publications, listing forty-five titles (1784–1808). The editor, John Edmonds Stock (1774–1835), a physician at Bristol, states that he found it difficult to gather details on Beddoes as he was “so regardless . . . of his own publications, that, at the time of his death, not one sixth part of them could be found

among the many thousand volumes of which his library was composed. The arrangement and analysis of his Manuscripts presented a task still more difficult" (preface). (Cole, 72; D.S.B., I, 564; Munk, III, 12; Osler, 1988; Partington, IV, 29; Watt, II, 882h; Wellcome, II, 129)

BEDDOES, Thomas

Reports principally concerning the effects of nitrous acid in the venereal disease, by the Surgeons of the Royal Hospital at Plymouth, and by other practitioners. Published by Thomas Beddoes, M.D.

Bristol: Printed by N. Biggs, for J. Johnson, St. Paul's Church-Yard, London. 1797.

First edition. 8vo. 3 leaves, 101, (1) pp. Very good copy, complete with the half title, in maroon half morocco antique, marbled boards, gilt-lettered and dated on spine.

AN IMPORTANT collection of letters to Beddoes, from contemporary physicians, on the treatment of venereal diseases. In parts IV and V of his work *Factitious Airts* (Bristol, 1796), Beddoes had recommended the use of nitric acid to treat syphilis. At that time the terms *nitrous* and *nitric* were used indiscriminately, but nitric acid was the chemical employed. Fifteen letters are reproduced, with descriptions of apparent cures of venereal diseases by patients drinking small quantities of dilute nitric acid. "From the large mass of evidence here brought together from various quarters, Dr. Beddoes considers it clearly proved that when the constitution is impaired or otherwise feeble or scrofulous, the cure of syphilis should always be attempted by nitrous acid in preference to any other medicine" (Waring, who erroneously gives 1796 as the date of publication). A rare work, of pharmaceutical chemical interest, which was translated into German by F. G. Friese (Breslau, 1799, 8vo.). Not listed in the usual early chemical bibliographies. (Blake, 38; Osler, 1984; Waring, 577; Watt, I, 92x; Wellcome, II, 129)

BEDDOES, Thomas, and WATT, James

Considerations on the Medicinal Use, and on the Production of Factitious Airts. Part I. By Thomas Beddoes, M.D. Part II. By James Watt, Engineer. Edition the Second. To which are added Communications from Doctors Carmichael, Darwin, Ewart, Ferriar, Garnet, Johnstone, Pearson, Thornton, and Trotter; from Mr. Atwood, Mr. Barr, Surgeon to the Birmingham Dispensary, Mr. Walter William Capper, Mr. Gimbernat, Surgeon to the King of Spain, Mr. Sandford, Surgeon to the Worcester Infirmary, and others.

Bristol: Printed by Bulgin and Rosser; For J. Johnson, in St. Paul's Church-Yard, London. 1795.

Second edition. 8vo. Pp. 8 + 9*–19* + (1) + 9–172 + 40. With 3 folding engraved plates (missing in this copy, but supplied in photographic facsimile). Very good copy in modern boards.

A CLASSIC EARLY pioneering work in chemical anesthesia. It was Beddoes (1760–1808) who first suggested that the inhalation of certain gases (e.g., carbon dioxide) would relieve pain, and in 1798 he founded his Pneumatic Institution in Bristol for the study of the medicinal properties of various inhaled gases. Published in only five or six hundred copies (see preface, p. 5), parts I and II (Bristol, 1794) were sold in a few weeks. This second edition is a close reprint. The first 172 pages are by Beddoes and the final 40 pages by Watt (1736–1819). The third and last edition appeared the following year (Bristol, 1796), and all editions are rare. The section by Watt describes the apparatus used to prepare gases (e.g., oxygen, nitrogen, carbon dioxide, hydrogen, and carbon monoxide), and the section by Beddoes covers experiments on humans and animals subjected to inhaling these gases. A supplement to part II (by Watt) appeared in 1796 (q.v.). Only the edition of 1794 is cited by Cushing, Duveen, Neu, and Wellcome. (Bolton, 295; D.S.B., I, 564; Ferchl, 33; Osler, 1379; Partington, IV, 30; Poggendorff, I, 130; Robinson, *Victory over Pain*, 1946, p. 323; Cartwright, *English Pioneers of Anaesthesia*, 1952, 78; Watt, I, 92v)

BEDDOES, Thomas, and WATT, James

Considerations on the Medicinal Use, and on the Production of Factitious Airts. Part I. By Thomas Beddoes, M.D. Part II. By James Watt, Engineer. Edition the Third. Corrected and Enlarged.

Bristol: Printed by Bulgin and Rosser, For J. Johnson, in St. Paul's Church-Yard, London. 1796.

Third edition. 8vo. Pp. 8 + 9*–23* + (1) + 9–222 + 8. With 5 folding engraved plates of apparatus for generating gases. Fine copy in quarter calf antique, marbled boards, spine gilt-lettered. Bound with: Parts III, IV, and V.

THE AUGMENTED third, final, and best edition of this classic work on pneumatic chemistry. The first 179 pages are by Beddoes, and pages 181–222 are by Watt. Complete sets of all five parts are of great rarity. In the present set, parts I and II are in third edition, part III is in second edition, and parts IV and V are in first edition. This edition is not mentioned by Bolton, Cushing, Duveen, Ferguson, Morgan, Neu, Osler, Smith, Waller, Wellcome, etc. (D.S.B., I, 564; Ferchl, 33; Edelstein, 195; Partington, IV, 30; Poggendorff, I, 130; Watt, I, 92v)

BEDDOES, Thomas, and WATT, James

Considerations on the Medicinal Use and Production of Factitious Airs. By Thomas Beddoes, M.D. and James Watt, Engineer. Part III. Second Edition, Corrected, and Enlarged. London: Printed for J. Johnson, St. Paul's Church-Yard. 1796.

Second edition. 8vo. Pp. xx, 178; 1 leaf (advertisements). With 3 engraved plates of apparatus. Fine copy in polished quarter calf antique, marbled boards, spine gilt lettered. Bound with: Parts I, II, IV, and V.

THE ENLARGED second (first London), final, and best edition of part III of this classic medicochemical work, which originally appeared a year earlier (Bristol: Bulgin and Rosser, 1795). It deals mainly with the medicinal and physiological effects of breathing oxygen and other gases. At the end there are some descriptions of apparatus and chemical experiments. Pages 177–178 list the subscribers to Beddoes' Medical Pneumatic Institution, including such illustrious names as Joseph Black, Matthew Boulton, Andrew Duncan, Andrew Fyfe, Thomas Henry, James Keir, Alexander Monro, Richard Pearson, Thomas Percival, R. J. Thornton, T. Trotter, and Josiah Wedgwood. This second edition with the London imprint appears to be unrecorded by the usual bibliographers and is even rarer than the first edition of part III, published in Bristol.

BEDDOES, Thomas, and WATT, James

Medical Cases and Speculations; including Parts IV and V of Considerations on the Medicinal Powers, and the Production of Factitious Airs. By Thomas Beddoes, M.D. and James Watt, Engineer.

Bristol: Printed by Bulgin and Rosser, for J. Johnson, St. Paul's Church-Yard, London. 1796.

First edition. 8vo. (in 4s). Pp. xvi + 3 leaves + 168 + 24 + 25*–42* + 25–86 + 5 leaves + 87–96 + 1 leaf (advertisements). With 2 plates of apparatus. Fine copy in polished quarter calf antique, marbled boards, spine gilt-lettered. Bound with: Parts I, II, and III.

THE SOLE edition of parts IV and V of this classic series. Part IV was written jointly by Beddoes and Watt, and part V by Watt only. Part V is entitled "Supplement to the Description of a Pneumatic Apparatus, for Preparing Factitious Airs; containing a Description of a Simplified Apparatus, and of a Portable Apparatus." Pages 41–96 comprise eight appendices, and these contain a great deal of information of chemical interest. Appendix VIII is by Jan Ingenhousz, dated October 1796, from Bowood, near Calne. Not mentioned by Bolton, Cushing, Duveen, Neu, Osler, Smith, Waller, etc. (Blake, 38; D.S.B., I, 564; Ferchl, 33; Partington, IV, 30; Poggendorff, I, 130; Watt, I, 92v)

BEGUIN, Jean

Les Elemens de Chymie, de Maistre Jean Beguin Aumosnier du Roy.

Paris: Chez Mathiev Le Maistre, ruë S. Iean de Latran à l'Arbre sec. 1615.

First edition in French. 8vo. 8 leaves, 290 pp., 1 leaf. With large folding table. Very fine copy in the original unlettered vellum. From the library of the noted historian of chemistry, Professor John Read, with his penciled signature on the recto of the first free endpaper.

THE VERY first textbook of chemistry to obtain wide distribution in a modern language and, as such, of great historical significance. The book originally appeared in Latin as *Tyrocinium Chymicum* (Paris, 1610). Beguin (fl. 1608) quickly realized that the book was favorably received by his students, so he decided to publish it in the vernacular, as here. General chemistry and iatrochemical preparations are discussed, and the earliest descriptions of certain chemicals are given, with the discovery of which the author is credited. Beguin maintained a school for chemical instruction in Paris and was the first to give courses in practical chemistry in his laboratory. His book contains no mysticism, unlike works by his contemporaries. It was the most popular textbook of the time, passing through some fifty editions (in Latin, French, and English) between 1610 and 1669, until it was superseded by Lemery's *Cours de Chymie* (Paris, 1675). All early French editions are very rare, particularly the first, which is extremely rare. This is an important association copy, as it once belonged to Professor John Read, who discusses it in his *Humour and Humanism in Chemistry* (London, 1947, pp. 81–88) and reproduces its title page. The many editions of Beguin's celebrated book are discussed in detail by Professor T. S. Patterson (*Annals of Science*, 2, 1937, 243–298), who says on page 279 of his article: "The French edition of 1615 is a very outstanding publication." Ferguson erroneously mentions a French translation of 1612, which is a ghost. Not in the Bibliothèque Nationale or the British Library. Not in Duveen, Edelstein, Mellon, Neu, Sondheimer, Waller, etc. (Bolton, 296; D.S.B., I, 571; Ferchl, 33; Ferguson Coll., 78; Partington, III, 3; Poggendorff, I, 134; Wellcome, I, 753)

BEGUIN, Jean

Les Elemens de Chymie, de Maistre Iean Beguin Aumosnier du Roy, reveus, notez, expliquez, & augmentez, par I.L.D.R.B.IC.E.M. . . .

Paris: Chez Mathiev Le Maistre, ruë saint Iean de Latran à l'Arbre sec. 1620.

Second (first de Roy) edition in French. 8vo. 8 leaves, 80, (3), 82–96, (2), 97–398 pp., 1 leaf (privilege) + 24 leaves (index).

Woodcut of furnace and still on title page, and 3 copperplates of apparatus in text (1 full page). Very fine copy, in modern marbled boards, black morocco label. From the Nordkirchen Library.

THE FIRST French edition to contain illustrations. Beguin died ca. 1619, and his friend Jean Lucas de Roy (abbreviated as I.L.D.R., etc. in the title) brought out this revised and greatly enlarged edition. De Roy dropped Beguin's preface of 1615, replacing it with his own, which states that the death of the author had prevented Beguin from publishing a second French edition in which he had intended to include more details on the methods used to prepare purer chemical compounds. Stressing that chemistry is a valuable adjunct to medicine, de Roy maintains that he (like Beguin) is a sworn enemy of the Paracelsians. While largely preserving Beguin's original text, de Roy has added many necessary preparative details, as well as a number of his own discoveries. The work is made even more useful by the addition of a comprehensive index. Not in the Bibliothèque Nationale or the British Library. Not in Cole, Duveen, Krivatsy, Wellcome, etc. (Bolton, 296; Caillet, 911; Ferchl, 33; Ferguson Coll., 78; Partington, III, 3)

BEGUIN, Jean

Les Éléments de Chymie, de Maistre Jean Beguin. Reveus, expliquez, & augmentez, par Iean Lucas de Roy, Medecin Boleducois. Quatriesme Edition.

Rouen: Chez Iean Bovllay, ruë aux Iuifs près le Palais. 1626.

First Rouen edition. 8vo. 8 leaves, 432 pp., 24 leaves. Large woodcut on title page (furnace and distillation apparatus, repeated on p. 82), and 11 large woodcuts (1 full page) in text. Printed table on verso of avii. Woodcut head- and tailpieces. Very good copy in original unlettered vellum.

AS BEGUIN died about 1618, the first French edition (Paris, 1615) was revised, annotated, and augmented by Jean Lucas de Roy, who brought out the second French edition (Paris, 1620). The third French edition (Paris, 1624), little changed from the second, included woodcuts of apparatus. "After this time the French editions began to be a little confused. In 1626 there were two. One appeared at Paris labelled *Troisiesme Edition* (actually the fourth). . . . Meantime publication of the book had been taken up at Rouen . . ." The present is thus the first Rouen edition, being the fourth (or fifth) edition of this important book in French. Further so-called fourth editions appeared at Rouen in 1632, 1637, and 1647; on which see T. S. Patterson (*Annals of Science*, 2 [1937], 250, 289–290). Very rare. Not in Caillet, D.S.B., Duveen, Edelstein, Ferguson, Ferguson Coll., Neu, Poggendorff, Smith, Waller, Watt, Wellcome, etc. (Bolton, 296; Ferchl, 33; Partington, III, 3; Thorndike, VIII, 112)

BEGUIN, Jean

Les Elemens de Chymie, de Maistre Jean Beguin. Reveus, expliquez, & augmentez, par Iean Lucas de Roy, Medecin Boleducois.

Rouen: Chez Iean Bovllay, ruë aux Iuifs, près le Palais. 1627.

Second Rouen edition. 8vo. 8 leaves, 432 pp., 24 leaves. Large woodcut on title page (furnace and distillation apparatus, repeated on p. 82), and 11 large woodcuts (1 full page) in text. Printed table on verso of avii. Woodcut head- and tailpieces. Very good copy in original unlettered vellum, with remains of ties.

A CLOSE PAGINARY reprint of the first Rouen edition of 1626. The Wellcome Library copy is imperfect, lacking pages 175–190. Very rare. Not in Bolton, Caillet, D.S.B., Duveen, Edelstein, Ferchl, Ferguson, Ferguson Coll., Goldsmith, Guaita, Neu, Poggendorff, Smith, Waller, Watt, etc. (Partington, III, 3; Patterson, *Annals of Science*, 2 [1937], 250, 290; Thorndike, VIII, 112; Wellcome, I, 754)

BEGUIN, Jean

Tyrocinium Chymicum e Naturae Fonte et Manuali Experimentia Depromptum . . . Studio & operâ Christophori Glückradts . . .

N.p. (Königsberg?): Excudebat Augustus Boreck. Impensis Clementis Bergeri: 1625.

Fourth (final) "Glückradt" edition. 8vo. 8 leaves, 392 pp., 4 leaves (2 blank). Alchemical woodcut on title, small woodcut (p. 123), and 2 pages of alchemical symbols (at the end). Some gatherings slightly embrowned; otherwise good copy, entirely uncut and unpressed (very rare thus), in original plain pasteboards, spine repaired.

THE NINTH edition of the *Tyrocinium* (first, 1610) and the fourth (although termed sixth in the title) to be edited by Johann Hartmann (1568–1631), who gave public lectures on iatrochemistry at Marburg, where the first chair of chemistry in Europe was founded. It is not clear why Hartmann wrote under the pseudonym Glückradt, but he added many notes to Beguin's text to keep it up-to-date. The first, second, and third Glückradt editions appeared in 1618 (2 eds.) and 1619. Pelshofer incorporated the present edition and Barth's edition into his version of the *Tyrocinium* (Wittenberg, 1634). Patterson discusses the four Glückradt editions. Not in Caillet, Cushing, Guaita, Poggendorff, Waller, Watt, Wellcome, or the usual chemical bibliographies. (Bolton, 296; Ferchl, 33; Ferguson Coll., 77; T. S. Patterson, *Annals of Science*, 2 [1937], 251, 291)

BEGUIN, Jean

Tyrocinium Chymicum Johannis Beguini, . . . Nunc vero & Johanne Georgio Pelshofero, . . . utriusque notis & medicamentorum formulis in unum systema redactis, denuo, amicorum rogatu, in publicum emissum, ac triplici indice ornatum.

Wittenberg: Typis viduae Georgii Mulleri; impensis haeredum Clementis Bergeri. 1634.

First edition edited by Pelshofer. 8vo. 40 leaves, 480 pp., 24 leaves (last blank lacking). Folding table facing page 98. Very good copy in contemporary blind-ruled calf, rebounded in morocco antique, spine gilt-lettered and dated. Neat signature in ink on flyleaf: "Simon Hassington, Chymist, dwellinge near Winchester strete in Sowthwarke," dated 1639, with price "3s 4d."

"IN 1634 J. G. Pelshofer (1599–1637) brought out an edition of the *Tyrocinium* intended to combine the merits of Glückradt's edition and Barth's edition. . . . In his preface, dated Feb. 25, 1634, Pelshofer points out that the text, published at Frankfurt-an-oder in 1618, is that of Barth, whose notes also are given and distinguished by name. In addition, Glückradt's notes and formulae, which were first published in 1618 at Königsberg, Prussia, and afterwards several times at Wittenberg, are added; these, he continues, had been communicated to Glückradt by D. J. Hartmann, at that time a very celebrated Professor of Chemistry at Marburg" (Patterson, *Annals of Science*, 2 [1937], 292). The Pelshofer edition is considered to be one of the best and was reprinted several times. Very scarce. Not in Bolton, Caillet, D.S.B., Duveen, Edelstein, Guaita, Neu, Poggen-dorff, Smith, Waller, etc. (Ferchl, 33; Ferguson, I, 93; Ferguson Coll., 77; Partington, III, 2; Watt, I, 94b; Wellcome, I, 752)

BEGUIN, Jean

Tyrocinium Chymicum Ioannis Begvini Regis Galliae Eleemosynarij, Antebac à Viris Clariss. D. Christophoro Glvctradt, & D. Ieremia Barthio, Philos. & Medic. DD. &c. notis elegantibus illustratum, formulisque medicamentorum optimis & secretis locupletorum. Nunc vero a Io. Georgio Pelshofero, Medic. D. & in Acad. Wittenb. Professore, vtriusq; Notis & medicamentorum formulis in vnum systema redactis. Hac nouissima Editione triplici Indice ornatum. Perillustri & eximio Aromatario Antonio De Sgobbis.

Venetiis, Apud Baleonium. 1643.

First Italian edition. 8vo. 28 leaves, 480 pp., 22 + 2 (blank) leaves. Folding printed table facing page 99. Large woodcut on title page and small woodcut figure on page 128. Very good, crisp copy in half vellum, boards antique, spine lettered in ink. Neat signature in ink on verso of final flyleaf: "Jo. Nicola Masalucci D'Ascoli mano propria 1715."

THE FIRST Italian printing of this famous chemical textbook, based on the Pelshofer edition of Wittenberg, 1640, which itself was derived from the earlier Pelshofer edition (Wittenberg, 1634). It is dedicated to the "illustrious and distinguished" pharmacist and perfumer Antonio de Sgobbis, who had a reputation as the best compounder of Venice treacle, a mixture (said to have come down from Nero's physician) of many ingredients, including vipers. The preface of the publisher, Baleonius, is dated from Venice on the third of the Ides (i.e., 13th) of May 1643. Rare. Neu (no. 371) cites another Italian edition (Venice: Baleonius, 1669), with different pagination, which was unknown to Patterson (*Annals of Science*, 2, 243 [1937]). Partington also cites the Venice (1669) edition. Not in Cushing, Duveen, Edelstein, Ferguson, Guaita, Neu, Poggen-dorff, Rosenthal, Sondheimer, Waller, Watt, etc. (Bolton, 296; Caillet, 913 ["Ouvrage rare et curieux"]; Ferchl, 33; Ferguson Coll., 77; Partington, III, 2; Patterson, 293; Smith, 42; Wellcome, II, 131)

BEGUIN, Jean

Tyrocinium Chymicum, commentariis illustratum à Gerardo Blasio, medico Amstelodamensi.

Amsterdam: Apud Aegidium Valkenier, & Casparum Commelinum. 1659.

First edition edited by Blas. 12mo. 6 leaves, 405 pp., 14 leaves (last 2 blank). Finely engraved title page (laboratory with chemist surrounded by furnaces, stills, and apparatus). Folding printed table at end. Fine copy in contemporary vellum.

THE FIRST edition of this important work to be edited by Gerard Blas. The engraved title page gives "a good representation of the interior of a laboratory of the time . . . and . . . the place of publication and the name of the publisher obviously connect this up with the 1656 edition of the *Miracula & Mysteria*. There is a dedication to John Nypoort, dated from Amstelodami 20 Augusti 1659" (Patterson, *Annals of Science*, 2 [1937], 294). The preface states that this edition contains the notes of Barth and Hartmann, as well as those of Blas the editor. The engraved and printed titles are illustrated on plate 19 (figs. 22 and 23) of Patterson's article. Not in Bolton, Caillet, Duveen, Ferguson, Guaita, Neu, Partington, Thorndike, etc. (Cushing, B249; Ferchl, 33; Ferguson Coll., 78; Smith, 42; Waller, 11065; Watt, I, 94b; Wellcome, II, 131)

BEGUIN, Jean

Tyrocinium Chymicum, commentario illustratum. A Gerardo Blasio . . . Editio secunda. Prior locupletior & emendatior.

Amsterdam: Apud Casparum Commelinum. 1669.

Second edition edited by Blas. 12mo. 18 leaves, 332 pp. (misnumbered 314), 4 leaves. Finely engraved title page (laboratory with chemist surrounded by furnaces, stills, and apparatus). Folding table facing page 60. Very fine copy in paneled calf antique, green morocco label gilt, spine dated.

THE SECOND edition (first Amsterdam, 1659) edited by Gerard Blas. In the preface it is stated that the text is based on that of the Wittenberg edition of 1650. Patterson (*Annals of Science*, 2 [1937], 294–295) discusses this edition in detail. Not in Caillet, Cushing, D.S.B., Edelstein, Poggen-dorff, Smith, Waller, Watt, etc. (Bolton, 296; Duveen, 63; Ferchl, 33; Ferguson, I, 94 [not in Young Coll.]; Ferguson Coll., 78; Neu, 372; Partington, III, 2, 3; Sondheimer, 106; Wellcome, II, 131)

BEGUIN, Jean

Tyrocinium Chymicum. or, Chymical Essays, acquired from the Fountain of Nature, and Manual Experience. By John Beguinus Almoner to the most Christian King of France. London: Printed for Thomas Passenger, at the three Bibles upon London-bridge. 1669.

First English edition. 8vo. 6 leaves, 136 pp., 2 leaves. Engraved title page (shaved on fore- and lower edges, as usual). Fine, complete copy, in contemporary mottled calf, rebounded, spine unlettered.

THE ONLY English edition, translated by Richard Russell apparently from the Latin edition of 1612, which by 1669 was rather out of date. Russell “presents the book as an auxiliary to those desirous to enter upon the Praxis of this Laudable Science.” (Patterson, *Annals of Science*, 2 [1937], 295). The dedication is to “God, Author of all Good.” Absolutely complete copies in fine condition, as here, are of great rarity. The British Library copy lacks the dedication and errata leaves (A3 and B2), and the copy in the Wellcome Library is also imperfect, lacking signatures A4 and C5. The engraved title page is often mutilated, and even Patterson could illustrate only a composite photograph of it on plate XX (fig. 24) of his article. Not in Caillet, Cushing, Edelstein, Mellon, Poggen-dorff, Sondheimer, Waller, etc. (Bolton, 296; D.S.B., I, 571; Duveen, 63–64; Ferchl, 33; Ferguson, I, 94; Ferguson Coll., 78; Neu, 373; Partington, III, 3; Smith, 42; Thorndike, VIII, 111; Thornton & Tully, 117; Watt, I, 94b; Wellcome, II, 131; Wing, B1703)

BELIDOR, Bernard Forest de

Le Bombardier François, ou Nouvelle Methode de Jetter les Bombes avec Precision. . . . Paris: De l’Imprimerie Royale. 1731.

First edition. 4to. 4 leaves, xli, (3), 366, (2) pp. With engraved frontispiece (Rigaud sc.) and 8 folding plates (Ph. Simonneau

Sculp.). Fine large paper copy, all edges gilt, in half calf antique, marbled boards, maroon morocco label, spine gilt in compartments.

BORN in Catalonia, Spain, Belidor (1697/1698–1761) lived mostly in France. Exceptionally gifted in practical mathematics, he worked in the field under Jacques Cassini and Philippe de la Hire in the survey of the meridian from Paris to the English Channel, completed in 1718. Elected professor of mathematics at the new artillery school at La Fère, he published several important technical treatises in the 1720s and 1730s. The book that established his reputation was *Nouveau cours de mathématique* (Paris, 1725), followed by the present work, which was written for use in combat. The frontispiece depicts mortars and cannon, with military personnel in discussion about trajectory, and a battle in progress in the background, the trajectories of the shot being clearly shown. The plates illustrate a mortar, rockets, explosive charges, fireworks, etc. The first part of the book comprises a comprehensive series of detailed firing tables. The second covers the manufacture of gunpowder for different uses, including fireworks for military and civilian applications. A second edition in French appeared (Amsterdam, 1734), and a German translation (Nuremberg, 1756). Belidor “was the first who seriously considered the quantity of gunpowder proper for charges” (Hutton), in this classic work on the manufacture of gunpowder for various uses. (D.S.B., I, 581–582; II, 202; Philip, B080.1; Poggen-dorff, I, 138; Watt, I, 95g)

BELIN, Jean Albert

Apologie du Grand Oeuvre, ou Elixir des Philosophes; dit vulgairement Pierre Philosophale. Où la possibilité de cette Oeuvre est démontrée tres-clairement. Et la porte de la vraie Philosophie naturelle est toute à fait ouverte. Par Monsieur l’Abbé D.B.

Paris: Chez Pierre de Bresche. 1659.

First edition. 12mo. 136 pp. (pp. 133–136 misnumbered 233–236). Woodcut vignette on title page. Ornamental woodcut capitals, head- and tailpieces. Fine copy, in contemporary quarter calf, gilt, marbled boards, green morocco label. Armorial bookplate: Gaston Jourdanne.

AN INTERESTING alchemical work on the properties of the philosopher’s stone and the transmutation of metals, by the Abbé Belin (1610?–1677), a Benedictine monk and bishop of Belley. His unsuccessful search for the philosopher’s stone gained him notoriety under Henri III and Henri IV. Becoming embittered, he wrote a satire against alchemy and alchemists (*Les aventures du philosophe inconnu*, Paris, 1646; Duveen, 65). However, in the present work he appears to have relented, as he praises alchemy and extols the virtues

of the philosopher's stone. "Ouvrage rare" (Guaita). Not in Bolton, Edelstein, Ferchl, Ferguson, Hall, Smith, Verginelli, etc. (Caillet, 924; Duveen, 64; Ferguson Coll., 56; Goldsmith, B31; Guaita, 51, 1149; Mellon, 111; Neu, 378; Waite, 277; Wellcome, II, 134)

BELSHAM, Thomas

Zeal and Fortitude in the Christian Ministry Illustrated and Exemplified. A Discourse delivered at Hackney, April 8, 1804, on Occasion of the Death of the Rev. Joseph Priestley, LL.D., F.R.S. &c. Published at the desire of the congregation. To which is annexed, a brief memoir of Dr. Priestley's Life and Writings, and a letter from his son, Mr. Joseph Priestley, containing the particulars of his last sickness. By Thomas Belsham . . .

London: Printed for J. Johnson, . . . by R. Taylor . . . 1804.

First edition. 8vo. viii + 61 pp., 1 leaf (list of books by Belsham, published by Johnson). Fine, crisp copy, in maroon half morocco antique, marbled boards, spine gilt-lettered and dated. Bound with: Johnson, J., *A Catalogue of Books, written by Joseph Priestley* (London, 1804).

BELSHAM (1750–1829) was a Unitarian minister of an independent congregation (Worcester, 1778), a professor of divinity at Daventry (1781–89), and a professor of divinity at Hackney College (1789–96). He then became minister of Gravel Pit chapel (Hackney, 1794), and in 1805 was minister at Essex Street chapel. He published several theological works and held Priestley in great esteem. This work is dedicated to Theophilus Lindsey (1723–1808), a famous Unitarian. On Belsham and Lindsey, see the D.N.B. Pages 1–38 cover the theological beliefs of Priestley and the Unitarians; pages 39–50 comprise a memoir of Priestley's life and works; pages 51–61 discuss Priestley's last illness (in a letter from his son to Theophilus Lindsey); and the final leaf lists books by Belsham. A rare and important piece of Priestleyana. Not in Bolton, Cushing, Duveen, Morgan, Smith, Waller, Wellcome, etc. (Crook, B/520/a; Partington, III, 238; Watt, I, 98i)

BENTLEY, Richard

The Folly and Unreasonableness of Atheism Demonstrated from The Advantage and Pleasure of a Religious Life, The Faculties of Human Souls, The Structure of Animate Bodies, & The Origin and Frame of the World: In Eight Sermons Preached at the Lecture Founded by The Honourable Robert Boyle, Esquire; In the First Year MDCXCII. By Richard Bentley, M.A. Chaplain to the Right Reverend Father in God, Edward, Lord Bishop of Worcester.

London: Printed by J. H. for H. Mortlock, at the Phoenix, in St. Paul's Church-Yard. 1693.

First edition of general title, 8 parts in 1 vol. 4to. I: 3 leaves, 36 pp. II: 34 pp. III: 32 pp. IV: 36 pp. V: 35, (1) pp. VI: 1 leaf, 34 pp. VII: 40 pp. VIII: 42 pp. General title as above. Each sermon with a separate title, pagination, and signatures. Very good set, in quarter calf antique, marbled boards, maroon morocco label. From the library of Thomas Furlly Forster (1761–1825), botanist and original member of the Linnaean Society (see D.N.B.), with his signature dated 4 June 1807, on verso of main title page.

BOYLE FOUNDED his lectures "for proving the Christian Religion," and this was the first course, given by Bentley (1662–1742), who consulted Newton himself before writing the final three sermons on the *Origin and Frame of the World*, which contain the earliest popular exposition of Newtonian physics. "Taken as a whole, Bentley's Boyle Lectures afford a signal proof of his vigorous ability in grasping a complex subject, and of his originality in treating it" (D.N.B.). This volume comprises I. *The Folly of Atheism*, 1693, 4th ed., Wing, B1938; II: *Matter and Motion cannot Think*, 1694, 3rd ed., Wing, B1940; III–V: *A Confutation . . . Structure . . . of Human Bodies*, 1693, '93, '94, 3rd, 2nd, 3rd eds., Wing, B1921, 1923, 1927; VI–VIII: *A Confutation . . . Origin*, 1694, 93, '93, 2nd, 1st, 1st eds., Wing, B1916, 1917, 1918. Part II (B1917) has imprint: "J. H. for Henry Mortlock," not mentioned by Wing. (Babson, 40; Fulton, *Boyle*, p. 197; Keynes, 992; Watt, I, 101j; Wing, B1930)

BENZELSTJERNA, Lars

De Re Metallica Sveo-Gothorum Schediasma . . . Praeside . . . Mag. Petro Elvio . . . Publicum ad examen defert Laurentius Benzelius ad d. VIII Maji A. MDCCIII. . . Uppsala: Praelo Werneriano. (1703).

First edition. 8vo. 3 leaves, 86 pp. Two woodcuts on verso of title page (obverse and reverse of medal). Very good copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A RARE DISSERTATION on mining and the extraction of metals from their ores in Sweden and Denmark, presented by Benzelstjerna (Benzelius, 1680–1755), who became one of the most famous Swedish metallurgists of the period. The praeses was the professor of astronomy and mathematics at Uppsala, Peter Elvius (1660–1718). Ores of copper, gold, iron, lead, silver, tin, and other metals are discussed, and the possibility of transmuting metals is covered (pp. 48–51). Authors whose works are cited include Agricola, Kircher, Le Grand, Morhof, and Sturm. Benzelstjerna was appointed director of the silver refinery at Hellefors. (Ferchl, 142; Poggendorff, I, 145, 661)

BERAUT, Laurent

Dissertation sur la Cause de l'Augmentation de Poids, que certaines matieres acquièrent dans leur Calcination. Qui a remporté le prix au jugement de l'Académie Royale des Belles Lettres, Sciences & Arts. Par le R. P. Beraut Jesuite, Professeur de Mathematiques dans le Collège de Lyon.
Bordeaux: Chez Pierre Brun, Imprimeur Aggrégé de l'Académie Royale . . . 1747.

First edition. 4to. 1 leaf, 36 pp. Woodcut printer's ornament on title and large woodcut headpiece on page 1. Very fine copy, with wide margins, in modern boards, gilt-lettered crimson label on spine. From the library of Professor Franz Sondheimer, with his bookplate on the front endpaper.

"A WORK OF great importance in the history of chemistry and which is hardly ever cited in any standard works" (Duveen). It is one of the rare attempts to explain, before Lavoisier, the gain in weight of metals on calcination by the addition to them of salts and niter supposedly contained in the air. At that time air was believed to be a pure Aristotelian element. Beraut (1702–1777), a Jesuit, was professor of mathematics at the College of Lyon. For this essay, in which he traces the history of experimentation on the increase in weight of metals on calcination, he was awarded the prize of the Academy of Bordeaux. The contents of this important work are fully discussed by Douglas McKie (*Annals of Science*, 1, [1936], 269–293). A reprint in 12mo. appeared in 1748 at La Haye, on which see Bolton (p. 89) and Ferchl (p. 35). Very scarce. Not in Blake, Bolton, Ferguson, Ferguson Coll., Smith, Waller, Watt, Wellcome, etc. (D.S.B., III, 206; Duveen, 66; Edelstein, 204; Neu, 404; Partington, III, 607; Poggendorff, I, 146; Sondheimer, 111)

BERGMAN, Torbern Olof

Åminnelse-Tal öfver Framledne Bergs-Rådet och Medicinæ Doctoren, samt K. Vetenskaps Sällskapets i Upsala, och Kongl. Academiens i Stockholm Ledamot, Herr Georg Brandt, Hället for Kongl. Vetenskaps Academiens, uti Stora Riddarhus-Salen, den 9 Aug. 1769, af dess Ledamot Torbern Bergman . . .
Stockholm: Tryckt hos Dir. Lars Salvius. 1769.

First edition. 8vo. 32 pp. Very good copy, uncut with wide margins, in brown half morocco antique, marbled boards, spine gilt-lettered and dated; with no copperplate on title page.

A EULOGIUM ON the great Swedish chemist Georg Brandt (1694–1768) by his friend Bergman. Brandt is best remembered for his research on the isolation of the metal cobalt and investigations of its chemical compounds, which are discussed in this work (p. 16 et seq.). Partington (III, 168–169) and Weeks (*Discovery of the Elements*, pp. 156–160)

describe Brandt's chemical work in detail. Not in the usual bibliographies. (Aurivillius, 18; Hjelm, 36; Moström, 57)

BERGMAN, Torbern Olof

Åminnelse-Tal öfver Framledne Bergs-Rådet och Medicinæ Doctoren . . . Herr Georg Brandt . . . den 9 Aug. 1769 . . . Torbern Bergman . . .
Stockholm: Tryckt hos Dir. Lars Salvius. 1769.

First edition. 8vo. 32 pp. Large copperplate vignette on title, woodcut headpiece. Fine copy in modern quarter vellum, speckled boards. From the library of Bertel Linder, director of Sveriges Vattenfabrikanter Riksförbund, Stockholm, celebrated collector of works by Bergman. Bound with 3 other works by Bergman on Carl de Geer, Anton Swab, and Nils Wallerius.

ANOTHER COPY of this tribute to Brandt by Bergman, with the usual copperplate vignette on the title page. It is otherwise identical to the other (proof?) copy without the title-page vignette.

BERGMAN, Torbern Olof

Åminnelse-Tal, öfver Framledne Bergs-Rådet, Öfver-Directeuren vid Controll-Verket, samt Riddaren af Kongl. Nord. Stjerne-Orden, Herr Anton von Swab, . . . den 29 Junii 1768, af dess Ledamot Torbern Bergman.
Stockholm: Tryckt hos Direct. Lars Salvius. 1768.

First edition. 8vo. 54 pp. Large copperplate vignette on title, woodcut head- and tailpieces. Fine copy in modern quarter vellum, speckled boards. From the library of Bertel Linder. Bound with three other works by Bergman on Georg Brandt, Carl de Geer, and Nils Wallerius.

A BIOGRAPHICAL MEMORIAL of Anton Swab (or Svab, 1703–1768), assessor to the Mining Academy of Stockholm, by his friend Bergman. Ennobled as von Swab in 1751, he "discovered native antimony (alloyed with some arsenic) in Salberg in Vastmanland, and examined it on charcoal before the blowpipe. He noticed the formation of gelatinous silica ('mineral gelatin') formed by the action of acids on some zeolite minerals" (Partington, III, 173). Swab also extracted zinc in 1742 by distilling its ores but gave up the process because it was inefficient. (Aurivillius, 18; Hjelm, 33; Moström, 51)

BERGMAN, Torbern Olof

Åminnelse-Tal öfver Framledne Theol. Professoren i Upsala, och Kongl. Vetenskaps Academiens Medlem, Herr Doctor Nils Wallerius, På Kongl. Academiens Befällning Hället uti Stora Riddarhus-Salen den 2. Februarii 1765, . . .
Stockholm: Tryckt hos Direct. Lars Salvius. 1765.

First edition. 8vo. 28 pp. Large copperplate vignette on title, woodcut head- and tailpieces. Fine copy in brown half morocco antique, marbled boards, spine gilt-lettered and dated.

A BIOGRAPHICAL MEMORIAL of Nils Wallerius (1706–1764), a physicist and meteorologist at Uppsala University, by his friend Bergman, with references to Descartes, Leibnitz, Newton, et al. Discoveries in magnetism, electricity, physical chemistry, etc., are discussed. Wallerius published works on meteorology, the aurora borealis, and evaporation of water into the atmosphere. He opposed Halley's theory that water dissolves into the atmosphere (as salts do in water) and proved that water can evaporate into a vacuum (see Partington, III, 763). Rare. Not in Blake, D.S.B., Poggendorff, Waller, Watt, Wellcome, Wheeler Gift, or the usual chemical bibliographies. (Aurivillius, 18; Hjelm, 24; Moström, 30)

BERGMAN, Torbern Olof

Åminnelse-Tal öfver Framledne Theol. Professoren i Upsala, och Kongl. Vetenskaps Academiens Medlem, Herr Doctor Nils Wallerius . . . af Torbern Bergman . . .

Stockholm: Tryckt hos Direct. Lars Salvius. 1765.

First edition. 8vo. 28 pp. Large copperplate vignette on title, woodcut head- and tailpieces. Fine copy in modern quarter vellum, speckled boards. From the library of Bertel Linder. Bound with 3 other works by Bergman, on Georg Brandt, Carl de Geer, and Anton von Swab.

ANOTHER COPY of this tribute to Wallerius. (Moström, 30)

BERGMAN, Torbern Olof

Åminnelse-Tal, öfver . . . Herr Torbern Olof Bergman, . . . af dess ledamot Peter Jacob Hjelm . . .

Stockholm: Tryckt hos Johan Georg Lange. 1786.

First edition. 8vo. 104 pp. Large engraved title-vignette. Engraved portrait bust of Bergman and his funerary urn on page 3. Fine copy, uncut, with wide margins, in modern patterned boards.

“THE WORKS of the famous Swedish chemist Torbern Bergman (1735–1784) were listed for the first time in the biographies of Bergman by P. F. Aurivillius, edited in 1785, and by P. J. Hjelm, edited in 1786. Hjelm's bibliography is a transcription of that of Aurivillius” (Moström). Pages 94–104 comprise a valuable chronological 106-item bibliography of Bergman's works in Swedish, Latin, English, and French. Items are arranged more systematically than in the bibliography of Aurivillius. A German translation (Grieffswald, 1790) also appeared (Bolton, 178). Hjelm (1746–1813), assayer to the mint in Stockholm, published on metallurgy, mineralogy, and chemistry (see Partington, III,

236; and Poggendorff, I, 1113–1114, who does not list the present work). Hjelm is famous for his discovery of molybdenum; he also obtained metallic manganese in 1778. Rare. Not in Blake, Neu, Watt, Wellcome, or the usual chemical bibliographies. (D.S.B., II, 8; Ferchl, 38; Moström, p. 5; Partington, III, 182; Waller, 16443)

BERGMAN, Torbern Olof

Åminnelse-Tal, öfver Kongl. Majits Tro-Man, Hof-Marschalken, . . . Hogvålborne Friherren, Herr Carl De Geer, Hället för Kongl. Vetenskaps Academi den 19 Decemb. 1778, af dess Ledamot, Torbern Bergman . . .
Stockholm: Tryckt hos Joh. Georg Lange. 1779.

First edition. 8vo. 40 pp. Large copperplate vignette pasted on title page, and another copperplate (medallic portrait of De Geer) pasted on page 3. Fine copy in modern quarter vellum, speckled boards. From the library of Bertel Linder. Bound with three other works by Bergman on Georg Brandt, Anton Swab, and Nils Wallerius.

A BIOGRAPHICAL TRIBUTE to the great Swedish entomologist Baron Carl De Geer (1720–1778), by his colleague at the Swedish Royal Academy of Sciences, Bergman. “De Geer was in close contact with the greatest entomological authorities of his time. . . . After his death his microscope and collections were turned over to the academy; the insect collections are now in the entomological department of the Swedish Museum of Natural History in Stockholm. . . . Torbern Bergman . . . gave fine testimony about De Geer's merits in the obituary that he read before the Academy of Sciences in 1778” (D.S.B.). An excellent account of De Geer's important work in entomology is given by Felix Bryk (in S. Lindroth, *Swedish Men of Science, 1650–1950*, Stockholm, 1952, pp. 113–121). Hjelm lists this work under the year 1778, not the actual date of publication, 1779. (Aurivillius, 18; D.S.B., V, 329; Hjelm, 76; Moström, 131)

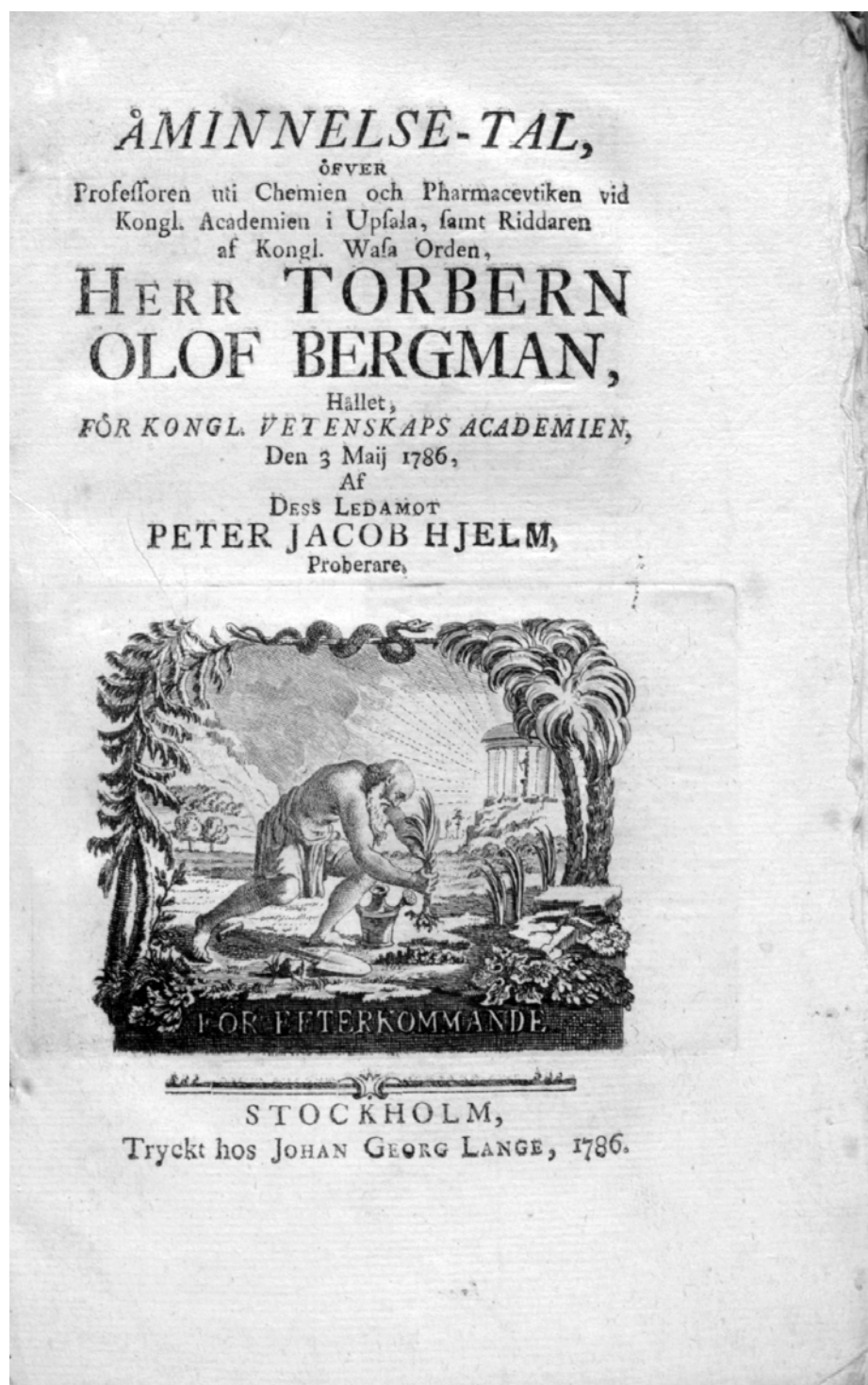
BERGMAN, Torbern Olof

Analyse du Fer, par M. Torb. Bergman, . . . Traduite en françoise avec des Notes & un Appendice, & suivie de quatre Mémoires sur la Métallurgie; par M. Grignon, . . .

Paris: Chez Méquignon. 1783.

First French edition. 8vo. 1 leaf, xvi, 286 pp. Woodcut on title page, woodcut head- and tailpieces. Fine copy in original mottled calf, gilt, maroon morocco label.

REVISED AND greatly enlarged French translation of *Dissertatio chemica de analysi ferri* (Uppsala, 1781), the doctoral dissertation of Johan Gadolin (1760–1852), presented under the direction of Bergman. The translator, Pierre Clément Grignon (1723–1784), director of the ironworks at



Bergman. Åminnelse-Tal öfver . . . Herr Torbern Olof Bergman. Stockholm, 1786.

Bayard, added an appendix (pp. 125–186) and four of his memoirs on the metallurgy of iron and related subjects (pp. 187–284). “It was this edition that was largely responsible for the interest of leading French scientists in the problem of steel” (C. S. Smith, who gives the first English translation of the 1781 Bergman and Gadolin dissertation). Topics covered include the analysis of different types of iron and steel, iron oxides, and magnetism. “Oxygen had already been discovered, and Bergman understood its role in combustion and calcination; he still, however, continued to use the phlogiston theory to explain the results of his analytical experiments on iron, with results that are fascinating illustrations of eighteenth-century chemical thinking” (C. S. Smith). Bergman was “one of the first to . . . shed light on the difference between iron and steel . . . his main contribution to metallurgy” (Tylecote). “One of the rarest of Bergman’s writings” (Duveen). A milestone work of metallurgical chemistry. Not in Blake, Honeyman, Hoover, Ward & Carozzi, Watt, etc. (Bolton, *First Supplement*, 86; Duveen, 67; Moström, 223; Neu, 408; Partington, III, 193; C. S. Smith, *Sources for the history of the science of steel 1532–1786*, p. 168; Sotheran, Cat. 806 [1927], 14006; R. F. Tylecote, *A History of Metallurgy*, p. 157; Wellcome, II, 149)

BERGMAN, Torbern Olof

A Dissertation on Elective Attractions. By Torbern Bergmann [sic]. . . . Translated from the Latin by the Translator of Spallanzani’s Dissertations.
London: Printed for J. Murray, . . . and Charles Elliot, Edinburgh. 1785.

First English edition. 8vo. xiv pp., 1 leaf, 382 pp., 1 leaf (Emendanda). With 7 folding tables (3 printed, 4 engraved). Fine copy in contemporary polished calf, rebounded, spine gilt-ruled, original maroon morocco label gilt.

THE ENGLISH translation by Thomas Beddoes of *Disquisitio de attractionibus electivis*, first published in 1775. Bergman believed strongly in the attractions between molecules, and he acquired a vast knowledge of chemical reactions while carrying out his analytical work, which put him in an ideal position to study chemical affinities. In the present work he published his important tables of chemical reactions and advanced a simplified version of Macquer’s classification of types of reaction. Fourcroy considered this to be one of Bergman’s most important contributions. The “tables were widely praised and were reprinted as late as 1808 in William Nicholson’s *Dictionary of chemistry*” (D.S.B.). “Bergman was the first to recognise the effect of heat on chemical affinities. . . . He was also the first to introduce the idea of double affinity” (Duveen). Not in Ferchl, Hoover, Waller, Ward & Carozzi, Wellcome, etc. (Blake, 43; Bolton, 302;

D.S.B., II, 7; Duveen, 67 [lacking tables]; Edelstein, 206; Ferguson, I, 99 [not in Young Coll.]; Ferguson Coll., 83; Morgan, 46; Moström, 266; Neu, 409 [lacking tables]; Partington, III, 184; Smith, 45; Sondheimer, 118; Sotheran, Cat. 666 [1906], 339 [“Scarce”]; Thornton & Tully, 164; Watt, I, 92t, 103g)

BERGMAN, Torbern Olof

Dissertazione del Sig. Cav. Torberno Bergmann . . . Sulla cagione della Fragilità del Ferro fragile-a-freddo ossia su un nuovo Metallo . . .
(Milan, 1784).

First Italian edition. 4to. Pp. 170–178. Fine copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

THE REVISED first translation into Italian of *Commentatio chemica de causa fragilitatis ferri frigidi*, which appeared in the *Nova acta Regiae Societatis Scientiarum Upsaliensis* (1784, vol. 4, pp. 51–62; Moström, 245). It is a discourse, with experimental observations, on the brittleness of cast iron when it is cold. The present extract is from the *Opuscoli scelti sulle scienze e sulle arti tratti dagli atti delle accademie, e dalle altre collezioni* (Milan, 1784, vol. 7). (Moström, 248)

BERGMAN, Torbern Olof

An Essay on the Usefulness of Chemistry, and its Application to the Various Occasions of Life. Translated from the Original of Sir Torbern Bergman, . . .
London: Printed for J. Murray. 1783.

First English edition. 8vo. 2 leaves, 163, (1) pp. Old stamp of “Med. Chir. Soc. Aberdeen” on second leaf (recto) and some underlining in pencil; otherwise very good copy in contemporary calf, rebounded, maroon morocco label gilt.

THE ENGLISH translation of *Anledning til föreläsningar öfver chemiens . . .* (Stockholm, Uppsala & Åbo, 1779; Moström, 132). According to Moström (p. 73) the translator was Franz Xaver Schwediauer (1748–1824). Duveen, however, citing A. Muirhead (*The Library*, 1946, I, 9), says that it was “the great Jeremy Bentham” who translated the German edition (Stockholm and Leipzig, 1779; Moström, 133) into English. Thornton and Tully say that this is a “rare translation from the German by Jeremy Bentham and Franz Xaver Schwediauer.” The title of this English edition clearly states that it was translated “from the Original of . . . Bergman,” implying the Swedish *Anledning* (1779), not the German version. Bergman here discusses the great utility of chemistry to mankind, covering medicine, economics, industry, metallurgy, manufactures, pyrotechny,

dyeing, salts, earths, gases, and other subjects. Duveen describes the second issue (London: J. Murray, 1784), identical to the first except for the reset title page, which he found after searching diligently for twenty-five years, just in time to include in the addenda of his catalogue. The first issue is even rarer. Not in D.S.B., Ferchl, Ferguson, Ferguson Coll., Hoover, Morgan, Poggendorff, Waller, Ward & Carozzi, Wellcome, etc. (Blake, 43; Bolton, 301; Duveen, 640; Edelstein, 207; Moström, 222; Neu, 411 [2nd issue]; Partington, III, 184; Smith, 45; Sondheimer, 116; Sotheran, Cat. 702 [1910], 6138 ["Rare"]; Thornton & Tully, 164; Watt, I, 103h)

BERGMAN, Torbern Olof

Manuel du Minéralogiste, ou Sciagraphie du Règne Minéral, distribué d'après l'analyse chimique. . . . Mise au jour par M. Ferber, Professeur de Chimie à Mittaw. Et traduite et augmentée de notes par M. Mongez le jeune, . . .
Paris: Chez Cuchet. 1784.

First French edition. 8vo. lxxxviii, 343, (1) pp. With copperplate of blowpipe and other apparatus (Sellier Sc.). Fine copy, uncut, with wide margins, in half calf antique, marbled boards, maroon morocco label gilt, original wrappers bound in.

THE FRENCH edition of *Sciagraphia regni mineralis* (1782), translated and augmented with notes by Mongez. In his classification of minerals by chemical composition, Bergman (following Cronstedt) attempted a general reform of the nomenclature of inorganic substances, dividing them into classes, genera, and species, after Linnaeus. "There were four classes: salts (including acids and alkalies as well as neutral salts), earths, metals, and phlogistic materials" (D.S.B.). More comprehensive than the nomenclature devised by Guyton de Morveau in 1782, it was a major contribution to reform before that of Lavoisier in 1787. "Bergman made much use of the blowpipe . . . [and] . . . used charcoal as a support . . . and a silver or gold spoon for fusion" (Partington). His blowpipe is illustrated in the plate. A milestone in the literature of mineralogical chemistry. Not in Blake, Bolton, Duveen, Ferchl, Ferguson, Ferguson Coll., Morgan, Poggendorff, Smith, Sondheimer, Waller, Wellcome, etc. (Edelstein, 208; Hoover, 114; Moström, 249; Neu, 419; Partington, III, 184; Sotheran, Cat. 795 [1925], 9399 ["Rare"]; Ward & Carozzi, 178)

BERGMAN, Torbern Olof

Manuel du Minéralogiste; ou Sciagraphie du Règne Minéral, distribuée d'après l'analyse chimique; par M. Torbern Bergman, . . . Mise au jour par M. Ferber, . . . et traduite et augmentée de notes par M. Mongez le jeune, . . . Nouvelle Édition, considérablement augmentée, par J.C. Delamétherie. . . .
Paris: Chez Cuchet. 1792.

Second French edition. 2 vols., 8vo. I: cxx, 359, (1) pp. II: 2 leaves, 443, (1) pp. With 2 copperplates (1 folding; Sellier Sc.). Fine copy in original speckled calf, gilt, brown morocco labels gilt.

THE GREATLY enlarged, final, and most complete French edition, published by Delamétherie (or Lamétherie, 1743–1817), an able chemist and editor of the *Journal de physique*. Numerous extensive notes updating the work since the first edition of 1784 have been added by Delamétherie, whose "influence may have been greater in mineralogy than in other sciences. His expanded French edition of Bergman's *Sciagraphia regni mineralis* was an important textbook for a generation of French scientists, and contributed to the acceptance of chemical composition as an important criterion in distinguishing minerals" (D.S.B.). Not in Blake, Bolton, Duveen, Ferchl, Ferguson, Ferguson Coll., Hoover, Neu, Wellcome, etc. (D.S.B., VII, 604; Edelstein, 209; Honeyman, 283; Moström, 293; Partington, III, 184; Smith, 45; Sondheimer, 121; Sotheran, Cat. 832 [1932], 4702 ["Rare"]; Ward & Carozzi, 179)

BERGMAN, Torbern Olof

Opuscules Chymiques et Physiques de M.T. Bergman, . . . Recueillis, revus et augmentés par lui-même. Traduits par M. De Morveau, avec des notes. . . .
Dijon: Chez L. N. Frantin, Imprimeur du Roi. 1780, 1785.

First French edition. 2 vols., 8vo. I: 8 leaves, xxxi, (1), 446 pp., 1 leaf (additions & corrections). Large folding table of analyses (facing p. 268), and 2 folding copperplates. II: 2 leaves, xvi, 525, (1) pp., 1 leaf (additions & corrections for vol. I). With 2 folding copperplates. Fine copy in contemporary mottled calf, spines richly gilt, maroon and green morocco labels, gilt. Late-eighteenth-century bookplates of J. Laissus in each volume.

FIRST FRENCH edition of the first two volumes of the *Opuscula physica et chemica* (Stockholm, 1779; Uppsala, 1780). The translation was made by Guyton de Morveau (according to Partington by Mme. Picardet, supervised by de Morveau), with the approval of Bergman, who supplied corrections and additions. "In this translation are inserted additions, which Bergman sent to Morveau, and extracts

from Bergman's letters to Morveau" (Moström). De Morveau added an introduction to each volume, plus many long and valuable notes, but when Bergman died in 1784, de Morveau discontinued the translation. The first volume is dedicated by Bergman to the Royal Society of London and the second to the Royal Society of Sciences of Berlin. Ferchl and Ferguson mention only the first volume, and Partington says that the second volume is very rare. (Blake, 43; Bolton, 301; Bouchard, *Guyton-Morveau*, 121; Duveen, 66–67; Edelstein, 211; Ferchl, 37; Ferguson, I, 99 [not in Young Coll.]; Moström, 165; Neu, 416; Partington, III, 183; Smeaton, *Ambix*, 6 [1957], 24; Smith, 46; Waller, 11070; Wellcome, II, 149)

BERGMAN, Torbern Olof

Opusculi Chimici e Fisici di Torberno Bergman tradotti in Italiano con Aggiunte e Note. . .

Firenze: Per Giuseppe Tofani. 1787, 1788.

First Italian edition. 2 vols., 8vo. I: 1 leaf, 46 pp., 1 leaf, 1 folding plate; 127, (1) pp.; 130 pp., 1 folding plate; 32 pp.; 20 pp.; 30 pp., 1 leaf (blank); 76 pp., 1 folding plate; 64 pp., 1 folding plate; 4 large folding tables. II: 1 leaf, 119, (1) pp.; 50 pp., 1 leaf; 48 pp., 1 folding plate; 83, (1) pp.; 46 pp., 1 leaf; 29, (1) pp., 1 leaf (blank); 62 pp., 1 leaf, 1 folding plate; 109, (1) pp., 1 leaf (blank); 63, (1) pp. Extremely fine, crisp copy, in original full vellum, maroon morocco labels gilt.

ITALIAN TRANSLATION of part of the *Opuscula physica et chemica* (Stockholm, 1779, Uppsala, 1780), including notes from the French edition of Guyton de Morveau (Dijon, 1780, 1785). The *Saggio sulla utilità* is a translation of *Adledning til föreläsningar öfver chemiens* (Stockholm, Uppsala and Åbo, 1779; Moström, 132). *Della proprietà elettriche* is translated from the *Abhandlung von des Tourmalins elektrischen Eigenschaften* (Moström, 49). The contents of the eighteen dissertations in this edition are listed by Moström (pp. 89–90), who states that "Tofani is only printer and editor of the works but Giovanni Valentino Fabbroni is translator as well as author of notes and additions." Careful examination of both volumes, however, reveals numerous extensive and valuable notes and addenda by Giuseppe Tofani. These dissertations were also sold separately, without formal title pages or place and year of publication (i.e., 1787–1788). A pirated edition of this work appeared (Naples, 1788) with three fewer dissertations but with a eulogy of Bergman by F. Vicq d'Azyr (Bolton, 302; Moström, 281a). Very rare. Not in Blake, Waller, Wellcome, or the usual chemical bibliographies. (Moström, 280)

BERGMAN, Torbern Olof

Physical and Chemical Essays; translated from the original Latin of Sir Torbern Bergman, Knight of the Order of Wasa, Professor of Chemistry at Upsal, &c. &c. &c. By Edmund Cullen, M.D., Fellow of the Royal College of Physicians at Dublin. To which are added Notes and Illustrations, by the Translator.

London: Printed for J. Murray, etc. 1784.

First English edition. 2 vols., 8vo. I: xl, 464 pp. With 2 folding printed tables, and 2 folding copperplates. II: xv, (1), 518 pp. With 2 folding copperplates (Page sc.). A sumptuous and immaculate copy, in original tree calf, spines richly gilt, dark-green morocco labels, gilt dentelles on each cover.

THE ENGLISH translation by Edmund Cullen of the first two volumes of the *Opuscula physica et chemica* (1779, 1780). "Cullen omitted many footnotes in the original but added de Morveau's notes and some initialled B., i.e., Beddoes" (Partington). The plate (facing p. 464, vol. I) titled "Comparative view of the French and Swedish thermometers with that of Fahrenheit" is not in the French edition of 1780. "Containing the first 25 (recte 26) dissertations—the most important part of the author's chemical works save *Elective Attraction*" (Zeitlinger). "Bergman's chief services to chemistry were in the domain of analysis, which he . . . enriched by valuable methods. He knew well how to make his chemical experiences useful for the definition and classification of minerals, and thereby laid the foundation of mineralogical chemistry and chemical geology" (E. von Meyer). Very rare. Not in Blake, Duveen, Edelstein, Ferchl, Ferguson Coll., Sondheimer, Waller, Ward & Carozzi, Wellcome, etc. (Bolton, 301–302; Ferguson, I, 99 [not in Young Coll.]; Moström, 253; Neu, 414 [lacking volume 2]; Partington, III, 183; Smith, 46; Sotheran, Cat. 702 [1910], 6140 ["Very rare"]; Thornton & Tully, 164; Watt, I, 103g, 275s)

BERGMAN, Torbern Olof

Physical and Chemical Essays: Translated from the original Latin of Sir Torbern Bergman, Knight of the Order of Wasa, Professor of Chemistry at Upsal, &c. &c. &c. By Edmund Cullen, M.D., Fellow of the Royal College of Physicians at Dublin. To which are added Notes and Illustrations, by the Translator.

London: J. Murray and William Creech. 1788.

Second English edition. 2 vols., 8vo. I: xlv + 467 pp.; 2 folding copperplates (chemical apparatus) and folding table comparing thermometric scales. II: xvii + 529 pp.; 2 folding copperplates (chemical apparatus and crystal diagrams). Superb copy, completely uncut and unpressed, in half calf antique, marbled boards, spines richly gilt and dated at foot, crimson lettering labels.

A SPLENDID COPY of the second English edition of Cullen's translation, which first appeared in 1784. This second edition is so rare that Moström, Bergman's bibliographer, states that he had never seen a copy. He placed an asterisk beside the entries for works he had not seen, and no. 283* is one of them. A third volume was published at Edinburgh in 1791 but is extremely rare and almost never occurs with this two-volume set, which was published in London. Comparison of this second edition shows that it is a close reprint of the first English edition (London, 1784). The contents of this work are given by Moström, under no. 253 (entry for the first English edition). This edition is not mentioned by Duveen, Ferchl, Poggendorff, Waller, or Watt. (Bolton, 301–302; Ferguson, I, 99 [not in Young Coll.]; Morgan, 48; Moström, 283*; Neu, 415; Partington, III, 183; Smith, 46; Sotheran, Cat. 773 [1919], no. 2423 ["Very Rare"]; Thornton & Tully, 164; Wellcome, II, 149)

BERGMAN, Torbern Olof

Physical and Chemical Essays: translated from the original Latin of Sir Torbern Bergman, . . . By Edmund Cullen, M.D. . . . To which are added Notes and Illustrations, by the Translator. . . .

London: Printed for J. Murray, 1788; & Edinburgh: Printed for G. Mudie, 1791.

Second English edition (vols. I & II), first English edition (vol. III). 3 vols., 8vo. I: xlv, 467, (1) pp. + 2 folding copperplates (chemical apparatus) and 2 folding tables. II: xvii, (1), 529, (1) pp. + 2 folding copperplates (apparatus and crystals). III: 1 leaf, xvi, 446 pp. A splendid set in near-mint condition, in original tree calf, spines gilt-ruled, red and black labels.

THE SECOND English edition of Cullen's translation (first, 1784), which is so rare that Bergman's bibliographer, Moström, states that he had never seen a copy. He placed an asterisk beside the entries for works he had not seen. The third volume was published in Edinburgh in 1791 and is of great rarity. It almost never occurs with the first two volumes, which were published in London. Comparison of the first two volumes shows that they are close reprints of the first English edition of 1784. The contents are given by Moström under no. 253 (entry for the 1784 edition). The first 158 pages of volume III, by an anonymous translator, reprint Bergman's essays on the history of chemistry. The remainder of the volume deals with minerals, inorganic and organic compounds, metals, mineral waters, etc. It is a translation of the *Opuscula physica et chemica* (1787). (Bolton, 301–302; Cole, 103a; Ferguson, I, 99 [not in Young Coll.]; Moström, 283 & 290; Partington, III, 183; Smith, 46; Sotheran, Cat. 800 [1926], 10172; Thornton & Tully, 164; Wellcome, II, 149)

BERGMAN, Torbern Olof

Saggio sulla utilità della chimica applicata ai diversi bisogni della vita umana.

(Florence: Per Giuseppe Tofani, 1788).

First Italian edition. 8vo. 119, (1) pp. Very fine copy, top edge cut, others uncut, rear wrapper preserved, in modern quarter gilt-ruled calf, marbled boards.

THE FIRST section of *Opusculi chimici e fisici* (Florence, 1788, vol. 2), which was issued with only a half title and sold separately. Giovanni Valentino Fabbroni translated and edited the Italian edition, with additions and notes. Rare. Not in Blake, D.S.B., Hoover, Waller, Watt, Wellcome, or the usual chemical bibliographies. (Moström, 280)

BERGMAN, Torbern Olof

Torberni Bergman, Chemiae Prof. Upsal. et Equitis aurati Regii Ordinis de Wasa; . . . Sciagraphia Regni Mineralis, Secundum Principia Proxima Digesti. . . .

Lipsiae et Dessaviae (Leipzig & Dresden). 1783.

Second (first pirated) edition. 8vo. 127, (1) pp. Very good copy in the original blue boards, printed paper label on spine. Bound with: Suckow, G. A., *Mineralogische Beschreibung des Natürlichen Turpeths* (Mannheim, 1782); and Wenzel, C. F., *Chymische Untersuchung des Fluszspaths* (Dresden, 1783).

THE *Sciagraphia* contains Bergman's chemical classification of minerals, based on their composition as revealed by analysis. The first issue of the first edition, edited by J. J. Ferber, appeared with the same imprint in 1782 (Moström, 211). Part of the edition (the second issue) was later given a new title page: "Lipsiae, In Bibliopolio I.G. Mulleriano, 1782." Under item 211, Moström states: "According to letters in the University Library of Uppsala to Bergman from N. G. Leske (July 10th 1783) and J. J. Ferber (Sept. 1st 1783 and Febr. 1st 1784) there was published in 1783 according to Leske in Offenbach, according to Ferber in Frankfort-on-the-Main a pirate edition of this work. Perhaps no. 233 with false place of publication." This is a copy of Moström no. 233, which in his bibliography of Bergman's works he has marked by an asterisk, indicating (p. 6 of his introduction) that "some works, to which I have found bibliographical reference, have defied all my efforts to get hold of them. They are marked with an asterisk (*)." Thus, this is one of the extremely rare works of Bergman that Moström was unable to locate. Duveen (p. 67), referring to the London (1783) Latin edition of this work states: "Using present day nomenclature this might be called a text-book of inorganic chemistry." This edition is not mentioned by the usual bibliographers of chemistry (e.g., Bolton, Duveen, Edelstein, Neu, Partington, Poggendorff, Smith, Waller, Watt, and Wellcome). (Moström, No. 233)

BERGMAN, Torbern Olof

Traité des Affinités Chymiques, ou Attractions Électives; traduit du Latin, sur la dernière édition de Bergman. Augmenté d'un Supplément & de Notes. Avec des Planches.
Paris: Chez Buisson. 1788.

First French edition. 8vo. 4 leaves, 444 pp., 2 leaves (last blank). With 4 folding copperplates, and 3 folding tables. Fine copy in contemporary blue boards, rebacked in calf antique, original maroon morocco label gilt.

THE FRENCH translation of the revised edition of *De attractionibus electivis* (contained in the *Opuscula physica et chemica*, Uppsala, 1783, vol. III). The *Approbation* is signed by Fourcroy (8 Oct. 1787), and the *Privilège du Roi* states that the *Traité* was translated from the English edition (1785). The translator, François Joseph Bonjour (1754–1811), who was an assistant to C. L. Berthollet, has added a long *Supplément* (pp. 260–444) and very extensive notes updating the work, with references to the researches of Lavoisier et al. “The notes are antiphlogistic, and include unpublished material from Berthollet” (Partington). Fourcroy states (in the *Approbation*) that he believes the work will be useful “aux progrès de la Chymie en France.” An important edition. Not in D.S.B., Ferguson Coll., Morgan, Poggendorff, Waller, Wellcome, etc. (Blake, 43; Bolton, 302; Duveen, 67; Edelstein, 214; Ferchl, 36 [wrong date: 1783]; Ferguson, I, 98; Moström, 284; Neu, 410; Partington, III, 184; Smith, 46; Sondheimer, 120; Sotheran, Cat. 832 [1932], 5030 [“Rare”]; Thornton & Tully, 164; Ward & Carozzi, 175)

BERGMAN, Torbern Olof, and RYDELL, Matthias

Dissertatio de Attractione Universali, cujus partem priorem, cum consens. ampliss. Facult. Philos. in Regia Academia Upsalensi, publico bonorum examini submitunt Stipendiarius Regius Thorbernus Bergman, Philos. Mag. et Matthias Rydell, V. Gothi, in Audit. Carol. Maj. die XXIX Nov. anni MDCCLVIII. H.A.M.S.
Uppsala. (1758).

First edition. 4to. 1 leaf, 27, (1) pp. With 1 copperplate (containing 9 geometrical figures). Fine copy, uncut with wide margins, in maroon quarter calf antique, marbled boards, spine gilt-lettered and dated.

ONE OF the earliest publications by the great Swedish scientist. In 1758 Bergman (1735–1784) graduated from the University of Uppsala, where he had studied mathematics and physics. Later in 1758 he presented this dissertation on general attraction, which takes Newton's *Principia* as its starting point and discusses the theories of Clairaut,

d'Alembert, Euler, John Keill, and Thomas Simpson, followed by his own calculations. Very rare. Not in N.U.C. or the Supplement. (Cole, 83; D.S.B., II, 4; Hoefer, II, 450; Moström, 7; Partington, III, 180; Poggendorff, I, 150)

BERGMAN, Torbern Olof, and SUEDELIUS, Gustav

Disquisitio Chemica de Confectione Aluminis, quam, . . . publico examini submitunt Mag. Torbernus Bergman, . . . et . . . Gustavus Suedelius, Westmannus, . . . 1 Aprilis, Anni MDCCLXVII.

Uppsala: Litteris Joh. Edman. (1767).

First edition. 4to. 1 leaf, 16 pp. Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

BERGMAN'S FIRST purely chemical publication, written in conjunction with Suedelius (dates unknown). In 1767 Bergman “succeeded J. G. Wallerius as professor of chemistry and pharmacy at Uppsala. He had studied chemistry but had then published nothing on that subject. The friends of Wallerius, who had another nominee, violently attacked Bergman's first chemical publication, on the preparation of alum, which contained quantitative experiments” (Partington, III, 180). “Bergman was not altogether clear on the composition of alum. In his first chemical paper (1767), he thought the addition of potash or ammonia caused crystallisation . . . [he] concluded from many experiments that it is certain that alum (i.e., aluminium sulphate) and vitriolated vegetable alkali (potassium sulphate) easily unite and form a triple salt” (Partington, III, 191–192). An important study on alum by this great eighteenth-century chemist. Revised and enlarged in his *Opuscula physica et chemica* (Stockholm, 1779, vol. 1), English, French, German, and Italian translations also appeared. The original dissertation (as here) is rare. Not in the usual early chemical libraries. (Ferchl, 37; Moström, 41; Partington, III, 182)

BERKELEY, George

Siris: A Chain of Philosophical Reflexions and Inquiries Concerning the Virtues of Tar Water, and divers other Subjects connected together and arising one from another. . . . A New Edition, with Additions and Emendations.

Dublin printed, London re-printed, for W. Innys, and C. Hitch, in Pater-noster-Row and C. Davis in Holbourn. 1744. (Price Two Shillings).

8vo. 174 pp., 1 leaf (Contents). Fine copy in contemporary calf, rebacked, 2 maroon morocco labels gilt. Bound with: Hales, Stephen, *An account of some experiments and observations on tar-water* (London, 1745); and, Prior, Thomas, *An authentick narrative of the success of tar-water* (London, 1746).

BERKELEY (1685–1753), bishop of Cloyne, educated at Kilkenny and Trinity College, Dublin, was a philosopher of merit who formed a link between Locke and Hume. He aimed at discrediting materialism and published scientific and philosophical works (see D.N.B.). “In 1744 he started the European vogue of tar water as a general medicine” (*Encycl. Brit.*). The first edition of *Siris* (Dublin, 1744) was quickly followed by several London editions, with translations into French (1745), Dutch (1747), German (1747), and Swedish (1744). The history of the beneficial uses of tar water is given, with references to Helmont, Boyle, Evelyn, Newton, et al., and lists of the substances isolated from mineral and vegetable tars by solvent extraction, distillation, expression, etc. Despite its chemical interest, no edition is cited in the usual early chemical bibliographies. Neu, Osler, and Watt list other editions published in 1744. (G. Keynes, *Bibliotheca Bibliographica*, 1964, no. 378; Waring, 623; Wellcome, II, 149)

BERKENHOUT, John

First Lines of the Theory and Practice of Philosophical Chemistry.

London: Printed for T. Cadell. 1788.

First (only) edition. 8vo. xxiii, (1), 434 pp., 1 leaf. With 6 engraved plates of symbols (1 folding), 2 large folding tables, and 1 double-page copperplate of chemical apparatus (between pp. 204–205). Very good copy in contemporary calf, rebounded, with original gilt-ruled spine and maroon morocco label laid on. From the Forfar (Scotland) Scientific Institution Library, with early-nineteenth-century bookplate.

BERKENHOUT (1730–1791), a British physician of Dutch origin who spent some time in America, had a deep knowledge of natural history, botany, and chemistry. His extensive textbook of chemistry is not recorded among his writings in the D.N.B. It is interesting to note that he is aware of the new discoveries of Priestley and Lavoisier, which had only recently been published. The last part of the book (“Lexicon and Index,” pp. 261–434) is, in fact, a dictionary of chemistry. A very scarce work that is not in D.S.B., Duveen, Ferguson, Ferguson Coll., Neu, Partington, Poggendorff, Waller, Wellcome, etc. (Blake, 43; Bolton, 302; Edelstein, 218; Ferchl, 38; Smith, 47; Watt, I, 103y)

BERLIN, Nils Johannes, and BIBERG, Anders

Anmärkningur vid Chromoxiden och några dess salter. . . af Mag. Nicol. Job. Berlin Chemiae Docens och Anders Biberg Norrlänningar. På Gustavianska Auditorium d. 27 Maji 1835. . .

Uppsala: Palmblad, Sebell & c. 1835.

First edition. 8vo. 1 leaf, 15, (3) pp. Fine copy, uncut with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and labeled: Biberg. Chromoxiden. 1835.

A SCARCE SWEDISH work on the oxides of chromium, chromium salts (including chromium alums), and chromates; presented by Biberg under the aegis of Nils Johannes Berlin (b. 1812), who became professor of chemistry and mineralogy at the University of Lund. Poggendorff and Ferchl list other works on chromium compounds by Berlin, but not the present title. (Bolton, 303)

BERLU, John Jacob

The Treasury of Drugs Unlock'd. Or a Full and True Description of all sorts of Drugs, and Chymical Preparations, sold by Druggists. Whereby you may know the place of their growth, and from whence they come, and how to distinguish the Good from the Bad. Very useful for all Gentlemen, Merchants, Druggists, Doctors, Apothecaries, Chirurgeons, and their Apprentices. As also for all Travellers, Seamen, Custom-house Officers, and all others that either Traffick in them, or make any use of them, or those that Import or deliver any of 'em at the Waterside. Giving a true Account of all those that are Prohibited, and those that are not, whereby many needless Disputes and Law Suits may be prevented. The whole Work Alphabetically digested, with a compleat Catalogue of all Drugs, &c. . .

London: Printed for John Harris at the Harrow against the Church in the Poultry, and Tho. Howkins in George-Yard, in Lombard-stret [*sic*]. 1690.

First edition. 12mo. 3 leaves, 138, 117–125, (1) (i.e., 147) pp., 6 leaves (index), 1 leaf (advertisements). Advertisement leaf with large heraldic woodcut facing title page. Fine copy in mottled half calf antique, marbled boards, brown morocco label, gilt, spine dated.

A VALUABLE CATALOGUE of chemicals, drugs, and natural products available to pharmacists and physicians of the late seventeenth century. Berlu (dates unknown), who describes himself on the title page as a “Merchant in Drugs,” has marked prohibited drugs with an asterisk. Very clear directions are given for the preparation of many inorganic and some organic chemicals. The animal, plant, or mineral origins of the preparations are unambiguously described. Other editions, slightly enlarged, appeared in 1724, 1733, and 1738; some are listed by Blake, Duveen, Ferchl, et al. Under “Berlie,” Watt lists an edition of 1693, unrecorded by Wing. Very rare. (Cushing, B308; Ferguson Coll., 84; Neu, 424; Watt, I, 104a; Wellcome, II, 150; Wing, B1980)

BERNARD, Edward

De Mensuris et Ponderibus Antiquis Libri Tres. Editio altera, purior & duplo locupletior.
Oxford: E Theatro Seldonio. 1688.

First edition. 8vo. 8 leaves, 261, (1) pp., 41 leaves. With engraved vignette (Sheldonian Theatre) on title page, and 4 copperplates (3 folding). Small piece of top blank corner of pages 79–80 missing; otherwise very good copy in original speckled calf (worn), spine gilt.

BERNARD (1638–1696), astronomer, critic, and antiquary, was educated at St. John's College, Oxford, and became D.D. in 1684. He studied oriental mathematical manuscripts at Leyden and was later Savillian Professor, Oxford, 1673–91. Elected F.R.S. in 1673, he was also tutor to two of the sons of King Charles II. He left several extensive manuscripts, which were purchased by the Bodleian Library. The present erudite work is based on manuscript sources and was edited and published by the Bodleian. The weights and measures of many ancient cultures are described, including those of Arabia, Britain, China, Egypt, France, Greece, Israel, Italy, Persia, Syria, Turkey, and other countries. The *editio altera* in the wording of the title indicates that the text of the manuscript was not followed verbatim in this printed version. Newton owned a copy of this edition, which is now in the Sjögren Library, Stockholm (see Harrison). The book is of some metallurgical and pharmaceutical chemical interest. Rare. (J. Harrison, *The Library of Isaac Newton*, 1978, p. 99, No. 166; Kress, 1671; Watt, I, 104j; Wellcome, II, 151; Wing, B1987)

BERNARDUS TREVISANUS

Bernhardus Innovatus. Das ist, Dess hochenfahnen, vortrefflichen und waaren Philosophi Chemici Herrn Bernhards, Grafen von der Marck und Tervis Chemische Schrifften. Von der Hermetischen Philosophia, oder vom gebenedeyten Stein der Weisen. Anjetzo Theils gantz von newem aus der Lateinischen Exemplarien verteutscht, theils von sehr vielen groben Erroribus und Verfälschungen, damit die vorigen Editiones . . . corrigirt, und in viel Wege verbessert, durch Casparum Hornium . . .

Nuremberg: In Verlegung Wolfgang Endters. N.d. (1643).

First Horn edition. 8vo. 60 leaves (last 2 blank), 600 pp. Title page in red and black. Few leaves with minor worming in margins (no loss); otherwise very good copy in contemporary vellum, early ink-lettering on spine.

THE ALCHEMICAL works of Bernardus Trevisanus are here first collected, corrected, and edited by Caspar Horn (1590–1643), a physician who practiced in Plauen and Freiburg. Other editions appeared in 1717 and 1747 (Bolton, 1060).

The present work is based on the edition edited by Joachim Tancke (Leipzig, 1605). This version contains 1) dedication by Horn dated 1643; 2) dedication by Bernard; 3) “Von der Hermetischen Philosophia, und Stein der Weisen” (p. 47); 4) “Aussführliches Sendschreiben vom Stein der Weisen” (p. 217); 5) “Appendix oder Anhang etzlicher nützlicher Chemischen Tractatlein . . .” (p. 329); 6) “Kurtze Auslegung dess Fontinleins oder Vierdten Theils Bernhards von Albert Beyer . . . hinterlassen” (p. 423); 7) “Dicta alani das ist, Kurtze Lehr- und Unterrichts-Sprüche” (p. 475); and 8) “Metallurgia, das ist, von der Generation und Geburt der Metallen” (p. 501). “Les écrits de Bernard de Trévisant ont été pendant longtemps fort recherchés par les alchimistes” (Hooper, I, 466). Each section has a separate divisional title page. Very rare. (Baumer, 83; Ferchl, 38; Ferguson, I, 101 [not in Young Coll.]; Gmelin, I, 161; Neu, 427 [imperf.]; Waite, 280)

BERNARDUS TREVISANUS

Le Texte d'Alchymie, et le Songe-Verd.
Paris: Chez Laurent d'Houry. 1695.

First edition. 12mo. 115, (1) pp., 2 leaves (last blank). With woodcut frontispiece of alchemical symbols, colored in a contemporary hand. Colored woodcut ornament on title page. Very fine copy, all edges gilt, in old crimson half morocco, marbled boards, spine richly gilt and dated.

THE FIRST three parts (pp. 29–99) are on the preparation and nature of the philosopher's stone. The fourth part (*Le songe-verd*, pp. 100–115) is on theosophical alchemy. In his preface, the author (“F.A.D.M.”) states that he has gathered the information for this book from the works of many ancient alchemists in addition to Bernardus Trevisanus and gives a long list of them. The preface is dated September 1694 at Paris. Not in Hall, Mellon, Verginelli, Waite, Wellcome, etc. (Caillet, 1042 [“Traité fort rare”]; Duveen, 69; Edelstein, 223; Ferchl, 530; Ferguson, II, 433; Ferguson Coll., 797; Guaita, 58; Neu, 428; Rosenthal, 853; Smith, 47)

BERNARDUS TREVISANUS

Traicté de la Nature de l'Oeuf des Philosophes. Composé par Bernard, Comte de Treves, Allemand.

Paris: Chez Jeremie & Christophle Perier, au Palais. 1624.

First edition. 8vo. 64 pp. Small woodcut on title page. Inner margin of title leaf strengthened, and lower right corners of several leaves at end skillfully repaired (not affecting text); otherwise very good copy, in old unlettered vellum.

A TREATISE ON the so-called philosopher's egg, or alchemical vessel, hermetically sealed, in which the “great work” of

the transmutation of base metals into gold was achieved. "It is often depicted with an enclosed serpent, symbolizing the material of the Philosophers' Stone" (Read [*Prelude to Chemistry*, p. 149 et seq.], who discusses this subject in detail). Bernardus (or Bernhardus, 1406–1490), Count of Trevigo, or Graf von der Marck und Tervis, was born in Padua, and "from the age of fourteen till the end of his life was given over entirely to the study of alchemy" (Ferguson [I, 103–104]), who gives extensive biographical details. Thorndike (III, 618–625), however, places Bernardus in the fourteenth century, claiming that he was a contemporary of Thomas of Bologna. Bernardus was a shadowy figure whose works were often reprinted and quoted by numerous later alchemists. Sometimes issued with the works of Basilius Valentinus, the 1624 edition is very rare. The later printing (Paris, 1659) is the one quoted by most authorities. Not in the British Library. (Caillet, 1043; Duveen, 69; Edelstein, 224; Ferguson Coll., 85; Mellon, 82; Neu, 429; Osler, 2023; Wellcome, I, 808)

BERNIARD

Mémoire contenant l'analyse chymique de l'Os trouvé à Paris dans une cave rue Dauphine, comparée avec l'analyse des os de baleine, d'éléphant, d'élan, de marsouin & de l'homme . . .
Par M. Berniard. *Extrait du Journal de Physique*, Octobre 1781.

N.p., n.d. (1781).

First separate edition. 8vo. 39, (1) pp. Caption title, with ornamental woodcut headpiece. Very good copy in contemporary quarter calf, speckled boards, with morocco label ("Melanges"). Bound with: Dubuisson, F.R.A., *Mémoire sur les Acides Natifs du Verjus, de l'Orange, et du Citron* (Paris, 1783), and 7 other chemical tracts.

A WORK ON the chemical analysis of a very large fossilized bone discovered during an excavation of the rue Dauphine and earlier reported in the *Journal de Physique* (May 1781, p. 394). Analyses of this bone are compared with analyses of the bones of recently dead animals (e.g., elephant, whale, elk, porpoise, and man). Analyses of the teeth of a dugong and elephant and the tooth of an unidentified large animal found by the Ohio River are described and discussed. Berniard concludes that the analyses then employed cannot easily distinguish between bones from man or other animals. He refers to analyses of fossil bones by Bergman, D'Arcet, Guyton de Morveau, La Métherie, Mongez, Proust, Rouelle, and other chemists. Very rare. (Ferchl, 39)

BERNIARD

Mémoire sur le Caoutchouc, connu sous le nom de Gomme élastique. . . . Extrait du Journal de Physique.
s.l.n.d., (Paris, 1781).

First separate edition. 8vo. 32 pp. Woodcut head- and tail-pieces. Fine copy printed on pale-blue paper, in half calf antique, marbled boards, maroon morocco label gilt.

RARE AUTHOR'S separate, reprinted from the *Journal de Physique*, being an account of the discovery of rubber and a summary of the work of Fresnau, which appeared in the *Mémoires de l'Académie des Sciences* (1751). The paper by Fresnau was the first announcement of the discovery of rubber. An account is given of the analyses carried out by P.-J. Macquer on the chemical composition of rubber, reported in the *Mémoires de l'Académie des Sciences* (1768). On page 13 Berniard says that at the beginning of 1780, he started an intensive investigation into the chemistry of rubber in order to determine its nature and composition. Twenty detailed chemical experiments that he carried out are described. The present work appears to be the third published on the chemistry of rubber. Unknown to the usual authorities. A milestone in the history of rubber chemistry. (Watt, I, 105j)

BERNOULLI, Daniel

Hydrodynamica, sive de Viribus et Motibus Fluidorum Commentarii. Opus Academicum . . .

Strassburg: Sumptibus Johannis Reinholdi Dulseckeri. 1738.

First edition. 4to. 4 leaves, 304 pp. With 12 folding copper-plates (I.M. Weis sc.). Large engraved vignette on title and page 1. Title in red and black. Fine copy, in original mottled calf, spine richly gilt, maroon label.

A FUNDAMENTAL WORK in hydrodynamics and the kinetic theory of gases. Daniel Bernoulli (1700–1782), second son of the famous mathematician Johann Bernoulli (1667–1748), became professor of mathematics at St. Petersburg, later returning to Basel. "Bernoulli's fame rests on his *Hydrodynamica*" (D.S.B.). One of the founders of mathematical physics, he introduced the principle of the conservation of *vis viva* (energy), employing this concept in his researches on the motions of liquids and gases, published in the present work. Bernoulli deals with every aspect of the flow of liquids, and in the tenth chapter he attempts to explain the experimental laws of gases by using the laws of mechanics. His theory that gaseous pressure is due to molecular bombardment led to the quantitative explanation of Boyle's law. He also attempts to evaluate the correction for the finite size of gas molecules and for the

pressure increase with rise in temperature, thus anticipating Van der Waals' equation of state, which was developed over a hundred years later. Although Bernoulli's theories on the nature of heat and the properties of gases were far in advance of his time, they were neglected by succeeding generations of physicists and chemists. Bernoulli's classic *Hydrodynamica* laid the foundation of the kinetic theory of gases, which was developed more completely in the nineteenth century. (D.S.B., II, 39; Magie, *Source Book in Physics*, 247; Partington, II, 477, 631, 767, III, 778; Poggendorff, I, 160; Watt, I, 105; Wolf, II, 71)

BERRES, Joseph

Ueber die Holzsäure und ihren Werth. Zum Gebrauche für Aerzte, Wundärzte, Chemiker, Oekonomen und Technologen. . . .

Vienna: Bey J. B. Wallishausser. 1823.

First edition. 8vo. xvi, 160 pp. Fine copy, uncut, in original boards.

A COMPREHENSIVE TREATISE on "pyroligneous acid" produced by the destructive distillation of wood (usually beech, birch, or oak) at about 350°C in the absence of air. The distillate of pyroligneous acid contains methyl alcohol, acetic acid, acetone, methyl acetate, allyl alcohol, and other organic compounds. The history and various chemical, commercial, and medical uses of pyroligneous acid and the compounds that can be separated from it are described. Berres (1796–1844), a professor of anatomy at the University of Lemberg, was an early pioneer of photographic processes (see Gernsheim, *Daguerre*, 1956, pp. 107, 170). Not in Bolton, Duveen, Partington, Wellcome, etc. (War-ing, 200)

BERTHELOT, Marcellin

Chimie Organique fondée sur la Synthèse. . . .

Paris: Mallet-Bachelier. 1860.

First edition. 2 vols., large 8vo. I: clviii, (2), 508 pp. II: 3 leaves, 842 pp. Immaculate copy, entirely uncut, in the original printed wrappers. With presentation inscription by Berthelot, in ink, on cover of volume I: "Hommage de l'Auteur."

ONE OF the greatest chemists of the nineteenth century, Pierre Eugène Marcellin Berthelot (1827–1907) used only the forename Marcellin in his many publications. In this book, his first, he describes the classic researches he carried out on the synthesis of organic compounds. He was "one of the first to synthesize organic substances that do not occur in nature" (*World Who's Who in Science*). "Berthelot's work is astonishing in its volume, originality, and importance. . . .

Apart from previous work by Kolbe . . . organic synthesis had hardly begun" (Partington). "Berthelot emphasized throughout the work that the success of synthesis in organic chemistry meant that the claim of vitalists that vegetable and animal substances were essentially different from those made in the laboratory was no longer tenable. There were not two chemistries but one, and chemical reactions in both the inorganic and organic realms depended ultimately on purely mechanical factors. . . . Berthelot argued that chemistry differed from a descriptive science such as natural history by being creative and that in this it resembled the mathematical sciences" (D.S.B.). The foundations of modern synthetic organic chemistry were laid by Berthelot, and the present work is one of the great classics of nineteenth-century chemical literature. Not in Duveen, Ferchl, Ferguson Coll., Osler, etc. (Bolton, 305; Caillet, 1064; Cushing, B337; D.S.B., II, 71; Edelstein, 229; Honeyman, 299; Morgan, 50; Partington, IV, 467; Smith, 48; Sondheimer, 129; Sotheran, Cat. 702 [1910], 6159 "Scarce"]; Thornton & Tully, 222; Waller, 11072)

BERTHELOT, Marcellin

Chimie Végétale et Agricole. Station de Chimie Végétale de Meudon (1883–1899). . . .

Paris: Masson et Cie. 1899.

First edition. 4 vols., 8vo. I: xvi, 511, (1) pp. II: vi, 441, (1) pp., 1 leaf (blank). III: vi, 517, (1) pp., 1 leaf (blank). IV: vi, 528 pp. Woodcut figures in text. Very fine copy in modern green quarter cloth, marbled boards, black morocco labels gilt, with original printed wrappers bound in.

BERTHELOT'S GREAT work on agricultural and plant chemistry. The first volume discusses the fixation of atmospheric nitrogen by the soil and by plants; the second covers plant chemistry and photosynthesis; and in the third Berthelot describes his researches on the chemistry of plants. In the final volume he covers the role of fertilizers in agriculture and the chemistry of winemaking. "In 1883 Berthelot founded a research establishment for vegetable chemistry, and during the last twenty-five years of his life he undertook research into aspects of chemistry useful to agriculture. He found that certain carbohydrates, such as cellulose, could be made to absorb nitrogen under the action of a silent electric discharge. By treating them with lime, the absorbed nitrogen was liberated as ammonia. He was able to demonstrate that the fixation of atmospheric nitrogen by sparking is parallel to the natural process in plants. In 1885 he made his first reference to microorganisms capable of fixing nitrogen and in 1893, in collaboration with Guignard, he succeeded in isolating and forming a culture of such bacteria. . . . he brought together work done by

himself and his collaborators . . . and published it in book form. The result was his *Chimie végétale et agricole* (1899)" (D.S.B.). Curiously, this important work is not mentioned by C. A. Browne. Not in Duveen, Edelstein, Morgan, Thornton & Tully, Waller, etc. (Bolton, *Second Supplement*, 52; D.S.B., II, 71; Partington, IV, 467; Poggendorff, IV, 105; Smith, 48)

BERTHELOT, Marcellin

Combinaisons de la Glycérine avec les Acides et reproduction artificielle des Corps Gras Neutres, par Marcellin Berthelot . . . Thèse présentée à la Faculté des Sciences de Paris. Paris: Mallet-Bachelier, Imprimeur-Libraire de l'École Impériale Polytechnique, du Bureau des Longitudes. . . . 1854.

First edition. 8vo. 109, (1) pp. Fine copy, uncut with wide margins, in contemporary plain paper wrappers. A presentation copy, inscribed in ink on title page: "A Monsieur Chevreul membre de l'Institut. Hommage respectueuse M.B." From the library of John Yudkin (1910–1995), professor of physiology and nutrition and founder of the first Chair of Nutrition at the University of London.

THE DOCTORAL thesis submitted on 24 June 1854 by Berthelot (1827–1907), one of the greatest organic chemists of the nineteenth century. This is his first published work in book form, although a slim 4to pamphlet was also published the same year. The thesis presents his major discovery that the trihydric alcohol glycerol (glycerine) can combine chemically with stearic acid in three proportions to produce the three esters: monostearin, distearin, and tristearin. It is entirely appropriate that Berthelot presented this copy to Michel Eugene Chevreul (1786–1889), whose reputation rests largely on his early studies on the composition of oils and fats, summarized in his classic *Recherches sur les corps gras* (1823). A rare and very important association copy. (Bolton, *Academic Dissertations*, 30; D.S.B., II, 63; Duveen, 72; Edelstein, 232; Sondheimer, 128)

BERTHELOT, Marcellin

Essai de Mécanique Chimique fondée sur la Thermochimie. . . . Paris: Dunod. 1879–1881.

First edition. 3 vols., 8vo., in 2. I: xxxi, (1), 566 pp. II: xi, (1), 174 pp. III: 16 pp. (Supplément). Woodcut frontispiece portrait in volume I. Woodcut illustrations in text. Very fine copy, entirely uncut, in modern dark-green cloth, spines gilt-lettered, with all original printed wrappers bound in.

A MONUMENTAL WORK in which Berthelot "laid the foundation of thermochemistry" (Zeitlinger). His researches began a new epoch, and in this work he introduced the terms

exo- and *endo-thermic*. Although a number of chemists before him had made contributions regarding the evolution and absorption of heat in chemical reactions, it was Berthelot whose experimental determinations cover almost the whole range of chemical reactions. "After more than ten years' research on thermochemistry, Berthelot published a major two-volume work for which he significantly chose the title *Essai de mécanique chimique. . . .* In the first volume, entitled *Calorimétrie*, Berthelot gave a general survey of thermochemistry, with particular reference to his own apparatus and results. The second volume, entitled *Mécanique*, was a general account of chemical reactions and decompositions" (D.S.B.). Most copies lack the important and rare *Supplément* (Paris: Dunod, 1881) containing *Nouvelles additions et corrections* to the main work. The *Supplément* contains many tables updating thermochemical data on inorganic and organic compounds of carbon, oxygen, nitrogen, sulphur, halogens, metals, etc. Not in Caillet, Duveen, Morgan, Waller, etc. The copies listed by Bolton, Edelstein, Smith, Sotheran, etc., lack the *Supplément*. (Bolton, 305; D.S.B., II, 71; Edelstein, 234; Partington, IV, 467; Smith, 48; Sondheimer, 136; Sotheran, Cat. 702 [1910], 6160; Thornton & Tully, 222)

BERTHELOT, Marcellin

Explosives and their Power. Translated and condensed from the French of M. Berthelot. By C. Napier Hake, . . . and William Macnab, . . . with a preface by Lieutenant-Colonel J. P. Cundill, . . .

London: John Murray. 1892.

First English edition. 8vo. xi, (1), 563, (1) pp. Woodcut text illustrations, and many tables. Small stamp on title page. Fine, crisp copy, uncut, in original gilt-lettered maroon cloth, gilt medallion device on front cover.

THE CONDENSED English translation of this definitive work, based on the third French edition (Paris, 1883, 2 vols.) and also containing much thermochemical data taken from the *Essai de mécanique chimique* (Paris, 1879, 2 vols.). Berthelot proved that the power of explosive materials could be quantitatively expressed, and his work with Vielle laid the foundations of a new scientific study of the mechanism of explosions. The appendix (pp. 543–553) contains abstracts of papers by Berthelot and Vielle on *Detonating gaseous mixtures; The rapidity of detonation in solid and liquid explosions; The explosive wave*, etc. Rare. (Bolton, 1171; Smith, 48; Sotheran, Cat. 907 [1954], 428)

BERTHELOT, Marcellin

Introduction à l'Étude de la Chimie des Anciens et du Moyen Age. . . .

Paris: Georges Steinheil. 1889.

First edition. Large 8vo. xii, 330 pp., 1 leaf (blank). With 8 plates (facsimiles of old manuscripts) and 45 figures in the text. Original quarter morocco gilt, marbled boards, top edge gilt, others uncut. Fine presentation copy inscribed in ink on half title: "A M. le Dr. Nicaise hommage de haute estimé. M. Berthelot." Jules Édouard Nicaise was a celebrated medical historian and friend of Berthelot.

"DESIGNED AS an introduction to the author's monumental collections of Greek and Arabic alchemists. It is a wholly original work, and gives a history of alchemical notation; and, among other noteworthy facts, proves that alchemy originated in the practices of Egyptian goldsmiths and metallurgists" (Duveen [quoting Zeitlinger]). Caillet mentions a portrait of the author, but all copies traced have no portrait. (Bolton, 89; Caillet, 1065; D.S.B., II, 71; Duveen, 72; Edelstein, 236; Partington, IV, 467; Smith, 48; Sondheimer, 139)

BERTHELOT, Marcellin

Leçons sur les Méthodes Générales de Synthèse en Chimie Organique, professées en 1864 au Collège de France. . . .

Paris: Gauthier-Villars, . . . 1864.

First edition. 8vo. xxi, (3), 524 pp. Pristine copy, uncut, in the original printed wrappers.

BERTHELOT'S FOURTH book containing his lectures on organic synthesis, given at the Collège de France in 1864. In the preface he indicates that it is not an abridgement of his *Chimie organique fondée sur la synthèse* (Paris, 1860) and that it contains many hitherto unpublished experiments and procedures. He describes in detail his syntheses of hydrocarbons (including acetylene), olefins, alcohols, aldehydes, ketones, acids, and related compounds. Chapter 27 describes the preparation of the organometallic compound diethylzinc and its use in preparing saturated and unsaturated hydrocarbons. "Berthelot's researches on synthesis put a new complexion on organic chemistry" (Partington). Many editions of this valuable work appeared, the last in 1910. Not in Cushing, Honeyman, Morgan, Thornton & Tully, etc. (Bolton, 305; Caillet, 1066; D.S.B., II, 71; Duveen, 72; Edelstein, 237; Partington, IV, 467; Smith, 48; Sondheimer, 130; Waller, 11073)

BERTHELOT, Marcellin

Les Origines de l'Alchimie. . . .

Paris: Georges Steinheil. 1885.

First edition. 8vo. xx, 445, (1) pp. Engraved frontispiece portrait (by A. Boulard fils), and 2 plates printed in red. Title page in red and black. Fine, crisp copy, in original half calf, pebbled maroon cloth, maroon morocco label gilt.

BERTHELOT MADE outstanding contributions to the history of chemistry, and his editions of alchemical works are still unsurpassed. In 1869 Berthelot visited Egypt, the country traditionally associated with the birth of chemistry. Fifteen years later he began the present work in which he maintains the opinion that alchemy had developed as a misunderstanding of the earlier empirical knowledge of the Egyptian metallurgists. "An original work of great authority, made much use of by modern historians of chemistry. It was intended as the historical and philosophical part of the author's great collection of Greek alchemists" (Sotheran, Cat. 894 [1951], 12). "Superbe ouvrage prodigieusement documenté" (Caillet). A "monumental effort by the famous French chemist" (Duveen). (Bolton, 90; Caillet, 1067; D.S.B., II, 71; Duncan, 1088; Duveen, 72; Edelstein, 239; Ferguson Coll., 87; Osler, 5676; Partington, IV, 467; Smith, 49; Sondheimer, 137; Thornton & Tully, 387; Waller, 15416)

BERTHELOT, Marcellin

La Révolution Chimique. Lavoisier. Ouvrage suivi de notices et extraits des registres inédits de laboratoire de Lavoisier. . . .

Paris: Félix Alcan. 1890.

First edition. 8vo. 2 leaves (advertisements), xii, 334 pp. + 32 pp. (advertisements). With frontispiece by G. Profit (after Mme. Lavoisier). Very good copy in original publisher's maroon cloth, with gilt medallion title on front cover.

BASED ON a study of Lavoisier's unpublished laboratory notebooks, this work was the point of departure for all later research on the Chemical Revolution. "Important, reproducing Lavoisier's journals" (Ernst von Meyer). Lavoisier's laboratory notebooks "are now in the possession of the Académie des Sciences" (Duveen & Klickstein, *Bibliography of Lavoisier*, 1954, p. 9). (Bolton, 90; Caillet, 1068; Cushing, B338; D.S.B., II, 71; Duveen, 72; Edelstein, 1388; Partington, IV, 467; Smith, 49; Sondheimer, 142; Thornton & Tully, 387)

BERTHELOT, Marcellin

Sur la Force de la Poudre et des Matières Explosives. . .
Paris: Gauthier-Villars. 1872.

Second edition. 12mo. 195, (1) pp. + 58 pp., 1 leaf, 4, 4 pp. (advertisements). Fine copy, uncut, in maroon quarter morocco antique, pebbled cloth, spine gilt-lettered, original printed wrappers bound in.

BERTHELOT WAS interested in measuring the evolution of heat during the rapid decomposition of unstable compounds and explosives. The present work (first edition, Paris: Gauthier-Villars, 1871, 4to., 39 pp.) covers his many experiments, with conclusions. Part I (pp. 17–74) describes the history of saltpeter extraction in France before the nineteenth century, with a discussion of other nitrates of metals and ammonium. Part II (pp. 75–111) covers the explosive forces produced by gunpowder and mixtures based on sodium nitrate and potassium chlorate. Part III (pp. 113–149) discusses the heats of formation of nitric acid and organic nitrates. Part IV (pp. 151–191) describes and compares the explosive powers of various chemical compounds and mixtures (e.g., nitrogen trichloride, nitroglycerin, dynamite, guncotton, picric acid, and potassium picrate). Partington and Smith cite only the third edition of 1883. Not in Caillet, Duveen, Edelstein, Morgan, Waller, etc. (Bolton, 305; D.S.B., II, 71; Sondheimer, 132; Thornton & Tully, 222)

BERTHELOT, Marcellin

*Sur la Force des Matières Explosives d'après la Thermo-
chimie. . . Troisième édition (avec figures) revue et con-
sidérablement augmentée. . .*
Paris: Gauthier-Villars. 1883.

Third edition. 2 vols., 8vo. I: xxv, (1), 405, (1) pp. II: 4 leaves, 445, (1) pp. Woodcut figures in text. Fine copy, top edge gilt, others uncut, in original half morocco gilt, marbled boards.

THE GREATLY enlarged, definitive edition of this important work. "While serving as president of the scientific commission appointed to bring any possible aid from science to help in the defense of Paris during the Franco-Prussian War, Berthelot investigated the possibility within the city of extracting saltpeter for gunpowder. . . . Combining his patriotic duty as a Frenchman and his interest in thermochemistry, Berthelot showed how the power of explosive materials could be quantitatively expressed. He expanded this research in his book *Sur la force des matières explosives d'après la thermochimie*, first published in 1871 but greatly expanded in the two-volume definitive work published as a third edition in 1883. In the intervening period Berthelot had made a particular study of the thermochemistry of nitrogen compounds used as the basis of explosives" (D.S.B.).

Not in Caillet, Duveen, Edelstein, Morgan, Thornton & Tully, Waller, etc. (Bolton, 305; D.S.B., II, 70–71; Partington, IV, 467; Smith, 49; Sondheimer, 133)

BERTHELOT, Marcellin

La Synthèse Chimique. . .
Paris: Germer Baillièrè. 1876.

First edition. 8vo. viii, 294 pp. Very good copy in original gilt-lettered maroon cloth. Neat signature on title page (W. W. J. Nicol. 1880).

AN IMPORTANT contribution to the literature on organic synthesis, covering progress made since the publication of his *Chimie organique fondée sur la synthèse* (Paris, 1860). Chapter 6 (pp. 202–214) comprises a brief history of organic synthesis before 1860, with references to the work of Berzelius, Demarçay, Dumas, Fourcroy, Kekulé, Kolbe, Liebig, Pelouze, Scheele, Vauquelin, Wöhler, et al. Published as volume 17 in the series *Bibliothèque Scientifique Internationale*, the second edition also appeared in 1876 with identical pagination. Another edition was published (Paris, 1880) with an additional thirty-two pages at the end (Morgan, 51). Scarce. Not in Caillet, D.S.B., Duveen, Partington, Waller, etc. (Bolton, 305; Edelstein, 243; Poggendorff, III, 116; Smith, 49; Sondheimer, 131)

BERTHELOT, Marcellin

Thermochimie. Données et Lois Numériques. . .
Paris: Gauthier-Villars et Fils. 1897.

First edition. 2 vols., large 8vo. I: xvii, (1), 737, (1) pp. II: 2 leaves, 878 pp., 1 leaf. Very fine set in contemporary quarter morocco, gilt, marbled boards.

A MASSIVE COMPILATION of data on Berthelot's work in thermochemistry and thermodynamics, covering metals, nonmetals, and inorganic and organic compounds. The first volume comprises *Les lois numériques* and the second *Les données expérimentales*. Representing the culmination of his many years of research, it is one of the greatest works of the nineteenth century on these subjects. Very scarce. Not in Caillet, Duveen, Edelstein, Morgan, Sondheimer, Waller, etc. (Bolton, *First Supplement*, 89; D.S.B., II, 71; Partington, IV, 467; Smith, 49; Thornton & Tully, 222)

BERTHELOT, Marcellin

Traité Élémentaire de Chimie Organique. . .
Paris: Dunod, . . . 1872.

First edition. 8vo. xvi, 604 pp. Fine copy in contemporary quarter morocco, marbled boards.

A CLASSIC TEXTBOOK in which Berthelot arranged organic compounds in homologous series. The result of twelve years of teaching, it is based on the principles enunciated in his *Chimie organique fondée sur la synthèse* (Paris, 1860), updated with much new information. In the preface Berthelot states that more than ten thousand organic compounds had been synthesized to that time, and he adds that in the future literally an infinite number could be made. Syntheses of aliphatic, aromatic, and naturally occurring animal and vegetable compounds are described. Cyanides, cyanates, thiocyanates, ureas, and related compounds are discussed (pp. 549–571), as are complex metal cyanides and nitroprussides. Several later editions appeared between 1881 and 1908, written in collaboration with Émile Jungfleisch. Scarce. Smith (p. 49) lists only the third edition (Paris, 1886). Not in Bolton, Caillet, Cushing, Duveen, Morgan, Thornton & Tully, Waller, etc. (D.S.B., II, 71; Edelstein, 244; Partington, II, 467; Sondheimer, 134)

BERTHELOT, Marcellin, and JUNGFLEISCH, Émile Clément

Traité Élémentaire de Chimie Organique. . . . Revue et considérablement augmentée.
Paris: Vve Ch. Dunod. 1886.

Third edition. 2 vols., 8vo. I: xxiii, (1), 578 pp. II: xv, (1), 596 pp. With 101 woodcut text figures. Fine copy in original quarter morocco, pebbled green cloth, spine gilt-lettered.

GREATLY ENLARGED and updated edition of the *Traité élémentaire de chimie organique* (Paris, 1872), written in collaboration with Jungfleisch (1839–1916). The excellent woodcuts depict chemical apparatus, furnaces, etc., of the period. Volume II (pp. 453–466) contains a discussion of the recently discovered aromatic diazo compounds, azo dyes, phenylhydrazine, and related compounds, summarizing the important researches of P. Griess, E. Mitscherlich, V. Meyer, and E. Fischer. Bolton (p. 306) cites only the second edition (1881), wrongly dating it 1891. Not in Caillet, Duveen, Edelstein, Morgan, Sondheimer, Thornton & Tully, Waller, etc. (D.S.B., II, 71; Partington, IV, 467; Smith, 49)

BERTHIER, Pierre

Traité des Essais par la Voie Sèche; ou des propriétés, de la composition et de l'essai des substances métalliques et des combustibles. À l'usage des ingénieurs des mines, des exploitans et des directeurs d'usines. Par M. P. Berthier. . . .
Paris: Thomine, Libraire, Rue de la Harpe, No. 88. 1834.

First edition. 2 vols., 8vo. I: xxiii, (1), 654 pp. + 13 folding engraved plates (by J. J. Olivier). II: xxxv, (3), 1008 pp. Ownership inscriptions excised from upper outer corners of title pages

and occasional slight foxing; otherwise very good copy in contemporary quarter calf, gilt decorated spines, marbled boards.

THIS CLASSIC work “on assaying and chemical metallurgy, including some general chemistry, is still quoted in large treatises” (Partington). Berthier (1792–1861), general inspector of the Corps des Mines, published numerous papers on minerals and compounds of metals. This is his “major work” (D.S.B.). Some of Berthier’s inorganic chemical researches are described by Partington. “His well-known *Traité des essais par la voie sèche* was widely used by mineralogists and mining engineers because his analytical procedures were simple, relatively accurate, and practical. Berthier maintained a lifelong interest in plant chemistry, and his analyses of plant constituents received some notice, but his importance lies in what he added to French geology, mineralogy, and metallurgy” (D.S.B.). Ferchl and Poggendorff erroneously give the date as 1833. (Bolton, 306; D.S.B., II, 72; Duveen, 74; Ferchl, 40; Partington, IV, 98; Poggendorff, I, 165; Wellcome, II, 153)

BERTHOLLET, Claude Louis

Description du Blanchiment des Toiles et des Fils par l'acide muriatique oxigéné; et de quelques autres propriétés de cette liquer, relatives aux arts. Par Berthollet.

Paris: Chez Fuchs, libraire, quai des Augustins no. 28. L'an 3e de la République. (1795).

First French edition in book form. 8vo. 46 pp. With folding copperplate (from “Annales de Chimie Tome 2”). Fine, crisp copy in modern green boards, dark-green morocco label gilt.

THE FIRST separate printing of the bleaching action of chlorine, which originally appeared in the *Annales de Chimie*, 1789, ii, 151–190, and 1790, vi, 204, 210. The preparation of gaseous chlorine from sodium chloride, manganese dioxide, and dilute sulphuric acid is described. By passing the chlorine into water, a solution containing hypochlorous acid useful for bleaching fabrics was obtained. Not in Bolton, Duveen, Lawrie, Smith, Sondheimer, etc. (Edelstein, 2809 [wrong date: 1895]; Partington, III, 507; Wellcome, II, 154)

BERTHOLLET, Claude Louis

Éléments de l'Art de la Teinture. . . .

Paris: Chez Firmin Didot, libraire pour l'artillerie & le génie. 1791.

First edition. 2 vols., 8vo. I: viii, xlvi, 311, (1) pp. II: viii, 365, (1) pp. Fine copy in original sprinkled calf, gilt.

THE FIRST edition of the first modern book on dyeing and the first general theory of its principles. Berthollet “endeavored to place the ancient craft of dyeing on a scientific basis by a systematic discussion of its procedures, coupled with

an attempt to find an adequate set of theoretical principles to explain the chemical actions involved. His explanation was that, depending on the variable physical conditions of temperature, quantity of solvent employed, and so forth, when a cloth was dyed the reciprocal affinities of the particles of the dye, the mordants, and the cloth itself were responsible for the kind and quality of dyeing" (D.S.B.). Two distinct editions appeared in 1791. Duveen, who lists the edition in larger type (with different pagination) as well as the present, suggests that the larger-type edition is the first. However, no priority of edition has been established. In 1784 Berthollet succeeded Macquer as commissioner of the Council for Dyeing, and the present book "was for a long period the outstanding scientific work on this subject" (S. M. Edelstein, *Historical Notes on the Wet-Processing Industry*, p. 158). (Bolton, 306; D.S.B., II, 77; Duveen, 74; Edelstein, 2811; Ferchl, 41; Ferguson Coll., 88; Lawrie, 51; Neu, 438; Partington, III, 514; Poggendorff, I, 166; Smith, 49; Sondheimer, 146; Sotheran, Cat. 666 [1906], 360 ["Rare"]; Watt, I, 107d; Wellcome, II, 154)

BERTHOLLET, Claude Louis

Éléments de l'Art de la Teinture, avec une description du blanchiment par l'acide muriatique oxigéné. Seconde édition, revue, corrigée et augmentée, avec deux planches. Par C. L. et A. B. Berthollet. . . .

Paris: Chez Firmin Didot. An XIII. (1804).

Second French edition. 2 vols., 8vo. I: viii, 478 pp. II: 2 leaves, 357, (1) pp., 1 leaf (advertisements). With 2 folding copperplates (Sellier sculp.). Very good copy in contemporary quarter calf, gilt, marbled boards, maroon morocco labels. Bound with: Vendrin, *Catalogue des livres de fonds* (Paris, 1817).

THE SECOND and final French edition of this classic work, revised, enlarged, and updated by C. L. and Amédée B. Berthollet. The important section on bleaching mentioned on the title page and illustrated by the two plates first appears in this edition. Not in Duveen, Ferchl, Ferguson Coll., Morgan, Poggendorff, Smith, Sondheimer, Waller, Watt, etc. (Bolton, 306; Edelstein, 2812; Lawrie, 52; Partington, III, 514; Sotheran, Cat. 832 [1932], 5873; Wellcome, II, 154)

BERTHOLLET, Claude Louis

Elements of the Art of Dying. By M. Berthollet, . . . Translated from the French by William Hamilton, M.D. . . .

London: Printed by Stephen Couchman, and sold by J. Johnson, St. Paul's Church-Yard. 1791.

First English edition. 2 vols., 8vo. I: xi, (1), xxxvii, (1), 302 pp., 1 leaf (errata, following title page). II: v, (1), 385, (1) pp. With folding copperplate (J. Lodge sculp.). Very fine, virtually mint copy, in original half calf, gilt, marbled boards, dark-green morocco labels. Old signature on title pages: Revd. Richd. Butler D.D.

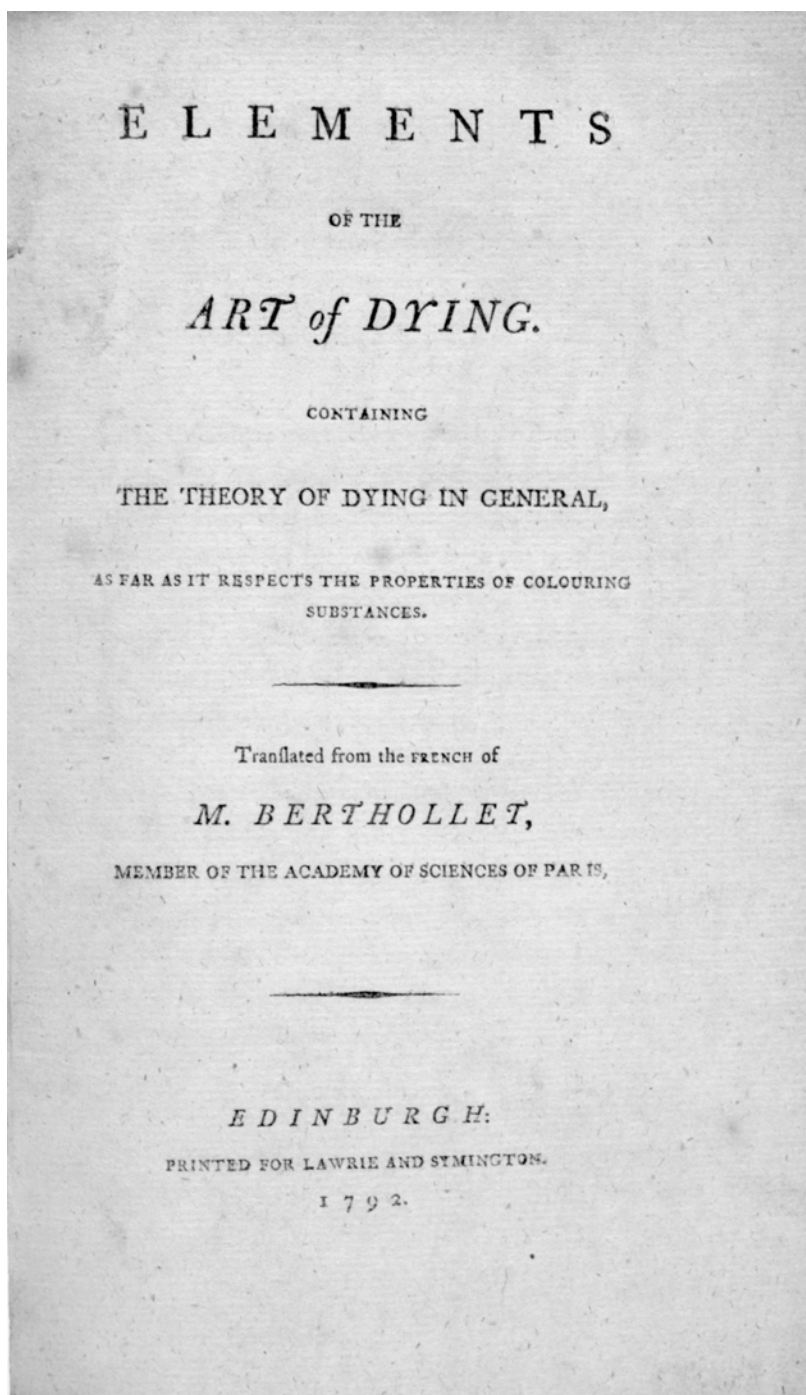
THE ENGLISH translation of Berthollet's *Éléments de l'art de la teinture* (Paris, 1791, 2 vols.), by William Hamilton (1758–1807), who was born at Strabane, Co. Tyrone, was educated at Glasgow and Edinburgh, and was physician to the London Hospital, where he also lectured on chemistry (see *Munk's Roll*, II, 366). At the end of volume II are added a "Description of the Translator's Apparatus, for the Distillation of Acids and other Substances" (pp. 358–368), illustrated by the plate, and a vocabulary of chemical terms (pp. 369–372). The Wellcome Library has volume I only. Not in Duveen, Ferchl, Ferguson Coll., Morgan, Poggendorff, Waller, etc. (Bolton, 306; Edelstein, 2813; Lawrie, 53; Partington, III, 514; Smith, 50; Sondheimer, 147; Sotheran, Cat. 666 [1906], 361 ["Rare"]; Watt, I, 462t; Wellcome, II, 154)

BERTHOLLET, Claude Louis

Elements of the Art of Dying. Containing the theory of dying in general, as far as it respects the properties of colouring substances. Translated from the French of M. Berthollet, . . . Edinburgh: Printed for Lawrie and Symington. 1792.

First edition of this translation. 8vo. 1 leaf, ii, 119, (1) pp. Fine copy, uncut, in quarter calf antique, marbled boards, maroon morocco label gilt.

THE ANONYMOUS Edinburgh translation of part of Berthollet's classic *Éléments de l'art de la teinture* (Paris, 1791, 2 vols.). Publication ceased immediately when the translation of William Hamilton (London, 1791) appeared. "The Publishers were preparing to lay before the Public, a complete translation of M. Berthollet's whole works, by an able hand: the translation was considerably advanced, and some progress had been made in the printing, when the unexpected appearance of another translation of the same book in London, rendered it eligible for them to desist from the undertaking" (preface). Rare. Not in Bolton, Duveen, Partington, Smith, Wellcome, etc. (Edelstein, 2814; Goldsmith's Library, 15147; Lawrie, 54; Sondheimer, 148)



Berthollet. Elements of the Art of Dying. Edinburgh, 1792.

BERTHOLLET, Claude Louis

Elements of the Art of Dyeing; with a description of the art of bleaching by oxymuriatic acid. . . . By C. L. and A. B. Berthollet. Translated from the French, with notes and engravings, illustrative and supplementary, by Andrew Ure, M.D., F.R.S. . . .

London: Printed for Thomas Tegg, . . . Simpkin & Marshall, . . . R. Griffin & Co., Glasgow; and J. Cumming, Dublin. 1824.

First edition of the Ure translation. 2 vols., 8vo. I: xxvii, (1), 408 pp.; 2 folding engraved plates (J. Shury, Sculpt.). II: vii, (1), 453, (1) pp.; 7 engraved plates (2 folding, J. Shury Sculpt.). Fine copy in original gilt-ruled half calf, marbled boards, tan and green morocco labels.

The second complete English edition (first: London, 1791), being the first translation by Andrew Ure of the second French edition (Paris, 1804). The first volume contains the two plates showing the apparatus for bleaching, copied from the French edition. The second volume contains extensive "Notes, illustrative & supplementary, by the translator" (pp. 312–453), with seven plates depicting machines used for dyeing cloth, which are not in the French edition. "The best English translation of this classic work" (Zeitlinger). The Wellcome Library has volume I only. Not in D.S.B., Duveen, Ferchl, Ferguson Coll., Morgan, Watt, etc. (Bolton, 306–307; Edelstein, 2816; Lawrie, 55; Partington, III, 514; Smith, 50; Sondheimer, 149; Sotheran, Cat. 832 [1932], 5876; Wellcome, II, 154)

BERTHOLLET, Claude Louis

Elements of the Art of Dyeing and Bleaching. By C. L. and A. B. Berthollet. Translated from the French, with notes and engravings, illustrative and supplementary, by Andrew Ure, M.D., F.R.S. A new edition, revised and corrected by an experienced practical dyer and calico printer.

London: Printed for Thomas Tegg, . . . R. Griffin and Co., Glasgow; Tegg and Co., Dublin; and J. and S.A. Tegg, Sydney and Hobart Town. 1841.

Second edition of the Ure translation. 8vo. xvi, 540 pp.; 4 engraved plates (3 folding). Very good copy, uncut, in original blind-stamped, patterned green publisher's cloth, spine gilt-lettered.

The third English edition to appear and the second and final edition translated by Andrew Ure. The most authoritative work on dyeing and bleaching chemistry and technology at the time of publication. The "experienced practical dyer and calico printer" mentioned in the title, who revised and corrected this edition, is not identified. Not in Duveen,

Ferchl, Ferguson Coll., Morgan, Smith, Waller, Wellcome, etc. (Bolton, 307; Edelstein, 2817; Lawrie, 55; Partington, III, 514; Sondheimer, 150)

BERTHOLLET, Claude Louis

Essai de Statique Chimique, par C. L. Berthollet, . . . Première (seconde) partie.

Paris: Demonville for Firmin Didot, An XI. 1803.

First edition. 2 vols., 8vo. I: viii, 543, (1) pp. II: viii, 555, (1) pp. Fine copy in contemporary half calf, spine richly gilt, marbled boards. Neat old signature on title pages.

BERTHOLLET'S MOST important work, in which "he argued that the forces of chemical affinity, like those of gravitation, must be proportional to the masses of the reacting substances" (*Biographical Dictionary of Scientists*, p. 54). This work led directly to the investigations of Joseph Louis Proust (1754–1826) on definite chemical proportions, which were preparatory to Dalton's atomic theory, on which the whole science of modern chemistry is based. Berthollet worked out the ramifications of his theories with masterful clarity in this book, which contains an expansion of the ideas put forward in the *Recherches sur les lois de l'affinité* (Paris, 1801). Duveen mistakenly says that Berthollet's ideas "led directly to Proust's investigations": he meant Proust. One of the great milestone books in the development of chemical theory. "Berthollet's position was vindicated half a century later by the Law of Mass Action enunciated by C. M. Guldberg and P. Waage" (*Biog. Dict. Scient.*, p. 55). "A very rare and very important book" (Sondheimer). Not in Ferguson Coll., Morgan, Waller, Watt, Wellcome, etc. (Bolton, 307; Cushing, B339; D.S.B., II, 78, 82; Duveen, 75; Edelstein, 254; Ferchl, 40; Honeyman, 296; Leicester & Klickstein, 202; Partington, III, 645; IV, 576; Poggendorff, I, 166; Smith, 50; Sondheimer, 153; Thornton & Tully, 169)

BERTHOLLET, Claude Louis

An Essay on Chemical Statics; with copious explanatory notes, and an appendix on vegetable and animal substances. Faithfully translated from the original French of C. L. Berthollet, . . . By B. Lambert. . . .

London: Printed for J. Mawman. 1804.

First English edition. 2 vols., 8vo. I: xxxii, 472 pp. II: 2 leaves, 499, (1) pp. Very fine and large copy in virtually mint condition, uncut and unpressed, in the original boards. Old signature on endpapers: "William Peel Talianis."

"THE ONLY English edition, and of great rarity" (Zeitlinger). Smeaton (*Ambix*, 24 [1977], 149–158), who published a careful bibliographical description of Berthollet's *Essai de*

statique chimique and its translations, points out that there are two cancel leaves in volume I, replacing leaves that had to be revised after the volume was printed. They are pages 209–210 and 223–224. The present English translation by Lambert was made “from a copy with the cancels in vol. I. The French errata have been corrected before translation. The notes are gathered at the end of each volume, instead of the end of each section, as in the original. . . . Nothing is known about the life of B. Lambert, who is described in the British Library catalogue as ‘Miscellaneous writer’” (Smeaton). Translations into Italian by Vincenzo Dandolo (Como, 1804) and German by Georg Wilhelm Bartholdy (Berlin, 1811) appeared. Kapoor has analyzed the contents of the *Essai* but does not mention the translations (see D.S.B., II, 78–82). Not in Duveen, Ferchl, Ferguson Coll., Morgan, Poggendorff, Smith, Wellcome, etc. (Bolton, 307; Edelstein, 255; Partington, IV, 576; Sondheimer, 154; Sotheran, Cat. 832 [1932], 5041)

BERTHOLLET, Claude Louis

Essay on the New Method of Bleaching, by means of Oxygenated Muriatic Acid; with an account of the nature, preparation, and properties, of that acid, and its application to several other useful purposes in the arts. From the French of Mr. Berthollet. With figures of all the necessary apparatus; and explanatory notes. By Robert Kerr, . . .

Edinburgh: Printed for William Creech, and G. G. J. & J. Robinson, London. 1790.

First English edition. Sm. 4to. 14 leaves, 139, (1) pp. With fine folding copperplate. A pristine copy in early-nineteenth-century quarter cloth, plain boards, spine gilt-lettered. Armorial bookplate of Alexander Thomson on front pastedown endpaper and signature “A. Thomson. Banchory” on title page.

AN IMPORTANT work in the chemistry and technology of bleaching, being the first announcement in English of the bleaching action of chlorine, discovered by Berthollet and described in the *Annales de Chimie* (2, 151–190) under the title “Description du blanchiment des toiles et des fils par l’acide muriatique oxygéné.” A separate French edition did not appear until 1795. The English translation is the first edition in book form and is written in terms of the then new antiphlogistic chemistry, which thus became familiar in chemical technology. A translation (pp. 116–127) of Chaptal’s memoir in the first volume of the *Annales de Chimie* on the bleaching properties of chlorine is included. The plate illustrates the same apparatus as that depicted in the plate of the 1795 French edition, although the plate in that edition has been reengraved with the apparatus laid out in a different order. A pupil of Macquer, Berthollet (1748–1822) was an inspired research worker, an innovator

in physical and applied chemistry, and the first (1785) to support the antiphlogistic theory of Lavoisier. His theoretical researches on chlorine and its compounds founded the modern chemistry of this element. A reprint of this edition appeared (Dublin, n.d., ca. 1790; Partington, III, 507). Not in Blake, D.S.B., Lawrie, Thornton & Tully, Waller, Wellcome, etc. (Duveen, 74; Edelstein, 2818; Ferguson Coll., 88; Neu, 439; Smith, 50; Sondheimer, 145; Watt, II, 568j)

BERTHOLLET, Claude Louis

Essay on the New Method of Bleaching: with an account of the nature, preparation, and properties, of oxygenated muriatic acid. To which is now added, observations and experiments, on the art of dying with madder. From the French of Mr. Berthollet. With figures of all the necessary apparatus; and explanatory notes, By Robert Kerr, . . .

Edinburgh: Printed for William Creech, and G. G. J. & J. Robinson, London. 1791.

Second edition. 12mo. 350 pp., 1 leaf (blank), 12 pp. With folding copperplate (identical with that in 1790 edition). Fine copy in contemporary half calf, marbled boards, dark-green morocco label gilt, spine dated. From the library of Edward Strutt, F.R.S. (1801–1880), first Baron Belper (see D.N.B.), with his ducal coronet bookplate.

THE SECOND edition of Kerr’s translation, to which are added definitions of chemical terminology and Berthollet’s *Observations on dyeing with madder* (pp. 201–330). At the end (12 pp.) is an “Addition to the essay on bleaching.” “The rapid sale of the first edition of this work, the whole impression having sold off in four months, gives full proof of the public approbation of the performance, and encourages the Translator to hazard a second edition. He has availed himself of every opportunity of improvement, . . . by additional notes” (preface). Not in Blake, Bolton, Duveen, Ferchl, Ferguson Coll., Partington, Sondheimer, Watt, Wellcome, etc. (Edelstein, 2819; Lawrie, 56; Morgan, 52 [wrong pagination]; Neu, 440; Smith, 50)

BERTHOLLET, Claude Louis

Nouvelles Recherches sur les Lois de l’Affinité, par N. Berthollet. Extrait des Mémoires de l’Institut de France, classe de Physique et de Mathématiques, année 1806.

Paris: de l’Imprimerie de Baudouin. Chez Crochard, libraire, . . . 1806.

First edition in book form. 8vo. 2 leaves, 122 pp. Mint copy in pristine condition, entirely uncut, in contemporary blue boards, crimson label, gilt. Bound with: Berthollet, C. L., *Recherches sur les lois de l’affinité* (Paris, 1801).

THE FIRST separate edition of the third and final work by Berthollet on the laws of chemical affinity, in which are described the further investigations he carried out to prove that the composition of inorganic compounds can vary within narrow limits and that the law of constant proportions is not always valid. The work originally appeared in the *Mémoires de l'Institut* (1806, 4to.; see Partington, III, 645, and Sondheimer, 148a). A very rare book, even rarer than his first work on the subject (Paris, 1801). Not in D.S.B., Duveen, Ferchl, Ferguson Coll., Morgan, Poggendorff, Smith, Thornton & Tully, Waller, Watt, Wellcome, etc. (Bolton, *First Supplement*, 89; Edelstein, 256; Partington, IV, 576)

BERTHOLLET, Claude Louis

Recherches sur les Lois de l’Affinité, par le citoyen Berthollet. . .

Paris: Baudouin, imprimeur de l’Institut national des Sciences et des Arts. AN IX. (1801).

First edition. 8vo. 2 leaves, 105, (1) pp. Mint copy in pristine condition, entirely uncut, in contemporary blue boards, crimson label, gilt. Bound with: Berthollet, C. L., *Nouvelles recherches sur les lois de l’affinité* (Paris, 1806).

THE FIRST of three publications in book form of Berthollet’s important work on the composition of inorganic compounds and the concept of chemical affinity. Berthollet made the “assumption that chemical reactions are usually incomplete, and that one substance is divided between two others in a variable ratio dependent upon the ‘mass,’ as well as his recognition of the importance of reactions in solutions, led him to the conclusion that the composition of a compound is not constant but variable, sometimes between fixed limits. This was a negation of the law of constant proportions. In his first work on affinity Berthollet says he proposes to investigate the circumstances which modify combination” (Partington, III, 644). “The idea of chemical equilibrium and its modification by the action of mass was first clearly stated by Berthollet” (Partington, IV, 576). “The existence of solid compounds with the components in slightly varying proportions was recognised by Kurnakov (1914), who called them Berthollide compounds” (Partington, III, 650). Translations into German by E. G. Fischer (Berlin, 1802) and English by M. Farrell (London, 1804) appeared. Commentaries on the work were published by C. J. B. Karsten (*Revision der chemischen Affinitätslehre*, Leipzig, 1803) and L. Schnaubert (*Untersuchung der Verwandtschaft der Metalloxyde . . . Nach einer Prüfung der neuen Berthollet’schen Theorie*, Erfurt, 1803). Not in Duveen, Edelstein, Ferguson Coll., Morgan, Smith, Sondheimer, Wellcome, etc. (Bolton, 307; D.S.B., II, 78; Ferchl, 41;

Partington, III, 644, 650; IV, 576; Poggendorff, I, 166; Sotheran, Cat. 800 [1926], 10210 [“Rare”]; Thornton & Tully, 169)

BERTHOLLET, Claude Louis

Claude Louis Berthollet über die Gesetze der Verwandtschaft in der Chemie. Aus dem französischen übersetzt mit Anmerkungen Zusätzen und einer synthetischen Darstellung von Berthollets Theorie versehen von Ernst Gottfried Fischer, . . . Berlin: bey G. C. Nauck. 1802.

First German edition. 8vo. xii, 332 pp. Very good copy in original gilt-ruled half calf, speckled boards, maroon morocco label, gilt. Bound with: Schnaubert, L., *Untersuchung der Verwandtschaft der Metalloxyde zu den Säuren* (Erfurt, 1803).

THE GERMAN translation of *Recherches sur les lois de l’affinité* (Paris, 1801). In the preface the translator, Fischer (1754–1831), gives a brief biography of Berthollet, praising him and listing the titles of his works on the reform of chemical nomenclature, bleaching, and dyeing. “Fischer found Berthollet’s new view of chemical phenomena so convincing that it is impossible to maintain the old theory” (Partington, III, 652). Fischer was professor of physics and mathematics in the Gymnasium zum grauen Kloster, Berlin, and, on page 232 he “gives a clear summary of Richter’s views . . . and a table of equivalent weights of acids and bases referred to 1000 parts of sulphuric acid as a single standard” (Partington, III, 678). “This table contains thirteen acids and eight bases, . . . the same standard that Richter . . . had consistently used. At the same time, however, Fischer criticizes Richter’s series of masses as unacceptable hypotheses” (D.S.B., XI, 437). The section entitled “Versuch einer synthetischen Darstellung von Berthollet’s Theorie” (pp. 263–332) summarizes the ramifications of the laws of affinity and mass in chemical reactions. Very rare. Not in Duveen, Edelstein, Ferchl, Ferguson Coll., Smith, Sondheimer, Wellcome, etc. (Bolton, 307; D.S.B., XI, 437; Partington, III, 678, 685; IV, 576; Poggendorff, I, 751)

BERTHOLLET, Claude Louis

Researches into the Laws of Chemical Affinity. By C. L. Berthollet, . . . Translated from the French by M. Farrell, M.D.

London: Printed for John Murray, . . . Bell and Bradfute, Edinburgh; and Gilbert and Hodges, Dublin. 1804.

First English edition. 8vo. viii, 213 pp., 1 leaf (advertisements). Good copy, uncut, in modern cloth-backed boards.

THE FIRST translation into English of Berthollet’s *Recherches sur les lois de l’affinité* (Paris, 1801), in which the concept of

chemical equilibrium and its relationship with the action of mass was first clearly stated. Although Partington describes it as a "poor translation," the book has the merit of being the first to introduce Berthollet's ideas to the English-speaking public. Rare. Not in Bolton, D.S.B., Duveen, Ferchl, Poggendorff, Thornton & Tully, Waller, Wellcome, etc. (Edelstein, 257; Ferguson Coll., 88; Morgan, 53; Partington, IV, 576; Sondheimer, 155; Sotheran, Cat. 832 [1932], 5045 ["Rare"]; Watt, I, 357r)

BERTHOLLET, Claude Louis

Researches into the Laws of Chemical Affinity. By C. L. Berthollet, . . . Translated from the French by M. Farrell, M.D.

Baltimore: Published by Philip H. Nicklin and Co. . . . Also by Farrand, Mallory and Co. Boston, and Hopkins and Earle, Philadelphia. 1809.

First American edition. 12mo. iv, 212 pp. Lightly foxed; otherwise a fine copy in the original gilt-ruled speckled sheep, maroon morocco label, gilt.

A PAGINARY REPRINT of the London edition of 1804. Very scarce. Not in D.S.B., Duveen, Morgan, Wellcome, etc. (Bolton, 307; Edelstein, 258; Smith, 50)

BERTHOLLET, Claude Louis

Saggio di Statica Chimica di C. L. Berthollet . . . diviso in due parti. Traduzione di V. Dandolo . . .

Como: Presso Luigi Nosedà. 1804.

First Italian edition. 2 vols., 8vo. I: xxviii, 564 pp. II: viii, 576 pp. Fine copy in original speckled calf, spine gilt-ruled, brown morocco labels.

THE ITALIAN translation, by Vincenzo Dandolo (1758–1819), of Berthollet's classic *Essai de statique chimique* (Paris, 1803). Dandolo, a pharmacist, had earlier translated several chemical works by Lavoisier, Fourcroy, and Guyton de Morveau and had published them in Venice, where he lived. In 1799 he moved to Paris and later to Varese near Milan. "This explains why his translation of *Statique Chimique* was printed in Como, a town about 30 km. from Varese not normally associated with scientific publishing. The book contains many typographical errors . . . which are corrected in the . . . errata" (Smeaton). In volume I, page 7 is not numbered, and pages 235, 326, 329, and 515 appear as 135, 526, 923, and 315, respectively. In volume II, page 16 is not numbered, and page 69 is misnumbered 96. Dandolo has added numerous valuable notes to this translation. (Bolton, *First Supplement*, 89; Cole, 124; Edelstein, 259; Partington,

IV, 576; Smeaton, *Ambix* [1977], XXIV, 153–154; Wellcome, II, 154)

BERTRAND

Reflexions Nouvelles sur l'Acide et sur l'Alcali: où apres avoir démontre que ces deux sels ne peuvent pas être les principes des Mixtes, on fait voir le veritable usage qu'on en peut faire dans la Physique & dans la Medecine. Par Mr Bertrand, Docteur en Medecine Aggrége au College des Medecins, de Marseille. Lyon: Chez Thomas Amaulry. 1683.

First (only) edition. 12mo. 10 leaves, 359 pp. Fine, crisp copy in contemporary calf, spine gilt. Contemporary neat signature in ink on recto of first free endpaper and title page of Dr. Andre Bouchetal. From the library of Professor Franz Sondheimer, with his bookplate on the front pastedown endpaper.

A RARE TREATISE on "the seventeenth century concepts of acid and alkali. . . . Dr. Bertrand . . . discusses very fully the current concepts referring especially to Van Helmont and Tachenius. He is by no means an extremist like Tachenius or Sylvius. His concepts do not differ essentially from those expressed more briefly by Lemery in his *Cours de Chymie*. Bertrand explains . . . that an acid is a liquid body composed of small firm and pointed particles, slightly resembling very fine and delicate needles. . . . Alkali, on the contrary, should be a solid earthy body the particles of which have between their junctions pores of different structure. Bertrand does not agree with Tachenius and others that every substance contains an acid or an alkali, nor does he deem it necessary to assume that every body which ferments with an acid is necessarily an alkali or contains an alkali" (Stillman, *The Story of Early Chemistry* [1924], pp. 401–402). One of the great milestones in the literature of the early theories of acids and bases. On page 189 Bertrand states that Boyle's theory of acids and alkalies is "too confused" and that of Van Helmont "too metaphysical." Bertrand explains the formation of salts by the mechanical fitting of the points of acid particles into the pores of alkali particles. A very rare and important book. Not in Bolton, Caillet, Cushing, Duveen, Ferguson, Mellon, Thorndike, Waller, Watt, etc. (Ferchl, 42; Ferguson Coll., 88; Neu, 442; Partington, III, 33; Smith, 51; Wellcome, II, 155)

BERTRAND, Michel

Essai touchant l'influence de la lumière sur les êtres organisés, sur l'atmosphère, et sur différens composés chimiques, présenté et soutenu à l'École de Médecine de Paris, le (blank) vendémiaire an VIII, . . .

Paris: De l'Imprimerie de Hy. An VIII. (1800).

First edition. 8vo. 66 pp., 1 leaf (blank). Fine copy, partly uncut, in marbled boards antique, maroon morocco label.

ONE OF the most esteemed physicians of the Puy-de-Dôme region, Bertrand (1774–1857) is regarded as the founder of the thermal spa there. He published *Recherches sur les propriétés physiques, chimiques, et médicinales des eaux du Mont-d'Or* (Paris, 1810) and a similar work in 1819 (see Wellcome, II, 156). Dedicated to the professor of anatomy at Clermont-Ferrand, Pierre Bonnet, the present *Essai* contains important chemical information concerning the action of light on human eyes and the animal economy, various chemicals (including silver chloride and mercury compounds, foreshadowing the discovery of photography), the atmosphere, and the leaves of plants. There are references to the production of oxygen and carbon dioxide by plants and to Ingenhousz and Priestley on photosynthesis. The final chapter on the chemical action of light discusses the researches of Berthollet and Fourcroy. Rare. Not in the usual bibliographies.

BERZELIUS, Jöns Jacob

Afhandling om Galvanismen. . . .

Stockholm: Tryckt i Kungl. Vetensk. Akad. Tryckeriet. 1802.

First edition. 8vo. 3 leaves, 145, (1) pp. Large folding engraved plate of apparatus. Interleaved throughout, with 4 pages of contemporary annotations in Swedish. Presentation copy from the author, inscribed on title page (cropped). Minor stain on preliminary leaf; otherwise very good copy, in modern marbled boards.

THE FIRST major publication in book form by Berzelius, preceded only by a pamphlet (15 pp.) on his chemical analysis of Medevi water (Uppsala, 1800) and his doctoral dissertation presented under the direction of Afzelius (Uppsala, 1 May 1802). The book is dedicated to Sven Hedén, chief physician at the Medevi mineral springs, under whose direction Berzelius began his scientific career. Berzelius “read of the newly described voltaic pile, the first reliable source of a continuous electric current. He soon built one for himself from sixty pairs of alternating zinc discs and copper coins. . . . His earliest book was a treatise on galvanism, a review of all the work done up to that time on the action of electricity on salts and minerals. This reflected his early

appreciation of the importance of the voltaic pile. It showed his ability to synthesize the literature, and it formed the basis for his pioneering studies with Hisinger” (D.S.B.). Not in Duveen, Edelstein, Ferguson Coll., Wellcome, Wheeler Gift, etc. (Bolton, 307; Cole, 134; D.S.B., II, 92; Ferchl, 42; Jorpes, *Berzelius*, 21; Partington, IV, 142; Poggendorff, I, 173; Sotheran, Cat. 800 [1926], 10215 [“Rare”]; Waller, 11282)

BERZELIUS, Jöns Jacob

An Attempt to Establish a Pure Scientific System of Mineralogy, by the Application of the Electro-Chemical Theory and the Chemical Proportions; by J. Jacob Berzelius, M.D., F.R.S. . . . Translated from the Swedish Original by John Black.

London: Printed for Robert Baldwin, . . . and William Blackwood, Edinburgh. 1814.

First English edition. 8vo. 144 pp. (including 6 pp. of advertisements). Fine, crisp copy, in contemporary half vellum, gilt-ruled, marbled boards, dark-blue morocco label. From the Devon and Exeter Institution, with printed list of library regulations on front pastedown endpaper and old stamp on verso of title.

THE ENGLISH translation of *Försök att genom användandet af den elektrokemiska teorien och de kemiska proportionerna grundlägga ett rent vetten skapligt system för mineralogien* (Stockholm, 1814), which first established the classification of minerals by their chemical composition rather than by their former arbitrary classification by crystal habit only. Berzelius sent Thomas Thomson a copy of the *Försök* immediately upon publication, and the latter supervised the translation by Black. In his two-page “advertisement” Thomson attests to “the fidelity of the translation.” The present work is the first appearance in English of the first attempts at calculating the composition of minerals on the basis of the atomic theory: i.e., using the law of multiple proportions of Dalton. Berzelius’s system of chemical symbols and formulae using the initial letters of the latinized names of the elements and indicating the proportions of atoms present calculated according to the atomic weights has since been established as the standard form of chemical notation. Table I (pp. 117–118) lists the atomic weights of forty-seven elements, based on oxygen = 100. Many of the chemical symbols used by Berzelius are still employed. Rare. Not in Duveen, Hoover, Waller, etc. (Bolton, 308; D.S.B., II, 94; Edelstein, 262; Morgan, 55; Partington, IV, 146; Smith, 51; Sondheimer, 162; Watt, I, 108c; Wellcome, II, 156; Wheeler Gift, 721)

BERZELIUS, Jöns Jacob

Chimie du Fer, d'après Berzelius. Traduit par le Chevalier Hervé, . . .

Paris: Chez F. G. Levrault. 1826.

First edition. 8vo. xvi, 200 pp. Fine copy with wide margins, in gilt-ruled calf antique, marbled boards, maroon morocco label, gilt.

A COMPREHENSIVE TREATISE on the chemistry of iron and its compounds and certainly one of the most complete to have appeared at the time. The translator, Hervé, was a captain in the French Corps Royal de l'Artillerie. The work was reprinted in a revised form in Berzelius's *Traité de Chimie* (Paris, 1831, vol. III, pp. 236–293). Very rare. Not in Annen, D.S.B., Hoover, Tylecote, Wellcome, or the usual chemical bibliographies. (Bolton, 307)

BERZELIUS, Jöns Jacob

De l'Analyse des Corps Inorganiques, par J. J. Berzelius. Traduit de l'Allemand.

Paris: Méquignon-Marvis. Juillet 1827.

First French edition. 8vo. 2 leaves, iv, 232 pp. With engraved plate (Moisy sculp.). Fine copy in original gilt-ruled quarter calf, speckled citron boards, maroon morocco label gilt, spine with name in gilt at bottom (A. Cheval). Two bookplates on front pastedown endpaper: J. Laissus, and unidentified.

A TRANSLATION BY E. Esslinger of the essay on the analysis of inorganic compounds, found at the end of volume 2 of the Blöde and Palmstedt translation of Berzelius's *Lehrbuch der Chemie* (Dresden, 1826), which itself was translated from the second Swedish edition of the *Lärbök i Kemien*. An English translation by G. O. Rees from this French edition was published (London, 1833). Rare. Not in D.S.B., Waller, Wellcome, or the usual chemical bibliographies. (Bolton, 307; Cushing, B345)

BERZELIUS, Jöns Jacob

De l'Emploi du Chalumeau dans les Analyses Chimiques et les Déterminations Minéralogiques . . . Traduit du Suédois par F. Fresnel.

Paris: Chez Méquignon-Marvis. 1821.

First French edition. 8vo. 2 leaves, vi, 396 pp., 2 leaves. With 4 folding copperplates. Fine large copy, uncut and unpressed, in gilt-ruled quarter calf antique, marbled boards, maroon morocco label, gilt, spine dated, original wrappers bound in.

“QUALITATIVE ANALYSIS in the dry way made considerable advances in the eighteenth century by the increasing use of the blowpipe, the value of which in the examination

of ores was recognised more especially in Sweden. Gahn and Bergman, together with the mineralogist Cronstedt, were chiefly instrumental in introducing it into chemistry. . . . But it was through Berzelius that the blowpipe became universally employed, as an almost indispensable aid in analysis” (Ernst von Meyer). Berzelius was “especially skillful in the use of the blowpipe, . . . and the book that he wrote concerning it popularized its use abroad” (D.S.B.). “An exceedingly useful and valuable book” (Thomas Thomson). Not in Duveen, Hoover, Morgan, Sondheimer, Waller, Wellcome, etc. (Bolton, 311; Cushing, B346; Edelstein, 263; Ferchl, 43; E. von Meyer, *A History of Chemistry*, 1906, p. 151; Partington, IV, 146; Poggendorff, I, 173; Smith, 51)

BERZELIUS, Jöns Jacob

De l'Emploi du Chalumeau dans les Analyses Chimiques et les Déterminations Minéralogiques . . . Traduit du Suédois par F. Fresnel.

Paris: Méquignon-Marvis, Père et Fils. 1837.

Second edition. 8vo. 2 leaves, 396 pp. With 4 folding copperplates. Very good copy in contemporary quarter morocco, marbled boards, spine gilt in compartments.

APART FROM omitting the six-page introduction, an exact reprint of the first edition (Paris, 1821) in which the errata have been corrected. The engraved plates are identical to those of the first edition. Evidently quite rare, this edition is not in Partington or the usual chemical bibliographies. (Edelstein, 264; Wellcome, II, 157)

BERZELIUS, Jöns Jacob

The Use of the Blowpipe in Chemical Analysis, and in the Examination of Minerals . . . Translated from the French of M. Fresnel, by J. G. Children, F.R.S., . . . with a sketch of Berzelius' system of mineralogy; a synoptic table of the principal characters of the pure earths and metallic oxides before the blowpipe, and numerous notes and additions by the translator.

London: Printed for Baldwin, Cradock, and Joy, Paternoster-Row; and J. Mawe, Strand. 1822.

First English edition. 8vo. xxxix, (1), 343, (1) pp. With 3 engraved plates of apparatus (J. Shury sculpt.) and one large folding table. Fine, crisp copy, in original gilt-ruled half calf, marbled boards, green morocco label, gilt.

THE FIRST English edition of this important work, dedicated to Sir Humphry Davy by the translator, John George Children (1777–1852), who included “additions and sarcastic notes which annoyed Berzelius” (Partington). “I have inserted . . . such additions as I thought wanting in the

original, and I have also collected into one view, in the form of a synoptic table, the principal pyrognostic characters of the pure earths and metallic oxides, which I think the operator will find useful, when occupied with his blowpipe" (translator's preface). Several enlarged editions appeared, the last in 1849. An American edition (Boston, 1845) was published, edited by J. D. Whitney. Not in Duveen, Morgan, Waller, etc. (Bolton, 310; Edelstein, 276; Ferchl, 43; Hoover, 123; Partington, IV, 146; Poggendorff, I, 173; Smith, 52; Wellcome, II, 157)

BERZELIUS, Jöns Jacob

Essai sur la Théorie des Proportions Chimiques et sur l'Influence Chimique de l'Électricité . . . Traduit du Suédois sous les yeux de l'auteur, et publié par lui-même.
Paris: Chez Méquignon-Marvis. 1819.

First French edition. 8vo. xvi, 190 pp., 1 leaf, 120 pp., 1 leaf. Signatures A3, B1, and F4 of the table are cancels. Contemporary quarter gilt-ruled calf, marbled boards. Fine copy from the library of Sir Philip Joseph Hartog (1864–1947), historian of science and educator, with his signature in ink on half title.

A VERY IMPORTANT book, dedicated to Berthollet, being Berzelius's most complete presentation of his work on atomic weights, translated under his supervision from parts of the third volume of the *Lärbok* (1818) and containing his revised tables of atomic and molecular weights taken from the supplement (*Bihang*, 1818). His electrochemical (or dualistic) theory is presented, which dominated the chemical world for many years. The table (120 pp.) gives the atomic weights of all the elements then known, in addition to the molecular weights of a large number of inorganic compounds, and is the first attempt at a complete list of atomic weights. Berzelius "linked electrochemistry with the atomic theory and emerged as the new prophet of atomism. His enthusiasm sprang from his interest in chemical proportions. Having begun a systematic study of combining weights, he heard of the atomic theory of John Dalton, realized its significance, and returned to his work with redoubled energy. By 1818 he had determined the atomic weights of all but four of the 49 elements then known" (T. I. Williams). Published by Berzelius himself, this French translation has a ten-page introduction by him. Not in Duveen, Hoover, Smith, Waller, etc. (Bolton, 308; D.S.B., II, 94–95; Edelstein, 265; Ferchl, 43; Honeyman, 308; Leicester & Klickstein, 259; Morgan, 56; Partington, IV, 147; Poggendorff, I, 173; Sondheimer, 158; Thornton & Tully, 217; Wellcome, II, 156; Wheeler Gift, 755; Williams, *Biographical Dictionary of Scientists*, 55)

BERZELIUS, Jöns Jacob

Föreläsningar i Djurkemien, af J. Jacob Berzelius.
Stockholm: Carl Delén, C. F. Marquard. 1806, 1808.

First edition. 2 vols., 8vo., in 1. I: 6 leaves, 276 pp. II: 4 leaves, lix, 498 pp., 1 leaf (errata). Original speckled calf, gilt, marbled boards, red and green labels. Fine copy from the library of Robert M. Herbst, with his signature.

THE FIRST book by the great Swedish chemist Berzelius (1779–1848), on animal (i.e., organic) chemistry, dedicated to the King of Sweden. At Davy's instigation it was translated by G. Brunmark as *A view of the progress and present state of animal chemistry* (London, 1813, 1818) and from English into German by G. C. L. Sigwart (Nürnberg, 1815). The results of his own experiments on animal fluids and tissues are included. During his researches he discovered that muscle tissue contains lactic acid, which aroused his interest in organic acids. In volume II (p. 279) Berzelius describes the preparation of urea by means of the oxalate, and he was the first to make pure specimens of this important compound. He greatly extended his coverage of organic chemistry in the *Lärbok i Kemien*. The *Föreläsningar i Djurkemien* is a great milestone in the early literature of organic chemistry. Very scarce. Not in Duveen, Morgan, Smith, Wellcome, etc. (Bolton, 308; D.S.B., II, 92; Edelstein, 266; Ferchl, 42; Holmberg, *Bibliografi över Berzelius*, 1806, I, and 1808, I; Nordenskiöld, *History of Biology*, 372; Partington, IV, 147; Poggendorff, I, 173; Sondheimer, 160; Waller, 11075)

BERZELIUS, Jöns Jacob

The Kidneys and Urine. By J. J. Berzelius. Translated from the German by M. H. Boye and F. Leaming, M.D.
Philadelphia: Lea & Blanchard. 1843.

First edition. 4to. viii, (17)–179, (1) pp. + 6 leaves (advertisements). (Note: Pages 9–16 were never printed, and the book is complete.) Few leaves lightly foxed; otherwise fine copy in original patterned green cloth, printed paper label on spine.

A BIOCHEMICAL AND medical treatise on the chemical components of normal and pathological urine, translated by Martin Hans Boye (1812–1909) and F. Leaming. An important early work on urinalysis, extracted from Berzelius's "recently completed work on Animal Chemistry, . . . The study of the chemical nature of the urine in disease has only lately commenced. . . . The present treatise embraces every thing that is known in a chemical point of view in regard to the urine and all the substances found in it, and also the easiest and most approved modes of detecting them" (preface). Numerous chemical tests are described for the

analysis of human and animal urines. Very scarce. Not in the usual chemical and medical bibliographies. (Edelstein, 268; Smith, 52; Wellcome, II, 157)

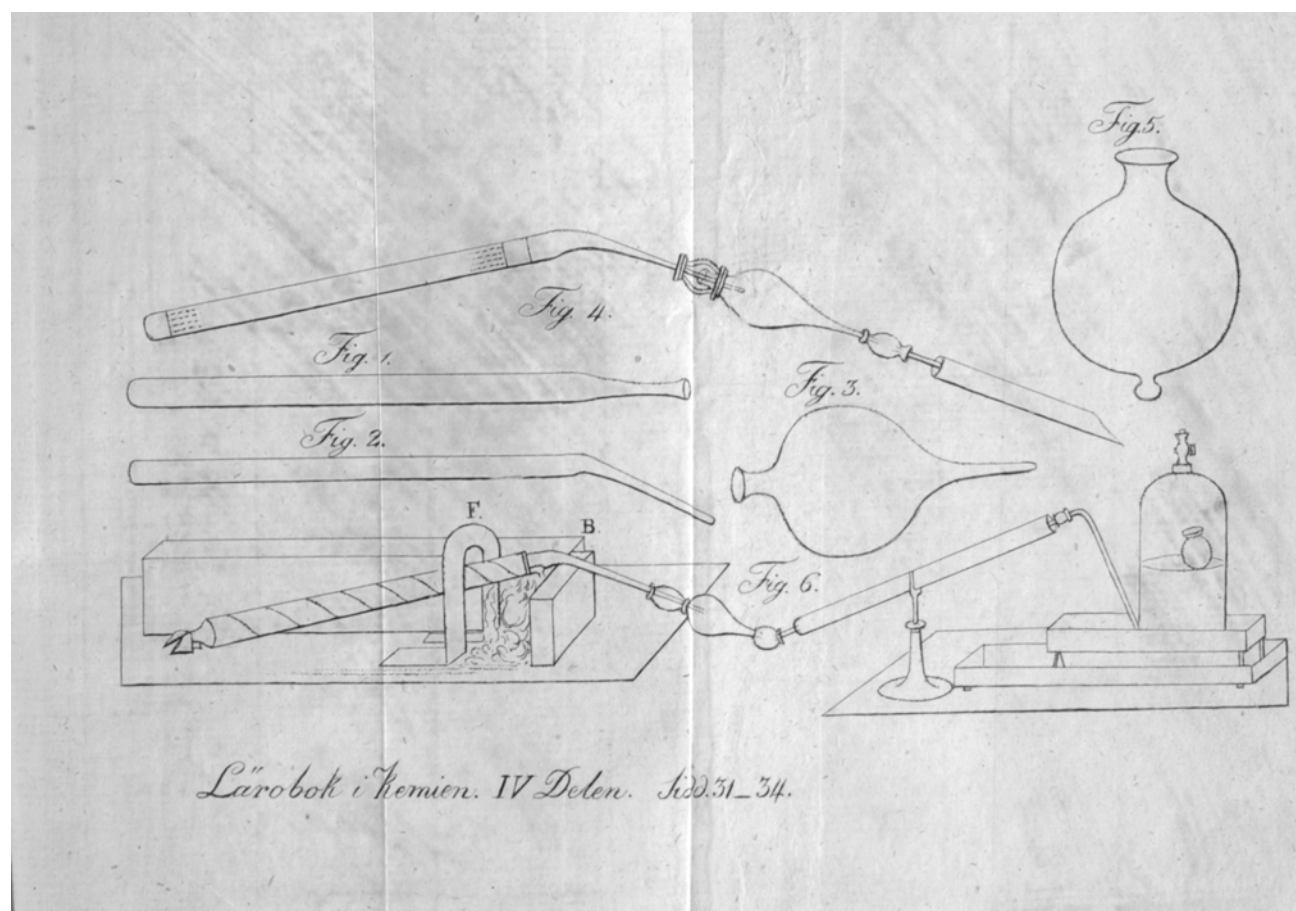
BERZELIUS, Jöns Jacob

Lärbok i Kemien.

Stockholm: Tryckt hos Henr. A. Nordström. 1808–1830.

First edition. 6 vols., 8vo. (1808, 1812, 1818, 1827, 1828, 1830), also 2nd and enlarged edition of vol. I (1817), and the *Bihang* (supplement) to vol. III, 4to. (1818). Together 8 vols. I: 5 leaves, 483, (1) pp., 3 folding plates. II: 1 leaf, iv pp., 2 leaves, 640 pp., 1 leaf, 1 folding plate. III: 3 leaves, 496 pp., 6 folding plates (including 2 tables). IV: xv, (1), 564 pp., 1 leaf, 1 folding plate. V: x pp., pp. 565–1300, 6 pp., 1 leaf, 1 folding table. VI: 2 leaves, vi, 895, (1) pp., 1 leaf. 2nd edition of vol. I: 5 leaves, 726 pp., 4 folding plates. *Bihang* to vol. III: 99, (1) pp. Volume I of first edition in original gilt-ruled half calf, speckled boards, maroon and green labels. Volumes II–VI and second edition of volume I in original half calf, gilt, marbled boards, green labels. *Bihang* in original half calf, gilt, marbled boards. A very fine, complete set.

FIRST EDITION throughout, plus the second edition of volume I, including the rare table of atomic and molecular weights. Berzelius had reported atomic weights in 1814, but this is the first extensive table ever published giving the atomic weights of forty-five of the forty-nine elements then known, together with the chemical composition and molecular weights of almost two thousand compounds. These were by far the most careful determinations available and attained a remarkable standard of accuracy. The most authoritative textbook of the period, the *Lärbök* was translated into French, Dutch, German, and Italian but not English. In the important third volume of 1818, which was accompanied by the *Bihang*, Berzelius gives an account of the atomic theory, the determination of atomic weights, and his electrochemical theory. The “most authoritative chemical text of its day. While he was writing it, problems occurred to Berzelius and the search for solutions to these led him to carry out much of the research which occupied his most productive period” (D.S.B.). Very rare. (Bolton, 308, 311; D.S.B., II, 92; Partington, IV, 145; Thornton & Tully, 217)



Berzelius. *Lärbok i Kemien*. Stockholm, 1808–1830.

BERZELIUS, Jöns Jacob

Mémoire sur la Composition des Fluides Animaux, par J. Berzelius . . . Tiré du 3e volume des Transactions Médico-chirurgicales de la société de Médecine de Londres. Traduit par G. Delarive . . .

Paris: Chez J.J. Paschoud . . . Geneva: Chez le même. 1814.

First French edition. 8vo. 4 leaves, 96 pp. Very good copy, untrimmed, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

THE FIRST separate edition of an important biochemical article originally published in the *London Med. Chirurg. Trans.* (1812, III, pp. 198–276). Translated by the professor of chemistry at Geneva, Gaspard De La Rive, this edition first contains valuable additional notes and observations. Berzelius describes his experimental researches on human blood and other bodily fluids (e.g., bile, milk, mucus, sweat, tears, and urine). Chemical analyses of these fluids are given. In the course of this work he noted that muscle tissues contain lactic acid, previously discovered in milk by Scheele. Extremely rare. Not in British Library, N.U.C., or the usual bibliographies.

BERZELIUS, Jöns Jacob

Nouveau Système de Minéralogie, . . . Traduit du Suédois sous les yeux de l'auteur, et publié par lui-même.

Paris: Chez Méquignon-Marvis. 1819.

First French edition. 8vo. 2 leaves, vi, 314 pp., 1 leaf (*Table des matières*). Fine copy, uncut and unpressed, in half calf antique, marbled boards, maroon morocco label, gilt, with original purple wrappers bound in.

THE FIRST French translation of the *Försök att genom användandet af den elektrokemiska teorien . . . för mineralogien* (Stockholm, 1814), dedicated to “Monsieur René-Juste Haüy, dont le génie a élevé la minéralogie au rang des sciences.” The translation from the Swedish edition was personally supervised by Berzelius, who states in his introduction that he was disappointed with the English version (London, 1814). “The methods of mineral classification existing at that time were based on appearance and physical properties. These seemed highly unsystematic to Berzelius. He concluded from his analytical experience that a logical classification could be based only on chemical composition. In his original system, first published in 1814, he arranged the minerals in terms of their basic constituents, although he later revised this and placed chief emphasis on the acid component. . . . During his visit to Paris in 1818 he won the approval of Haüy, the leading mineralogist of the day, whose own system was based on physical proper-

ties” (D.S.B.). The element selenium, discovered by Berzelius in 1818, is mentioned in this edition. Not in Duveen, Honeyman, Morgan, Smith, Waller, Wellcome, etc. (Bolton, 308; Edelstein, 271; Ferchl, 43; Holmberg, *Bibliografi över J.J. Berzelius*, År 1819, 21 [p. 37]; Hoover, 122; Partington, IV, 146; Poggendorff, I, 173; Sondheimer, 164; Sotheran, Cat. 832 [1932], 4706 [“Scarce”]; Ward & Carozzi, 202)

BERZELIUS, Jöns Jacob

Nuevo Sistema Mineral del Señor Berzelio, del Año de 1825, traducido del Frances, con algunas notas y adiciones por el ciudadano Andres Del Rio, del Instituto Mexicano.

Mexico: En la imprenta del Aguila. 1827.

First edition. Folio. 28 pp. Inscribed in ink on blank leaf preceding title: “Geschenk des Ubersetzers.” Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

AFTER THE discovery of isomorphism by Mitscherlich, Berzelius proposed a new system of chemical mineralogy that was first published in the *Transactions of the Swedish Academy of Sciences* in 1824. Translated into Spanish (from the French), it was separately published in Mexico, with critical comments by Andrés Manuel Del Rio (1764–1849), professor of mineralogy at the newly founded Colegio de Minera in Mexico City and author of the first textbook of mineralogy to be published in the Americas (*Elementos de Orictognosia*, Mexico City, 1795, 1805). The D.S.B. describes Del Rio’s comments as important additions. Very rare. Not in the usual chemical bibliographies. (D.S.B., XI, 464–465; Holmberg, *Bibliografi över J. J. Berzelius*, I, 61, 36; Weeks, *Discovery of the Elements*, 6th ed., 1960, pp. 400, 404)

BERZELIUS, Jöns Jacob

Nova Analysis Aquarum Medeviensium. Quam venia ampliss. ord. philos. p. p. praeses Mag. A.G. Ekeberg chem. adjunctus Reg. Acad. Scient. Stockh. Membr. et auctor Jacobus Berzelius Oetrog. Stip. Strandb. In audit Gust. Maj. D. VI Decemb. MDCCC.

Uppsala: Litteris Joh. Fr. Edman, Reg. Acad. Typogr. (1800).

First edition. 4to. 15, (1) pp. Fine copy with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

THE FIRST publication by the great Swedish chemist Berzelius (1779–1848). In the summer of 1800, Sven Hedin, chief physician at the Medevi mineral springs, took Berzelius as his assistant. There Berzelius began his chemical career by analyzing the mineral content of the spring water.

He published the results in the present thesis, which he presented at the University of Uppsala on 6 December 1800. Bergman had written on the same subject in 1782, and Berzelius carefully compares his own findings with those of Bergman. He reports the presence of salts not mentioned by Bergman (e.g., calcium and magnesium carbonates, sodium and calcium sulphates, and silica). A rare work, not in Cole, Duveen, Smith, Wellcome, etc. (Bolton, 310; D.S.B., II, 91; Edelstein, 272; Ferchl, 42; Holmberg, *Bibliografi över Berzelius*, p. 10, No. 1; Partington, IV, 142; Poggenдорff, I, 172; Waller, 11079)

BERZELIUS, Jöns Jacob

Om Blåsrörets Användande i Kemien och Mineralogien. Af Jac. Berzelius.

Stockholm: Tryckt hos Direct. Henr. A. Nordström. 1820.

First edition. 8vo. 5 leaves, 302 pp., 1 leaf. With 4 large folding engraved plates of apparatus (depicting 35 figures). Small old ink mark at top of title page; otherwise very fine copy in pristine condition, in original gilt-ruled half calf, marbled boards, citron morocco label gilt.

AN ABSOLUTELY complete copy of the very rare first Swedish edition, containing the required preliminary ten pages (see Holmberg, *Berzelius*, 1820, No. 1), not six pages or eight pages, as stated by Bolton and Partington, respectively. The dedication leaf to Herrar Ledamöter is an insert. The first exhaustive treatise dealing with the analysis of minerals using the blowpipe. Berzelius carried out a great deal of mineralogical analysis making considerable use of the blowpipe, and thus popularized this technique. A very important milestone work in analytical chemistry, which was rapidly translated into French by Fresnel (Paris, 1821), into German by H. Rose (Nürnberg, 1821) and into English by J. G. Children (London, 1822). Not in Duveen, Hoover, Morgan, Smith, Wellcome, etc. (Bolton, 310; D.S.B., II, 93; Edelstein, 273; Ferchl, 43; Partington, IV, 146; Poggenдорff, I, 173; Szabadváry, *History of Analytical Chemistry*, 1966, 54; Waller, 11080)

BERZELIUS, Jöns Jacob

Théorie des Proportions Chimiques, et Table Synoptique des Poids Atomiques des Corps Simples, et de leurs Combinaisons les plus importants. . . . Deuxième Édition revue, corrigée et augmentée.

Paris: Firmin Didot Frères, . . . J.-B. Baillière. 1835.

Second edition. 8vo. 2 leaves, 477, (1) pp., 1 leaf (blank). Very fine, crisp copy, unpressed and uncut, in quarter morocco antique, marbled boards, spine gilt-ruled and dated, maroon morocco label, gilt, with original printed wrappers bound in.

THE REVISED, corrected, greatly enlarged, and final French edition of this important work, in which the table of atomic and molecular weights is considerably augmented. Very scarce. Not in D.S.B., Duveen, Edelstein, Ferchl, Morgan, Sondheimer, Thornton & Tully, Waller, Wellcome, etc. (Bolton, 308; Partington, IV, 147; Poggenдорff, I, 173; Smith, 52)

BERZELIUS, Jöns Jacob

Traité de Chimie par J. J. Berzelius. Traduit . . . sur des manuscrits inédits de l'auteur, et sur la dernière édition allemande. . . .

Paris: Firmin Didot Frères. 1829–1833.

First French edition. 8 vols., 8vo. I: 3 leaves, 482 pp., 1 leaf (errata); 3 folding engraved plates (Adam sc.). II: 2 leaves, 534 pp.; 2 folding plates. III: 2 leaves, 495, (1) pp. IV: 2 leaves, 708 pp., 1 leaf (errata). V: 2 leaves, 599, (1) pp., 18 leaves; 1 folding plate. VI: 2 leaves, 747, (1) pp. VII: 2 leaves, 758 pp. VIII: 2 leaves, 355, (1), 66 pp.; 1 folding table; 7 folding plates. All half titles, 13 plates, and table present. Fine, crisp set, in original gilt-ruled quarter calf, marbled boards.

AN EXCELLENT translation of Berzelius's *Lärbök*, made from the *Lehrbuch der Chemie*, translated by F. Wöhler. Volume I was translated by A. J. L. Jourdan and volumes II–VIII by Esslinger. The translators incorporated information from manuscript notes supplied by Berzelius, so that this French version "doit être regardée comme une véritable édition nouvelle." Berzelius supervised the translation, and in his preface (dated Stockholm, 20 Nov. 1828) he states that this edition contains many additions not in the German edition of Wöhler. The final volume comprises "Opérations et appareils chimiques." Berzelius designed and built many new types of chemical apparatus, which "were described in the various editions of his textbook and became standard pieces of equipment in laboratories all over the world" (D.S.B.). (Bolton, 309; D.S.B., II, 93; Duveen, 75; Edelstein, 275; Honeyman, 310; Partington, IV, 145; Smith, 52; Sondheimer, 167; Thornton & Tully, 217; Wellcome, II, 156)

BERZELIUS, Jöns Jacob

Traité de Chimie Minérale, Végétale et Animale, par J. J. Berzelius. Seconde Édition Française, traduite avec l'assentiment de l'auteur, par MM. Esslinger et Hoefer, sur la cinquième édition que publié M. Berzelius à Dresden et à Leipzig. . . .

Paris: Chez Firmin Didot Frères. 1845–1850.

Second French edition. 6 vols., 8vo. I. 3 leaves, 849, (1) pp.; 2 folding plates (H. Roux aîné sc.). II: 2 leaves, 760 pp.; 1 plate

(H. Roux aîné). III: 2 leaves, 621, (1) pp. IV: 2 leaves, 615, (1) pp. V: 2 leaves, 688 pp. VI: 2 leaves, 906 pp. All half titles and plates present. Woodcuts in text. A splendid set in essentially mint condition, in original green quarter morocco, marbled boards, spines gilt-lettered.

THE DEFINITIVE final French edition, translated by Esslinger and Hoefer from the fifth German edition (5 vols., Dresden and Leipzig, 1843–48). According to Partington, this edition was not completed. Bolton erroneously states that eight volumes were published, but the edition is complete in six. Not in Edelstein, Morgan, Sondheimer, Waller, Wellcome, etc. (Bolton, 309; Duveen, 76; Partington, IV, 145; Smith, 52; Thornton & Tully, 217)

BERZELIUS, Jöns Jacob

Untersuchung der Mineral-Wasser von Karlsbad, von Teplitz und Königswart . . . Aus den Schriften dieser Gesellschaft übersetzt von Dr. Gustav Rose, herausgegeben mit erläuternden Zusätzen vom Professor Dr. Gilbert.

Leipzig: Barth'sche Buchhandlung. 1823.

First separate printing in German. 8vo. vi, 124 pp. (p. 124 misnumbered 126). Fine copy in original printed wrappers, in patterned boards antique. Ownership stamp on title: Dr. C. Becher, Karlsbad.

AN ACCOUNT of the mineral spring waters of Karlsbad, Teplitz, and Königswart, which originally appeared in 1822 in the *Transactions of the Royal Academy of Sciences of Stockholm*, to which Berzelius was a frequent contributor. Translated by Gustav Rose into German, the text then appeared in Gilbert's *Annalen der Physik* (1823). The work was written as the result of a visit to Karlsbad by Berzelius in 1822 and his discovery of various salts in the waters there. Chemical analyses of the springs are listed, and these are compared with mineral waters in other parts of the Continent and Great Britain. Rare. Not traced in the usual chemical bibliographies. (Poggendorff, I, 174)

BERZELIUS, Jöns Jacob

A View of the Progress and Present State of Animal Chemistry, . . . Translated from the Swedish, by Gustavus Brunmark, D.D. . . .

London: Printed for John Callow, . . . by J. Davy. 1818.

First edition, second issue. 8vo. vii, (1), 115, (1) pp. + 4 pp. (advertisements). Fine copy, unpressed and uncut, in original boards, rebacked, printed paper label.

THE SECOND issue of the first edition, being the sheets of the first issue (London: J. Hatchard, 1813), with a new half title and title attached to the stub of the original title leaf

(see Melhado). Berzelius was elected to the Royal Academy of Sciences in Stockholm in 1808 and in 1810 gave up its presidency. "The Royal Academy . . . elects its President every half year from among its Members; and it is required, by the statutes . . . that whoever has filled that office should, upon leaving it, read an Essay . . . on some literary or scientific subject. This regulation gave rise to the present Treatise" (preface). Effectively an abridgement of his much larger *Föreläsningar i Djurkemi* (Stockholm, 1806, 1808, 2 vols.), Berzelius here reviews the state of organic and biochemistry. Brunnmark, chaplain to the Swedish Legation at the Court of St. James, was assisted and the translation was revised by Thomas Young and William Allen. Very rare. Blocker (p. 35) and Watt (I, 163a) list the first issue. Not mentioned by the usual bibliographies. (E. M. Melhado, *Jacob Berzelius*, 1981, p. 335; Partington, IV, 147; Wellcome, II, 156)

BESSON, Jacques

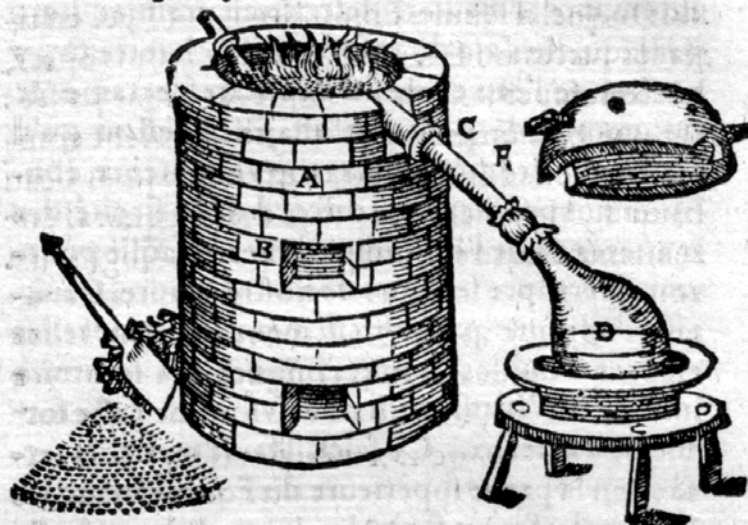
Art et Moyen parfait de tirer Huyles et Eaux, de tous Medicaments simples & Oleagineux. Premièrement Receu d'un certain Empirique qu'on estimoit Alleman, & depuis confirmé par raisons & experiences. Nouvellement corrigé & augmenté d'un second Livre, par Iacques Besson, Daulphinois, Professeur és Sciences Mathematiques.

Paris: Pour Galiot du Pré, Rue S. Iaques, à l'enseigne de la Gallere d'or. 1573.

Second French edition. 8vo. 32 leaves (foliation erratic). Large woodcut on title (galley ship in full sail) and numerous woodcuts of distillation apparatus, furnaces, etc. in the text. An exceptionally fine copy, crisp and in pristine condition, sumptuously bound in crimson crushed levant morocco, inner dentelles gilt, spine gilt-lettered and dated.

BESSON (fl. 1559) was professor of mathematics at Orléans in 1569, but he died before his well-known *Théâtre des Instruments mathématiques et mécaniques* (edited by F. Beroald, Lyon, 1578) was published. He was also interested in geology and wrote a book on springs (*L'Art et Science de trouver les Eaux et Fontaines cachés sous Terre*, Orléans, 1569). His important work on distillation (*De absoluta ratione extrahendi Olea et Aquas a Medicamentis simplicibus*, Zürich, 1559, sm. 8vo., 42 pp.), which describes processes for the extraction of oils, waters, and medicines, was translated into French (Paris, 1571), of which this is the second, final, and best edition. Besson lists the herbs, seeds, woods, and aromatics to be distilled, and describes clearly the furnaces and apparatus and how the oils are separated from the aqueous portions of the distillate. A milestone work in the history of sixteenth-century distillation. All editions are very rare, and a copy in as beautiful condition as this is virtually

De tirer huile des medicam. simples. 25
encores pour mesme vsage à cause qu'elle retiēt
tousiours quelque faculté de la subitāce, où elle



auoit esté mēlée. Aussi qu'elle peut seruir à 2.
voire 3. séblables infusiōs. Apres le recipiāt osté
en faudra remettre vn autre, qui soit demy plain
d'eau claire, dās leq̄l distille l'huile. No^o disōs le
recipiāt deuoit estre demy plain pour l'épireume,
ou vice lequel par trop forte ebulitiō l'huile au
roit peu cōceuoit, se peut ainsi aisémēt corriger:
& l'huile sās aucūe exhalatiō cōseruer. Ce qui se
peut encor' plus cōmodément faire, si on met le
recipiāt dās vn bassin, ou autre vase, réply d'eau
froide laquelle tu puisses souuētes fois chāger, iuf
ques à tāt q̄ la distillatiō soit acheuée. Ce que tu
peux voir ē la presēte fig. c. Tu pourras aussi, vne
foys ou ii. chāger le vaisseau receuāt l'huile (si tu
le trouues bō) pour cōgnōistre la differēce des
huilles. Aussi fault separer l'huile d'auec l'eau

Dii

unique. The text was appended to the *Praxis Alchymiae* (Frankfurt, 1604) of Libavius. Not in Duveen, Ferguson, Neu, Smith, Watt, etc. (Durling, 567; Ferchl, 44; Ferguson Coll., 89; Forbes, 366; Partington, II, 88; Thorndike, V, 589; Wellcome, I, 828)

BETHE, Johann Christian Jacob

De Antiquitatis Re Metallica Commentatio quam conscripsit Johannes Christianus Jacobus Bethe minister verbi divini et literarum humaniorum in Lyceo Clausthaliensi doctor Clausthaliae MDCCCXI.

Brescia: Ex Officina Bettoniana. 1814.

First edition. 8vo. 116 pp., 2 leaves (errata). Fine crisp copy, uncut, with wide margins, in original half vellum, boards.

A VERY RARE treatise on the knowledge of mining and metallurgy possessed by the ancient Greeks and Romans, written by a schoolmaster at Klausthal near Halberstadt, Germany, in response to the Literary Society of Brescia's offer of a prize for a dissertation on this subject. Silver, lead, and copper were mined at Klausthal, where there was also a famous mining college and mineralogical museum. Unknown to the usual bibliographers and not traced in the *Gesamtverzeichnis*, 1700–1910.

BEVERWYCK, Jan van

Autarkeia Bataviae, sive Introductio ad Medicinam Indigenam.

Leyden: Ex Officia Davidis Lopez de Haro. 1663.

First edition, second issue. 12mo. 1 leaf, pp. 3–162. Woodcut printer's device on title page. Fine copy, in contemporary vellum. Bound with: Thomson, G., *Chymiatrorum acus magnetica* (Frankfurt, 1686).

AN INTERESTING iatrochemical and medical work. Although sometimes described as the second edition, this is in fact the second issue of the first edition and is composed of the sheets of that edition. The paper used for the title leaf has different chain- and wire-lines from the paper used in the rest of the book and is slightly thinner. This edition not in the usual chemical and medical bibliographies. (Manget, *Bibliotheca Scriptorum Medicorum* [1731], I, pt. 1, p. 298; Watt, I, 110d)

BEVERWYCK, Jan van

Idea Medicinae Veterum. Ioh. Beverovicus concinnavit.
Leyden: Ex officina Elseviriorum. 1637.

First edition. 8vo. 4 leaves, 390 pp., 5 leaves. Title in red and black, with woodcut printer's device. Fine copy in contemporary unlettered vellum.

BEVERWYCK (1594–1647) studied at Leiden, Paris, Montpellier, and Padua and became professor of medicine at Dordrecht. A correspondent of Gui Patin, he was a councillor, then burgomaster, and president of the Admiralty. He published several medical works, including this one on ancient medicine, which is of chemical interest for its descriptions of pharmaceutical preparations. In his *De calculo renum et vesicae* (Leyden: Elsevir, 1638) he gave an account of Harvey's theory of the circulation of the blood and corresponded with Descartes on this subject (see Osler). A rare book, which is not in Cole, Cushing, Garrison and Morton, Neu, Osler, Watt, etc. (Thorndike, VIII, 411; Waller, 12683)

BEVIS, John

An Experimental Enquiry concerning the Contents, Qualities, and Medicinal Virtues, of the Two Mineral Waters, lately discovered at Bagnigge Wells, near London; with Directions for drinking them, and some Account of their Success in obstinate Cases. By John Bevis, M.D., Fellow of the Royal Academy of Sciences at Berlin. . . .

London: Printed for J. Clarke, . . . J. Shuckburgh, . . . and J. Walter, . . . 1760.

First edition. 4to. 2 leaves, 61, (1) pp., 1 leaf. Fine crisp copy, with some outer margins untrimmed, in half calf antique, marbled boards, maroon morocco label, gilt.

THE ONLY book dealing exclusively with the chemical properties and medicinal uses of these wells. Bevis (1693–1771) describes forty-seven analytical experiments he carried out to determine the mineral content of the waters. Duveen states that the Bagnigge Wells were “situated where the Kings Cross Road now runs.” The author was trained as a physician and practiced medicine in London before 1730. Elected F.R.S. in 1765, he became foreign secretary of the Royal Society (1766–71). A close friend of Halley, Bevis abandoned medicine to study astronomy and soon gained eminence in that field. He “was a diligent observer, who published astronomical and medical works” (D.N.B.). Poggendorff lists several works by Bevis, but not the present title. Neu records only the second edition (London: J. Newberry, 1767). Rare. Not in Bolton, Ferchl, Partington,

Smith, etc. (Duveen, 77; Waring, 708; Watt, I, 110f; Wellcome, II, 160)

BIBLE

The Holy Bible, Containing the Old Testament and the New: Newly translated out of the Original Tongues, and with the former Translations diligently Compared and Revised, by His Majesties special Command. Appointed to be read in Churches.

Oxford: Printed at the Theater and are to be sold by Thomas Guy at the Oxford Arms in Lombard Street near Popes-Head-Alley. London. 1689.

8vo. Unfoliated. 2 leaves (title, dedication), A–Dddd8; A–E8, F4. Signature Kkk7 is title page to the New Testament. Very good copy, in contemporary dark-blue unlettered calf, spine richly gilt, both covers gilt-ruled with rectangular gilt panel in center, all edges gilt.

A King James I version of the Bible. The title of the New Testament has the imprint “Oxford, Printed at the Theater, and are to be sold by Peter Parker at the Leg and Star, over against the Royal Exchange in Cornhill, London. Anno Dom. 1689.” The main title has a woodcut of Oxford University, and the title of the New Testament has a woodcut of the Sheldonian Theatre. Very rare. No copies recorded in the United States. Only three copies are listed by Wing B2353: British Library; British and Foreign Bible Society, London; Bodleian Library, Oxford.

BIBLIA LATINA

Biblia Latina. (Colophon:) Explicit biblia ipressa Venetijs per Leonardum vuuld de Ratisbona expensis Nicolai de frankfordia. M.CCCC.LXXVIII. (Venice, 1478).

Folio. Double columns, 52 lines and headline. All capitals beautifully inserted in red and blue by hand, with very elaborate colored penwork down the margins on many pages. Lacks 5 leaves at the beginning (a1 blank–a4, and a8), and 2 leaves in Isaiah; otherwise a magnificent incunable printed on thick paper with wide fore- and lower margins. Bound in richly blind-stamped cream-colored calf antique, over heavy oak boards (simulating a fifteenth-century binding).

A SUPERB EXAMPLE of an illuminated early Bible, printed just twenty-three years after the first Gutenberg Bible of 1455. In his introduction to the British Library Catalogue (vol. V), Victor Scholderer describes it as a “particularly fine specimen of plain printing.” It is in fact the best work of Leonard Wild, who on 14 March 1478 contracted with Nicolaus de Frankfordia to deliver to him by the following

July 930 copies of this Bible. Owing to their heavy use, early Bibles frequently lack a few leaves, and of the five incunable Bibles (1489–1498) in the Wellcome Library, four are very seriously imperfect. Apart from the seven missing leaves, this copy is remarkably complete and in excellent condition. Very rare. (British Library Cat., V, 264; Goff, B588; Hain, 3067)

BIBLIOTHECA METALLICA

Bibliotheca Metallica, oder Bergmännischer Bücher-Vorrath, vorstellend auf dem Ersten Repositorio, Decemviros, das ist: Dehn Gelehrte Männer welche von Bergwercks-Sachen theils ausführlich, theils beyläuffig, geschrieben haben, allen Bergwercks-Liebenden zum Unterricht und Nutzen, mit Fleiss und Mühe zusammen getragen, in Quartale Reminiscere, Anno MDCCXXVIII, durch einen Bau-lustigen Brund-Herrn Edler Bergwerke.

Leipzig: Gedruckt bey Christoph Zunkel. (1728).

First edition. 4to. 300 pp. Three parts in one (all published). Fine copy in original speckled boards.

A FASCINATING AND virtually unknown early bibliography of mining and metallurgy, compiled by an anonymous editor. Printed quarterly—the present three parts were all that appeared—this work created a source of reference for persons interested in the mining industry and those who wished to use or acquire books not easily available to the public. The formal arrangement of the bibliography is quite unusual: some authors are represented by whole chapters of their works; others by excerpts, a table of contents, or an index; others again by nothing more than the reproduction of the text of a title page. The works included concern all aspects of the mining industry: history, geology, practical chemistry and physics, mechanics and machinery, management, accounting, legal aspects, and even medical problems arising from working underground or in the mountains. A valuable sourcebook for tracing early works not included in the standard bibliographies. Bolton (p. 4) lists a similar title (Dresden, 1730, 4to.), possibly a reprint. Extremely rare. Not in N.U.C. (B.M.C., 3, p. 383)

BICKER, Johann Bernd

Dissertatio Philosophica Inauguralis de Igne quam, auspice deo optimo max ex Auctoritate Magnifici Rectoris, Johannis Horthemels, Phil. Doct. hujusque Facultatis Professoris Ordinarii . . . pro gradu doctoratus & magisterii summisque in Philosophia & Artibus liberalibus . . . Publico examini submittit Johannes Bernd Bicker, Henr. Fil. Amstelaedamo-Batavus.

Trajecti ad Rhenum (Utrecht): Ex Officina Joannis Broedelet, Academiae Typographi. 1765.

First edition. 4to. 2 leaves, 106 pp., 1 leaf. Minor repair to inner margin of title leaf (no loss) and slight browning of paper; otherwise very good copy with wide margins, in modern Cockerell boards, gilt-lettered brown morocco label.

A DOCTORAL DISSERTATION on fire, presented to the faculty of philosophy of Utrecht University by Bicker, of whose life nothing seems to have been recorded. Almost entirely chemical in content, this work contains extensive discussions of the nature and properties of phlogiston, increase in weight of metals when converted to their calces, production of phosphorescent materials, electrical and magnetic properties of substances, etc. Chemical works by Boerhaave, Drebbel, Newton, Stahl, et al., are cited. A table (p. 95) lists the temperatures attained (in degrees Fahrenheit) on mixing various ratios of concentrated sulphuric acid and water. Endothermic mixtures of sulphuric acid with ammonium chloride and other salts are also described (pp. 96–98), with reference to Boyle's experiments on the production of heat and cold. A rare and important mid-eighteenth-century review of fire, its nature, and chemical effects, which appears to be unknown to the bibliographers.

BIGGS, Noah

Mataeotechnia Medicinae Praxeos. The Vanity of the Craft of Physick. Or, A New Dispensatory. Wherein is dissected the Errors, Ignorance, Impostures and Supinities of the Schools, in their main Pillars of Purges, Blood-letting, Fontanels or Issues, and Diet, &c. and the particular Medicines of the Shops. With an humble Motion for the Reformation of the Universities, and the whole Landscap of Physick, and discovering the Terra incognita of Chymistrie. To the Parliament of England. By Noah Biggs, Chymiatrophilos. . . .

London: Printed for Giles Calvert, at the signe of the Black Spread-Eagle at the west-end of Pauls. 1651.

First edition. 4to. 16 leaves, 232 pp. Very good copy, in blind-stamped contemporary calf, rebounded, with arms of Society of Writers to the Signet in gilt on both covers.

IN THIS iatrochemical work dedicated to the Parliament, Biggs (dates unknown), an admirer of Oliver Cromwell's

Commonwealth government, deplores the inadequate education of physicians. He proposes the establishment of an "Academy of Philosophick freedom" and urges Parliament to order the universities to teach chemistry when training physicians. The immense value of a knowledge of chemistry to physicians and apothecaries is stressed. A poem (signature C3) full of chemical allusions, praising Biggs, is signed "R. B. Iatrophilos." Could "R. B." have been Robert Boyle, who in 1651 was only twenty-four years old? It is known that Boyle wrote many poems when young, before he turned his attention in earnest to science and theology (see L. T. More, *Life and Works of Boyle*, 1944, p. 40). Biggs describes himself as "Chymiatrophilos," and, as an advocate of chemistry, he and Boyle possibly knew each other. A poem by "W. R. Mystica-Physophilos" (signature C1) confirms that Biggs (like Boyle) was also young. Wellcome (II, 166) lists a copy with "Edward Blackmore" in the imprint. (Cooper, 32; Cushing, B394; Ferguson Coll., 91; Krivatsy, 1254; Neu, 458; Wing, B2888)

BILFINGER, Christian Ludwig

Dissertatio Inauguralis Chémico-Médica, de Vitro Antimonii Cerato. . . Praeside . . . Philippo Friderico Gmelin, . . . pro licentia, summos in medicina acquirendi honores, a. d. (blank) April. 1756. Defendet auctor Christianus Ludovicus Bilfinger, Sielmingensis.

Tübingen: Typis Erhardti. (1756).

First edition. 4to. 40 pp. Large ornamental woodcut head-piece on signature A2. Fine copy, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

THE DOCTORAL dissertation of the celebrated German physician Bilfinger (1736–1803), presented under the direction of P. E. Gmelin (1721–1768), professor of medicine, chemistry, and botany at Tübingen. Bilfinger discusses the chemical and medicinal properties of glass of antimony (i.e., impure antimony tetroxide, Sb_2O_4 , prepared by roasting stibnite, Sb_2S_3). The fused "glass" contains unchanged stibnite and is now used for coloring porcelain and glass yellow. There are many references to earlier and contemporary chemists (e.g., Basil Valentine, Boyle, Morley, Geoffroy, Macquer, and Vogel). Blake, Blocker, and Wellcome list Bilfinger's important book on tetanus (*De Tetano*, 1763) but not the present work. Rare. Not in the usual chemical and medical bibliographies. (Poggendorff, I, 914; Wing, 237)

BILHUBER, Joseph Friedrich

Dissertatio Inauguralis Chemico Medica de Magnesia Cruda atque Calcinata. . . Praeside . . . Christiano Frid. Jaeger . . . Pro gradu doctoris medicinae die (blank) Nov. MDCCLXXIX. Publico examini submittit . . . Josephus Fridericus Bilhuber Uracensis.
Tübingen: Typis Reissianis. (1779).

First edition. 4to. 44 pp. Fine, crisp copy, on thick paper, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

AN IMPORTANT dissertation on the preparation, chemical, physical, and medicinal properties of magnesium carbonate, oxide, and hydroxide, presented by Bilhuber under the direction of the professor of medicine at Tübingen, Christian Friedrich Jaeger. The work is a well-documented summary of the subject, with many references to the classic researches of Joseph Black as well as to those of Bergman, Macquer, Monnet, Spielmann, et al. Ferchl erroneously gives the author's first name as Johann, and Waring lists this title under Jaeger. Very rare. Unknown to historians of chemistry and medicine, it is not in the usual bibliographies. (Ferchl, 46; Waring, 552)

BILLICH, Anton Günther

Ad Animadversiones, Quas Anonymus quidam in Angeli Salae Aphorismos Chymiatricos conscripsit: Antoni Guntheri Billichii Frisii Responsio.
Leyden: Excudebat Godefridus Basson. 1622.

First edition. 8vo. 101, (1) pp., 1 leaf (blank). Woodcut device on title. Occasional minor water stains; otherwise very good copy in contemporary vellum. Bound with: Sala, Angelo, *Anatomia antimonii* (Leyden, 1617), and 5 other works.

A DEFENSE OF Angelo Sala's *Chymiatric Aphorisms*. Billich, the son-in-law of Sala, begins the book by defining the two main operations of chemistry: fire and solvents. In twenty-four chapters he proceeds to discuss metals, salts, minerals, vitriols, acids, potable gold, products obtained from plants and animals, balsams, etc. Some authorities (e.g., Ferguson) give a different wording of the title: *Responsio in animadversiones. . .* Possibly there were two states of the title page? Rare. Not in Duveen, Krivatsy, Neu, Wellcome, etc. (Ferchl, 46; Ferguson, I, 107 [not in Young Coll.]; Ferguson Coll., 91; Partington, II, 280; Thorndike, VII, 169)

BILLICH, Anton Günther

Antoni Guntheri Billichii Frisi Archiatri Oldenburgensis Observationum ac Paradoxorum chymiatricorum Libri Duo: Quorum Unus medicamentorum Chymicorum praeparatione(m): Alter eorundem usum succinctè perspicuè; explicat.
Leyden: Ex officina Ioannis Maire. 1631.

First edition. 4to. 4 leaves (including finely engraved title page by Gerart Muntinck), 1 leaf (blank, stub only remaining of sign. B1, but conjugate with sign. B4; catchword on p. 8 agrees with that on p. 11), pp. 11–173, (1). An exceptionally fine and crisp copy in contemporary limp vellum with ties. From the Glyndebourne Library, with bookplate on front pastedown endpaper.

CONTINUING THE attack on the Paracelsian *tria prima*, which he had begun in his *De Tribus Chymicorum Principiis* (Bremen, 1621), Billich here presents a number of chemical paradoxes and rejects the *tria prima* altogether. He criticizes the arrangement of chapters two to five in the first book of Jean Beguin's *Tyrocinium Chymicum*. In addition to Beguin, Billich also criticizes the various iatrochemical preparations described in the works of Croll, Du Chesne (Quercetanus), Paracelsus, and other chemists. The book contains numerous descriptions of pharmaceutical chemical preparations, from animals, vegetables, and minerals, with their supposed physiological actions on man. Rare. Not in Bolton, Borel, Caillet, Cushing, Ferguson Coll., Guaita, Mellon, Morgan, Osler, Reynolds, Smith, Waite, Waller, Watt, etc. (Baumer, 14; Duveen, 78; Ferchl, 46; Ferguson, I, 107; Lenglet du Fresnoy, III, 123; Neu, 462; Partington, II, 281; Poggendorff, I, 190; Rosenthal, 151; Sondheimer, 179; Thorndike, VIII, 114; Wellcome, I, 865)

BILLICH, Anton Günther

D.O.M.A. De Tribus Chymicorum Principiis, et Quincta Essentiâ Exercitatio. Anton. Gunther. Billichii Medicinar. Licent. & Med. Oldenburg. ordin.
Bremen: Apud Thomam Villerianum, anno 1621.

First edition. 8vo. 4 leaves, 69, (1) pp., 1 leaf (blank except for large woodcut printer's device). Very good copy in modern brown half calf, cloth, spine gilt-lettered.

BILLICH (1598–1640), son-in-law of Angelo Sala and private physician to the Count of Oldenburg, studied medicine under Henning Arnisaeus, a professor at Helmstedt. He defended Sala and had a controversy with Peter Lauremberg. Billich was a good chemist (and was quoted by Boyle) and wrote on fermentation, the vanity of the Spagirists, and related subjects. He claimed to prove (against Beguin) that the Paracelsian *tria prima* (i.e., philosophical salt, sulphur, and mercury) were really made up of the Aristotelian

four elements (air, earth, fire, and water), illustrating his arguments by the experiment on burning wood that was later also used by Boyle. *De Tribus Chymicorum Principiis* is Billich's first book, and in it he writes against the Paracelsian *tria prima*. Ferguson states that Billich was "a clear expounder of facts and principles for which he is commended." He was one of the earliest chemists to challenge the then-prevalent Paracelsian doctrines. Very rare and important in the history of the theories of chemical elements. Not in Caillet, Cushing, Ferguson Coll., Guaita, Mellon, Morgan, Osler, Poggendorff, Reynolds, Rosenthal, Smith, Sondheimer, Waller, Watt, Wellcome, etc. (Baumer, 13; Bolton, 313; Borel, 47; Duveen, 77; Ferchl, 46; Ferguson, I, 107 [not in Young Coll.]; Lenglet du Fresnoy, III, 122; Neu, 461; Partington, II, 281; Thorndike, VIII, 113; Waite, 281)

BINET, Etienne

Essay des Merveilles de Nature, et des plus Noble Artifices. Piece tres-necessaire, à tous ceux qui font profession d'Eloquence. . . . Quatriesme edition. Reveuë, corrigée, & augmentée par l'Autheur.

Rouen: Chez Romain de Beauvais, pres le grand Portail nostre Dame. 1624.

Fourth edition. 4to. 6 leaves, 600 pp., 1 leaf. Woodcut printer's device on title page, woodcut capitals, head- and tailpieces, and many figures in text. Very good copy in original vellum. From the library of the great French-Italian scientist and mathematician Joseph Louis Lagrange (1736–1813), with his signature (M. De la Grange) and several lines of handwriting on front pastedown endpaper and verso of final leaf of text.

PUBLISHED UNDER the pseudonym René François, the author was Etienne Binet (1569–1639), a Jesuit of Dijon who died in Paris. This book of secrets first appeared in a handsome quarto at Rouen in 1621. Immediately popular, at least seven quarto editions were published between 1621 and 1629, and these were followed by at least six in octavo (1644–1657). An encyclopedic work containing detailed information on metals, gilding, iatrochemistry, medicine, and many other subjects. Ferguson (*Books of Secrets*, II, 3rd supplement, pp. 43–44) and Thorndike (VIII, 270–271) discuss Binet and this book. Other editions are listed by Caillet, Guaita, Wellcome, etc. This edition is not in the British Library or the usual bibliographies.

BIOT, Jean Baptiste

Instructions Pratiques sur l'Observation et la Mesure des Propriétés Optiques appelées Rotatoires, avec l'exposé succinct de leur application à la chimie médicale, scientifique et industrielle . . .

Paris: Bachelier, Imprimeur-Libraire . . . J.-J. Baillièrre. 1845.

First edition. 4to. iv, 47, (1) pp. Diagrams in text. Fine copy with wide margins, uncut, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated, original printed wrappers bound in.

BIOT HERE describes the construction and use of the apparatus for measuring the optical rotation of organic liquids and aqueous solutions of optically active compounds. He discusses the practical applications of these measurements in medicine and industrial chemistry. This work is listed among Biot's "most important books" (D.S.B.). Very scarce. Not in the usual chemical bibliographies. (D.S.B., II, 140; Poggendorff, I, 195; Wellcome, II, 169)

BIOT, Jean Baptiste

Mélanges Scientifiques et Littéraires . . .

Paris: Michel Levy Frères, Libraires-Éditeurs. 1858.

First edition. 3 vols., 8vo. I: 2 leaves, iv, 472 pp. II: 2 leaves, 462 pp. III: 2 leaves, 532 pp. With half titles and 2 maps (1 folding). Very good set, in original gilt-ruled maroon quarter sheep, marbled boards (worn). From the library of Stanislas Meunier (1843–1925), with his stamp on each title.

ONE OF the last works by Biot, this important collection of memoirs, essays, and lectures includes some of chemical interest. Among the many topics covered are the scientific contributions of Cavendish, Franklin, Hassenfratz, Lavoisier, and Regnault. Also discussed are the voyages of discovery by Cook and others, plus biographical material on Galileo, Laplace, and Napier. The first volume contains a long section on Newton (pp. 121–417). This set has a distinguished provenance, having once belonged to the celebrated French geologist Meunier. Not in Babson or Gray. (D.S.B., II, 140; Roller, 58; Wallis, 365.4)

BIOT, Jean Baptiste

Précis Élémentaire de Physique Expérimentale, . . . Ouvrage destiné à l'enseignement public, par Arrêté de la Commission de l'Instruction publique, en date du 22 fév. 1817. . . .

Paris: Chez Deterville. 1817.

First edition. 2 vols., 8vo. I: x, 576 pp.; 6 folding engraved plates (by Adam and Thierry). II: 2 leaves, iv, 608 pp.; 8 folding plates. The half titles state that there are 12 plates, but 14 are present (no duplicates). Fine, crisp copy, in original half calf, marbled boards, spines gilt-ruled.

BIOT (1774–1862), professor of physics at the Collège de France, first recognized the phenomenon of optical activity in quartz crystals. Establishing that rotatory dispersion and rotatory polarization (rotation of the plane of polarized light) are related to the wavelength of the light used, he showed that, for quartz, the rotation (α) is inversely proportional to the square of the wavelength ((λ) : $\alpha = k/\lambda^2$)

(Biot's law). He also announced in 1815 that various organic liquids would rotate the plane of polarized light and discovered the optical rotation of cane sugar in 1818. Although mainly on physics, this work contains much of chemical importance: e.g., chemical properties of gases, exothermic reactions, electrolysis, and Voltaic piles. In a long and important chapter (vol. II, pp. 397–500), Biot gives the first full exposition of the effect on plane-polarized light of various compounds. The phenomenon of the rotatory dispersion of light was emphasized later in the nineteenth century by Le Bel and van't Hoff to elucidate the stereochemical structures of many isomeric compounds, particularly optical isomers. The present pioneer work led to the later epochal discoveries of such giants as Pasteur, Le Bel and van't Hoff, and Werner. Partington (IV, 750–751) discusses the importance of Biot's work on optical activity. A second edition appeared in 1821, and a third in 1824. The first edition is rare. Not in the usual chemical bibliographies. (D.S.B., II, 140; Poggendorff, I, 195; Wellcome, II, 169)

BIOT, Jean Baptiste

Précis Élémentaire de Physique Expérimentale, . . . Ouvrage destiné à l'enseignement public, par l'arrêté de la Commission de l'Instruction publique, en date du 22 février 1817. Troisième édition. . . .

Paris: Chez Deterville. 1824.

Third edition. 2 vols., 8vo. I: xii, 678 pp.; 7 folding engraved plates (Thierry sculp.). II: 2 leaves, 786 pp.; 12 folding plates (by Adam, and Thierry; plate II is in 2 parts). Mint copy in original quarter calf, gilt, marbled boards, maroon morocco labels, gilt.

THE FINAL and most complete edition of this important work. One of the best textbooks of the period on physics, in which Biot reports the further investigations he made on the rotatory dispersion of plane-polarized light since the appearance of the first edition (Paris, 1817). Not in Caillet, Honeyman, Poggendorff, Waller, Wellcome, or the usual chemical bibliographies. (D.S.B., II, 140; Wheeler Gift, 809)

BIOT, Jean Baptiste

Sur les Modifications qui s'opèrent dans le Sens de la Polarisation des Rayons Lumineux lorsqu'ils sont transmis à travers des milieux solides ou liquides soumis à des influences magnétiques très-puissantes. . . .

Paris: Imprimerie Royale. 1846.

First separate edition. 4to. 2 leaves, 52 pp. Very fine copy with wide margins, uncut, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated, original plain blue wraps bound in.

AN IMPORTANT work in which Biot repeats the experiments of Faraday on the effects of a strong magnetic field on the polarized light passed through various transparent solids (e.g., minerals, inorganic salts, and organic compounds). Biot refers extensively to the earlier work of Newton and to the researches of more recent physicists. He demonstrates the connection between light and magnetism. This paper first appeared in the *Journal des Savants* (1846). No bibliographical reference to this historically significant publication has been located.

BIRCH, Thomas

The History of the Royal Society of London for Improving of Natural Knowledge, from Its First Rise. In which the most considerable of those Papers communicated to the Society, which have hitherto not been published, are inserted in their proper order, as a Supplement to the Philosophical Transactions. By Thomas Birch, D.D., Secretary to the Royal Society. . . .

London: Printed for A. Millar in the Strand. 1756–1757.

First edition. 4 vols., 4to. I: 3 leaves, 511, (1) pp. With 3 folding engraved plates. II: 1 leaf, 501, (1) pp. With 3 folding engraved plates. III: 1 leaf, 520 pp. IV: 1 leaf, 558 pp. Numerous woodcut diagrams. Possibly lacking plate 4 (vol. I); otherwise a very handsome set with wide margins, in fine condition throughout, in original gilt-ruled calf, rebacked, maroon and green morocco labels gilt. From the library of Professor Franz Sondheimer, with his bookplate in each volume.

THE DEFINITIVE history of the Royal Society from its beginning in 1660 to 1687. Birch presents the "whole . . . [in] a chronological order, as most proper for ascertaining the origin and improvements of the several discoveries in nature and inventions of art, and for doing justice to the claims of their respective authors" (preface). "Birch's *History* . . . reprints the minutes and register-books of the Society" (Knight). "The most important early work on the Royal Society" (Duveen). Numerous chemical experiments and discoveries are described. It is an indispensable reference work for the period covered. Although described as possibly lacking plate 4, the early copies were issued with three plates, as here. Only copies later off the press had four plates in volume I. Wallis describes many copies having three plates, so it is probable that the fourth plate was not ready for binding into the earliest issues. Careful examination shows that this copy never had more than three plates in volume I, so it must be considered complete as issued. (Blake, 48; D.S.B., XII, 583; Duveen, 78; Eales, 639; Edelstein, 305; Ferchl, 47; Harvey, 128; Knight, 44; Neu, 464; Osler, 6107; Partington, II, xiii; Sondheimer, 181a; Wallis, 366; Watt, I, 115n; Wellcome, II, 170)

BIRCH, Thomas

The Life of the Honourable Robert Boyle. By Thomas Birch, M.A. and F.R.S.

London: Printed for A. Millar, over-against Catharine-Street in the Strand. 1744.

First edition. 8vo. 3 leaves, 458 pp., 8 leaves. Woodcut vignette on title. Fine, crisp copy, in original calf, rebound, spine gilt-ruled and dated, green morocco label. Armorial bookplate: C. W. H. Sotheby.

IN SOME copies (as here) the date in roman numerals on the title page is erroneously printed MDCDXLIV. "This life, which is the chief early authority for a biography of Boyle, was also appended to the collected editions of his works" (Fulton). The long appendix (pp. 319–458) is of great American interest, as it includes *The Charter of the Corporation for propagating the Gospel in New England and Letters from John Eliot of New England to Mr. Boyle*. Boyle was the first governor of the corporation. Birch (1705–1766), secretary of the Royal Society (1752–65), was a Whig-affiliated minister. He published several historical and biographical works and bequeathed his manuscripts to the British Library (D.N.B.). (Blake, 48; Edelstein, 400; Fulton, 380; Keynes, 993; Neu, 465; Osler, 954; Partington, II, 486; Smith, 55; Waller, 16531; Watt, I, 115k; Wellcome, II, 170)

BIRINGUCCIO, Vanoccio

De la Pirotechnia. Libri X. Dove ampiamente si tratta non solo di ogni sorte & diversita di Miniere, ma anchora quanto si ricerca intorno a la prattica di quelle cose di quel che si appartiene a l'arte de la fusione over gitto de metalli come d'ogni altra cosa simile a questa. . . .

(Colophon:) Venice: Venturino Roffinello. Ad instantia di Curtio Navo, & Fratelli. 1540.

First edition. 4to. 8 leaves, 168 folios. Pictorial woodcut border around title, large woodcut printer's device on verso of title, and 84 large woodcuts in text. Roman letter. Minor water stain on first 8 leaves; otherwise a remarkably fine, fresh copy in pristine condition, in unlettered paneled calf antique.

THE FIRST comprehensive treatise on metallurgy and the first printed book on the technology of fabricating metals and the reduction of their ores. Biringuccio (1480–ca. 1539) was concerned with working in metals for profit and use. He employed power-driven machinery and worked on a large scale. His practical knowledge was gained almost entirely from his own experience. "The *Pirotechnia* is a prime source on many practical aspects of inorganic chemistry. Biringuccio emphasizes the adaptation of minerals and

metals to use—their alloying, working, and especially the art of casting, of which he writes in great detail. In this area he is far better than . . . Agricola and Ercker" (D.S.B.). Here is given the first account of the amalgamation process for the extraction of silver, the use of sodium chloride for separating gold and silver from baser metals, the first description of cobalt blue and manganese, the manufacture of steel, the earliest account of metallic antimony, etc. Also described are the preparation of salts, distillation of acids, glassmaking, manufacture of gunpowder and fireworks, etc. Agricola borrowed heavily from Biringuccio's work. Rare. Many later editions and translations appeared. (Bolton, 314; Dibner, 38; D.S.B., II, 143; Duncan, 1200; Duveen, 79; Hoover, 129; Partington, II, 32; Philip, 21; Wellcome, I, 873)

BIRINGUCCIO, Vanoccio

La Pyrotechnie, ou Art du Feu, contenant dix livres, ausquels est amplement traicté de toutes sortes & diversité de minieres, fusions & separations des metaux: des formes & moules pour getter artilleries, cloches, & toutes autres figures: des distillations, des mines, contremines, pots, boulets, fusées, lances, & autres feuz artificiels, concernans l'art militaire, & autres choses dependantes du feu. Composée par le seigneur Vanoccio Biringuccio Siennois. Et traduite d'Italien en Francois, par feu maistre Jaques Vincent. Avec privilege du Roy pour dix ans.

Paris: Chez Claude Fremy a l'enseigne S. Martin, rue S. Iaques. 1556.

First French edition. 4to. (4), 230 leaves. Woodcut printer's device on title, and 84 woodcuts in text. Roman letter. Very good copy with wide margins, in contemporary limp overlapping vellum, old ink titling on spine.

THE FIRST translation into French by Jacques Vincent of the original Italian edition (Venice, 1540). The privilege is dated September 1552, but the book was not published until 1556. "The text is excellently printed and the cuts are well copied. . . . Vincent's translation is not a good one, for it is full of omission, condensation, and misinterpretation" (C. S. Smith). Nevertheless, it was important because it introduced northern European workers to Biringuccio's treatise and was of value despite its shortcomings. Two later editions in French appeared (Paris, 1572; Rouen, 1627). German (Braunschweig, 1925) and English (New York, 1942) editions appeared only in the twentieth century, although excerpts in English were published in various works in the sixteenth century (see Smith & Gnudi). (Bolton, 314; *British Library, S.T.C. French Books*, 69; D.S.B., II, 143; Duncan, 1200; Duveen, *Supplement*, 7; Ferguson, *Books of*

DEL SAGGIARE L. M.

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metta vna pocha quantita, anzi sol tanto che facci quel pocho del fondo doue in vltimo si riduce l'argento, & di nuouo vifi ritorna sopra la forma de legno, & si ribatte, accio che luna cennare con l'altra si vnifcha bene, & dipoi si caua la coppella & si lassa asciugare, & se adoperara come intenderete.



Ma prima che piu oltre passi vi dico hauer veduto, & ancho hauer adoperato piu volte in luocho di coppella per necessita vn pezzo di coppo di tetto cauato con vno scarpello alquanto come vn cauo di coppella. Ma per che sonno per el fuoco facili a romparsi non si deue potendo far altrimenti adoperargli. Pure ve l'ho voluto dire accio che se non hauesse ne tempo ne modo daffar coppelle, & vi bisognasse saggiare qualche miniera d'argento vene potiate seruire.

A P P R E S S O alle coppelle e di necessita d'hauere vn fornello murato & fatto a modo dun torrioncello di forma quadra, & largo vn palmo di voto o pocho piu, alto da terra vn braccio & mezzo in circha, & da piei come se fusse la porta dela torre, sia vno aperto duna buchetta quadra, per laquale habbi da pigliar il vento, & da capo doue s'ha daffare il fuoco sia il vacuo de vn di quarti de braccio, & a vn palmo di sotto doue alquanto per restringersi fa vna pocha di rifidertia vifi fa a modo duna finestra vno apto quadro largo quattro dita, & piu basso vn dito o qualche cosa di piu, a questa sia fatta vna gratella di vergelle di ferro, messe discoste luna da l'altra pocho piu dun mezzo dito, & sopra a tal gratella al pari dela buchetta vifi mette vn pocho dun mattoncel tagliato che allarghi il piano dentro allentrata dela buchetta piu dun mezzo ditto in circha, & questo el fornello.

A P P R E S S O a questo si fa vno archetto di terra da crogioli o da pignatti o daltra che regghi al fuoco fatto a modo duna volticella largo quato e la buchetta dauanti o pocho piu, & verso el fuoco tanto che

Secrets, II, *First Supplement*, 21; Partington, II, 32; Philip, 22; Smith & Gnudi, *The Pirotechnia of V. Biringuccio* [1942], 460; Sotheran, Cat. 702 [1910], 6235 ["Extremely Rare"])

BIRKBECK, George

A Lecture on the Preservation of Timber by Kyan's Patent for Preventing Dry Rot; delivered by Doctor Birkbeck, at the Society of Arts, Adelphi; December 9, 1834. With an Appendix, &c.

London: Published by John Weale, &c. N.d. (1834).

First edition. 8vo. 1 leaf, 47, (1) pp. With 3 engraved plates and 1 lithographed plate. Fine copy in original printed wrapper, bound in nineteenth-century pebbled cloth, front cover gilt-lettered. Bound with: Faraday, Michael, *On the practical prevention of dry rot in timber* (London, 1837). From the library of Joseph Warner Henley (1793–1884), conservative politician (Oxfordshire M.P., 1841–78) and president of the Board of Trade (see D.N.B.), with his signature in ink on front wrapper.

BIRKBECK (1776–1841), M.D. (Edinburgh, 1799), was professor of natural philosophy at the Andersonian University, Glasgow. In 1800 he established cheap courses of lectures on science for working men in Glasgow, which developed into the Glasgow Mechanics' Institution, 1823. He practiced as a physician in London (see Munk, III, 59–60) and in 1824 founded and became first president of Birkbeck Mechanics' Institution, which later became Birkbeck College, University of London. The present lecture describes the process for preserving wood invented by John Howard Kyan (1774–1850), who began his experiments in 1812 and received a patent in 1832. The "Kyanizing" process consisted of steeping wood in a solution of mercuric chloride. It was found to be of great utility in preventing the development of fungal rot in railway sleepers, in discouraging the attacks of marine animals in the wood used to construct the hulls of ships, and in many other applications. There are references to Berzelius, Davy, Fourcroy, De Candolle, et al., as well as letters of recommendation for the Kyan process from the British Admiralty, architects, government officials, and others (pp. 34–47). Very rare. Not in the usual bibliographies.

BIRRIUS, Martin

Tres Tractatus de Metallorum Transmutatione. Quid singulis contineatur, sequens pagina indicat. Incognito auctore. Adjuncta est Appendix Medicamentorum Antipodagricorum & Calculifragi. Quae omnia ad bonum publicum promovendum nunc primum in lucem edi curavit . . .

Amsterdam: Apud Johannem Janssonium à Waesberge, & Viduam Elizei Weyerstraet. 1668.

First edition. 8vo. 8 leaves, 110 pp., 1 leaf (blank). Large folding portrait of Birrius at age 38, dated 1663, drawn and engraved by Chr. Hagens. Very good copy. Bound with: Bracesco, Giovanni, *De alchemia dialogi duo* (Hamburg, 1673), and 2 other alchemical works.

BIRRIUS (b. 1625) was a doctor of philosophy and medicine who practiced in Amsterdam. Usually ascribed to Eirenaeus Philalethes, a pseudonymous author, these three tracts on the transmutation of metals were translated from the English into Latin and edited by Birrius. The tracts are *De metallorum metamorphosi* (pp. 1–50), *Brevis manuductio ad rubinum coelestem* (pp. 51–87), and *Fons chemicae philosophiae* (pp. 88–110). The preface contains testimonials by Daniel Sennert, Cornelius Martin, Conrad Horne, and Marcel Palingenius. The very rare portrait of Birrius is not present in the copies in the Young, Ferguson Collection, and the National Library of Medicine. "Birrius . . . experimented in Chemistry and exhibited certain substances to Morhof who describes them" (Ferguson). A copy of Morhof's *De metallorum transmutatione* (1673) is bound with the present book. (Duveen, 80–81; Edelstein, 306; Ferchl, 48 [wrong date, 1618]; Ferguson, I, 109; Ferguson Coll., 92; Kopp, *Die Alchemie*, II, 336; Krivatsy, 8946; Lengliet Dufresnoy, III, 123; Smith, 55; Verginelli, 45; Wellcome, II, 171)

BJÖRKMAN, Peter, and NYREN, Anders

De Corporum Mutationibus, praesertim ad Chemiam Relatis, . . . p.p. J. Gust. Waldenström, Phil. Mag. et Peter Björkman, Wermelandi (et Anders Nyren, Wermelandi).

Die 1 Junii MDCCCXVI. . . .

Lund: Litteris Berlingianis. (1816).

First edition. 4to. 1 leaf, pp. 1–8, (2), 9–20. Mint copy with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A DISSERTATION ON chemical dynamics and reactions in which a novel system of symbols is introduced in order to account for double decomposition and the formation of new compounds. A joint publication carried out under the direction of J. G. Waldenström, to which Björkman contributed the first eight pages and Nyren the remainder. The work is dedicated to Jöns Albin Eugeström (1787–1846), professor of chemistry and physics at the University of Lund. Apparently unrecorded.

BJÖRKSTEN, Jacob Johan

Dissertatio Chemica Animadversiones Celeberrimi Gmelin in Theoriam Lavoisierianam, de Natura Acidi Phosphorici Examinans. . . . Praeside Mag. Joh. Gadolin, . . . pro gradu publicae censurae subjicit Jacobus Joh. Björkstén, Stip. Segercrantz. Tavastensis. In Auditorio Majori die (blank) Februarii 1802.

Abo: Typis Frenckellianis. (1802).

First edition. 4to. 1 leaf, 21, (1) pp. Fine copy, uncut with wide margins, in maroon quarter cloth antique, marbled boards, spine labeled: Gadolin. Nature of Acids. 1801–1802.

A DISSERTATION ON the preparation, composition, and reactions of phosphoric acid, being one of a series of replies to the rejection by Johann Friedrich Gmelin (1748–1804) of Lavoisier's theory of acids (see Crell, *Chemische Annalen*, 1796, I, 399). Presented by Björkstén under the direction of Gadolin at Åbo, the oxidation of phosphorus in air is discussed, and the works of Götting, Kunckel, Lavoisier, Marggraf, Priestley, Stahl, et al. are cited. (Partington, III, 235)

BLACK, Joseph

Experiments upon Magnesia Alba, Quick-Lime, and other Alcaline Substances . . . To which is annexed, An Essay on the Cold Produced by Evaporating Fluids, and of some other means of producing Cold; By William Cullen . . .
Edinburgh: Printed for William Creech. 1777.

First separate edition. 8vo. 1 leaf, 133, (1) pp. With small woodcut (p. 120). Fine copy in original unlettered calf, rebacked. Enclosed in a blue morocco-backed, felt-lined, clamshell box.

BLACK (1728–1799) was the chief founder of chemistry as an exact science. His discovery that carbon dioxide is a distinct chemical compound different from air initiated the era of pneumatic chemistry. By the use of the balance and careful analysis, he demonstrated the quantitative relationship between carbon dioxide, magnesium oxide, and magnesium carbonate and also proved that lime (calcium oxide) and magnesia are different. The results were published in his doctoral dissertation of 1754 (Garrison-Morton, 919). In 1755 he read before the Philosophical Society of Edinburgh his *Experiments upon Magnesia Alba* (published in their *Essays and Observations*, 1756), which includes important matters not in his dissertation, from which the present text is reprinted. The “first successful model of quantitative chemical investigation, . . . a classic . . . of experimental science” (Guerlac). To this rare first separate edition is added (pp. 115–133) the essay by Black's teacher,

Cullen (1710–1790), containing the discovery of latent and specific heats (proposed by Black) that formed the basis of later discoveries by J. R. von Mayer, Joule, and Helmholtz. (Blake, 49; Bolton, 316; D.S.B., II, 181; Fyffe & Anderson, 14; Guerlac, *Isis*, 48 [1957], 124 ff.; Partington, III, 137; Roller & Goodman, I, 122; Sotheran, Cat. 702 [1910], 6248 [“Very Rare”]; Watt, I, 117t)

BLACK, Joseph

Experiments upon Magnesia Alba, Quick-Lime, and other Alcaline Substances . . . To which is annexed, An Essay on the Cold Produced by Evaporating Fluids, and of some other means of producing Cold; by William Cullen, M.D. . . .
Extracted from Essays and Observations, Physical and Literary, read before a Society in Edinburgh, Anno 1755.
Edinburgh: Printed for William Creech. 1796.

Third edition. 12mo. 134 pp., 1 leaf (advertisements). Fine copy in nineteenth-century half calf, cloth, maroon morocco label, gilt.

THE SCOTTISH chemist Joseph Black (1728–1799) was the chief founder of chemistry as an exact science. His discovery that carbon dioxide was a distinct chemical substance different from air ushered in the era of pneumatic chemistry. By the use of the balance and careful analysis, he demonstrated the quantitative relationship between carbon dioxide, magnesium oxide, and magnesium carbonate and also proved that lime (calcium oxide) and magnesia are different. Black published the results in his doctoral dissertation of 1754. In the following year he read before the Philosophical Society of Edinburgh his *Experiments upon Magnesia Alba* (published in their *Essays and Observations*, 1756), which includes important matters not in his dissertation and from which the present text is reprinted. It is “the first successful model of quantitative chemical investigation, . . . a classic . . . of experimental science worthy of comparison with Newton's *Opticks*” (Guerlac). A separate edition appeared (first, 1777; second, 1782), to which was added the essay by Black's teacher, Cullen (1710–1790), whose contribution (pp. 116–134) contains the discovery of latent heat and the theory of specific heat (proposed by Black), which later formed the basis of discoveries by J. R. von Mayer, Joule, and Helmholtz. Rare. Not in Blake, D.S.B., Wellcome, etc. (Guerlac, H., *Isis*, 48 [1957], 124 ff., Partington, III, 137; Smith, 56)

BLACK, Joseph

Experiments upon Magnesia Alba, Quick-Lime, and other Alcaline Substances . . . To which is annexed, An Essay on the Cold produced by Evaporating Fluids, and of some other means of producing Cold; By William Cullen . . . Extracted from Essays and Observations, Physical and Literary, Read before a Society in Edinburgh, Anno 1755.

Edinburgh: Printed for William Creech. 1796.

Third separate edition. 12mo. 134 pp., 1 leaf (advertisements). Fine copy in nineteenth-century half calf, pebbled cloth, maroon morocco label, gilt.

APART FROM three additional lines of text on the title page, this is an unchanged reprint of the first separate edition (Edinburgh, 1777) of this great classic of chemical literature, which announces the discovery of carbon dioxide. The second separate edition, unchanged from the first, appeared five years later (Edinburgh, 1782; Cole, 157; Duveen, 81; Neu, 474; Wellcome, II, 172). All three editions are rare. (Blake, 49; D.S.B., II, 181; Fyffe & Anderson, 16; Partington, III, 137; Smith, 56)

BLACK, Joseph

Lectures on the Elements of Chemistry, delivered in the University of Edinburgh; by the late Joseph Black, M.D. . . . Now published from his manuscripts, by John Robison, LL.D. . . .

Edinburgh: Printed by Mundell and Son, for Longman and Rees London, and William Creech Edinburgh. 1803.

First edition. 2 vols., 4to. I: lxxvi (misnumbered lxvi), 556 pp., 2 leaves; 3 engraved plates (D. Lizars sculpt.). With frontispiece portrait of Black. II: 1 leaf, 762 pp. + 19, (1) pp. (index). Contemporary gilt-ruled half calf, rebounded, corners repaired, marbled boards. Fine set from the library of William Cunningham (1805–1861), theologian (see D.N.B.), with engraved bookplates.

A POSTHUMOUS WORK of great importance, dedicated to James Watt. One of the most celebrated lecturers of the last half of the eighteenth century, Black occupied the chair of chemistry at Edinburgh for more than thirty years. He published little, preferring that his discoveries and major experiments should be given to his students. His lectures circulated only in manuscript among his students and were not printed during his lifetime. Soon after Black died, his pupil, colleague, and friend Robison (1739–1805) compiled this collection based on Black's own manuscripts to forestall any unauthorized version prepared from students' notes. Robison added a long introduction and enriched the text with valuable notes. He succeeded Black as chemical lecturer at Edinburgh. The rare index, published shortly after

the text, is often missing: it is not in the copies described by Bolton, Duveen, and Honeyman. (Bolton, 315; Cushing, B415; D.S.B., II, 181; Duveen, 81–82; Edelstein, 313; Ferchl, 49; Ferguson Coll., 93; Honeyman, 337; Kent, *An Eighteenth Century Lectureship in Chemistry*, 1950, pp. 126–132; Partington, III, 132; Poggendorff, I, 206; Smith, 56; Sondheimer, 189; Thornton & Tully, 160; Waller, 11087; Watt, I, 117t; Wellcome, II, 172)

BLACK, Joseph

Lectures on the Elements of Chemistry, delivered in the University of Edinburgh; by the late Joseph Black, M.D. . . . Published from his manuscripts, by John Robison, LL.D. . . . First American from the last London [sic] edition.

Philadelphia: Printed for Mathew Carey, etc. 1807, 1806, 1806.

First American edition. 3 vols., sm. 4to. I: 8, iii–iv (dedication to Watt), iv (list of subscribers), v–lix, (1), 394 pp. With portrait frontispiece of Black (Grav'd by W. Kneass), and 3 folding copperplates (dated 1807). II: 436 pp. III: 453, (15) pp. (index). A remarkably well-preserved copy, bright and crisp, in original tree calf, spines gilt-ruled, maroon morocco labels, gilt. Fine late-eighteenth-century American bookplate (Social Library, Warren, 1787) in volume III (removed from vols. I and II).

A VERBATIM REPRINT of the Edinburgh (1803) edition, this American version contains an additional two pages of favorable reviews (all but the last are English notices), including the joint approbation of Adam Seybert, Benjamin Smith Barton, and James Reynolds, dated 13 December 1806. The four pages of subscribers include several well-known American scientists (e.g., B. S. Barton, John Griscom, William McNeven, Benjamin Rush, and Adam Seybert). Not in Cushing, Duveen, Ferchl, Poggendorff, Sondheimer, Waller, Wellcome, etc. (Bolton, 315; D.S.B., II, 181; Edelstein, 314; Morgan, 68; Partington, III, 132; Smith, 56; Thornton & Tully, 160)

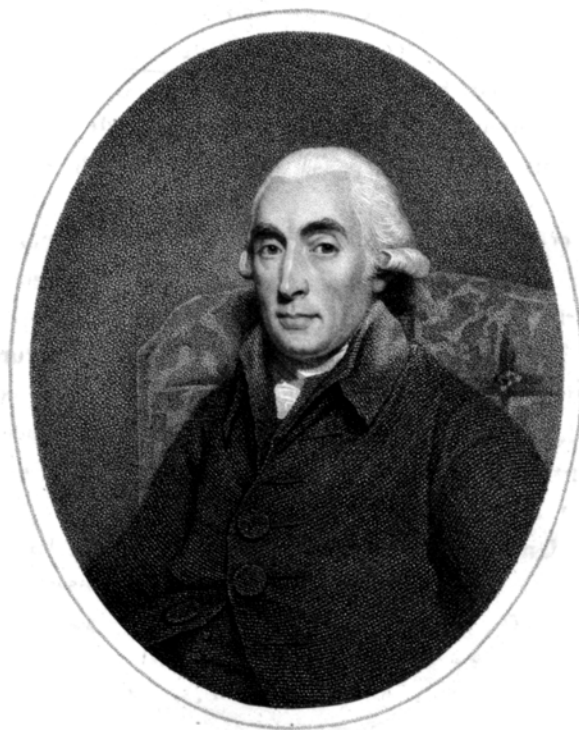
BLACK, Joseph, and STANLEY, John Thomas

An Account of the Hot Springs in Iceland; with an Analysis of their Waters.

(Edinburgh?), n.d. (1794).

First separate edition. 8vo. (in 4s). 1 leaf, 100 pp. Last leaf dusty; otherwise very good copy, in crimson quarter morocco antique, marbled boards, spine gilt-lettered and dated.

PRINTED ON paper watermarked 1794, this work comprises reprints of two letters by Stanley (dated 7 Nov. 1791 and 30 April 1792) addressed to Joseph Black in response to his paper of 4 July 1791 presented to the Royal Society of



DR. JOSEPH BLACK.

Published by Longman & Rees, May 1783.

Black. Lectures on the Elements of Chemistry. Edinburgh, 1803.

Edinburgh and printed in their *Transactions* (III, 1794, pp. 95–126). The letters by Stanley describe hot springs in Iceland near Rykum (pp. 1–19) and near Haukadal (pp. 21–46). Apart from his classic researches on alkalies, the work by Black is the second of his only two substantial papers: the first being in the *Phil. Trans. Roy. Soc.* (1775, 65, 124–129) on the freezing of water. Black presents an “Analysis of the Waters of some Hot Springs in Iceland” (pp. 49–100), showing that “they contain silica held in solution by caustic soda” (Partington, III, 133). Black’s analysis “well illustrates the careful and painstaking practical work he did” (Duveen, who erroneously gives 1791 as the date of publication of this edition). Partington, who was unaware of this separate printing, states that Black’s paper (in the *Trans. Roy. Soc. Edin.*) includes the two letters by Stanley. (Duveen, 562; Wellcome, II, 173)

BLACKWELL, J. Kenyon

Explosions in Coal Mines, their causes, and the means available for their prevention and control; containing a review of the committee of 1852 on this subject; a letter addressed to Lord Palmerston on the late explosions and on mining inspection; and notes on various forms of the Davy lamp and their relative value. . . .

London: Taylor and Francis. 1853.

First edition. 8vo. 38 pp. Mint copy in maroon half morocco antique, marbled boards, spine gilt-lettered and dated.

A REPORT THAT emphasizes the necessity of adequate ventilation in coal mines to prevent the accumulation of explosive gas and dust mixtures. The discussion of the Davy lamp and its modifications (pp. 32–38) and the author’s letter to Lord Palmerston on the explosion of fire-damp (methane) in the Arley Mine near Wigan (in which more than fifty-five coal miners were killed in March 1853) make interesting reading on contemporary conditions. Evidently the operators of the mine allowed the miners to work with naked lights. Blackwell contends that “had the safety lamp been employed exclusively and under proper regulations . . . it is probable that none of the loss of life . . . would have occurred.” Author of the report presented to Parliament in 1850 on the ventilation of mines, Blackwell was commissioner of mines inquiry, 1849–50. No bibliographical reference to this rare booklet has been found.

BLANKAART, Steven

The Physical Dictionary. Wherein the Terms of Anatomy, the Names and Causes of Diseases, Chyrurgical Instruments and their Use; are accurately Describ’d. Also the name and virtues of medicinal plants, minerals, stones, gums, salts, earths, &c. And the method of choosing the best drugs: the terms of chymistry, and of the apothecaries art; and the various forms of medicines, and the ways of compounding them. By Stephen Blancard M.D. Physick-Professor at Middleburg in Zealand. The second edition, with the addition of above a thousand terms of art, and their explanation. . . .

London: Printed for S. Crouch, at the Corner of Pope’s-Head-Alley near the Royal-Exchange in Cornhill. 1693.

Second English edition. 8vo. 2 leaves, 213 pp. (misnumbered 113), (3) pp. (advertisements). Early annotations in faded ink on recto and verso of first flyleaf; otherwise a very good copy in blind-tooled calf antique, brown morocco label gilt.

AN IMPORTANT work, being the first medical dictionary printed in Great Britain, translated from the author’s *Lexicon medicum graeco-latinum* (Amsterdam, 1679). One of the most remarkable of the early medical dictionaries, which was in print over 150 years after its initial publication (Osler, 6919, lists an edition of 1832). The first English translation (two issues, London, 1684) was followed by the present enlarged edition and those of 1697, 1702, 1708, 1715, and 1726 (see Blake, p. 50). Medical and chemical terms are given in Latin and Greek, with explanations in English. There is a great amount of chemical information. Citing the 1684 and 1697 English editions, Duveen (p. 641) says that the work is “unknown to the usual authorities.” All the English editions are rare. First apprenticed to an apothecary to learn chemistry and botany, the author (1650–1702) became a celebrated iatrochemist and physician in Amsterdam. He edited the first medical journal in the Dutch language, wrote on syphilis, and advocated the medicinal benefits of tea and coffee. He also published a book on practical chemistry (see Partington) and added notes to Lancelotti’s *Brandende Salamander*. Not in the usual early chemical bibliographies. (Garrison & Morton, 6797 [1684 ed.]; Partington, II, 738; Watt, I, 120p; Wellcome, II, 178; Wing B3165)

BLANKAART, Steven

Theatrum Chemicum, Ofte Geopende Deure der Chymische Verborgentheden. Ontsloten van de vermaartste Autbeuren, die in de Chymische stoffe gelaboreert en geschreven hebben. Met groote vlyd door een Liefhebber der Chymie by een gesammelt. Als Schroderus, Angelus Sala, Rolfinkius, le Febure, Crollius, Charras, Beguinus, als meer andere hedendaagse Schryvers. Met een vervolg over de Chymische Verborgentheden aangaande de verandering en verbetering der Metalen en Gesteenten. Door den Ridder K. Digby.

Amsterdam: by Jan ten Hoorn Boekverkooper over't Oude Heere Logement. 1693.

First edition. 8vo. 8 leaves (including fine engraved frontispiece), 490 pp., 11 leaves (index); 170 pp., 3 leaves (index). With 11 copperplates (2 folding) of chemical apparatus. One leaf (sign. L5, pp. 169–170) lacking from the Digby section, which has separate divisional title page, collation, and pagination; otherwise a fine copy in contemporary vellum.

THE FIRST Dutch edition of this very rare iatrochemical work, which includes extracts from many earlier and contemporary authors, some of whom are named in the title. The largest section (*Theatrum Chemicum*, pp. 1–490) comprises a work on practical chemistry, describing the apparatus and processes for preparing numerous inorganic and organic compounds. It is an expanded version of the author's *De Nieuwe Hedendaagsche Stof-Scheiding, ofte Chymia* (Amsterdam, 1678 and 1685), on which see Partington (II, 738). The second part (170 pp.) is the first Dutch translation of Sir Kenelm Digby's *A Choice Collection of Rare Chymical Secrets* (London, 1682), edited by George Hartman. The Dutch version was probably made from the German translation (*Ausserlesene, seltzame philosophische Gebeimnisse und chymische Experimente*, Hamburg, 1684). Duveen, Ferchl, Hoover, and Neu list only German translations. Not in Bolton, Caillet, D.S.B., Edelstein, Guaita, Partington, Sondheimer, Waller, Watt, etc. (Ferguson Coll., 193 [only 10 plates]; Ferguson, *Books of Secrets*, I, Pt. 2, 54; Rosenthal, 261 [only 10 plates]; Wellcome, II, 177)

BLOMBERG, William Nicolas

An Account of the Life and Writings of Edmund Dickinson, M.D. Physician in Ordinary to King Charles and King James II. To which is added, A Treatise on the Grecian Games, Printed from the Doctor's own Manuscript. . . . By William Nicolas Blomberg, A.M. Rector and Vicar of Fulham.

London: Printed for R. Montagu, at the Book-Warehouse, that End of Great-Queen-Street next Drury-Lane. 1739.

Second (best) edition. 8vo. 1 leaf, 225, (1) pp. With elegant pictorial copperplate capital, head- and tailpieces. Very fine copy in modern sheep, spine gilt-ruled, maroon morocco label. Armorial bookplate: United Grand Lodge of A. F. & A. Masons of England (dated 1927).

THE FINAL, greatly enlarged, and most complete edition (first: London, 1737, 8vo., 140 pp.) of the definitive biography of Dickinson (1624–1707), a celebrated chemist who claimed alchemical powers. The treatise on the Grecian (i.e., Olympic) games (pp. 201–225) was not in the first edition. Of considerable historical chemical interest throughout, Dickinson's *Physica Vetus & Vera* (London, 1702), his most important work, is discussed in detail. The author, Blomberg (1702?–1750), graduated from Merton College, Oxford (1726), and was a grandson of Dickinson. Watt, who calls him “Blombery,” states erroneously that the first edition of this biography appeared in 1709. Rare. Not in the usual chemical bibliographies. (D.N.B., V, 224; Ferguson, I, 210 [not in Young Coll.]; Partington, II, 327; Watt, I, 122g, 302k)

BLOMSTRAND, Christian Wilhelm

Die Chemie der Jetztzeit vom Standpunkte der Electrochemischen Auffassung aus Berzelius Lehre Entwickelt. . . . Heidelberg: Carl Winter's Universitätsbuchhandlung. 1869.

First edition. 8vo. xx, (2), 417, (1) pp. Numerous chemical structures in text. Very good copy, in contemporary cloth-backed marbled boards.

BLOMSTRAND (1826–1897) was professor of chemistry and mineralogy at the University of Lund, Sweden. This is his most important book, which “made his name known throughout Europe” (D.S.B.). A voluminous treatise on the theories then current on organic and inorganic chemistry, it was one of the most original and controversial works in the chemical literature of its time. Even today it is encountered in historical discussions of valence theory. The varying valences of an element in different compounds were clearly described in this work. Blomstrand also investigated the possible structures of ammonia compounds of certain metal salts (coordination compounds) and puts forward the “diazonium” formula for diazo-salts. He represented the structure of benzene as a straight molecule (C₆H₆, just before Kekulé proposed his ring structure) (p. 388). (Bolton, 92; D.S.B., II, 199; Ferguson Coll., 96; Partington, *A Short History of Chemistry*, 1937, p. 294; Smith, 57)

BLONDEAU-DEJUSSIÉU, H.

Catalogue raisonné de Plantes de Vignes pour Vins rouges, rosés ou blancs, fins, grands ordinaires, ordinaires et communs. . . .

Dijon: Imprimerie J. E. Rabutot. 1860.

First edition. 8vo. 16 pp. Fine copy in the original yellow printed wrappers. Bound with: Cossigny de Palma, *Observations sur l'art de faire le vin. . . .* (Paris, 1807).

A VERY RARE pamphlet on the different types of grapevines and the wines they produce. The chemistry and botanical aspects of wine manufacture are discussed. Unknown to the usual bibliographers.

BLONDEAU-DEJUSSIÉU, H.

Considérations d'importance première pour qui veut planter les Cépages de la Côte-d'Or et du Beaujolais; instructions détaillées sur chacune des variétés de Vignes les plus méritantes ou les plus connues qu'on y cultive, et sur la plupart des Cépages des Vignobles les plus célèbres de France. . . .

Paris: Librairie Agricole (&) Victor Masson. Beaune: Librairie Lambert (&) H. Blondeau-Dejussieu. 1860.

First edition. 8vo. 24 pp. Fine copy, bound with 6 other works on the chemistry of winemaking.

A VERY RARE pamphlet on the best varieties of grapevines to plant in the regions named in the title, with comments on the wines they produce. Not found in available bibliographies.

BLOUNT, Thomas Pope

A Natural History: Containing Many not Common Observations: Extracted out of the best Modern Writers. . . .

London: Printed for R. Bentley in Russel Street, in Covent Garden. 1693.

First edition. 8vo. 8 leaves, 469, (3) pp. Front cover, scuffed; otherwise fine copy in original blind-ruled calf, gilt, maroon morocco label.

A WORK OF remarkable scholarship containing observations on over fifty subjects, many of chemical interest. Blount (1649–1697), politician and M.P. for St. Albans, was commissioner of accounts in the House of Commons (see D.N.B.). Three years earlier he published his important biographical dictionary of literature and science, *Censura celebriorum authorum* (London, 1690; Wing, B3346), in which are recorded the opinions of almost six hundred authors of all periods. Based on modern writers, the *Natural History* displays an unusual amount of research in the literature. In addition to topics in natural history, subjects

discussed include the generation of metals, lodestone, volcanoes, damps in mines, earthquakes, salts, gold, silver, indigo, diamonds, opium, tobacco, coffee, tea, sugar, and glowworms. Authors quoted include Acosta, Bacon, Barba, Borelli, Boyle, Gilbert, Grew, Heylin, Hooke, Plot, Sprat, and Willis. Not in Sabin, despite many references to America. See, for example, page 77 for the practicality of growing the Bermuda Berry in Britain for the extraction of cochineal and page 357 for the Jamaican “Soape-Tree” with berries that “wash better than any Castile-Soape.” (Arents, 416; Eales, 1074; Freeman, 362; Harvey, 542; Watt, I, 123h; Wellcome, II, 183; Wing, B3351)

BOCCONE, Paolo

Museo di Fisica e di Esperienze Variato, e decorato di Osservazioni, Note Medicinali, a Ragionamenti secondo i Principii de' Moderni. . . .

Venice: Per Jo. Baptistam Zuccato. 1697.

First edition. 4to. 4 leaves, 319, (1) pp. With beautiful engraved portrait of Boccone (aged 64), and 24 engravings on 12 plates (some printed on both sides, and some folding). An excellent, crisp copy, in original calf, rebacked.

AN IMPORTANT work including many experiments of chemical interest. Boccone includes the preparation and properties of the phosphorescent Bolognian stone and describes other phosphors and fluorescent substances. In addition, he discusses sulphur, natural and synthetic salts, metals and their ores, minerals, etc. The book “consists of some forty-six *Osservazioni* on particular natural topics . . . the Sicilian earthquake of 1693, . . . alkali and medicinal earths, . . . prodigious effluvia of some plants and animals, . . . alum di Rocca, . . . petroleum and naphtha, . . . *sal mirabile* of Glauber, . . . a mechanical and chemical explanation why some coral is red and other, white” (Thorndike). Not in the usual chemical bibliographies. (Ferchl, 52; Harvey, 607; Partington, II, 545; Poggendorff, I, 216; Thorndike, VIII, 39–41; Watt, I, 125y; Wellcome, II, 185)

BOCCONE, Paolo

Osservazioni Naturali ove si contengono Materie Medico-Fisiche, e di Botanica, produzioni naturali, fosfori diversi, fuochi sotterranei d'Italia, & altre curiosità. Disposte in trattati familiari . . . e dirette a varii Cavalieri, e Letterati del nostro Secolo; secondo lo stile delle Accademie Fisico-Matematiche [sic] d'Europa.

Bologna: Manolesi. 1684.

First edition. 12mo. 6 leaves, 400 pp. With engraved frontispiece, and plate facing page 228. Fine, crisp copy, in original mottled calf, rebacked, maroon morocco label, gilt.



Boccone. Museo di Fisica. Venice, 1697.

BORN IN Palermo, Sicily, the distinguished naturalist and iatrochemist Boccone (1633–1704) later retired to a monastery near Palermo and changed his name from Paolo to Silvio. The present work contains twenty-six “observations” on a variety of chemical subjects, including the preparation and properties of phosphorus, gleaned from Balduin, “Cavallere Boyle,” Kraft, Kunckel, et al. Also described are the Bolognian phosphor (calcined native barium sulphate), a panacea of antimony (from crude antimony and fixed niter), a “smoking liquor” (stannic chloride, made from mercury and tin), volcanic sal ammoniac (ammonium chloride), subterranean fires (supposedly produced by the effervescence of acid and alkali with ethereal matter interposed), etc. The phosphorescent and luminescent properties of plankton, worms, sea anemones, fish, insects, lizard eggs, and other living things are also discussed. Four specimens of the Bolognian stone are shown in the plate facing page 228. “In Alemagna gli Accademici de’ Curiosi della natura lo ascrissero a loro socio onorario con diploma dato del 1 agosto 1696, e lo chiamavano il Plinio del nostro secolo” (Mira). A milestone book in the history of chemical and biochemical luminescence. Not in the usual chemical bibliographies. (*Diz. Biogr. Degli Italian*, 11, pp. 98–99; Ferchl, 52; Harvey, *History of Luminescence*, pp. 119, 476; Mira, 111; Partington, II, 545; Pritzel, 860; Watt, I, 125y; Wellcome, II, 185)

BODIN, Jean

Universae Naturae Theatrum. In quo rerum omnium effectrices causae, & fines contemplantur, & continuae series quinque libris discutiuntur.

Hanau: Typis Wecheliani apud Claudium Marnium, & haeredes Joann. Aubrii. 1605.

First Hanau edition. 8vo. 8 leaves, 633, (1) pp. Woodcut printer’s device on title page. Historiated woodcut initials and diagrams in text. Fine copy, in contemporary unlettered vellum.

THE FRENCH political philosopher Bodin (1530–1596) expounded the principles of stable government in *Les six livres de la republique* (1576), which was widely influential in Europe when medieval systems were giving place to centralized states. Born in Angers, from 1551 to 1561 Bodin studied civil law at Toulouse and in 1561 served in Paris as *avocat du roi*. The *Universae naturae theatrum* is a cosmological work written as a dialogue between Theodorus and Mystagogus. In five sections (books) Bodin covers the principles of nature, origin of the earth, elements, minerals, metals, fossils, plants, animals, sun, moon, planets, stars, and other subjects. Of historical importance are Bodin’s discussions of the increase in weight of lead when calcined, his concept of atoms, and his discourse on fire, metals, ac-

ids, salts, etc. Partington (II, 14, 386, 421), who refers to this work and its chemical content, does not mention the present edition. According to Watt (I, 126m), in this book “he endeavours to show that natural religion is preferable to revelation.” The first edition (Lyons, 1596) was translated into French by François de Fougères (Lyons, 1597). Hoover (no. 140) describes the second Latin edition (Frankfurt, 1597), and the present Hanau edition may be the second issue of the Frankfurt edition, as the names of the printers in the imprint are the same and the pagination and signatures are identical. None of the usual authorities list the Hanau imprint, except Wellcome (I, 924).

BODIN DES PLANTES, Jacob

Tentamen Chémico-Medicum de Aquis Mineralibus auctor Jacobo Bodin Des Plantes, Machicoleo-Nannetensi, apud Britannos, Liberalium Artium Magistro. Propugnatum pro primâ Apollinari Laureâ consequendâ, in Augustissimo Ludovico Medico Monspeliensi, mense Julii, anni 1769. Montpellier: Apud Augustinum-Franciscum Rochard, Regis & Universitatis Medicinae Typographum unicum. 1769.

First edition. 4to. 32 pp. Woodcut on title page and large woodcut headpiece on page 5. Fine, crisp copy, in maroon half morocco antique, marbled boards, spine gilt-lettered and dated.

A DISSERTATION ON the chemistry, physics, and medicinal properties of mineral waters, especially those of France. Chapter 2 (pp. 14–24) discusses the chemical analysis of mineral waters, with descriptions of the reagents used. Chapter 3 (pp. 24–32) covers the medical uses of the waters. There are numerous references to the writings of other chemists on mineral waters (e.g., Monnet, Boulduc, Stahl, Bayen, Venel, Rouelle, Cadet, and Valmont de Bomare). Under Jacques Bodin (dates unknown), the Wellcome catalogue (II, 186) lists the author’s *Tentamen medicum de squirro uteri* (Montpellier: J. F. Picot, 1779, 4to., 15 pp.) but not the present work. Carrère (I, 62) says of the *Tentamen chémico-medicum* that it is a “Dissertation remplie d’idée et de vues utiles.” A very rare and important work that has remained unknown to the bibliographers of chemistry and balneology.

BOEHM, Michael Friedrich

Examen Acidi Pinguis sub praesidio Dn. Jacobi Reinboldi Spielmann . . . die XXIII. Decembris MDCCLXIX. solenni eruditorum disquisitioni subjiciet Michael Fridericus Boehm Argentoratensis auctor.

Strasbourg: Typis Johannis Henrici Heitzii, Universit. Typogr. (1769).

First edition. 4to. 1 leaf, 38 pp. Crimson half morocco antique, marbled boards, spine gilt-lettered and dated. Fine presentation copy, with neat inscription in ink on title page, from Boehm to Dr. Brix of Fürstemberg.

A DISSERTATION ON Johann Friedrich Meyer's theory of acidum pingue, the agent believed responsible for the causticity of quicklime. The eminent Strasbourg professor of chemistry J. R. Spielmann presided over the presentation, which discusses the writings of many earlier and contemporary chemists (e.g., Helmont, Kunckel, Neumann, Alston, and Black). "Boehm . . . rejected both Black's and Meyer's theories and said limestone became caustic by loss of water; causticity was capacity for combining with water" (Partington). On pages 1–3 there is a biographical account of Meyer. An important contribution to the theory of the cause of alkalinity, which engaged the best chemical minds of the mid-eighteenth century. Rare. Not in Duveen, Edelstein, Smith, Wellcome, etc. (Bolton, 844; Ferchl, 511; Neu, 3887; Partington, III, 148; Poggendorff, II, 971)

BOEHME, Johann Heinrich

Dissertatio Inauguralis Chymica de Experimentorum quorundam chymicorum perversa explacatione, . . . praeside Dn. Friderico Hoffmanno, . . . pro doctoris gradu ad diem (blank) Aug. 1697 . . . publico eruditorum examini submittit Johannes Henricus Böhme, Bitterfeldâ Misn.

Halle: Literis Chr. Henckelii, Acad. Typogr. 1697.

First edition. 4to. 12 leaves, unpaginated. Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A DOCTORAL DISSERTATION attempting to explain why many chemical experiments go wrong, presided over by the great Friedrich Hoffmann the Younger (1660–1742), professor of chemistry and medicine at the University of Halle. Boehme, on whom no biographical information has been found, discusses the preparation of many inorganic and organic compounds and comments on their variability of composition, even when made by apparently similar processes. He also describes the calcination of minerals, the preparation of acids, alkalies, salts, etc., with references to Georg Ernst Stahl's work on fermentation (i.e., *Zymotechnia*). Very rare and not in the usual early chemical libraries. (Ferchl, 241)

BOERHAAVE, Herman

De Mercurio Experimenta.

Utrecht: Apud Jurrianum a Paddenburg. 1735.

First Latin edition. 8vo. 43, (1) pp. Woodcut on title page. Fine, crisp copy, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

AN EXTREMELY rare book of fundamental importance, in which Boerhaave proved the impossibility of transmuting mercury into gold. In a series of painstaking, quantitative experiments, some of which lasted for many years, he repeatedly distilled mercury and showed that it remained unchanged. Some "specimens of mercury were variously heated for fifteen and one-half years, boiled 511 times, or mixed with gold and then distilled 877 times. Gold remained gold, and mercury, mercury. . . . Boerhaave's most important contributions to science, perhaps, were made in chemistry. . . . He introduced exact, quantitative methods . . . by measuring temperature and using the best available balances made by Fahrenheit; indeed, he may be considered the founder of physical chemistry. He was an indefatigable experimenter, exhibiting an unbelievable tenacity in his experiments on mercury" (D.S.B.). The experiments here described were first published in the *Phil. Trans.*, 38, 145 (1734) and, later, in book form as *Some experiments concerning mercury* (London, 1734). The present Latin edition is not in the usual chemical and medical bibliographies. (D.S.B., II, 227; Gibbs, *Ambix*, 6 [1958], 135; Hertzberger, *Boerhaave S.T.C.*, 161; Lindeboom, 502; Partington, II, 742)

BOERHAAVE, Herman

De Mercurio Experimenta.

Utrecht: Apud Jurrianum a Paddenburg. 1735.

First Latin edition. 8vo. 43, (1) pp. Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

APART FROM an additional leaf (signature A2) from the printer to the reader, the content of this Latin edition is identical to that of the English edition (London, 1734). Boerhaave's experiments clearly demonstrated that mercury could be converted to its calx (mercuric oxide) and then back to mercury without the addition of any other substance, but his attitude toward alchemy remained ambiguous. "Since . . . he had been able to repeat many of the chemical experiments described in books of the alchemists he could not deny the possibility of transmutation" (Partington [II, 742]). Had Boerhaave been more objective in his conclusions, he might have forestalled the progress of the theory of phlogiston, which dominated chemical thought throughout most of the eighteenth century. About forty years later similar experiments to those described by Boerhaave in this work were carried out by Lavoisier, who correctly interpreted the results. Lavoisier's conclusions led to the downfall of the phlogiston theory and the birth of modern chemistry. (D.S.B., II, 227; Gibbs, *Ambix*, 6 [1958], 129, 135; Hertzberger, 161; Lindeboom, 502)

BOERHAAVE, Herman

Dr. Boerhaave's Elements of Chymistry, faithfully abridg'd from the late Genuine Edition, publish'd and sign'd by himself at Leyden. With all the cuts and explanations, contain'd in the original. To which are added, curious and useful notes, rectifying several opinions, &c. of the learned author. By a physician. The second edition.

London: Printed for J. Wilford, behind the Chapter-house in St. Paul's Church-Yard. 1734.

First Strother edition, second issue. 2 parts in 1 vol., 8vo. vi, 210 pp.; viii, 208 pp., 5 leaves (index) + 17, (1) pp. (explanation of plates). Fine engraved frontispiece portrait of Boerhaave (G. King sculp., 1733). Near pristine copy in original paneled calf, maroon morocco label.

THE FIRST abridged edition in English of the *Elementa Chemiae* (Leyden: I. Severinum, 1732). Although the title states that this is the second edition, it is in fact the second issue of the first edition, first issue of 1732, with identical collation and pagination. The present issue has the first four leaves (signature A), including the portrait, printed on thicker paper than the rest of the volume, clearly indicating that this is a reissue of the sheets of the first edition. The portrait (dated 1733) was not available for the first issue. In the true second edition (London, 1737) the translator, Edward Strother (1675–1737), is named on the title page. Gibbs states that “the abridger was at pains to show that he disagreed strongly with the *Elementa Chemiae* and thought that Lemery and Freind together were the only authors who presented ‘the true theory of chemistry.’ His notes were curious enough, but not at all useful: several of them were impertinent, dogmatic or misinformed.” Partington thought the translation “is really not at all bad.” The book is rare. Gibbs traced only one copy in England (Cambridge) and one in Germany (Frankfurt). Unknown to Hertzberger. Blake, Duveen, Ferchl, and Ferguson mention the first issue (1732). (Bolton, 322; Gibbs, *Ambix*, 6 [1958], 125, 133 [no. 22]; Lindeboom, 470; Partington, II, 744; Smith, 59)

BOERHAAVE, Herman

Elementa Chemiae, quae anniversario labore docuit, in publicis, privatisque, scholis, Hermannus Boerhaave. Tomus primus. Qui continet historiam et artis theoriam. (Tomus secundus. Qui continet operationes chemicas.) Cum tabulis aeneis.

Leyden: Apud Isaacum Severinum. 1732.

First edition. 2 vols., 4to. I: 6 leaves, 896 pp., 20 leaves (index). With 16 copperplates. II: 4 leaves, 538 pp., 23 leaves (index). With 1 copperplate. The 17 plates have explanatory texts on

opposite pages (in addition to collation given above). Half title of volume I missing; otherwise a fine copy with wide fore- and lower margins, in original mottled calf, spines gilt, tan-colored labels gilt. From the library of the famous Irish-American chemist William James MacNeven (1763–1841), professor of chemistry, College of Physicians and Surgeons, New York, with his neat signature in ink on title page of each volume: “Ex libris Doctoris MacNeven.”

THE FAMOUS, and now very rare, first authorized edition, bearing on the verso of the title page of the first volume the certification of authenticity, signed in ink by Boerhaave himself. Dedicated to his brother, the reverend Jacob Boerhaave, with whom he carried out chemical experiments in his student days, this edition was ready in the autumn of 1731. Two copies were sent to Sir Hans Sloane on 15 October 1731. The *Elementa Chemiae* immediately became the standard textbook of chemistry, and it maintained its position of eminence until the overthrow of the phlogiston theory at the end of the eighteenth century. “It is no exaggeration therefore to say that Boerhaave’s influence in chemistry lasted for about a century, almost from Boyle to Dalton” (Gibbs, *Ambix*, 6 [1958], 119). All known copies lack signature Ggg4 (vol. I, pp. 423–424), but the text is continuous. For explanation, see R. G. Neville, *The Book Collector*, 8 (1959), 428–429; and, F. N. L. Poynter, *ibid.*, 9, (1960), 64. Not in Caillet, Edelstein, Ferguson Coll., etc. (Blake, 53; Bolton, 322; Cushing, B459; D.S.B., II, 227; Duveen, 84; Ferchl, 53; Ferguson, I, 112; Gibbs, 131; Hertzberger, 93; Lindeboom, 450; Morgan, 73; Neu, 512; Osler, 1094; Partington, II, 743; Poggendorff, I, 223; Smith, 58; Sondheimer, 198; Thornton & Tully, 157; Waller, 11089; Wellcome, II, 190)

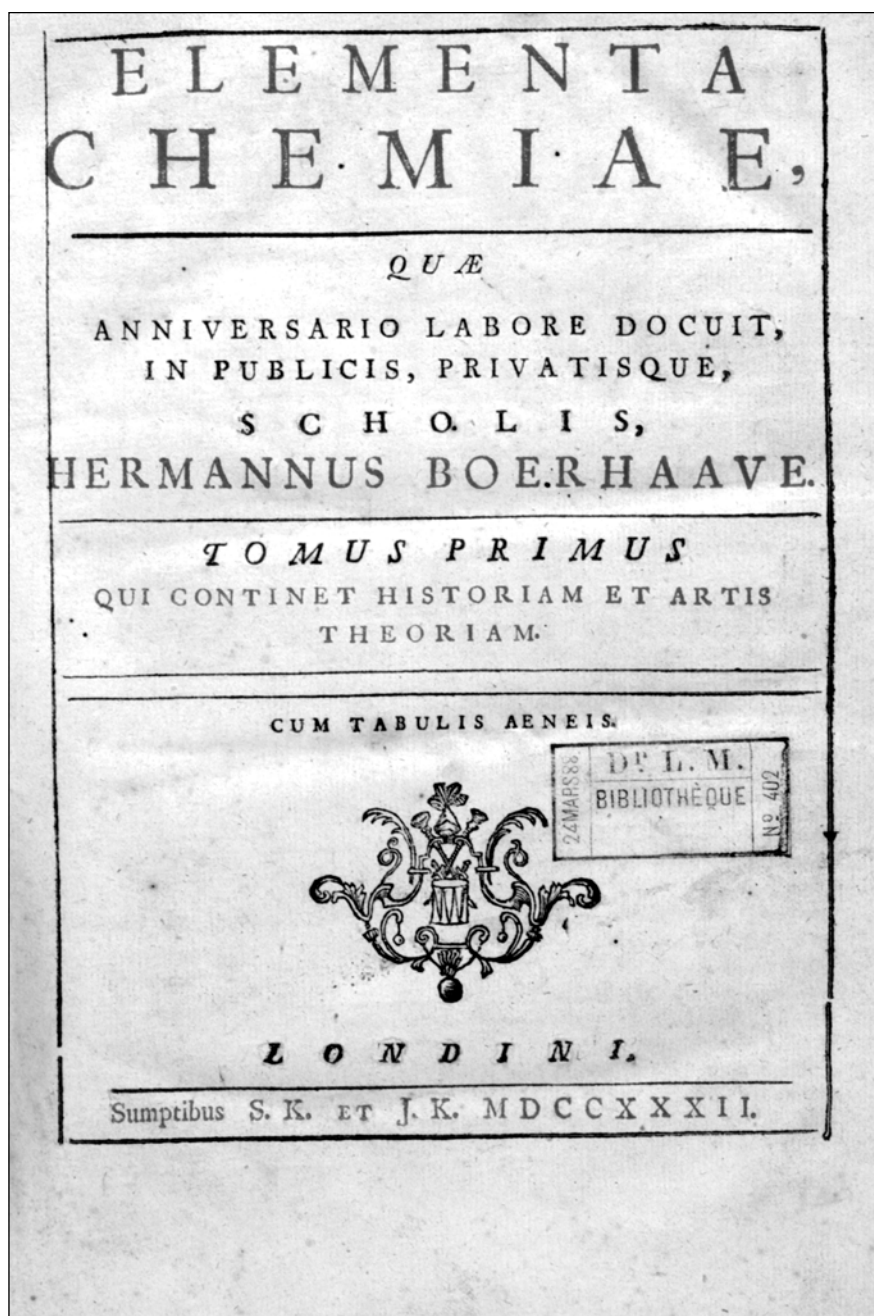
BOERHAAVE, Herman

Elementa Chemiae, quae anniversario labore docuit, in publicis, privatisque, scholis, Hermannus Boerhaave. Tomus primus qui continet historiam et artis theoriam. (Tomus secundus qui continet operationes chemicas.) Cum tabulis aeneis.

London: Sumptibus S.K. et J.K. 1732.

First authorized edition printed in England. 2 vols., 4to., in 1. I: 4 leaves, 344 pp., 16 leaves (index), 9 leaves (text explaining figures). Title page in red and black. With 17 folding engraved plates of apparatus. II: 2 leaves, 209 pp., 19 leaves (index). Text in double columns. Fine, crisp copy, in original mottled calf, gilt, dark-maroon label. Bookplate (eighteenth century): D. Theodoricus Petrus Caels Patricius Lovaniensis Med. Lic.

THE FIRST authorized edition of Boerhaave’s classic work to be printed in England, being an exact reprint of the first edition (Leyden: I. Severinum, 1732) with several



Boerhaave. Elementa Chymiae. London, 1732.

typographical and factual errors corrected. The plates are reengraved but are close copies of the originals in the Severinus edition. In his detailed investigations on Boerhaave's chemical writings, Gibbs (*Ambix*, 6 [1958], 131, No. 8) located no copies in Great Britain and only two copies in Germany (Frankfurt am Main, Göttingen). Extremely rare. (Duveen, *Supplement*, 46; Hertzberger, 95; Lindeboom, 454; Partington, II, 744; Smith, 59)

BOERHAAVE, Herman

Elementa Chemiae, quae anniversario labore docuit, in publicis, privatisque scholis, Hermannus Boerhaave. Tomus primus. Qui continet historiam et artis theoriam. (Tomus secundus. Qui continet operationes chemicas.) Cum tabulis aeneis. Cum privilegiis Caesareo, Polonico & Saxonico. Leyden: Sumtibus Joannis Rudolphi Imhof. 1732.

First Imhof edition. 2 vols., 4to., in 1. I: 8 leaves, 896 pp., 26 leaves (index). II: 2 leaves, 538 pp., 23 leaves (index). With 17 folding copperplates and explanatory text on separate leaves (scattered throughout vol. I). Fine copy in original calf, spine gilt, brown label gilt, with letters I.B.R. (unidentified) stamped on spine.

THE IMHOF printing of the first authorized edition, with identical pagination, except for the privilege of Friedrich August, king of Poland, in German at the front of volume I and that of Emperor Charles VI in Latin at the front of volume II. It also contains instructions to the binder, in German, at the foot of the description to plate XVII. The index of this edition has twelve pages more than that of the Severinus printing. The Tübingen bookseller Imhof procured a license to print the work on 4 October 1730, at Dresden (see privilege). The Severinus and Imhof printings were issued at about the same time, the latter being most probably for sale outside Holland. Gibbs (*Ambix*, 6 [1958], 131) suggests that this edition may have been printed in Tübingen. There exists another 4to. edition of 1732 printed from a different setting of type but with the same pagination, probably printed at Basel, with the name "Im-hoff" in the imprint (Gibbs., *loc. cit.*). The Imhof editions are even rarer than the Severinus printing. Blake, Hertzberger, and Smith list the "Im-hoff" edition only. Not in Bolton, Duveen, Ferguson, Ferguson Coll., Morgan, Neu, Osler, Sondheimer, Waller, etc. (Edelstein, 327; Gibbs, 131 [no. 5]; Lindeboom, 451; Partington, II, 744; Wellcome, II, 190 [vol. I only])

BOERHAAVE, Herman

Elementa Chemiae, quae anniversario labore docuit, in publicis, privatisque scholis, Hermannus Boerhaave. Tomus primus. Qui continet historiam et artis theoriam. Cum tabulis aeneis. (Tomus secundus. Qui continet operationes chemicas.) Cum Privilegio Pot. Regis Pol. & El. Sax. Leipzig: Apud Casparum Fritsch. 1732.

First 8vo. edition. 2 vols. in 3. I: 8 leaves (unnumbered), 32 numbered leaves, pp. 37–356. With 6 copperplates, and explanatory text on facing separate leaves. Woodcut title-vignette. (N.B. Title is signature a1. Collation indicates no half title issued with this volume). II: 1 leaf (signature z1; pp. 357–8), pp. 359–744, 38 unnumbered leaves (index). Copperplates 7–17, and explanatory text on facing separate leaves. III: 2 leaves (half title, title), pp. 3–470, 45 unnumbered leaves (index). Woodcut title-vignette. (N.B. Signature D5 misprinted C5) Fine, absolutely complete copy, beautifully and strongly bound in mottled calf antique, spines gilt, maroon morocco labels gilt. Unobtrusive old stamp on titles of each volume: Bibliothek zu Eybesfeld.

THE VERY rare first 8vo. edition, the only one in Latin published at Leipzig. An edition in German with a Leipzig imprint appeared in 1753. Ferguson (I, 112), who had never seen a copy, says: "There is said to have been an 8vo. edition" of 1732. In their respective bibliographies Gibbs and Lindeboom refer only to the first volume, and both state erroneously that Caspar Fritsch published only the theoretical part of the *Elementa Chemiae*. The second volume, here present, containing the practical operations of chemistry, is extremely rare. Blake, Edelstein, Lindeboom, Smith, and Wellcome list only the first volume. Not in Bolton, Ferchl, Hertzberger, Morgan, Poggendorff, Sondheimer, Thornton & Tully, Waller, etc. (Blake, 53; Duveen, 84 [slightly different collation]; Edelstein, 326; Ferguson Coll., 100; Gibbs, 131 [no. 7]; Lindeboom, 455; Neu, 513; Partington, II, 744; Smith, 58; Wellcome, II, 190)

BOERHAAVE, Herman

Elements of Chemistry: being the Annual Lectures of Herman Boerhaave, M.D. Formerly Professor of Chemistry and Botany, and at present, Professor of Physick in the University of Leyden. Translated from the original Latin, by Timothy Dallowe, M.D. . . .

London: Printed for J. and J. Pemberton, in Fleet-Street; J. Clarke, under the Royal Exchange; A. Millar, in the Strand; and J. Gray in the Poultry. 1735.

First unabridged English translation of the authorized edition of the *Elementa Chemiae* (Leyden: I. Severinum, 1732). 2 vols., 4to. I: xii, 528 pp., 4 unnumbered leaves (index). With 17 folding copperplates. Plates VI and VII signed "J. Mynde." Probably the other unsigned plates are by Mynde, as style and

quality of engraving are similar. II: 4 leaves, 376 pp., 8 leaves (13 pp. index, 3 pp. book advertisements). Woodcut title-vignettes. Splendid large, crisp copy, in contemporary gilt-ruled sprinkled calf, tastefully rebacked, spines gilt, red and green morocco labels.

DALLOWE was a student under Boerhaave in 1724 and again in 1730. Gibbs surmises that Dallowe reenrolled in order to go over the manuscript of the English translation with Boerhaave. In the preface he speaks as one who had attended the lectures to keep as complete a record as possible. Parts of the work were condensed, and textual changes were made with Boerhaave's approval. The translation "is more correct . . . than the original" (William Burton, *Life of Boerhaave*, 1746, p. 149). An "excellent translation" (T. L. Davis, *Isis*, 10 [1928], 33–46). This translation "seems never to have been a popular work . . . Nevertheless it was undoubtedly useful to those . . . whose Latin was inadequate" (Gibbs, *Ambix*, 6 [1958], 124). Read says that "of the English versions, the best are those of Dr. Timothy Dallowe . . . and Dr. Peter Shaw" (*Humour and Humanism in Chemistry*, 1947, p. 134). Only a small edition was published, and copies are now very scarce. Not in Ferguson Coll., Hertzberger, Osler, Waller, etc. (Blake, 53; Bolton, 322; Cushing, B460; Duveen, 641; Edelstein, 328; Ferchl, 53; Ferguson, I, 112 [not in Young Coll.]; Gibbs, 132; Lindeboom, 478; Neu, 516; Partington, II, 744; Smith, 59; Wellcome, II, 190)

BOERHAAVE, Herman

Institutiones et Experimenta Chemiae. . . .

Paris (i.e., Leyden): n.p. 1724.

First edition. 2 vols., 8vo., in 1. I: 2 leaves, 290 pp., 1 leaf (blank). With 1 engraving on page 209, and 1 folding copperplate facing page 290. II: 8 leaves, 375, (1) pp. Fine copy in contemporary speckled calf, spine gilt in compartments. Bookplate: Otto Oren Fisher.

FIRST APPEARANCE in print of Boerhaave's famous textbook of chemistry. Boerhaave (1668–1738), who had given private courses on chemistry since 1702, in 1718 succeeded Jacob Le Mort as professor of chemistry at Leiden. Always popular, his lectures were collected in manuscript by his students and published surreptitiously in the present volume, without Boerhaave's authorization. The book was very successful, was several times reprinted, and was translated into English, French, and German. Its publication annoyed Boerhaave, and he published his own enlarged edition as *Elementa Chemiae* (Leyden, 1132, 2 vols., 4to.) "The *Elementa Chemiae* is more formal and contains some information which does not appear in the *Institutiones* . . . and it shows the author's personality less clearly. The spurious

edition contains . . . many anecdotes, etc., which are omitted from the *Elementa Chemiae*, which . . . stimulate the interest of the student" (Tenney L. Davis ["The Vicissitudes of Boerhaave's Textbook of Chemistry," *Isis*, X, 1923, pp. 33 ff.]). "This spurious work afforded, in fact, a very competent presentation of Boerhaave's exposition of chemistry; but the distress . . . which its publication caused him can well be imagined" (John Read, *Humour and Humanism in Chemistry* [London, 1947, p. 132]). Not in Caillet, Cushing, Morgan, Osler, Poggendorff, Waller, Wellcome, etc. (Blake, 53; Bolton, 321; D.S.B., II, 227; Duveen, 83–84; Edelstein, 329; Ferchl, 53; Ferguson, I, 112 [not in Young Coll.]; Ferguson Coll., 100; Gibbs, *Ambix*, 6 [1958] 130; Hertzberger, 119; Lindeboom, 444 [gives size wrongly as 4to.]; Neu, 511; Partington, II, 743; Smith, 59; Sondheimer, 197; Thornton & Tully, 157; Watt, I, 127f)

BOERHAAVE, Herman

Institutiones et Experimenta Chemiae. . . .

Venice: Apud Sebastianum Coleti. 1726.

First edition printed in Italy. 2 vols., 8vo. I: 292 pp. With woodcut figure on page 210 and 1 folding copperplate facing page 292. II: 6 leaves, 350 pp., 1 leaf. Very good copy, entirely uncut, in contemporary brown painted boards (simulating tree calf), green spines, maroon morocco labels gilt.

THE ONLY Italian edition of the *Institutiones*, being a reprint of the Latin edition of 1724. The first title page is undated, and the privilege in volume 2 is dated 1 July 1725. Lindeboom (no. 446) lists an edition "Venetiis, 1724–26," but that is a ghost. A very rare book. Gibbs (*Ambix*, 6 [1958], 130) traced only two copies (Biblioteca Nazionale Centrale, Florence; Royal Dutch Medical Association Library at University of Amsterdam). Not in the British Library or Bibliothèque Nationale. Not in Bolton, Duveen, Edelstein, Ferguson, Ferguson Coll., Neu, Smith, Sondheimer, Waller, Watt, etc. The Wellcome Library has only an imperfect copy of volume 2. (Blake, 53; Ferchl, 53; Hertzberger, 120; Lindeboom, 447; Partington, II, 743; Thornton & Tully, 157; Wellcome, II, 190)

BOERHAAVE, Herman

A New Method of Chemistry; including the Theory and Practice of that Art: laid down on Mechanical Principles, and accommodated to the Uses of Life. The whole making a clear and rational system of chemical philosophy. To which is prefix'd a critical history of chemistry and chemists, from the origin of the art to the present time. Written by the very learned H. Boerhaave, . . . Translated from the printed edition, collated with the best manuscript copies. By P. Shaw, M.D. and E. Chambers, Gent. With additional notes and sculptures.

London: Printed for J. Osborn and T. Longman, at the Ship in Pater-noster-Row. 1727.

First English edition. 4to. Pp. xvi, 383, (1), 160, (161–188), 161–335, (1); 22 leaves (index). With 2 fine copperplates (pl. I: Chemical Vessels; pl. II: Chemical Furnaces). The extra pages (161–188) are bound in correctly. Fine copy in original paneled unlettered calf; rebacked, with original spine laid on. From the library of the celebrated physician Thomas Frewen, M.D. (1704–1791), with his unobtrusive stamp on title and first flyleaf.

THE ONLY English translation of the surreptitious *Institutiones et Experimenta Chemiae*, 1724, by Peter Shaw and Ephraim Chambers, who collated the printed text with the most complete manuscripts of Boerhaave's lectures and added notes of their own. Written in a racy, candid, and informal style, this competent translation was well received by English readers. One of the earliest attempts at writing a history of chemistry is in part I (pp. 1–50). Part II (pp. 51–383) covers the theory of chemistry, and part III (pp. 1–335) the practical operations. The importance of this famous textbook is discussed by John Read (*Humour and Humanism in Chemistry*, London, 1947, pp. 132–152). This copy has an important provenance, having belonged to Thomas Frewen, one of the first physicians to inoculate against smallpox. Shaw and Chambers were well-known authors, on whom see the D.N.B. Not in Duveen, Neu, Waller, etc. (Blake, 54; Bolton, 321–322; Cushing, B466; D.S.B., II, 227; Edelstein, 330; Ferchl, 53; Ferguson, I, 112 [not in Young Coll.]; Ferguson Coll., 100; Gibbs, 131; Hertzberger, 102; Lindeboom, 449; Osler, 1095; Partington, II, 743; Smith, 59; Sondheimer, 200; Thornton & Tully, 157; Watt, I, 127g; Wellcome, II, 190)

BOERHAAVE, Herman

A New Method of Chemistry; including the History, Theory, and Practice of the Art: translated from the original Latin of Dr. Boerhaave's Elementa Chemiae, as published by himself. To which are added, notes; and an appendix, shewing the necessity and utility of enlarging the bounds of chemistry. With sculptures. By Peter Shaw, M.D. The second edition. London: Printed for T. Longman, at the Ship in Pater-noster-Row. 1741.

First Shaw translation of the authorized edition of the *Elementa Chemiae* (Leyden: I. Severinum, 1732). 2 vols., 4to. I: xxx, 593, (1) pp. II: 1 leaf, 410 pp., 19 leaves (index). With 25 copperplates (17 by J. Mynde on 9 folding leaves, and 8 by J. Vander Gucht on 8 folding leaves). Fine copy in contemporary gilt-ruled calf, richly gilt spines, maroon morocco labels.

UNIVERSALLY AGREED to be the most complete English translation of the *Elementa Chemiae*, the so-called first edition by Shaw and Chambers (1727) being the English version of the surreptitious *Institutiones et Experimenta Chemiae* (1724), which Boerhaave repudiated. Shaw retained some of the notes of the 1727 edition, with revisions and timely additions, so that the present translation is a more useful work than the Latin original. An immediate success, it remained for nearly half a century one of the best textbooks on chemistry in English. In Great Britain "generations of chemists . . . were brought up on it" (Gibbs). As an appendix to the second volume Shaw added *An Essay for the Farther Advancement of Chemistry* (pp. 345–374), an abridged version of the first essay of his *Three Essays in Artificial Philosophy* (1731); and *An Essay for Introducing a Portable Laboratory*, by Shaw and Hauksbee (1731). Not in Bolton, Cushing, D.S.B., Ferguson Coll., Hoover, Osler, Waller, Watt, etc. (Blake, 54; Duveen, 84; Edelstein, 331; Ferchl, 53; Ferguson, I, 112 [not in Young Coll.]; Gibbs, 133; Hertzberger, 103; Lindeboom, 479; Morgan, 75; Neu, 517; Partington, II, 744; Smith, 59; Sondheimer, 203; Thornton & Tully, 157; Wellcome, II, 190)

BOERHAAVE, Herman

A New Method of Chemistry; including the History, Theory, and Practice of the Art: translated from the original Latin of Dr. Boerhaave's Elementa Chemiae, as published by himself. To which are added, notes; and an appendix, shewing the necessity and utility of enlarging the bounds of chemistry. With sculptures. By Peter Shaw, M.D. F.R.S. The third edition corrected.

London: Printed for T. and T. Longman, in Pater-noster-Row. 1753.

Second edition of the Shaw translation of the authorized edition of the *Elementa Chemiae* (Leyden: I. Severinum, 1732).

2 vols., 4to. I: xxx, 593, (1) pp. With 17 copperplates (by J. Mynde) on 9 folding leaves. II: 1 leaf, 410 pp., 19 leaves (index). With 8 folding copperplates (by J. Vander Gucht). (N.B. Wording of title and imprint of vol. II slightly different.) A superb copy in pristine condition, with wide margins, in contemporary light-tan speckled calf, orange-tan morocco labels. Armorial bookplates: William Constable.

THE LAST and best English edition of Boerhaave's famous textbook, being an exact reprint of the 1741 edition with identical pagination. The corrigenda, which appeared on the last page of the index in volume II of the 1741 edition, have been corrected. Comparison of the engraved plates reveals that they are identical to those of the 1741 edition. According to a note in the *Smith Catalog* (1960), Shaw's translation of Boerhaave was the textbook used in Provost William Smith's course of chemistry at the University of Pennsylvania in 1756 (i.e., in colonial times). This beautiful copy came from the library of William Constable (d. May 1791), F.R.S. (1775). For details on Constable, see Thomas Thomson, *History of the Royal Society* (London, 1812), appendix IV, p. 55. Scarce. Not in Cushing, D.S.B., Duveen, Ferchl, Morgan, Neu, Osler, Waller, Wellcome, etc. (Blake, 54 [vol. I only]; Bolton, 322; Edelstein, 332 [vol. I only]; Ferguson, I, 112 [not in Young Coll.]; Ferguson Coll., 100; Gibbs, 133; Hertzberger, 104; Hoover, 144; Lindeboom, 480; Partington, II, 744; Smith, 59; Sondheimer, 205; Thornton & Tully, 157; Watt, I, 127g)

BOERHAAVE, Herman

Sermo Academicus de Comparando in Physicis; quem habuit in Academia Lugduno-Batava, quum Octavo Februarii, Anno MDCCXV. Rectoratum Academiae deponeret.
Leyden: Apud Petrum Vander Aa, Bibliopolam. 1715.

First edition. 4to. 2 leaves, 52 pp. With beautiful engraved title page and large engraved vignette on letterpress title. Few minor marginal stains and some early underlining and notes in ink; otherwise good copy with wide margins, in dark-brown quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A LECTURE BY Boerhaave on the degrees of certitude in the physical sciences, delivered on 8 February 1715. It marked the end of his first term as vice chancellor of the University of Leiden. The works of the ancients are discussed (e.g., Democritus, Epicurus, and Leucippus), as well as those of more recent scientists (e.g., Bernoulli, Boyle, Descartes, Galileo, Gassendi, Halley, Hooke, Leibnitz, and Newton). The engraved title, showing Boerhaave giving his address in the great auditory at Leyden, and the title-vignette are both reproduced by Lindeboom. (Blake, 55; D.S.B., II, 225; *Heirs of Hippocrates*, 744; Hertzberger, 23; Lindeboom, 27; Sotheran, Cat. 832 [1932], 5070; Wellcome, II, 189)

BOERHAAVE, Herman

Some Experiments concerning Mercury. . . . Translated from the Latin; communicated by the Author to the Royal Society.
London: Printed for J. Roberts, near the Oxford-Arms, in Warwick-Lane. 1734.

First edition in English. 8vo. 55, (1) pp. Very good copy, in crimson quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A RARE BOOK of fundamental importance, in which Boerhaave proved the impossibility of transmuting mercury into gold. He showed that on prolonged heating just below its boiling point mercury formed a red calx, which on heating alone (without the addition of charcoal) returned to metallic mercury. He thus demonstrated that Becher and Stahl were wrong in their belief that metals were regenerated from their calxes only by heating them with charcoal, a substance supposedly rich in phlogiston. Some "specimens of mercury were variously heated for fifteen and one-half years, boiled 511 times, or mixed with gold and then distilled 877 times. Gold remained gold, and mercury, mercury" (D.S.B. [II, 227]). The experiments described herein were first published in Latin in the *Phil. Trans*, 38, 145 (1734). Not in Cole, Duveen, Ferguson, Wellcome, etc. (Blake, 55; Gibbs, *Ambix*, 6 [1958], 129, 135; Hertzberger, 162; Lindeboom, 509; Neu, 529; Smith, 59)

BOHN, Johann

Circulus Anatomico-Physiologicus, seu Oeconomia Corporis Animalis, hoc est, cogitata, functionum animalium potissimum formalitatem et causas concernentia.
Leipzig: Apud Thomam Fritsch. 1697.

Third (or second issue of second) edition? 4to. 3 leaves, 478 pp., 10 leaves (index). Woodcut of Pegasus on title page. Fine copy, in original blind-stamped vellum. From the library of Dr. Gaston de Beloe, member of the Société Géologique de France, with his inscription on the front cover and on the rectos of the first free endpaper and first flyleaf.

DEDICATED TO the great physician Marcello Malpighi (1628–1694), the *Circulus* (first, 1680), comprising thirty progymnasmata, shows Bohn to have been an expert on contemporary anatomical and physiological discoveries. He "experimented on the decapitated frog, declaring the reflex phenomena to be entirely material and mechanical, the general view of the time being that 'vital spirits' were present in the nerve-fluid. Bohn showed that the nerves do not contain a 'nerve juice'" (Garrison-Morton, 1355). This work covers what is now termed biochemistry: e.g., chemistry of blood, chylification, mechanism of urine formation, respiration, smelling, and tasting. The author refers to the works

of numerous contemporary chemists and physiologists, including Bartholin, Borel, Boyle, Helmont, Mayow, Swammerdam, Sylvius, and Willis. Only the 1686 edition is mentioned by Garrison-Morton, Thorndike (VIII, 371), Waller (1244), and Wellcome (II, 193). Another edition also appeared (Leipzig, 1710; Eales, 1219). (Ferchl, 55; Osler, 2072; Partington, II, 301)

BOHN, Johann

Dissertationes Chymico-Physicae, quibus accedunt ejusdem Tractatus, de Aeris in Sublunaria Influxu, et de Alcali et Acidi insufficientia.

Leipzig: Apud J. Thomam Fritsch. 1696.

Second (first 8vo.) edition. 8 leaves, 554 pp., 11 leaves. Woodcut (Pegasus) on title, and divisional title pages at pages 447 and 513. Fine copy in original half vellum, marbled boards, old ink lettering on spine.

BOHN WAS, sequentially, professor of anatomy, therapeutics, town physician, and dean of the medical faculty at the University of Leipzig. The present work (first: Leipzig, 1685, 4to.; Duveen, 85; Poggendorff, I, 226) contains fifteen chemical dissertations at which Bohn presided, together with reprints of his tracts on the chemistry of gases (first, 1675) and acids and alkalies (first, 1675). He opposes the iatrochemical school, rejects the theory that acids and alkalies form an adequate basis for explaining biochemical processes, discusses the possible porosity of glass (referring to Boyle), and mentions the crystallization of alkaline salt (potassium carbonate) and the formation of cubic niter (sodium nitrate) from a solution of common salt in boiling nitric acid. Boyle, Glauber, van Helmont, and other chemists are cited throughout. The final and most complete edition, and the first to contain the reprint of the tract on acids and alkalies. "Every one speaks of Bohn in the highest terms" (Ferguson). He laid the foundation of a scientific treatment of forensic medicine. (Bolton, 323; D.S.B., II, 238; Ferchl, 55; Ferguson, I, 113; Ferguson Coll., 101 [imperf.]; Krivatsy, 1433; Neu, 536; Partington, II, 301; Smith, 60; Watt, I, 128g; Wellcome, II, 193)

BOHN, Johann

Epistola ad Virum Nobilissimum atque Amplissimum D. Joelem Langelottum, . . . De Alcali et Acidi Insufficientia pro Princip Principiorum seu Elementorum Corporum naturalium munere gerendo. Conscripta a Johanne Bohn . . .

Leipzig: Sumptibus Johannis Fritzchii. 1675.

First edition. 8vo. 64 pp. Fine copy in contemporary boards. Stamp (nineteenth century) on title page, circular engraved bookplate (eighteenth century) on front pastedown, and ms.

Note on flyleaf dated 1765 recording the gift of this book to Dr. (C. J.) Trew of the Acad. Caesareae in Nuremberg.

BORN IN Leipzig, Bohn (1640–1718), M.D. (1665), was an esteemed physician who effected the transition from alchemical philosophy to experimental physiology and biochemistry. In this important work, addressed to Joel Langelott (1617–1680), Bohn contends that the traditional theory of acids and alkalies is inadequate to account for the composition of all the substances of the natural world. For example, he cites alcohol, which contains neither acid nor alkali, and refers in particular to Boyle's *Sceptical Chymist*, as well as to works by Helmont, Sylvius, Tachenius, Zwelfer, and other chemists. "There seems to have been a certain fashion at this time among chemists to publish their books under the form of a letter to Joel Langelott" (Duveen). This tract was reprinted (Leipzig, 1681; Poggendorff, I, 226) and was included in Bohn's *Dissertationes Chymico-Physicae* (Leipzig, 1696). Only the 1681 edition is mentioned by Partington (II, 301). (Bolton, *First Suppl.*, 98; Duveen, 85; Ferchl, 55; Ferguson, I, 113 [not in Young Coll.]; Ferguson Coll., 101; Neu, 537; Thorndike, VIII, 371; Waring, 104; Watt, I, 128f; Wellcome, II, 193)

BOLNEST, Edward

Aurora Chymica: or a Rational Way of Preparing Animals, Vegetables, and Minerals, for a Physical Use; by which Preparations they are made most efficacious, safe, pleasant Medicines for the Preservation and Restoration of the Life of Man. Authore Edwardo Bolnest Med. Reg. Ord.

London: Printed by Tho. Ratcliffe, and Nat. Thompson, for John Starkey at the Miter within Temple-Bar. 1672.

First (only) English edition. 8vo. 8 leaves, 146 pp., 1 leaf (postscript). Page 37 is a divisional title page to second part. Fine copy in antique-style modern sheep, gilt-lettered maroon label, spine gilt-ruled and dated. From the library of Professor Franz Sondheimer, with his bookplate on the front pastedown endpaper.

A VERY RARE pharmaceutical chemical book by Bolnest, of whose life nothing has been recorded. The author also published *Medicina Instaurata, or: A Brief Account of the true Grounds and Principles of the Art of Physick* (London: J. Starkey, 1665). A Latin translation of the *Aurora Chymica* appeared at Hamburg, 1675. The book is essentially on the practical chemical methods by which pharmaceutical chemicals and medicines can be prepared from animals, plants, and minerals. Pages 94–146 are of particular interest as they cover the chemistry of metals and minerals, with emphasis on preparations made from gold, silver, mercury, tin, lead, iron, copper, antimony, niter, nitric acid, salt, hydrochloric acid, aqua regia, amber, sulphuric acid, etc. The

seventeenth-century preparations of recognizable salts are covered. The first two parts of the book describe preparations of medicines from such materials as mummy, blood, bones, crustaceans, reptiles, insects, birds, mammals, honey, and ambergris. The preface is dated from Queen-street, near Guildhall, London, 26 March 1672. Not in Bolton, Caillet, Cushing, Duveen, Mellon, Morgan, Osler, Poggendorff, Reynolds, Smith, Waller, etc. (Ferchl, 56; Ferguson, I, 114 [not in Young Coll.]; Ferguson Coll., 102; Neu, 539; Partington, II, 182; Thorndike, VIII, 97; Watt, I, 129t; Wellcome, II, 196; Wing, B3497)

BONNEAU

Teinture Alcaline. Par Mr. Bonneau Docteur en Médecine.
Toulouse: Chez M. Fouchac, à la Porterie. 1706.

First edition. 12mo. 17 leaves, 309, (3) pp. Very good copy in contemporary sprinkled calf, spine gilt. Old writing on title page neatly inked out (not affecting wording of title).

A BOOK OF the greatest rarity about which no information has been found in any bibliography. This title is not in the British Library, Bibliothèque Nationale, or National Union Catalogue. The catalogue of the Bibliothèque Nationale lists only another book by this author, published pseudonymously under the name Raphael: *Vertus et usages de l'azoth, par le sieur Raphael*, (Bonneau, docteur en médecine), Toulouse, 1704.

After tracing the etymology of the word *azoth* from the alchemists through the iatrochemists to the beginning of the eighteenth century, the author gives (pp. 2–3) a tantalizingly brief description of his *teinture alcaline*. Evidently the flowers of violets and other plants were first steeped in alcohol for a long period; then the alcohol was distilled gently, yielding a distillate (largely alcohol) containing the essential oils extracted from the petals. This was treated with “Alcali nitreux & stibié,” which concentrated (i.e., dehydrated) the alcohol. After standing at room temperature for several weeks, the alcoholic solution would contain a small amount of potassium antimonate. The stibiated nitrous alkali was made by fusing niter (potassium nitrate) with antimony sulfide in a red-hot crucible. Bonneau’s “azoth” thus consisted of a dilute alcoholic solution of potassium antimonate (probably also containing potassium bisulfate, from the reaction of antimony sulfide with fused niter) and some essential oils derived from flowers. There is much to interest the chemical historian throughout the book. Lenglet Dufresnoy (III, 162) refers to a Jean de Bonneau, 1653, possibly the same author. Partington (II, 247) discusses the word *azoth* and its various meanings.

BONNET, Charles

Recherches sur l'Usage des Feuilles dans les Plantes, et sur quelques autres sujets relatifs à l'histoire de la végétation.
Par Charles Bonnet, . . .

Göttingen & Leyden: Chez Elie Luzac, Fils. 1754.

First edition. 4to. viii, 343, (1) pp. With 31 folding copper-plates. Title page in red and black, with large engraved vignette (by J. Wandelaar, 1753). Fine copy with wide margins, in original gilt-ruled mottled calf, spine richly gilt, crimson morocco label.

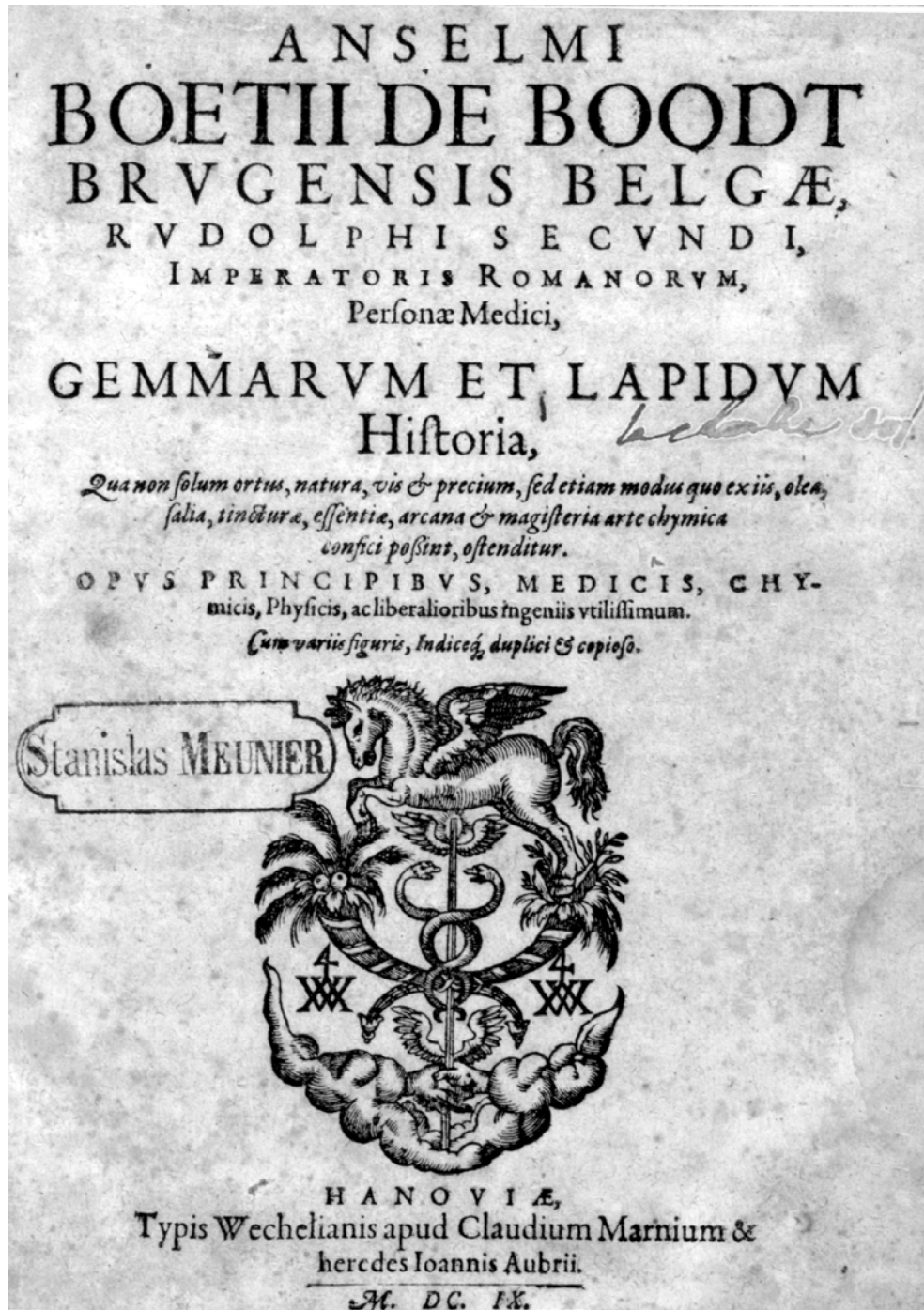
CONSIDERED ONE of the fathers of modern biology, the Swiss scientist Bonnet (1720–1793) was distinguished both for his experimental research and for his philosophy, which exerted a profound influence on the naturalists of the eighteenth and nineteenth centuries. In the *Recherches* Bonnet grouped five memoirs, all of which are of prime importance in the history of plant biology. He describes with great precision the nutrition of leaves and their transpiratory phenomena. Although he was unable to identify the gases (oxygen and carbon dioxide) produced and absorbed during the photosynthetic process, Bonnet made careful observations of the conditions under which these gases were produced. For his expert experimental technique, Bonnet must be regarded as one of the first to investigate the processes under which photosynthesis in plants occurs. His experiments became the basis for the later researches on photosynthesis by Priestley and Ingenhousz. The fine plates were engraved by Jacob wander Schley and J. Wandelaar. Not in Eales, Osler, Waller, or Wellcome. (Blake, 58; Ferchl, 56; Nissen, 201; Partington, III, 281; Poggendorff, I, 233; Pritzel, 981; Watt, I, 132c)

BOODT, Anselmus Boetius de

Gemmarum et Lapidum Historia, qua non solum ortus, natura, vis & precium, sed etiam modus quo ex iis, olea, salia, tincturae, essentiae, arcana & magisteria arte chymica confici possint, ostenditur. Opus principibus, medicis, chymicis, physicis, ac liberalioribus ingeniis utilissimum. . . .

Hanau: Typis Wecheliani apud Claudium Marnium & heredes Joannis Aubrii. 1609.

First edition. 4to. 8 pp., 6 leaves, 294 pp. (badly numbered 288), 8 leaves. (N.B. Pagination skips from 112 to 117 and from 270 to 277, but text and collation complete). With 2 folding tables. Large woodcut printer’s device on title and text woodcuts. Fine copy in contemporary calf, spine richly gilt, brown morocco label. Stamp on title page of the celebrated French geologist Stanislas Meunier (1843–1925); eighteenth-century bookplate of the physician J. P. le Dru on front paste-down endpaper and signature of Caroli De Henaut (dated 1710) on flyleaf facing title page.



Boodt. Gemmarum et Lapidum Historia. Hanau, 1609.

THE FIRST attempt to systematize mineralogy. "This book, which appeared in the same year as that in which Kepler discovered the laws of planetary motion, is in many respects the most important lapidary of the 17th century and exerted a widespread influence" (Adams, *Development of the Geological Sciences*, pp. 161–162). It enumerates about six hundred minerals, with descriptions of their chemical, physical, and medicinal properties. De Boodt (ca. 1550–1632) criticizes Aristotle, Pliny, Paracelsus, and others but accepts the four element and *tria prima* theories. His "chief work" (D.S.B.), which provided the basis for Nicols's *Lapidary* (1652). Rare. This copy has a distinguished provenance. (Brunet, I, 1108; Caillet, 1285; D.S.B., II, 293; Ferchl, 54; Ferguson Coll., 105; Partington, II, 101; Poggendorff, I, 236; Thorndike, VI, 318–24; Ward & Carozzi, 251 [imperf.]; Watt, I, 133r; Wellcome, I, 980)

BOODT, Anselmus Boetius de

Gemmarum et Lapidum Historia. Quam olim editit Anselmus Boetius de Boot [sic] Brugensis, Rudolphi II Imperatoris Medicus. Nunc vero recensuit, a mendis repurgavit, commentariis, & pluribus, melioribusque figuris illustravit, & multo locupletiore indice auxit, Adrianus Toll Lugd.-Bat. M.D.
Leyden: Ex officina Joannis Maire. 1636.

Second (first Toll) edition. 8vo. 4 leaves, 576 pp., 12 leaves (last blank). With 2 folding tables. Woodcut device on title page and text woodcuts. Few minor marginal wormholes; otherwise very good copy, in contemporary vellum, spine ink-lettered. Old signatures on leaf facing title page (Johannes Franciscus Vallant, D.M.; C.A. Lemarquiere, D.M.).

THE FIRST edition in octavo format of this important work, edited with notes and corrections by the Leiden physician Adrian Toll. One of the most serious works on gems and minerals before Boyle, this edition is essentially a paginary reprint of the first (Hanau, 1609). The list of authors includes many famous names (e.g., Albertus Magnus, Andrea Bacci, Andreas Libavius, Conrad Gesner, Georgius Agricola, Joseph Quercetanus, and Jerome Carden). This edition remained unknown to Ferchl, Partington, Poggendorff, and Thorndike. There is no copy in the Ferguson Collection. (British Museum, *Natural History Cat.*, I, 199; Caillet, 1285; D.S.B., II, 293; Harvey, 71; Hoover, 146; Manget, *Bibliotheca Scriptorum Medicorum*, II, pt. 2, p. 385; Smith, 63; Sotheran, Cat. 795 [1925], 9410 ["Rare"]; Ward & Carozzi, 252; Watt, I, 133r; Wellcome, I, 981)

BOODT, Anselmus Boetius de

Gemmarum et Lapidum Historia. Quam olim editit Anselmus Boetius de Boot, Brugensis, Rudolph II Imperatoris Medicus. Postea Adrianus Tollius, Lugd.-Bat., M.D., recensuit; figuris melioribus, & commentariis pluribus illustravit, & indice auxit multo locupletiore. Tertia editio longe purgatissima. Cui accedunt Joannis de Laet, Antwerpiani, De Gemmis & Lapidibus libri II. Et Theophrasti liber De Lapidibus, Gr. & Lat. cum brevibus notis.
Leyden: Ex Officina Joannis Maire. 1647.

Third (second Toll) edition. 8vo. 4 leaves, 576 pp., 12 leaves; 32 leaves, 210 pp., 3 leaves. With 2 folding tables, separate divisional title page (de Laet), and numerous fine text woodcuts. A beautiful copy in an elegant mid-eighteenth-century maroon morocco binding, covers gilt-ruled, inner dentelles gilt, spine richly gilt, all edges gilt.

THE FINAL Latin edition to be edited by Adrian Toll (d. 1635). It is especially valuable because the publisher, Jan Maire, has supplemented Toll's commentary with a Latin translation of Theophrastus's book on stones, which was made specifically for this edition by Jan van Laet (1593–1649). Laet based his recension on the text of Furlanus (Hanau, 1605) but incorporated some good emendations proposed by Salmasius in his *Pliniae Exercitationes* (Paris, 1629). "Cette Édition est plus complète que celles de 1609 et de 1636" (Brunet). (Adams, 163; D.S.B., II, 293; Ferguson Coll., 105; Harvey, 306; Partington, II, 101; Smith, 63; Sotheran, Cat. 795 [1925], 9413 ["Rare"]; Thorndike, VI, 321; Ward & Carozzi, 253; Watt, I, 133r; Wellcome, II, 202; Wheeler Gift, 120a)

BOODT, Anselmus Boetius de

Le Parfait Joaillier, ou Histoire des Pierres: ou sont amplement descrites leur naissance, juste prix, moyen de les cognoistre, & se garder des contrefaites, facultez medecinales, & proprietez curieuses. Composé par Anselme Boece de Boot, Medecin de l'Empereur Rodolphe II. Et de nouveau enrichi de belles Annotations, Indices & Figures. Par André Toll, Doct. Med. de Leide.

Lyons: Chez Jean-Antoine Huguétan. 1644.

First French edition. 8vo. 16 leaves, 746 pp., 18 leaves (last blank). Title page in red and black, with large copperplate. With 2 folding tables and woodcut text figures. Very fine, crisp copy, in original vellum, spine ink-lettered.

THE FIRST translation into French, by Jean Bachou, of the first Adrian Toll Latin edition (Leyden, 1636). The publisher, J. A. Huguétan, dedicated the book to Gaspard de Monconys, and the privilege is dated 4 January 1644. "Important as the authority on historical gems, and for giving

the prices of gems and pearls and illustrations of lapidary's tools and apparatus for cutting and polishing diamonds" (Zeitlinger). There is a long section on the lodestone and magnets. Another edition appeared (Lyons, 1649). Not in the usual chemical bibliographies. (Caillet, 1286 ["Rare et singulier"]; D.S.B., II, 293; Ferguson Coll., 105; Goldsmith, B1406; Graesse, I, 493; Hoover, 147; Partington, II, 102; Sotheran, Cat. 795 [1925], 9414 ["Very Rare"]; Ward & Carozzi, 254; Wellcome, II, 202; Wheeler Gift, 120)

BÖÖK, Lars

Specimen Academicum, de Officinis Ferrariis et Ferro in Svecia Malleato, quod cum consensu ampliss Facult. Philosoph. in incluta Regia Academia Upsaliensi, praeside . . . Mag. Nicolao Celsio, . . . Placide . . . submittit Laurentius Böök, Westmannus. In Aud. Gust. Maj. ad d. VIII Decemb. Anno MDCCXXII. . . .

Uppsala: Literis Wernerianis. (1722).

First edition. 8vo. 4 leaves, 46 pp., 3 leaves. Fine copy, in dark-brown quarter calf antique, marbled boards, spine gilt-lettered and dated.

AN INTERESTING dissertation on the history of iron- and steelmaking in Sweden, presented by Böök (or Boek, fl. 1720) under the direction of the professor of mathematics at Uppsala, Nicolas Celsius. Among the dedicatees is the famous metallurgist Lars Benzelstierna (Benzelius, 1680–1755), director of the silver refinery at Hellefors. The different Swedish iron ores and their impurities are described as well as the methods used to manufacture iron and steel of good quality. Laws relating to the mining and smelting of iron are also discussed. Very rare. Not found in available bibliographies.

BOOTH, Abraham

A Treatise on the Natural and Chymical Properties of Water, and on Various British Mineral Waters. By Abraham Booth, Operative Chymist, Lecturer on Chymistry, Pharmacy, &c. London: Published by George Wightman, . . . George Dupree, . . . and James Richardson, . . . 1830.

First (only) edition. 12mo. xii, 196 pp. Very good copy, uncut, in contemporary green cloth, with original printed paper label on spine.

DEDICATED TO Isaac Booth, the author's father, this excellent work on water is based on William Saunders's *A treatise on the chemical history and medicinal powers of . . . mineral waters* (London, 1800; 2nd ed., 1805). It is entirely chemical in content, giving analyses of many British mineral waters. Pages 183–190 list most of the mineral waters of Great Britain, classifying them as chalybeate, sulphureous,

saline, or pure. Pages 191–196 make up a useful bibliography of "some of the Authors on General or particular Mineral Waters." No biographical details have been found on the author, who also published a brief work listed by Wellcome (II, 203), namely, *A description of the ancient art of embalming, practised by the Egyptians* (London, 1831, a pamphlet of 8 pp.). Rare. Not in Duveen, Edelstein, Ferchl, Ferguson Coll., Morgan, Osler, Partington, Poggendorff, Smith, Waller, Wellcome, etc. (Bolton, 1st Supplement, 101; Waring, 778)

BOOTH, James Curtis, and MORFIT, Campbell

Smithsonian Report. On Recent Improvements in the Chemical Arts. By Professor James C. Booth, and Campbell Morfit.

Washington: Published by the Smithsonian Institution. 1852.

First edition. 8vo. 216 pp. Good copy in maroon cloth antique, spine gilt-lettered and dated, with original printed wrappers bound in.

AN EXCELLENT review of mid-nineteenth-century chemical technology, prepared under the direction and at the expense of the Smithsonian Institution. Subjects covered (among many) include fuels, glassmaking, pottery, cement, metallurgy, chemicals, drugs, pyrotechny, photography, textiles, dyeing, bleaching, oils, fats, soap, sugars, starches, and fermentation. Booth (1810–1888), a pupil of Silliman and Wöhler, founded the oldest chemical consulting firm in the United States. Joseph Henry considered him "the most accomplished practical chemist in our country." In 1849 President Zachary Taylor appointed Booth melter and refiner of the U.S. Mint, Philadelphia, a post he held until 1887. Morfit (1820–1897), professor of applied chemistry at the University of Maryland, published several books on industrial chemistry, including an important work on soap manufacture (1871). Scarce. Not in Bolton, Duncan, Duveen, Edelstein, Ferchl, Morgan, Partington, Poggendorff, etc. (Miles, 43; Smith, 63)

BORDEU, Théophile de

Dissertation sur les Eaux minérales du Bearn. Par M. De Bordeu Pere, Docteur en Médecine de la Faculté de Montpellier, & Médecin de Pau en Bearn. Paris: Chez G. F. Quillau, Pere, . . . 1750.

First edition. 12mo. xxvi + 173 pp., 1 leaf. Woodcut on title page. Fine copy, bound with Cavallery, A., *Dissertation sur la cause de la chaleur et de la froideur des eaux minerales* (Bordeaux, 1739).

A MEDICAL AND pharmaceutical work on the mineral waters of Bearn, which is a region at the base of the Pyrenees mountains. Bordeu (1722–1776) was professor of medicine in Montpellier and published several works, on which see Wellcome. Most of the present work is on the use of these waters in the treatment of various internal and external disorders, with references to the writings of Boerhaave, Fizes, Hoffmann, Glauber, Lister, Duclos, et al. A brief discussion of the chemical analysis and content of these waters is found on pages 170–71. Duveen (p. 88) describes a different book by Bordeu on the mineral waters of Bearn (Amsterdam, 1746) but not the present work. Not in Bolton, Caillet, Ferchl, Neu, Partington, Smith, Waller, Watt, Wellcome, etc.

BOREL, Pierre

Bibliotheca Chimica. Seu catalogus librorum philosophicorum hermeticorum in quo quatuor millia circiter, Authorum Chemicorum, vel de transmutatione Metallorum, re Minerali, & Arcanis, tam manuscriptorum, quam in lucem editorum, cum eorum editionibus, usque ad annum 1653 continentur. Cum eiusdem Bibliothecae Appendice, & Corollario. . . .
Paris: Apud Carolum du Mesnil, . . . et Thomam Jolly. 1654.

First edition. 12mo. 6 leaves, 276 pp. Woodcut head- and tailpieces. Fine copy in original blind-ruled, unlettered calf. From the library of the Scottish patriot Andrew Fletcher (1655–1716), with his signature on the title page.

The “first independent bibliography of chemistry and alchemy, including manuscript material” (Grolier Club, Bibliography, 59). Despite repetitions, this constitutes the first extensive catalogue of chemical works. It cites many authors and titles either now entirely lost or obtainable only with great difficulty. A reprint appeared (Heidelberg, 1656; Waller, 18140). It “is not without use even now for the older literature, and is familiar to those concerned with it” (Ferguson). A milestone of early chemical bibliography. Borel (ca. 1620–ca. 1689), a physician of Castres and later of Paris, was a “man of comprehensive knowledge, unwearied energy, and remarkable insight into the subjects he discussed” (Ferguson). Noted for his important book on the telescope (*De vero telescopii inventore*, The Hague, 1655–56), in which he assigned the invention to Zacharias Janssen (1590) over Hans Lipperhey (1608), Borel was also an ardent student of astronomy, optics, philology, etc., as well as chemistry. Watt, in 1824, stated that this book was “very scarce.” (Besterman, I, 767; Bolton, 7; Caillet, 1433; D.S.B., II, 305; Duveen, 89; Edelstein, 355; Ferchl, 58; Ferguson, I, 116; Ferguson Coll., 106; Heym, *Ambix*, I [1937], 48; Neu, 563; Partington, III, 13; Poggendorff, I, 240; Smith, 64; Thordike, VII, 153; Thornton & Tully, 311; Watt, I, 134w; Waite, 282; Wellcome, II, 204)

BOREL, Pierre

Historiarum, & Observationem Medicophysicarum, Centuriae IV. . . . Accesserunt, D. Isaaci Cattieri . . . Observationes Medicinales raras, Dn. Borello communicatae: et Renati Cartesii Vita eodem P. Borello Authore.

Frankfurt: Apud Laur. Sigismund. Cörnerum, Bibliopolam Lipsiensem. 1670.

Third (first Frankfurt) edition. 8vo. 8 leaves, 352 pp., 16 leaves (last blank); 86 pp., 1 leaf (blank); 55, (1) pp. Engraved title page and letterpress title in red and black. Separate divisional titles to *Observationes medicinales* by Cattier and *Vitae Renati Cartesii* by Borel. Woodcut on page 157 of first part and full-page copperplate on page 50 of “Cattier” section. Most leaves somewhat embrowned owing to quality of paper; otherwise good copy in original calf, gilt, joints cracked (but cords intact).

THE FIRST part contains four hundred medical observations by Borel, the first two hundred of which had appeared at Castres in 1653. “The first work to apply microscopy to medicine. Borel probably saw the blood corpuscles and Sarcopetes scabiei” (Garrison-Morton, 260). This edition is based on the second (Paris, 1656), which first contains the additional observations by Isaac Cattier (including a long and important chapter on the lymphatic vessels) and the first appearance of Borel’s *Life of Descartes*, the earliest biography of the great scientist. The bibliography of Descartes includes a list of manuscripts found at Stockholm after his death and extracts from his letters to Mersenne. The book is also of considerable iatrochemical interest. The fourth edition appeared at Frankfurt and Leipzig, 1676 (Wellcome, II, 205). Other editions are listed by Caillet, D.S.B., Ferguson, Partington, Waller, etc. (Eales, 529; Ferchl, 58; Krivatsy, 1573)

BORGMAN, Carolus Andreas

Dissertatio Chemica de Coeruleo Berolinensi (Berliner Blatt). . . . Publico Examini Deferunt Praeses Job. Henr. Engelhart, . . . Respondens Carol. Andr. Borgman, Scanus. D. XIX Decembr. A. MDCCLXXVIII.

Lund: Typis Berlingianis. (1778).

First edition. 4to. 21, (1) pp. Large woodcut headpiece on page 4. Very good copy with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A HISTORICALLY IMPORTANT dissertation on the preparation and properties of the valuable pigment Berlin green. Borgman was a student of Johann Heinrich Engelhart at the University of Lund. The history of the pigment Prussian blue (ferric ferrocyanide) is outlined, and the preparation of Berlin green (ferric ferricyanide) by oxidizing Prussian blue with dilute nitric acid is described, with

experimental details. The writings of Diesbach (the discoverer of Prussian blue), Dippel, Geoffroy, Macquer, Spielmann, Stahl, et al., are cited. The uses of Prussian blue and Berlin green as pigments in oil painting are discussed. Very rare. Unknown to the usual bibliographers.

BORGOGNINI, Antonio Maria

La Teoria del Fuoco d'Anton Ma. Borgognini Patrizio Sanese . . . Poema in Verso sciolto diviso in tre Parti colle Annotazioni, e Rami Allusivi d'un Filosofo Amico dell'Autore.

(Colophon: Firenze: Nella Stamperia di Giuseppe Allegrini alla Croce Rossa. 1774.)

First edition. 12mo. 1 leaf (engraved title page), 238 pp., 1 leaf (errata). With engraved frontispiece portrait of Pietro Leopoldo (by G. Vascellini), and 3 allegorical plates. Page 1 of text is engraved. Fine copy, unpressed and uncut, printed on thick paper, in original cream-colored pasteboards.

DEDICATED TO Peter Leopold, prince of Hungary and Bohemia, etc., this book contains a long poem on the theories of fire, light, combustion, fermentation, electricity, and related phenomena. Of historical interest are the extensive commentaries by Father Francesco M. Soldini on the chemical and physical aspects of the poem. The three parts of the poem are each discussed separately (i.e., pp. 47–87, 107–151, 169–229) and in great detail by Soldini, with numerous references to earlier and contemporary chemists and physicists (e.g., Boyle, Newton, Nollet, Franklin, and Boerhaave). The theory of phlogiston is covered (p. 169 et seq.). An extremely rare book, to which no bibliographical reference has been located.

BORGSTRÖM, Nils Peter

Observationes Stoechiometricae ad Mineralogiam Pertinentes . . . Praeses Carolus Gust. Retzius, . . . et respondens Nicolaus Petrus Borgström, Blekingus. In Auditorio Carolino die XVIII Nov. MDCCCXVIII.

Lund: Literis Berlingianis. (1818).

First edition. 4to. 12 pp. Mint copy on bluish paper, in maroon quarter cloth antique, marbled boards, spine gilt lettered and dated.

A DISSERTATION ON the chemical analysis and stoichiometry of two zeolite minerals, presented under the direction of Carl Gustaf Retzius (1798–1833) by Borgström. Retzius was demonstrator in chemistry at Lund and son of Anders Jahan Retzius (1742–1821), the famous professor of chemistry at the Carolinian Institute in Stockholm. Poggendorff (II, 611) briefly lists a few publications by C. G. Retzius but not this title. Rare. Not in the usual bibliographies.

BORMES (Baron de)

Épître à Messieurs les Savans et Amateurs en Chymie. Pour servir de Réponse à un article des Elémens d'Histoire-Naturelle & de Chymie de M. de Fourcroy; suivie de plusieurs Mémoires, sur des opérations nouvelles & curieuses en Chymie. Par M. le Baron De Bormes.

A Bruxelles, Et se trouve à Paris, Chez Hardouin & Gattey. 1787.

First edition. 8vo. 1 leaf, 145, (1) pp., 4 leaves. Engraved frontispiece, and 2 folding copperplates of chemical apparatus. Fine copy, uncut, in the original wrappers; bound in maroon half morocco antique, marbled boards, spine gilt-lettered and dated. From the library of Professor Franz Sondheimer, with his bookplate on the verso of the front wrapper.

THE AUTHOR had published in the *Mémoires de l'Académie des Sciences, Mém. div. Sav.*, (1774), 6, 613, a paper describing his process for preparing ethyl chloride by distilling alcohol with zinc chloride. In his *Elémens d'histoire naturelle et de chimie* Fourcroy had mentioned the preparations of Courtanvaux and La Planche but not that of Bormes. In this book Bormes defends his method, which he considers superior to those of the other two chemists. The text of his original memoir is printed on pages 17–31. It is followed by several other memoirs by the author, including two on sulphuric acid prepared from sulphur (illustrated by two copperplates). At the end is a list of memoirs that he planned to publish later. The frontispiece shows the author meditating in his book-lined study. He also appears on one of the plates. Rare. Not mentioned by Bolton, Cushing, Duveen, Edelstein, Neu, Osler, Partington, Poggendorff, Smith, Waller, Watt, Wellcome, etc. (Caillet, 1437; Ferchl, 58; Ferguson, I, 117; Ferguson Coll., 108)

BORN, Ignaz Edler von

Briefe über Mineralogische Gegenstände, auf seiner Reise durch Temeswarer Bannat, Siebenbürgen, Ober- und Nieder-Hungarn, an den Herausgeber derselben, Johann Jacob Ferber, . . . geschrieben.

Frankfurt und Leipzig. 1774.

First edition. 8vo. 6 leaves, 228 pp. With 3 folding engraved plates (C. G. Nestler Sc.). Very good copy in contemporary gilt-ruled half calf, marbled boards, marbled endpapers. Bookplate: Dr. Kemény Gyula.

THE DISTINGUISHED mineralogist and member of a noble German family, Born (1742–1791) studied natural history and mining in Prague and in 1770 joined the department of mines and the mint. "In the same year Born visited the principal mines of Hungary and Transylvania. His account of this expedition is preserved in a series of lively and interesting letters addressed to the mineralogist J. J. Ferber.

In 1774 Ferber published these letters in a work that later appeared in English, French, and Italian editions" (D.S.B.). In later years Born prepared catalogues of fossil and mineral collections, wrote works of classification and descriptions of mines and mining equipment, and also developed an amalgamation process for extracting gold and silver from various ores. Not in Blake, Hoover, Waller, Watt, Wellcome, Zittel, or the usual chemical bibliographies. (D.S.B., II, 315; Partington, II, 732; Poggendorff, I, 242; Ward & Carozzi, 261)

BORN, Ignaz Edler von

Travels through the Bannat of Temeswar, Transylvania, and Hungary, in the Year 1770. Described in a Series of Letters to Prof. Ferber, on the Mines and Mountains of these different Countries, By Baron Inigo Born, Counsellor of the Royal Mines, in Bohemia. To which is added, John James Ferber's Mineralogical History of Bohemia. Translated from the German, with some explanatory Notes, and a Preface on the Mechanical Arts, the Art of Mining, and its present State and future Improvement, By R. E. Raspe. . . .
London: J. Miller, . . . for G. Kearsley. 1777.

First English edition. 8vo. xxxix, (xi), 320 pp., 12 leaves. With 2 folding engraved maps. Fine, crisp copy, entirely unpressed and uncut, in the original boards. From the library of Hugh Cecil, Earl of Lonsdale, with his fine armorial engraved bookplate on the front pastedown endpaper.

THE FIRST edition in English of two important works on mining and metallurgy in central Europe, both of which were originally published in German in 1774. Born was in the government department of mines in Prague and subsequently became head of all mining operations in the Austrian Empire. He was responsible for important improvements in mining technology. In this book he describes how he was almost killed in a mine at Nagy-Banya by the arsenic fumes from the fires inside the mine used to detach the mineral ores. The translator of this work was the famous author of *Baron Munchausen's Travels*. Raspe had fled to England in 1776, and his very competent work in this translation enabled him later to pose as a mineralogical expert. Detailed descriptions are given of the production of metals, minerals, and salts from various ores, as well as assaying and analytical chemical processes used at the time. This important book was translated into Italian (Venice, 1778) and into French by A. G. Monnet (Paris, 1780). Scarce. Not in Blake, Bolton, Caillet, Duveen, Edelstein, Ferchl, Ferguson, Hoover, Neu, Poggendorff, Smith, Waller, etc. (D.S.B., II, 315; Partington, II, 732; Watt, I, 135k; Wellcome, II, 205)

BORN, Ignaz Edler von

Voyage Minéralogique faite en Hongrie et en Transylvanie, par M. De Born, traduit de l'Allemand, avec quelques notes, par M. Monnet, . . .
Paris: Rue et Hostel Serpente. 1780.

First French edition. 12mo. xvi, (4), 405, (1) pp. Fine copy in original mottled calf, spine richly gilt, green morocco label.

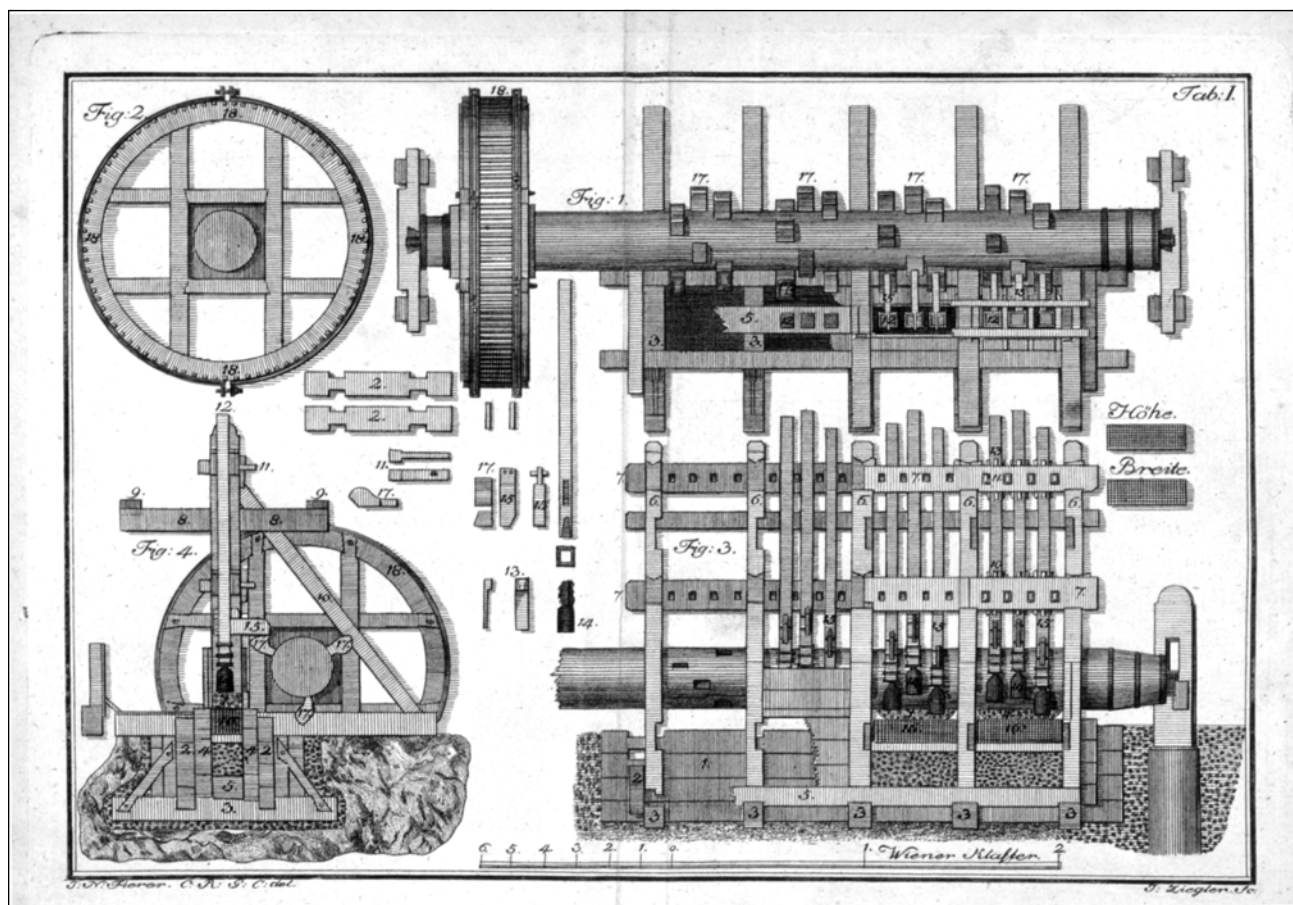
THE FRENCH translation of Born's *Briefe über Mineralogische Gegenstände* (Frankfurt & Leipzig, 1774). The translator, Antoine Grimoald Monnet (1734–1817), a Paris chemist, became inspector general of mines in France in 1774. This edition is valuable for the extensive footnotes added by Monnet. Not in Blake, Waller, Watt, Wellcome, or the usual chemical bibliographies. (D.S.B., II, 315; Hoover, 154; Partington, II, 732; Ward & Carozzi, 262)

BORN, Ignaz Edler von

Ueber das Anquicken der gold- und silberhältigen Erze, Rohsteine, Schwarzkupfer und Huttenspeise. . . .
Vienna: bey Christian Friederich Wappler. 1786.

First edition. 4to. 8 leaves, 227, (1) pp. Beautiful allegorical engraved frontispiece and title-vignette (J. Adam sc.), and 21 folding engraved plates of metallurgical apparatus (J. Ziegler sc.). Small engraved plates (by J. Adam) on pages 85, 190, and 227. Text mainly in black letter. Fine copy in contemporary half calf, gilt, speckled boards, tan morocco label, gilt, marbled endpapers.

"BORN INVENTED an amalgamation process for removing gold and silver from various ores. Since the process did not require the usual melting of the ore, its use effected a considerable saving of fuel. A trial of the process in the presence of observers was made at Selmeczbánya (German, Schemnitz), Hungary (now Banská Stiavnica, Czechoslovakia). In 1786 Born published his description of it. The process was adopted in copper mines throughout Hungary, and Born was given a share of the savings occasioned by its use" (D.S.B.). "The process consisted in first roasting the ore, which must contain some pyrites, with common salt, when silver chloride is formed. This was reduced by mercury in rotating horizontal barrels, and the silver amalgam produced was separated and the mercury removed by distillation" (Partington, who says that this is Born's "most famous book"). "Born's greatest contribution to mining was his improved hot amalgamation process of extracting precious metals from ores" (Weeks, *Discovery of the Elements*, 1960, p. 323). "One of the finest of eighteenth century works on mining . . . it contains valuable information on the methods of mining in Spanish America from the 16th century to date" (Sondheimer). Not in Blake, Bolton, Duveen, Edelstein, Smith, Ward & Carozzi, Wellcome, etc. (Annan,



Born. Ueber das Anquicken. Vienna, 1786.

Historic Books in Mining, 1960, no. 45; D.S.B., II, 315; Ferchl, 58; Hoover, 153; Partington, II, 732; Poggendorff, I, 243; Sondheimer, 215; Watt, I, 135)

BORN, Ignaz Edler von

Baron Inigo Born's New Process of Amalgamation of Gold and Silver Ores, and other Metallic Mixtures, as, by his late Imperial Majesty's Commands, introduced in Hungary and Bohemia, from the Baron's Account in German, translated into English by R. E. Raspe. . . . To which are added, a Supplement, or a comparative View of the former Method of Melting and Refining; and an Address to the Subscribers, giving an Account of its latest Improvements, and of the Quicksilver Trade.

London: Printed for T. Cadell in the Strand. 1791.

First English edition. 4to. xxxiv, 256 pp. With 22 folding engraved plates (Neele sculpt.). Fine, crisp copy, with wide margins, in half calf antique, marbled boards, maroon morocco label, gilt.

THE ENGLISH translation of Born's *Ueber das Anquicken* (Vienna, 1786), containing also Johann Jacob Ferber's *Reports and Opinions on the Advantages of Amalgamation . . .* (Leipzig & Vienna, 1787). The translator, who gives an informative twenty-seven-page introduction, was Rudolf Erich Raspe (1737–1794), a German professor at Kassel. He was elected F.R.S. in 1769 and fled to England in 1775 to avoid punishment for stealing medals from the collection in Kassel, of which he was curator. On his arrival in England he was expelled from the Royal Society. Raspe was the author of the original series of tall stories, *Baron Munchausen's Narrative of his Marvellous Travels . . . in Russia* (Oxford, 1785). Published in a very small edition, the list of subscribers for the present work gives only fifty-nine names (including Joseph Black and Richard Watson). Not in Blake, Bolton, Duveen, Ferchl, Poggendorff, Wellcome, etc. (Annan, *Historic Books on Mining*, 1960, no. 46; D.S.B., II, 316; Edelstein, 3785; Ferguson Coll., 108; Honeyman, 403; Hoover, 152; Neu, 566; Partington, II, 732; Smith, 64; Sondheimer, 216; Ward & Carozzi, 264; Watt, II, 791m)

BORN, Ignaz Edler von

Methode d'Extraire les Métaux Parfaits des Minerais et autres Substances Métalliques par le Mercure. . . .
Vienna: De l'Imprimerie de Gay. 1788.

First French edition. 4to. 4 leaves, 198 pp. With 21 folding engraved plates (J. Ziegler sc.). Woodcut head- and tailpieces. An excellent, crisp, wide-margined copy, in original full vellum, red morocco label, gilt.

BORN TRANSLATED his *Ueber das Anquicken* (Vienna, 1786) into French and dedicated it to Charles III, king of Spain. The plates are identical to those of the German edition but with French terms substituted in place of the German words. An 8vo. edition appeared the same year. It is interesting to note that Born was a Masonic lodge brother of Mozart and the prototype for Sarastro in *The Magic Flute*. The French edition is rare and is not mentioned by the usual bibliographies. (Partington, II, 732)

BORRICHIOUS, Olaus

Conspectus Scriptorum Chemicorum Illustriorum, Libellus Posthumus cui prae fixa historia vitae ipsius ab ipso conscripta.

Copenhagen: Sumptibus Samuelis Garmanni Bibliop. 1697.

First edition. 4to. 6 leaves, 48 pp. Woodcut printer's device on title page. Very fine copy, in brown quarter morocco antique, marbled boards, spine gilt-lettered.

THE FIRST attempt at a catalogue raisonnée of alchemical literature, preceded by an extensive autobiography of Borrichius in which he describes his visit to England (1663) and his meeting with Robert Boyle, Edmund Dickinson, Kenelm Digby, Walter Charleton, and other distinguished scientists. In eighty-one paragraphs the bibliography describes many alchemical works that are now very rare or completely lost. Ferchl, Poggendorff, and Partington give the date of publication as 1696, probably in error. (Bolton, 7; D.S.B., II, 317; Duveen, 90; Ferchl, 59; Ferguson, I, 119; Ferguson Coll., 105; Krivatsy, 1547; Neu, 557; Partington, III, 160; Poggendorff, I, 244; Waller, 18138)

BORRICHIOUS, Olaus

De Ortu, et Progresso Chemiae, Dissertatio.

Copenhagen: Typis Matthiae Godicchenii, sumptibus Petri Haubold, Reg. Acad. Bibl. 1668.

First edition. 4to. 6 leaves, 150 pp., 1 leaf (errata). Woodcut printer's device on title page. Some leaves lightly browned; otherwise very good copy, in original unlettered calf. From the library of John Stuart, third Earl of Bute (1713–1792).

A MAN OF considerable learning and a copious author, Oluf (or Ole) Borch (Olaus Borrichius, 1626–1690) was royal surgeon and professor of chemistry, botany, and poetry at the University of Copenhagen. In this influential history of alchemy, he demonstrates his credulity by attempting to prove the great antiquity of the Emerald Table and writings of Hermes Trismegistus. "This celebrated treatise, the most frequently quoted by early historians . . . was highly prized by the alchemists of his day on account of its earnest defense of their principles" (Bolton). "His works on the history of chemistry are still of use" (Ferguson). The principal fame of Borrichius is due to his works in the history of alchemy and his discoveries in chemistry, on which see Partington and Thorndike. This copy has a distinguished provenance, having come from the library of the Earl of Bute, secretary of state (1761) and favorite of George III. Retiring from politics (1765), the earl traveled on the Continent, buying important scientific books, and built a large library. Dispersed in July 1961, this copy was lot 77 at the Sotheby auction. (Bolton, 95; D.S.B., II, 317; Duveen, 89; Edelstein, 361; Ferchl, 59; Ferguson, I, 119 [not in Young Coll.]; Ferguson Coll., 105; Kopp, *Geschichte der Chemie*, III, 255; Krivatsy, 1548; Neu, 558; Partington, III, 160; Poggendorff, I, 244 [wrong date: 1688]; Smith, 64; Thorndike, VIII, 364; Waite, 282; Waller, 15422; Watt, I, 135q; Wellcome, II, 206)

BORRICHIOUS, Olaus

Hermetis, Aegyptiorum, et Chemicorum Sapientia ab Hermanni Conringii animadversionibus Vindicate per Olausum Borrichium. . . .

Copenhagen: Sumptibus Petri Hauboldi, Reg. Acad. Bibl. 1674.

First edition. 4to. 6 leaves, 448 pp., 4 leaves (index). With folding copperplate facing page 156. Very good copy in nineteenth-century vellum, maroon morocco gilt-lettered label, spine dated.

ONE OF the very few copies having the folding plate illustrating three types of retorts, as well as the four-page dedication to Jean Baptiste Colbert. According to the Wellcome Library catalogue, "this plate is a copy from a MS. of Zosimus (ca. 500 A.D.) of the earliest known illustration of distilling apparatus." In this work Borrichius answers Hermann Conring's *De Hermetica Aegyptiorum Medicina* (Helmstedt, 1648), wherein the extreme antiquity attributed to alchemy had been seriously doubted. Borrichius's book contains valuable information on the early history of alchemy. The substantial final portion supports Paracelsian theory as applied to medicine. No other editions except this one of 1674 exist. Although several works by Borrichius

were reprinted in Manget's *Bibliotheca Chemica Curiosa* (Geneva, 1702), this was not among them.

Ferguson states that there "were apparently two issues of this book, for I have seen other copies without the dedication and the plate." Duveen confirms this, his copy being without plate and dedication. The Wellcome Library catalogue states that this is the second issue, although on what authority I do not know. This issue is very rare. Not in Caillet, Cushing, Guaita, Mellon, Osler, Sondheimer, Waller, etc. (Bolton, 95; D.S.B., II, 317; Duveen, 89–90; Edelstein, 358; Ferguson, 118; Ferguson Coll., 105; Neu, 559; Partington, III, 161; Poggendorff, I, 244; Rosenthal, 173; Smith, 64; Thorndike, VIII, 366; Watt, I, 135q Wellcome, II, 206)

BOSC d'ANTIC, Paul

Mémoire qui a remporté le prix extraordinairement proposé par l'Académie Royale des Sciences, pour l'année 1760.

Quels sont les moyens les plus propres à porter la perfection & l'économie dans les Verreries de France? . . .

Paris: Chez Durand. 1761.

First edition. Large 4to. 2 leaves, 51, (1) pp. With 2 folding copperplates (by Defehrt), depicting designs of glass furnaces. Lower right-hand corner of title leaf repaired (not affecting imprint); otherwise fine copy with wide fore- and lower margins, in crimson half morocco antique, pebbled cloth, spine gilt-lettered.

AN IMPORTANT work on the chemistry of glassmaking, which describes improvements that could make the French glass industry more efficient and profitable. Awarded the prize for 1760 by the French Academy of Sciences, the running title is *Mémoire sur la perfection de la verrerie*. The history of glassmaking is traced with references to Agricola, Neri, Kunckel, Merret, Haudiquier de Blancourt, Pott, and other writers. Furnaces, crucibles, alkalies, the composition of glass-forming earths, and related matters are covered, and a number of technical modifications are proposed. Bosc d'Antic (1726–1784) was director of mirror manufacturing at St. Gobain and later the owner of a glassmaking factory. Duncan, Ferchl, Poggendorff, and Wellcome list other works by this author, but not the present title, which is rare. Not in Blake, D.S.B., Singer, or the usual chemical bibliographies. (Sotheran, Cat. 907 [1954], 100 [wrong pagination: 49 pp.]

BOSCOVICH, Ruggiero Giuseppe

Theoria Philosophiae Naturalis redacta ad unicam legem virium in natura existentium, auctore P. Rogerio Josepho Boscovich Societatis Jesu, nunc ab ipso perpolitata, et aucta, ac a plurimis praecedentium editionum mendis expurgata. Editio Veneta Prima ipso auctore praesente, et corrigente.

Venice: Ex Typographia Remondiniana. Superiorum permissu, ac privilegio. 1763.

First and only Venetian edition. 4to. xl + 311 + (1) pp., 4 leaves (catalogue of Boscovich's works). 4 folding copperplates. Errata on verso of last leaf. Title printed in red and black. Small engraving on title, and numerous woodcuts in text. Large paper copy in pristine condition, in contemporary half vellum, floral patterned boards, with maroon morocco gilt-lettered label.

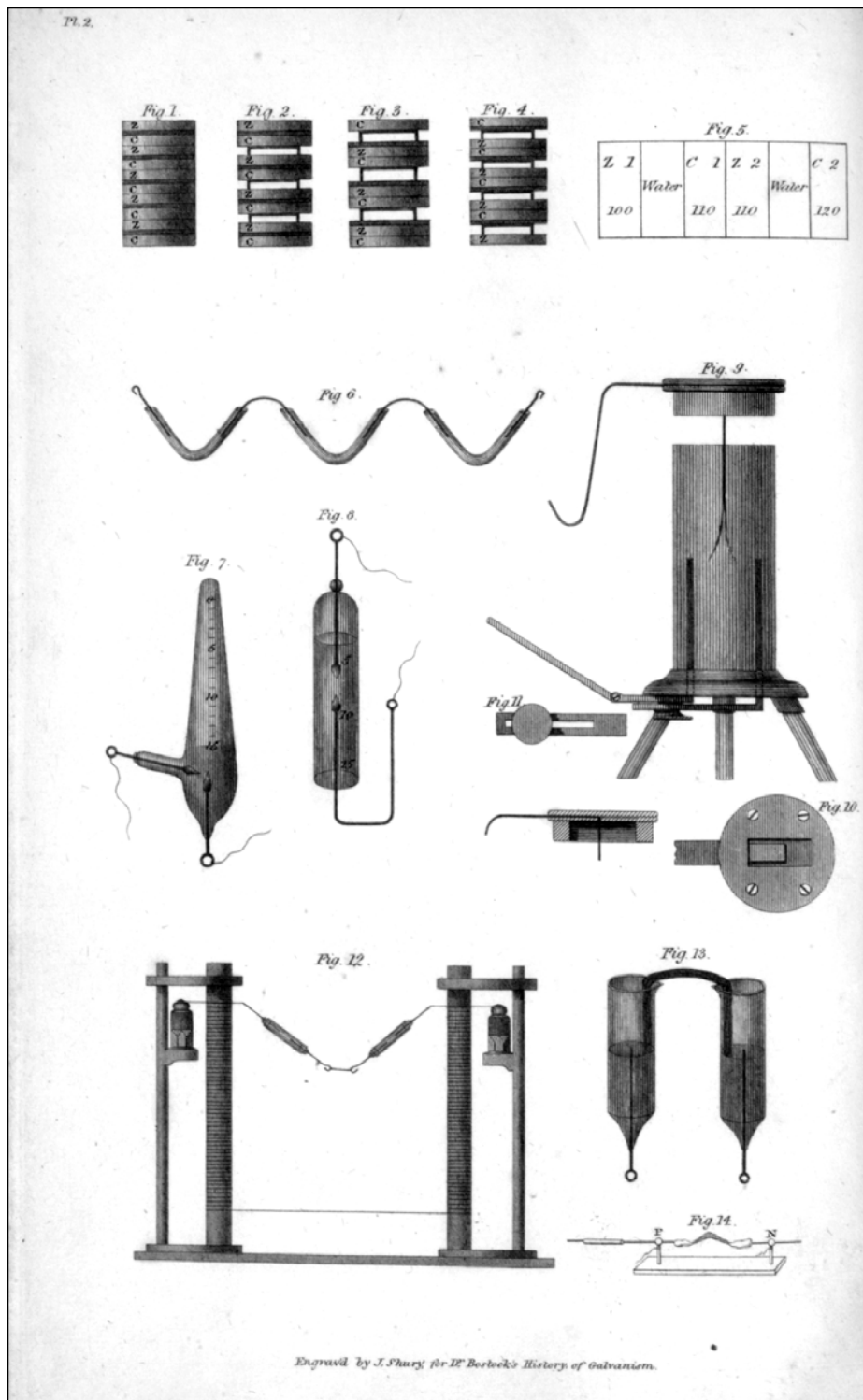
A SPLENDID COPY of a work of fundamental importance in which Boscovich (1711–1787) laid the foundation of present-day atomic science. Boscovich held views that are different from those of Lucretius and Newton and come nearer to the concepts of modern atomic physics. He abandoned material corpuscles, replacing them by point centers of alternating attractive and repulsive forces, a concept that Priestley, Faraday, Lord Kelvin, and others commended. "J. J. Thomson referred to him when describing the electron and his own idea of successive rings or shells of electrons in the atom, only the outer ones of which are chemically operative. This in turn led to the work of Niels Bohr, who showed that the energy of the electron revolving in its fixed orbit was transformed into light energy of a definite frequency" (*Printing and the Mind of Man*). First published in Vienna (1758) and reprinted several times, this Venice (1763) edition is the definitive one, which was corrected and greatly augmented by Boscovich. It is one of the great milestones in the history of scientific thought. All early editions are rare. An English translation of this Venice edition appeared in 1922. The D.S.B., Poggendorff, P.M.M., and Watt cite only the first edition. (*De Backer-Sommervogel*, I, 1840–41, No. 66; Partington, II, 476; Riccardi, I, 180; Sotheran, Cat. 789 [1924], 4485 ["Rare"]; Whyte, 103)

BOSTOCK, John

An Account of the History and Present State of Galvanism. . . .
London: Printed for Baldwin, Cradock, and Joy. 1818.

First edition. 8vo. 2 leaves, 164 pp. With 2 full-page copperplates (by J. Shury) depicting Voltaic piles and other equipment. Fine uncut copy, in original blue boards, printed paper label on spine.

A PUPIL OF Dr. Joseph Black at Edinburgh (M.D., 1798), the English physician Bostock (1774–1846) was a versatile



Bostock. Account . . . of Galvanism. London, 1818.

writer and lecturer and a friend of John Dalton. He published works on respiration, galvanism, and physiology and lectured on chemistry at Guy's Hospital, London. He also translated and published an edition of Pliny and was president of the Geological Society in 1826. Bostock was elected F.R.S. and became vice president of the Royal Society in 1832. Of considerable chemical interest, the present work refers to the researches of Berzelius, Carlisle and Nicholson, Davy, Gay-Lussac, Grotthus, Humboldt, Oersted, Priestley, Thenard, et al. "The greater part . . . is a critical history of the subject; the rest treats of the theories advanced by Galvani and Volta" (Wheeler Gift). According to the D.N.B., "perhaps the only one of his books still worth reading." Very scarce. Not in Duveen, Edelstein, Ferchl, Smith, Sondheimer, Waller, Wellcome, etc. (Bolton, 95; D.S.B., II, 336; Ekelöf, 61; Morgan, 82; Mottelay, 443; Partington, III, 711; Poggendorff, I, 249; Sotheran, Cat. 702 [1910], 6372; Wheeler Gift, 743)

BOTTONI, Dominic

Pyrologia Topographica id est de Igne Dissertatio juxta loca eorum Descriptionibus . . .

Naples: Ex nova Officina Sociorum Dom. Ant. Parrino, & Michaelis Aloysii Mutii. 1692.

First edition, first issue. 4to. 20 leaves, 245, (1) pp. Large folding engraved plate of luminous insects (following p. 98, the leaf of explanation of the plate). Fine copy with wide margins, in original vellum, gilt-paneled spine lettered in seventeenth-century ink-script.

THE DISTINGUISHED physician of Messina and later of Naples, Bottoni (1641–1731) was the first Sicilian to be received by the Royal Society (1697), although he was not elected to its fellowship. The present important work is an analytical survey of the phenomenon of fire, in three sections: general, celestial, and terrestrial. Many subjects are critically examined: organic and inorganic compounds, carbon, phosphorus, acids and alkalis, light, the sun, volcanic activity, etc. There are references to Boyle, Giordano Bruno, Galileo, Gassendi, and others. The large plate depicts a firefly contained in a glass flask, with an open book showing that the luminescence emitted by the insect was sufficient for reading in a darkened room. Copies vary as to the number of plates, the earliest issues containing only the firefly plate (as here). The Yale copy has this plate and a map. The British Library copy lacks the map but includes two views of volcanic eruptions (following pp. 124 and 170: Etna and Vesuvius, respectively). The Duveen copy contains the firefly plate and the two volcano plates but no map. The present copy is in pristine condition, undisturbed in its original binding. As there is no evidence of any other plates or a map having been in this copy, it is reasonable to assume

that it is complete as issued. Harvey (*History of Luminescence*, pp. 137–138) discusses the contents of this interesting and rare work. (Duveen, 90; Ferchl, 59; Neu, 575, Poggendorff, I, 251)

BOUDET, Félix Henri

De l'Action de l'Acide Hyponitrique sur les Huiles, et des Produits qui en résultent. Ire.: thèse soutenue devant la Faculté des Sciences, Académie de Paris, pour obtenir le grade de Docteur, le 9 Août 1832. Par Félix Boudet.
Paris: Imprimerie et Fonderie de Fain. 1832.

First edition. 8vo. 4 leaves, 48 pp. Fine copy in maroon quarter calf, marbled boards, spine gilt-lettered and dated. Presentation copy to the great chemist Gay-Lussac, with inscription in ink on back wrapper (bound in): "Mr. Gay-Lussac à l'Arsenal."

THE DOCTORAL thesis of Boudet (1806–1878), professor at the École de Pharmacie, which was reprinted the same year in the *Annales de Chimie* (50, 391–434). The author discusses the action of nitrous acid on olive oil and other oils derived from plants. He discovered elaidic acid (the trans-stereoisomer of oleic acid) and here describes its preparation, chemical reactions, and physical properties. The committee adjudging this work included several illustrious chemists: Gay-Lussac (recipient of this copy), Biot, Dulong, Thenard, et al. One of the principal works of Boudet, who also published on the chemistry of blood, serum, fats, etc. Rare. Wellcome gives the wrong pagination and the author's forenames as Henri Félix. Ferchl, Partington, and Poggendorff cite only the reprint in *Annales de Chimie*. Not in the usual early chemical bibliographies. (Bolton, *Academic Dissertations*, 42; Wellcome, II, 210)

BOUGEANT, Guillaume Hyacinthe, and GROZELIER, Nicolas

Observations Curieuses sur Toutes les Parties de la Physique, Extraites & recueillies des meilleurs Mémoires. . . .

Paris: Chez André Cailleau, Place de Sorbonne, à Saint Andre. 1730, 1726, 1730.

First edition of vols. II & III, second edition of vol. I. 3 vols., 12mo. I (1730): 5 leaves, 512 pp., 4 leaves (index). II (1726): 4 leaves, 541, (1) pp., 6 leaves (index). III (1730): 6 leaves, 586 pp., 7 leaves (index); 2 engraved plates. Fine copy in original calf, spines richly gilt, maroon morocco labels.

A VALUABLE COLLECTION of memoirs on a variety of subjects, abstracted from the leading seventeenth- and eighteenth-century scientific journals of Europe and Great Britain. Topics covered include physics, astronomy, chemistry, anatomy, botany, and natural history. Sections of direct chemical interest (vol. I, pp. 225–250; vol. II, pp.

140–161; vol. III, pp. 203–243) are supplemented by discussions elsewhere on the physical and chemical properties of air, fire, water, acids, alkalies, metals, nonmetals, etc. Volume III (pp. 24–34) discusses phosphorus, phosphorescence, and luminescence, as well as the nature and properties of light, with references to Boyle, Lemery, Newton, et al. Volume I (first: Paris, 1719) was edited by Bougeant (1690–1743), and volumes II and III were edited by Grozelier (1692–1778). The Wellcome Library Catalogue (III, 171) lists only volume II of this set, with a note stating that a fourth volume appeared forty-one years later (Paris, 1771). (Poggendorff, I, 254, 961; Watt, I, 138k)

BOUGEANT, Guillaume Hyacinthe, and GROZELIER, Nicolas

Observations Curieuses sur Toutes les Parties de la Physique, extraites & recueillies des meilleurs Mémoires. . . .
Paris: Chez André Cailleau . . . 1730, 1726, 1730.

Second (first Cailleau) edition. 3 vols., 12mo. I: 5 leaves, 512 pp., 4 leaves. II: 4 leaves, 541, (1) pp., 5 leaves. III: 6 leaves, 586 pp., 7 leaves. With 2 engraved plates. Title page of volume II dated 1726. Fine, crisp copy, in contemporary calf, spines richly gilt, maroon morocco labels.

A COMPREHENSIVE WORK (first: Paris, 1719–1726, 3 vols.) comprising extracts from the scientific journals of British and European societies (e.g., Royal Society and Académie Royale de Paris). Topics covered include anatomy, astronomy, botany, chemistry, physics, and natural history. Chemical subjects are discussed in volume I (pp. 223–250), volume II (pp. 140–161), and volume III (pp. 203–243), as well as elsewhere in each volume. In volume III (pp. 24–48) there is a long section on phosphorescent and luminescent substances of chemical importance that was unknown to E. Newton Harvey (*History of Luminescence*). Only the first volume was edited by Bougeant (1690–1743), a Jesuit who taught science successively at Caen, Nevers, and Paris. The second and third volumes were edited by Grozelier (1692–1778), a priest who taught philosophy and science. Only volume II, with different imprint (Paris: C. Jombert, 1726), is in Wellcome (III, 171). A fourth volume appeared much later (Paris, 1771), edited by Grozelier. Not in the usual bibliographies. (Caillet, 1513; Poggendorff, I, 254, 961)

BOUILLON-LAGRANGE, Edmonde Jean Baptiste

Dispensaire Pharmaco-Chimique, à l'usage des élèves des Écoles Impériales Vétérinaires. On y trouve les éléments théoriques et pratiques de ces deux sciences. . . .
Paris: De l'Imprimerie et dans la Librairie de Madame Huzard (née Vallat La Chapelle). 1813.

First edition. 8vo. 446 pp. With fine lithographic portrait frontispiece of the author (by Delpéch), and 4 copperplates (by Adam) of chemical apparatus. Very good copy in contemporary marbled boards, dark-green morocco label gilt.

A DICTIONARY OF chemistry and veterinary pharmacy, which, according to the *Avis*, is the first of its type. Writing principally for his students, the author describes chemical processes and techniques, as well as the preparations and properties of all inorganic and organic compounds used in veterinary medicine. Divided into five sections, the book covers general chemistry and pharmacy, gases and their reactions, metals and salts, vegetable substances, and animal substances. An early convert to the new chemistry of Lavoisier and his circle, the author gives a detailed list of the old and new nomenclature (pp. 405–424). One of the rarest works of Bouillon-Lagrange, which is not listed in any available early chemical bibliography.

BOUILLON-LAGRANGE, Edmonde Jean Baptiste

Essai sur les Eaux Minérales Naturelles et Artificielles. . . .
Paris: J. Klostermann Fils . . . Saint-Petersbourg: Klostermann, Père et Fils. 1810.

First edition, first issue. 8vo. viii, 4, 478 pp. With 4 copperplates of chemical apparatus. Fine copy, uncut and unpressed, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated, with original marbled wrappers bound in.

AN IMPORTANT and comprehensive treatise on natural and artificial mineral waters. The first part covers internal and external uses of fresh water, seawater, and different kinds of mineral water. The major portion of the book describes the principal spas of Europe (including Great Britain) in alphabetical order (pp. 74–411), including chemical analyses of the waters. The last section gives detailed directions for the preparation of artificial mineral waters, with plates showing apparatus for making hydrogen, carbon dioxide, and hydrogen sulphide. The machine designed by L. A. Planche for making carbonated mineral waters under pressure is described, for further details on which see William Kirkby, *The Evolution of Artificial Mineral Waters* (Manchester, 1902, pp. 85–88). Two issues of this work appeared: the first, as here, published in 1810, is listed in Wellcome. The second issue, published in 1811, contains an eleven-page appendix on the hot springs of Saint-Gervais. Both issues contain a four-page report by Desessartz praising Bouillon-Lagrange and this work. Very scarce. Ferchl (p. 60) lists only the third edition (1825). Not in Duveen, Edelstein, Ferguson, Ferguson Coll., Partington, Smith, Sondheimer, Waller, Watt, etc. (Bolton, 598; Poggendorff, I, 256; Wellcome, II, 212)

BOUILLON-LAGRANGE, Edmonde Jean Baptiste

Essai sur les Eaux Minérales Naturelles et Artificielles . . .
Paris: J. Klostermann Fils . . . Saint-Pétersbourg: Klostermann, Père et Fils, Libraires. 1811.

First edition, second issue. 8vo. viii, 4, 489, (1) pp. With 4 copperplates of chemical apparatus. Neat contemporary annotations in ink on half title, and a few leaves; otherwise a fine copy in original quarter calf gilt (spine worn), speckled boards.

THE SECOND ISSUE, being the sheets of the first issue with a reset title page plus an eleven-page appendix (pp. 479–489) on the hot springs of Saint-Gervais. Very scarce. Not in Duveen, Edelstein, Wellcome, etc. (Bolton, 598; Poggen-dorff, I, 256)

BOUILLON-LAGRANGE, Edmonde Jean Baptiste

Manuel d'un Cours de Chimie, ou série des expériences et des démonstrations qui doivent composer un Cours complet sur cette Science. Par E. J. B. Bouillon-LaGrange, . . .
Paris: Chez Bernard. An VII. (1799).

First edition. 2 vols., 8vo. I: xl pp., 1 leaf (chemical symbols), 367, (1) pp. Folding table, and 15 engraved plates (chemical apparatus). II: 2 leaves, 558 pp., 1 leaf (errata), 7, (1) pp. (advertisements by Bernard). Very good copy in contemporary marbled boards, rebounded in calf, spines gilt-lettered.

BOUILLON-LAGRANGE (1764–1844) was Fourcroy's assistant from 1788 and later professor in the École de Pharmacie. He was an early pioneer in the study of organic chemistry and discovered camphoric anhydride. His researches included investigations on suberic acid and its compounds, tannic and gallic acids, the preparation of ethyl nitrite, and other organic compounds. The *Manuel* was very popular, reaching a fifth edition (3 vols., 1812), and was translated into English in 1800. Bolton, Ferchl, and Poggen-dorff state erroneously that the first edition is in three volumes. Duveen (p. 91) cites the fourth edition only (Paris, 1808, 3 vols.). The first edition is very scarce. Not in D.S.B., Edelstein, Ferguson, Ferguson Coll., Morgan, Neu, Osler, Sondheimer, Waller, Watt, etc. (Blake, 60; Ferchl, 60; Partington, III, 108 [incorrect title]; Poggen-dorff, I, 256; Smith, 65; Wellcome, II, 212)

BOUILLON-LAGRANGE, Edmonde Jean Baptiste

A Manual of a Course of Chemistry; or, a Series of Experiments and Illustrations, necessary to form a Complete Course of that Science. By J. B. Bouillon Lagrange, . . . Illustrated with seventeen plates. Translated from the French. To which is added, an appendix, by the translator. . . .

London: Printed by G. Auld, . . . for J. Cuthell, . . . and Vernor and Hood. 1800.

First (only) English edition. 2 vols., 8vo. I: xx, 448 pp., 10 leaves (index). II: vii, (1), 457, (1) pp., 9 leaves (index). With 17 copperplates (including one double-page plate of chemical symbols). Fine, crisp, uncut and unpressed copy, in contemporary brown boards, printed paper labels on spines.

THE ENGLISH translation of the sixty lectures of the *Manuel d'un Cours de Chimie* (Paris, 1799). In addition to other interesting notes by the anonymous translator, the appendix (vol. 2, pp. 433–457) contains descriptions of "recent experiments by Mr. Davy, of Bristol" on nitrous oxide (p. 437). The original French edition has the plates in outline form. The English edition is improved by accurate and finished engraved plates by Lowry, with two new plates added (one of the chemical symbols adopted by the French chemists, the other of chemical apparatus). Even rarer than the French original, the English edition is not in D.S.B., Edelstein, Ferchl, Ferguson, Morgan, Poggen-dorff, Sondheimer, Waller, Watt, Wellcome, etc. (Blake, 60; Bolton, 598; Duveen, 334 [under "Lagrange"]; Ferguson Coll., 109; Partington, III, 108; Smith, 65)

BOULLANGER

Expériences et Observations sur le Spath vitreux, ou Fluor spathique . . .
(Paris). 1773.

First edition. 8vo. 32 pp. Fine uncut copy, marbled boards, antique, gilt-lettered crimson morocco label.

A SIGNIFICANT EARLY work on fluorspar (native calcium fluoride) and its reaction with concentrated sulphuric acid to produce hydrofluoric acid, with references to the contemporaneous investigations of Scheele on the same subject. The preparations of various inorganic fluorides are described (e.g., those of silver, mercury, potassium, sodium, and ammonium). Priestley mentions "M. Boulanger, who has taken a great deal of pains with this subject, and is of opinion that this new acid is only the acid of salt, combined with an earthy substance" (see *Experiments and Observations*, 1790, vol. 2, p. 339). The author, who gives no initials to his name, is otherwise unknown. Lavoisier states that he was the Duc de Liancourt (i.e., La Rochefoucauld,

1747–1827; see *Traité de Chimie*, 1789, vol. I, p. 263). Kopp, however, says that he was the chemist D'Arcet (see *Geschichte der Chemie*, 1845, vol. III, p. 369). Under Boulanger [*sic*] Watt lists *Experiments, Researches, and Observations on the Vitrous Spar, or Sparry Fluor*. Translated into English from the French, 1775, 8vo.; but he does not list the present original edition. Very rare. Not in Blake, D.S.B., Wellcome, or the usual chemical bibliographies. (Duveen, 91; Neu, 577; Partington, III, 214)

BOULLAY, Pierre François Guillaume

Dissertation sur les Éthers, première partie. Thèse soutenue devant la Faculté des Sciences de l'Université de France pour obtenir le grade de docteur, le 4 Janvier 1815; par P. F. G. Boullay, . . .
Paris: L. Colas, Imprimeur-Libraire. 1815.

First edition. 8vo. 4 leaves, 68 pp., 1 leaf, 67, (1) pp. With folding copperplate (by Gaitte). Fine crisp copy in contemporary green quarter morocco, marbled boards, spine gilt-lettered. Presentation copy, with 3-line inscription in ink on verso of half title, signed by Boullay. All published.

BOULLAY (1777–1869), a Paris apothecary, made several important chemical discoveries. Dedicated to Vauquelin, this doctoral thesis contains Boullay's classic researches on ether, for which he established a new classification. He added to it his earlier papers on the subject, together with reports on these papers by Fourcroy, Thenard, and Vauquelin. Pages 1–59 cover the history, preparation, and properties of diethyl ether. The remainder of the book describes four newly discovered esters: ethyl acetate, ethyl arsenate, ethyl chloride, and ethyl phosphate. Partington (IV, 343–346) discusses Boullay's work on ether but does not mention the present title. Bolton gives the wrong format (4to.) and date (1814). Not in D.S.B., Duveen, Ferchl, Ferguson Coll., Morgan, Poggendorff, Smith, Sondheimer, Waller, etc. Rare. (Bolton, *Academic Dissertations*, 43; Edelstein, 364; Wellcome, II, 212)

BOULTON, Samuel

Medicina Magica Tamen Physica: Magical, but Natural Physick. Or a Methodical Tractate of Diastatical Physick. Containing the general Cures of all infirmities: And of the most radical, fixed, and malignant Diseases belonging, not only to the Body of Man, but to all other Animal and Domes-tick creatures whatsoever, and that by way of Transplantation. With a Description of a most excellent Cordial out of Gold, much to be estimated. Published by Samuel Boulton, Salop. . . .

London: Printed by T. C. for N. Brook, at the Angel in Cornhil. 1656.

First edition. 8vo. 4 leaves, 195 (i.e., 197), (3) pp. (list of books published by Nat. Brook, including *Theatrum Chemicum Britannicum* by Elias Ashmole). Edges of first few leaves with minor browning; otherwise very good copy in gilt-lettered nineteenth-century quarter morocco, boards, spine dated.

BOULTON (or Bolton, fl. 1656) published this curious work on iatrochemistry as the result of a serious illness from which he had just recovered. He admits that the contents are not completely original with him but are based on papers from “that late worthy and Reverend Chymist Dr. Everard” (i.e., John Everard, 1575?–1650?). The word *diastatical* is explained by stating that diseases arise from disturbances in the spirit or vital energy in the body. Present in all parts of the body, the spirit continues in things no longer attached to it (e.g., urine, feces, mucus, sweat, hair and nail clippings). By blending these substances with medicines made from minerals, plants, and the “Cordial of Gold” (pp. 110–116), they recycle back into the body to restore its original spirit. Chemical works by Croll, Fludd, Hartmann, Paracelsus, Tentzel, et al., are cited. Thorndike points out the similarities between this text and that of an anonymous seventeenth-century manuscript in the British Library. Rare. (Duveen, 91–92; Ferguson, I, 120 [imperf.]; Krivatsy, 1616; Thorndike, VIII, 418; Wellcome, II, 213; Wing, B3833A)

BOURNE, Robert

An Introductory Lecture to a Course of Chemistry: read at the Laboratory in Oxford, on February 7, 1797, by Robert Bourne, M.D. . . .

Oxford: Sold by Messrs. Fletcher and Co. and J. Cooke; and Messrs. Rivington, . . . London. 1797.

First edition. 8vo. 48 pp. Neat corrections in ink by the author on pages 5, 6, 8, and 33. Inscribed in ink on title page: “The Rev. H. J. Stevenson from the Author's Son.” Bound with Baker, John, *The Christian House, built by Truth on a Rock* (London, 1820), a very rare, privately printed work of 20 pages, beautifully engraved throughout on copper and illustrated with large woodcuts; and several mid-nineteenth-century religious tracts.

BOURNE (1761–1829), a Worcestershire man, received the M.D. (Oxford, 1787) and was appointed reader of chemistry in Oxford University on the resignation of Dr. Thomas Beddoes in 1794. He was elected a Fellow of the Royal College of Physicians (F.R.C.P.) in 1790. Apart from the present work outlining the scope of his chemical lectures, Bourne published *Oratio . . . ex Harveii instituto* (Oxford, 1797) and *Cases of Pulmonary Consumption* (Oxford, 1805). Very rare. Not in Blake, Duveen, Edelstein, Ferguson Coll., Neu, Partington, Poggendorff, Waller, etc. (Bolton, *First Supplement*, 103; Munk, II, 402; Smith, 65; Watt, I, 140a; Wellcome, II, 215)

BOWLES, William

Introduccion a la Historia Natural, y a la Geografia fisica de España. . . .

Madrid: En la Imprenta de D. Francisco Manuel de Mena. 1775.

First edition. 4to. 4 leaves, 48, 529, (1) pp., 3 leaves. Beautiful copy in original mottled calf, gilt, maroon morocco label. An important association copy from the library of the celebrated French scientist and coworker of Lavoisier, Michel Adanson (1727–1806), with copious annotations by him.

AFTER STUDYING natural history, chemistry, and metallurgy in Paris, the Irish naturalist Bowles (1705–1780) entered the Spanish service in 1752, being appointed to superintend the state mines and form a collection of natural history. He later traveled throughout Spain, investigating minerals, mining, and plants and, as a result, published the present book, which according to the D.N.B. (II, 977) “has very considerable value as being the first work of its kind.” It contains long sections on geology, mineralogy, mining, extraction of metals (e.g., mercury, gold, platinum, and copper), and the manufacture of saltpeter. French (Paris, 1776) and Italian (Parma, 1783) translations appeared. An extract was published in *Recueil de Memoires et d’Observations sur la Formation & sur la Fabrication du Salpêtre* (Paris, 1776, pp. 586–597), edited by Lavoisier, Montigny, Macquer, Sage, Baumé, and d’Arcy (see Duveen & Klickstein, *Bibliography of Lavoisier*, 1954, No. 203, pp. 223–224). Adanson, from whose library this copy came, was a brilliant naturalist, botanist, encyclopedist, and academician noted for his major contributions to eighteenth-century French science. Books from Adanson’s library, especially when as copiously annotated as is this copy, are of great rarity. Not in Blake, D.S.B., Hoover, Ward and Carozzi, Wellcome, or the usual chemical bibliographies. (Engelmann, 147; McDonald, *A History of Platinum*, 1960, p. 60 [reproducing title page of present work]; *ibid.*, 1982, p. 19 [reproducing p. 155—on platinum—of present edition]; Palau, 34228; Watt, I, 141m)

BOWMAN, John Eddowes

A Practical Handbook of Medical Chemistry. By John E. Bowman, . . .

London: John Churchill. 1850.

First edition. 8vo. xx, 259, (1) pp. With 75 woodcut figures and folding printed table of calculi facing page 111. Very good copy in original blind-stamped publisher’s green cloth, spine gilt-lettered. Presentation copy to an unknown recipient, inscribed in ink on half title: “With the Authors Compts.”

BOWMAN (1819–1854) was professor of chemistry at King’s College, London (1851). He was the son of John Eddowes Bowman (1785–1841), noted naturalist and banker. Biographies of both father and son are in the D.N.B. An important milestone textbook in early biochemistry, in five parts. Part I (eight chapters) is on the chemistry of healthy and pathological urine, and part II (four chapters) covers calculi and concretions. Normal and abnormal blood are discussed in part III (three chapters), while part IV (eight chapters) covers milk, mucus, pus, bone, etc. Part V (fourteen chapters) deals with forensic chemistry, describing analytical chemical tests for the detection of traces of arsenic, mercury, lead, antimony, hydrocyanic acid, and other poisons. Several other English editions appeared, and an American edition (*A Manual of Medical Chemistry*, Philadelphia, 1883), based on this work, was published by William H. Greene (Bolton, 496). The first edition is rare. Not in D.S.B., Duveen, Edelstein, Garrison-Morton, Osler, Partington, Poggendorff, Smith, Waller, etc. (Bolton, 334; Ferchl, 63; Wellcome, II, 217)

BOYLE, Robert

The Aerial Noctiluca: or Some New Phoenomena, and a Process of a Factitious Self-shining Substance. Imparted in a Letter to a Friend, living in the Country. By the Honourable Robert Boyle, Fellow of the Royal Society.

London: Printed by Tho. Snowden, and are to be sold by Nath. Ranew, Bookseller in St. Paul’s Church-Yard. 1680.

First edition. 8vo. 4 leaves, 109, (1) pp., 1 leaf (blank) lacking. Edge of *Errata Typographica* leaf neatly repaired; otherwise good copy, in speckled calf antique, maroon morocco label, spine dated.

BOYLE WAS among the first to investigate the preparation and properties of elementary phosphorus, and in this work he gives a detailed and quantitative description of its production by the distillation at high temperature of a mixture of putrefied urine and sand. The phosphorus was collected underwater to prevent it from catching fire in the air. He demonstrated that something is present in air (i.e., oxygen) that causes phosphorus to become luminescent. In addition to phosphorus Boyle describes other previously known phosphors, including the Bolognian stone. “Of all those who prepared phosphorus in the seventeenth century, the studies of Boyle were the most complete” (Harvey, who gives a full account of the subject). (D.S.B., II, 381; Duveen, 96; Ferchl, 64; Ferguson, I, 121 [not in Young Coll.]; Ferguson Coll., 111; Fulton, 138; Harvey, 427; Keynes, 867; Neu, 581; Partington, II, 493; Poggendorff, I, 268; Smith, 66; Thornton & Tully, 105; Watt, I, 142w; Wing, B3925)

BOYLE, Robert

New Experiments, and Observations, made upon the Icy Noctiluca. To which is annexed a Chymical Paradox. By the Honourable Robert Boyle, Fellow of the Royal Society. London: Printed by R. E. for B. Tooke, at the Ship in St. Paul's Church-Yard. 1681/2.

First edition. 8vo. 8 leaves, 104, (105–112), 113–150 pp. Variant with "Finis" on p. 104. Blank leaves A1 and L8 lacking (as often); otherwise very good copy, in original unlettered paneled calf. From the library of the celebrated carbohydrate chemist Professor Maurice Stacey, C.B.E., F.R.S. (Sotheby auction, 14 May 1973, lot 54).

A SEQUEL TO *The Aerial Noctiluca* (London, 1680), in which Boyle describes further experiments he made on the luminescent and chemical properties of elementary phosphorus. The interesting section titled "A Chymical Paradox, grounded upon new experiments, making it probable, that chymical principles are transmutable" was intended to be added to the Latin translation of *The Sceptical Chymist* (Oxford, 1680). In his advertisement, Boyle states that "some unluckie Accidents having kept that Translation from being finished, the Author thought fit the ensuing Paper should accompany his Icy Noctiluca, both in English and in Latin." This section is not on phosphorus, but it is important as it confirms that Boyle believed that transmutation of one substance (not element) into another could occur (e.g., when natural oils are thermally decomposed to other substances during distillation). (Bolton, *Second Supplement*, 59; Cushing, B581; D.S.B., II, 381; Ferchl, 64; Ferguson Coll., 114; Fulton, 139; Harvey, 427; Keynes, 920; Neu, 582; Partington, II, 493; Poggendorff, I, 268; Smith, 71; Thornton & Tully, 105; Watt, I, 142w; Wellcome, II, 223; Wing, B3995)

BOYLE, Robert

Certain Physiological Essays, Written at distant Times, and on several Occasions. By The Honourable Robert Boyle. London: Printed for Henry Herringman at the Anchor in the Lower walk in the New-Exchange. 1661.

First edition. 4to. 2 leaves, pp. 1–36, 1 leaf, pp. 37–99, 102–103, 102–105, (1), 6 leaves, pp. 107–135, (136–138), 139–249, (1) (pagination erratic, but complete). With 3 divisional title pages. Occasional light damp stains; otherwise fine, crisp copy, in contemporary unlettered calf, rebacked. Old signature in ink on flyleaf of Geo. Fleming, Scottish physician (M.D., Utrecht, 1689; see *Munk's Roll*, vol. I, p. 502).

DEDICATED TO his nephew, Richard Jones, this work appeared in March 1661. It is very important as it is a prologue to the famous *Sceptical Chymist*, which appeared in

August 1661. The attack on the tenets of the alchemists, begun in the *New experiments physico-mechanical* (1660), is continued in this work. A landmark in the history of chemistry, in the *Essays* Boyle gives the first clear outline of his corpuscular theory of matter, which was the guiding principle of all his later chemical studies and is expounded in greater detail in *The origine of formes and qualities* (1666). He illustrates his corpuscular theory by the production of saltpeter from two types of niter without any significant loss of weight. Physiology in the modern sense is represented in a discussion of digestion (e.g., in a dog's stomach, p. 146) and a description of "fluid bodies," which we now call enzymes. (Cushing, B550; D.S.B., II, 378–380; Duveen, 92; Eales, 542; Ferchl, 64; Fulton, 25; Keynes, 870; Krivatsy, 1666; Neu, 585; Partington, II, 492; Poggendorff, I, 267; Smith, 66; Thornton & Tully, 102; Waller, 10754; Watt, I, 142q; Wing, B3929)

BOYLE, Robert

Certain Physiological Essays and other Tracts; Written at distant Times, and on several Occasions. By the Honourable Robert Boyle. The Second Edition. Wherein some of the Tracts are enlarged by Experiments, and the Work is increased by the Addition of a Discourse about the Absolute Rest in Bodies. London: Printed for Henry Herringman at the Blew Anchor in the Lower Walk of the New-Exchange. 1669.

Second edition. 4to. 4 leaves, 292 pp., 2 leaves, 30 pp., 2 leaves (blank). With 4 divisional title pages (two dated 1668). Minor worm trail in margins of last few leaves; otherwise fine, crisp copy, in contemporary paneled calf, rebacked.

THE ENLARGED second edition of this important work, containing descriptions of many more chemical experiments than were in the first edition of 1661. A list of the pages of the additional experiments is given in the advertisement (signature A4). Fulton states that these *Essays* must have been widely read, as nine editions in Latin appeared, as well as the two English editions. "Boyle's recognition of the complexities of the experimental approach was very rare in his day. . . . One reason for the now tedious length of most of his treatises was his desire to describe his experiments faithfully and in such a way that others could follow. He also was always careful to describe experiments that did not succeed, a procedure he defended in two of *Certain Physiological Essays* as essential to progress in experimental philosophy" (D.S.B. [II, 378–380]). (Edelstein, 367; Ferchl, 64; Fulton, 26; Harrison, 255; Keynes, 871; Krivatsy, 1667; Osler, 939; Partington, II, 492; Poggendorff, I, 267–268; Smith, 66; Thornton & Tully, 102; Watt, I, 142q; Wellcome, II, 221; Wing, B3930)

BOYLE, Robert

A Continuation of New Experiments Physico-Mechanical, touching the Spring and Weight of the Air, and their Effects. The I. Part. Written by way of Letter, to the Right Honourable the Lord Clifford and Dungarvan. Whereto is annexed a short Discourse of the Atmospheres of Consistent Bodies. By the Honourable Robert Boyle, Fellow of the Royal Society. Oxford: Printed by Henry Hall, Printer to the University, for Richard Davis, in the Year 1669.

First edition. 4to. 11 leaves, 198 pp., 6 leaves (last, a longitudinal title). With 8 copperplates (4 folding). Fine, crisp copy. Bound with Boyle, Robert, *New experiments physico-mechanical* (London, 1682); and *A continuation of new experiments. The second part* (London, 1682).

THE IMPORTANT first *Continuation* in which is described the improved second English air pump, designed by Boyle and his assistant Robert Hooke, and a series of fifty experiments performed with it. The air pump was “a single-barelled device like the first worked by a rack and pinion, but in this modification the barrel was kept under water to keep the leather of the piston always wet” (Fulton). Plates 1 and 2 show the pump and its component parts, and plate 5 illustrates the famous experiment of pumping water up to the roof level of the Sheldonian Theatre in Oxford. Page 176 is dated 24 March 1667, proving that the experiments were completed at least two years before publication. The section on the “atmospheres of . . . bodies” (pp. 177–198, with divisional title) demonstrates that Boyle had some concept of the vapor pressure of chemical compounds, as well as of electrostatic forces. (Blocker, 50; Cushing, B552; Duveen, 93; Edelstein, 370; Ferchl, 64; Fulton, 16; Keynes, 926; Krivatsy, 1662; Madan, 2820; Neu, 649; Partington, II, 492; Poggendorff, I, 268; Smith, 67; Thornton & Tully, 102; Watt, I, 142p; Wellcome, II, 220; Wing, B3834)

BOYLE, Robert

A Continuation of New Experiments Physico-Mechanical touching the Spring and Weight of the Air, and their Effects. The Second Part: wherein are contained divers experiments made both in compressed and also in factitious air, about fire, animals, &c. Together with a description of the engines wherein they were made. By the Honourable Robert Boyle, Fellow of the Royal Society.

London: Printed by Miles Flesher, for Richard Davis, Bookseller in Oxford. 1682.

First edition in English. 4to. 10 leaves, 198 pp., 4 leaves (last blank). With 5 folding copperplates. Fine, crisp copy. Bound with Boyle, Robert, *New experiments physico-mechanical* (London, 1682); and *A continuation of new experiments. The I. part* (Oxford, 1669).

ORIGINALLY APPEARING in Latin (Oxford, 1680; Fulton, 17), this work describes for the first time the double air pump devised by Denis Papin, who had brought it from France in order to work with Boyle. Details are given of numerous chemical and biological experiments, which were carried out from March 1676 until February 1679, showing that Boyle and Papin worked together for about four years. (Blocker, 50; Cushing, B553; Ferchl, 64; Fulton, 18; Keynes, 928; Krivatsy, 1664; Neu, 652; Partington, II, 492; Poggendorff, I, 268; Thornton & Tully, 102; Watt, I, 142p; Wellcome, II, 221; Wing, B3935)

BOYLE, Robert

Curiosities in Chymistry: being New Experiments and Observations Concerning the Principles of Natural Bodies. Written by a Person of Honour, and Published by his Operator, H. G.

London: Printed by H. C. for Stafford Anson, at the Three Pigeons in St. Paul's Church-Yard. 1691.

First edition. 8vo. 1 leaf (title page, verso blank), 113, (1) pp., 1 leaf (advertisements). Pages 112–113 misnumbered 102–103. Fine, crisp copy, in contemporary vellum.

ONE OF the rarest of Boyle's works, published posthumously by his operator (i.e., laboratory assistant), Hugh Gregg. Two states of the imprint are known: one with “S. Anson” (recorded by Fulton and Keynes) and the other with “Stafford Anson” (recorded by Wing and indefinitely mentioned by Fulton). No priority has been established. The text is based on a manuscript by Boyle that was never published in any of his separate works or in any of the collected editions. Reference to the index of the 1744 and 1772 collected editions (edited by Birch) reveals that Boyle was reluctant to publish the more speculative of his manuscripts. The present text, fortunately published soon after Boyle died, is extremely important because it sets forth some of his theories of the composition of matter which he was unwilling to print even as hypotheses in works appearing under his own name. “The Ingenious Author of this Treatise has herein laid a great many Experiments and Observations together, in order to prove that Water is the only first Material Principle of Natural Bodies; and that all the other pretended Hypostatical Principles are ultimate and reducible into mere Elementary Water” (pp. 1–2). This was an advance on Boyle's statement in *The Sceptical Chymist* that no substance could be claimed with certainty as being elementary. In nineteen propositions and numerous ingenious chemical experiments, he makes a good case for the elementary nature of water. The concepts in this work have been overlooked by scholars. (Ferchl, 111; Fulton, 354; Keynes, 999; Wellcome, II, 225; Wing, G1877)

BOYLE, Robert

A Disquisition about the Final Causes of Natural Things: wherein it is inquir'd, whether, and (if at all) with what Cautions, a Naturalist should admit them? By the Honourable Robert Boyle, Esq; to which are subjoyn'd, by way of Appendix, some uncommon Observations about Vitiated Sight. By the same Author.

London: Printed by H. C. for John Taylor, at the Ship in St. Paul's Church-Yard. 1688.

First edition, first issue. 8vo. 8 leaves, pp. 1–96, 81–112, 129, 114, 114 [*sic*], 132–133, 117–118, 136–137, 121–122, 140–141, 125–126, 144–237, (1); 3 leaves, pp. 245–256, 157, 258–261, 252–253, 265, 264, 256–257, 268–274; 3 leaves. The erratic pagination and omission of “Fellow of the Royal Society” after Boyle’s name in the title are not noticed by Fulton. Fine, crisp copy, with wide margins, in original calf, rebacked, maroon morocco label.

ALTHOUGH FULTON (no. 186A) describes this as another issue, it is most probably the first. As in the issue that he describes fully (no. 186), the erratic pagination has been corrected, and the title has the usual “Fellow of the Royal Society” after Boyle’s initials, as in his other works. Wing erroneously lists this as the second edition. One of Boyle’s most interesting books, in which he takes us into his confidence and gives us “his *confessio fidei* as a biologist” (Fulton). Boyle relates his conversation with William Harvey on how he discovered the circulation of the blood. In his search for the final causes in the works of nature, he discusses many physiological and chemical matters. The section on vitiated sight (with separate title) describes various case histories (from Boyle’s experience), and it is “one of the first in which this method of teaching was employed in an ophthalmological treatise” (Fulton). (Cushing, B556; Duveen, 97; Ferguson Coll., 112; Keynes, 881; Krivatsy, 1726; Neu, 593; Partington, II, 494; Smith, 68; Thornton & Tully, 105; Waller, 10766; Watt, I, 142y; Wellcome, II, 224; Wing, B3946A)

BOYLE, Robert

An Essay about the Origine & Virtues of Gems. Wherein are Propos'd and Historically Illustrated some Conjectures about the Consistence of the Matter of Precious Stones, and the Subjects wherein their chiefest Virtues reside. By the Honourable Robert Boyle, Esq; Fellow of the Royal Society.

London: Printed by William Godbid, and are to be sold by Moses Pitt at the White Hart in Little Britain. 1672.

First edition. 8vo. 8 leaves, 184 pp. (181–184 misnumbered 182–185). Fine, crisp copy, with wide fore- and lower margins, in quarter calf antique, gilt, marbled boards, maroon label (by Jean Duval). The Duveen copy, with crimson bookplate. Large

armorial bookplate of Richard Towneley, dated 1702, on verso of title.

“THE *Essay* marks the beginning of the modern development in knowledge of crystal structure” (Fulton). Boyle examined the structure of diamonds and found that they and other gems could be split along the crystal planes. He also correctly explained the colors of gems by the inclusion of minerals in them and was emphatic in rejecting any mystical or magical properties attributed to precious stones. This copy is of great interest and importance as it belonged to Richard Towneley, a friend of Boyle. Dated 1702, Towneley’s bookplate states his age as seventy-three. Towneley’s birthdate was hitherto unknown, but this dated bookplate places his birth in 1629. He did important work on the compression of air, using apparatus similar to that of Boyle. Had he published his findings, Boyle’s law might have been named “Towneley’s law.” (Cushing, B557; Duveen, 94; Edelstein, 372; Ferchl, 64; Ferguson Coll., 112; Fulton, 96; Hoover, 161; Keynes, 882; Krivatsy, 1692; Neu, 594; Partington, II, 493; Poggendorff, I, 268; Smith, 68; Thornton & Tully, 104; Waller, 12118; Watt, I, 142t; Wellcome, II, 222; Wing, B3947)

BOYLE, Robert

An Essay of the Great Effects of Even Languid and Unheeded Motion. Whereunto is Annexed An Experimental Discourse of some little observed Causes of the Insalubrity and Salubrity of the Air and its Effects. By the Honourable Robert Boyle, Fellow of the Royal Society.

London: Sold by Sam. Smith at the Prince’s Arms in St. Paul’s Church-Yard. 1690.

Second edition, second issue. 8vo. 4 leaves, pp. 1–123, (1), 2 leaves (blank), pp. 129–158, 1 leaf (blank), 4 leaves, pp. 1–76, 51–113, (1). Page 78 misnumbered 8. Signatures B1 and B3 of second part incorrectly signed K and K3. Two blank leaves (signatures I7 and I8) lacking, but blank leaf (signature L8) present. Fine, crisp copy, in ruled calf antique, maroon morocco label.

THE CORRECTED and final form of this work (first: London, 1685). “This oddly named tract, along with his earlier treatise on Cold, gives Boyle a place in the early history of thermodynamic concepts, and it is among the most important of his later writings. . . . He first draws attention to the ‘great effects’ which can be propagated by the air (e.g., breaking distant windows by cannon), and reiterates that any moving body, whether liquid, gaseous, or solid, evolves heat on encountering an impediment. Many passages indicate that he was thinking of a ‘mechanical equivalent of heat’ and that he regarded heat itself as probably due to small particles of matter in ‘local motion’” (Fulton). (Ferchl, 64;

Ferguson Coll., 112; Fulton, 165; Keynes, 884; Krivatsy, 1716; Neu, 597; Partington, II, 493; Poggendorff, I, 268; Smith, 68; Thornton & Tully, 105; Watt, I, 142x; Wellcome, II, 224; Wing, B3950)

BOYLE, Robert

Essays of the Strange Subtilty Great Efficacy Determinate Nature of Effluvioms. To which are annexed New Experiments to make Fire and Flame Ponderable. Together with a Discovery of the Perviousness of Glass. By The Honourable Robert Boyle, Fellow of the Royal Society. . . .

London: Printed by W. G. for M. Pitt, near the little North Door of St. Paul's Church. 1673.

First edition, first issue. 8vo. 4 leaves, 69 + (1) pp., 1 leaf, 47 + (1) pp., 74 pp., 5 leaves, 85 + (1) pp., 3 leaves. Outer margins of title page neatly repaired, and a few other margins repaired; otherwise a good copy in contemporary paneled calf, rebacked, with gilt-lettered maroon label. Stamps of the Astronomical Society and the Mathematical Society on the title (just touching text). From the library of Professor E. N. da C. Andrade, F.R.S., with his bookplate on the front flyleaf.

FULTON SAYS that this work is "one of the important but less widely known" books by Boyle, ranking in some respects with his *Spring and Weight of the Air*. Experiments on the calcination of metals are described, and (as Fulton observes) "had Boyle been a little bolder in the conclusions which he drew from the experiments," he might have forestalled the phlogiston theory. He certainly observed the increase in weight when such metals as lead, copper, and iron are calcined in air and confirmed the observations of Jean Rey made about fifty years earlier. Like Rey, however, Boyle failed to recognize the significance of the discovery. In addition to chemical experiments this work describes the effluvia that surround lodestones (i.e., magnetism) and touches on electrostatics, the word *electrical* being used several times. Odors are explained by the emission of minute particles (effluvia) from substances, an assumption that is still the basis of physiological theories of the sense of smell. This copy has the four-page catalogue of Boyle's writings at the end. Two other issues also appeared in 1673, with variant title pages. The first issue is rare. The copy of this issue, which Boyle gave to Newton, was in the Duveen Collection, now at Wisconsin. (Duveen, 94; Fulton, 105; Neu, 600; Wing B3951)

BOYLE, Robert

Essays of the Strange Subtilty Determinate Nature Great Efficacy of Effluvioms. To which are annexed New Experiments to make Fire and Flame Ponderable. Together with a Discovery of the Perviousness of Glass. Also an Essay, about the Origine and Virtue of Gems. By the Honourable Robert Boyle, Fellow of the Royal Society. To which is added The Prodromus to a Dissertation concerning Solids naturally contained within Solids. Giving an Account of the Earth, and its Productions. By Nicholas Steno. Englished by H. O. London: Printed by W. G. for M. Pitt, at the Angel near the little North Door of St. Paul's Church. 1673.

First edition, third issue. 8vo. 4 leaves, 69 + (1) pp., 1 leaf, 47 + (1) pp., 74 pp., 5 leaves, 85 + (1) pp., 3 leaves. Fine, crisp copy, in original calf, rebacked, spine gilt-ruled, maroon morocco label.

ALTHOUGH MENTIONED in the title, this copy (like most) does not contain the *Essay . . . of Gems* or *The Prodromus* by Steno. Fulton states that Steno's work is lacking in all but a few copies. This issue is identical to the first, except for the variant title page. Wing erroneously describes this as being in quarto format. (Cushing, B558; Edelstein, 373; Ferguson Coll., 112; Fulton, 107; Keynes, 886; Partington, II, 493; Poggendorff, I, 268; Thornton & Tully, 104; Waller, 10762; Wellcome, II, 222–223; Wheeler Gift, 172; Wing, B3952)

BOYLE, Robert

The Excellency of Theology, compar'd with Natural Philosophy, (as both are Objects of Men's Study.) Discours'd of In a Letter to a Friend. By The Honourable Robert Boyle, Esq.; Fellow of the Royal Society. To which are annex'd Some Occasional Thoughts about the Excellency and Grounds Of the Mechanical Hypothesis. By the same Author. Felicitatem Philosophi quaerunt; Theologi inveniunt; soli Religiosi possident.

London: Printed by T. N. for Henry Herringman, at the Anchor in the Lower Walk of the New Exchange. 1674.

First edition, first issue. 8vo. 15 leaves, 232 pp., 1 leaf (errata), 3 leaves, 41 + (1, blank) pp. Title page remargined. With 2 title pages to the second part, the first with a tear in the lower margin indicating that it should be canceled. Fine copy with wide fore-margins, in contemporary mottled calf, rebacked in matching unlettered calf.

AN INTERESTING copy because it has the cancelland as well as the cancel title to the second part. Fulton says that he found the cancelland in only one of the copies he examined, and he lists fourteen copies in his bibliography. This copy lacks the second errata leaf to the first part, which, as

Fulton states, is an “inserted leaf” giving “a fuller list” of errata and is usually bound in front or behind the title to the second part. Presumably the original binder removed the second errata leaf instead of the cancelland when inserting the cancel title. The copy of this book that Boyle presented to John Evelyn was in exactly the same state as this copy: i.e., with cancelland but no second errata. It is possible that this is a copy of the book in its earliest state, before Boyle asked the printer to make up the second errata. It is well known that Boyle constantly sent amendments and additions to the text while his books were being set up in type and tried to get the printers and binders to incorporate them. Although the first part is strictly theological, the second part is scientific, and, as Fulton indicates, it contains Boyle’s clearest statement of his theory of the universe, i.e., “matter in motion.” (Fulton, No. 116; Watt, I, 142t; Wellcome, II, 223 [without 2nd errata leaf]; Wing, B3955)

BOYLE, Robert

Exercitationes Atmo-Sphaeris Corporum Consistentium; Deque Mira Subtilitate Determinata natura, & Insigni Vi Effluviiorum. Subjunctis Experimentis Novis, Ostendentibus, Posse partes Ignis & Flammae reddi Stabiles Ponderabilisque. Una cum Detecta Penetrabilitate Vitri a Ponderabilibus partibus Flammae. Authore Rob. Boyle, . . . Ex Anglico in Latinum sermonem versae. . .

Leyden: Ex Officina Felicis Lopez. 1676.

Fourth Latin (first Lopez) edition, second issue. 12mo. (4), 5–221, (3), 225–282, (2), 285–312 pp. Very good copy in contemporary vellum, maroon morocco label, old ink date on spine. Bound with Boyle, R., *Observationes de salsedine maris* (Bologna, 1675).

PRECEDED BY three other editions in Latin (London, 1673; Bologna, 1675, two printings), this is the first edition of the *Effluviiums* to be published by Felix Lopez, in Leiden. It appeared in two issues: one of 1675 (Wellcome, II, 223) and the present one in 1676. Rare. Not in Duveen, Ferguson, Neu, etc. (Fulton, 110A; Keynes, 887; Krivatsy, 1698; Sondheimer, 44)

BOYLE, Robert

Experimenta & Observationes Physicae: Wherein are briefly Treated of Several Subjects Relating to Natural Philosophy in an Experimental Way. To which is added, a small Collection of Strange Reports, in two Parts. By the Honourable Robert Boyle, Fellow of the Royal Society.

London: Printed for John Taylor at the Ship, and John Wyat at the Rose in S. Paul’s Church-Yard. 1691.

First edition. 8vo. 13 leaves, 158 pp., 1 leaf, 28 pp., 1 leaf (errata, advertisement). Very good copy, with wide margins, in modern polished tan calf, spine gilt-lettered and dated, inner dentelles gilt, by Sangorski and Sutcliffe, London.

AN INTERESTING work containing much on chemistry. It is “a most diverse collection ‘thrown together’ with Boyle’s characteristic casualness. In Chapter I he sets down a series of interesting observations on lodestones in which the influence of heating, rate of cooling, and of thermal gradients upon their magnetic properties is described at length. Chapter II is devoted to a further analysis (see his *Essay on Gems*) of the specific gravity and other physical properties of diamonds, and the third chapter deals again (see *Colours and Cosmical Qualities*) with the influence of various chemical substances on the colour of solutions of vegetable pigments” (Fulton, who discusses also how near Boyle came [in chapter IV] to discovering the motor area of the human brain). Details of ten chemical experiments are given (pp. 131–158), including the preparation of colloidal gold, silver chloride, silver amalgam, and gold amalgam. (Cushing, B562; Ferchl, 65; Fulton, 193; Keynes, 889; Krivatsy, 1729; Neu, 604; Partington, II, 494; Poggendorff, I, 268; Smith, 69; Thornton & Tully, 105; Waller, 10767; Watt, I, 143a; Wheeler Gift, 203; Wing, B3959)

BOYLE, Robert

Experiments and Considerations about the Porosity of Bodies, in Two Essays. By the Honourable Robert Boyle, Fellow of the Royal Society.

London: Printed for Sam. Smith at the Prince’s Arms in S. Paul’s Church-Yard. 1684.

First edition. 8vo. 2 leaves, 146 pp., 1 leaf (blank). Fine, crisp copy, in original unlettered speckled calf. Armorial bookplate: Sir Michael R. Shaw Stewart.

“TO A MODERN physiologist the *Porosity of Bodies* is of signal interest, for it marks the beginning of the study of osmotic pressure and of the exchange of substances through living membranes, which is at the basis of the regulation of all bodily processes. . . . The second part of the essay deals with the porosity of solid bodies, and once more we find Boyle speaking in terms of atomic structure and arrangement. . . . At the end there is an interesting section on the porosity of glass, in which the methods of staining glass are described at length” (Fulton). Both parts of this work are of considerable chemical interest and importance. (Cushing, B565; Edelstein, 374; Ferchl, 64; Fulton, 149; Keynes, 890; Krivatsy, 1712; Partington, II, 493; Poggendorff, I, 268; Thornton & Tully, 105; Watt, I, 142x; Wellcome, II, 223; Wing, B3966)

BOYLE, Robert

Experiments and Considerations touching Colours. First occasionally written, among some other Essays, to a Friend; and now suffer'd to come abroad as the beginning of an Experimental History of Colours. By the Honourable Robert Boyle, Fellow of the Royal Society. . . .

London: Printed for Henry Herringman at the Anchor in the Lower walk of the New-Exchange. 1664.

First edition. 8vo. 20 leaves, 424 pp. (last blank). Title in red and black. With folding engraved plate facing page 192 (prism depicting reflection and refraction of parallel light ray and formation of spectral colors). Fine, crisp copy, in original blind-ruled sheep, rebounded, maroon morocco label, spine dated. Bookplate (dated 1724): Hon. George Baillie.

FULTON STATES that this work ranks in importance with the *Spring and Weight of the Air* and the *Usefulness*. It covers many subjects and contains generalizations that were later adopted by Newton in his great work *Opticks* (1704). This book greatly influenced Newton, who began his experiments on the interaction of light with prisms about 1664 (see A. R. Hall, *Annals of Science*, XI [1955], 27). Boyle describes chemical indicators to distinguish acids from alkalies and many other chemical reactions that produce color changes. Also included is Boyle's description of a diamond that "shines in the dark" (pp. 389–423), with divisional title page. (Cushing, B566; D.S.B., II, 379; Ferchl, 64; Fulton, 57; Keynes, 891; Krivatsy, 1679; Neu, 606; Osler, 944; Partington, II, 492; Poggendorff, I, 268; Smith, 69; Thornton & Tully, 103; Waller, 11294; Watt, I, 142r; Wellcome, II, 221; Wing, B3967)

BOYLE, Robert

Experiments, Notes, &c. about the Mechanical Origine or Production of divers particular Qualities: among which is inserted a Discourse of the Imperfection of the Chymist's Doctrine of Qualities; together with some Reflections upon the Hypothesis of Alkali and Acidum. By the Honourable Robert Boyle, Esq; Fellow of the Royal Society.

London: Printed by E. Flesher, for R. Davis, Bookseller in Oxford. 1675.

First edition, first issue. 8vo. 1 leaf, pp. (1–5), 6–21, (1), 1 leaf (*Heat and Cold*), pp., 1–105, (1), 1 leaf (*Tasts*), pp. 3–35, (1), 1 leaf (*Odours*), pp. 3–31, (1), 1 leaf (*Doctrine of Qualities*), pp. 3–50, 1 leaf (blank), 1 leaf (*Alkali and Acidum*), pp. 3–38, 1 leaf (blank), 1 leaf (*Volatility*), pp. 1–7, (1), (*Advertisements . . . Chymical Qualities*), pp. 3–56, 1 leaf (*Fixtness*), pp. 3–34, 1 leaf (blank), 1 leaf (*Corrosiveness*), pp. 1–69, (1), 1 leaf (*Precipitation*), 2 leaves (*Advertisement*), pp. 1–46 (40 and 41 misnumbered 41 and 40, respectively), 1 leaf (*Magnetism*, dated 1676), 1 leaf (*Advertisement . . . Occult Qualities*), pp. 1–20, 1 leaf (*Electricity*), pp. 1–38. With the original blanks B8, D2, C4,

and C2, respectively, but (as often) lacking the inserted leaf signed (*) (*Directions for the Bookbinder*). Fine, crisp copy, with wide margins (some uncut), in calf antique. Collation the same as in Fulton.

"THIS COLLECTION of eleven tracts is rare and often imperfect, and it contains two of Boyle's major contributions to physical science. . . . The rare first issue bears on the general title-page the date 1675 . . . but most copies have a cancel general title bearing the date 1676. . . . The collection is important because of the tracts on magnetism and electricity. . . . The tracts on taste and smell are the first monographs . . . to be devoted to these special senses" (Fulton). (Cushing, B567; D.S.B., II, 378; Duveen, 95; Ferguson, I, 120; Ferguson Coll., 113; Fulton, 123; Keynes, 896; Neu, 613; Partington, II, 493; Thornton & Tully, 104; Waller, 10765; Wellcome, II, 223; Wheeler Gift, 178; Wing, B3976)

BOYLE, Robert

A Free Discourse against Customary Swearing. And a Dissuasive from Cursing. By the late Honourable Robert Boyle. Published by John Williams, D.D.

London: Printed by R. R. for Thomas Cockerill, Senr and Junr, at the Three Legs in the Poultry, over-against Stocks-Market. 1695.

First edition. 8vo. 8 leaves, 131, (1); 30 pp., 2 leaves. Frontispiece portrait of Boyle (R. W. sculp.). Title page is a cancel (as usual), with stub of cancelland before portrait. Early-nineteenth-century signature (Frederic Dusaulay?) in top blank margin of title page; otherwise fine copy with wide margins, in modern calf, spine gilt-lettered and dated.

THE LAST of Boyle's posthumous publications but among the earliest he wrote, dating from 1647. In the dedication by John Williams (1636?–1709), bishop of Chichester, he states that the manuscript was given to him by Boyle's executors, and that "it is not only certain that it was Wrote by the Honourable Person whose Name it bears; but also that it was designed by him for the Press; as some Passages in it do apparently shew." In his text condemning swearing and the frequent use of oaths by his contemporaries, Boyle makes cogent arguments based on theological premises. The tract at the end, *A dissuasive from cursing*, signed W. D., mentions "our Friend Mr. Boyle" (p. 14) but is not by him. The fine portrait by "R. W." (i.e., Robert White, 1645–1703) was again used by Richard Boulton in his *Works of . . . Boyle, epitomized* (London, 1699–1700, and 1715), but with "M. Van der Gucht" substituted as the engraver. (Fulton, 197; Keynes, 898; Wing, B3978)

BOYLE, Robert

A Free Enquiry into the Vulgarly Receiv'd Notion of Nature; made in an Essay, Address'd to a Friend. By Robert Boyle, Fellow of the Royal Society. . . .

London: Printed by H. Clark, for John Taylor at the Globe in St. Paul's Church-Yard. 1685/6.

First edition. 8vo. 12 leaves, 412 pp., 2 leaves (last blank). Light worming in top blank margin of a few leaves of preface, and lacking (as often) Advertisement leaf (sign. a5); otherwise a good, crisp copy, in contemporary ruled calf, rebacked with original gilt spine laid down, maroon morocco label, with gilt arms of Lord Viscount Courtenay on front cover.

"AFTER THIRTY years of experimentation and observation of natural phenomena Boyle appears in this thoughtful treatise to have reached his maturity as a philosopher; had he lived some fifteen years earlier he might, with Lucretius, have entitled his message *On the Nature of Things*; but equally well he could with his contemporary, Isaac Newton, have called it his *Principia*. The book deals with the laws of motion, less precisely, to be sure, than did the forty-four-year-old Newton the following year. He tells us that the current views of Nature were incompatible both with religion and philosophy, arguing that one must distinguish between 'universal nature' and 'particular nature,' the former being the result of general cosmic principles such as the laws of motion . . . and the latter the result of the general laws applied to a specific natural object. The growth of Boyle's theory of the universe as represented in *Forms and Qualities*, *Cosmicall Qualities*, and the present work forms an important phase in the history of natural philosophy that is little known" (Fulton). It is also of importance because Boyle was the first Englishman to recognize the *vis medicatrix naturae*. (Cushing, B569; Fulton, 170; Keynes, 899; Krivatsy, 1721; Neu, 616; Smith, 78; Thornton & Tully, 105; Watt, I, 142y; Wellcome, II, 224; Wing, B3979)

BOYLE, Robert

General Heads for the Natural History of a Country, Great or Small; Drawn out for the Use of Travellers and Navigators. Imparted by the late Honourable Robert Boyle, Esq; Fellow of the Royal Society. Ordered to be published in his Life-time, at the Request of some Curious Persons. To which is added, other Directions for Navigators, &c. with particular Observations of the most noted Countries in the World: By another Hand.

London: Printed for John Taylor at the Ship in S. Paul's Church-Yard, and S. Holford, at the Crown in the Pall Mall. 1692.

First edition. 12mo. 2 leaves, 138 pp., 1 leaf (advertisements). Very good copy, in original unlettered calf. Page 139 is not numbered, although the parentheses are present and the pages preceding it are numbered correctly.

A POSTHUMOUSLY PUBLISHED work (by Denis Papin?) based on three papers that Boyle inserted in the *Philosophical Transactions* for 1666 (see Fulton, 210). Pages 102–106 are headed "Enquiries for Virginia and Bermudas," in which he asks for a "particular Account of the Spider in the Bermudas." He also desires further information concerning the "Gigantick Natives of Cheasapeak" and details on seawater "where ships do soonest rot as in the Streights of California." The text shows that Boyle remained open-minded until the end of his life about the possibility of transmutation of base metals. Many other chemical and mineralogical subjects are discussed. A most interesting aspect of this work is its connection with his famous colleague Denis Papin, who describes his relationship with Boyle, and the availability of "Engines or Contrivances named in this Treatise" on the first page of the advertisements. (Cushing, B570; Fulton, 195; Keynes, 901; Krivatsy, 1731; Neu, 620; Smith, 70; Thornton & Tully, 106; Waller, 10768; Watt, I, 11–3c; Wing, B3980)

BOYLE, Robert

The General History of the Air, Designed and Begun by the Hon'ble Robert Boyle, Esq. Imprimatur. June 29, 1692. Robert Southwell, P.R.S.

London: Printed for Awnsham and John Churchill, at the Black Swan in Pater-noster-Row, near Amen-Corner. 1692.

First edition. 4to. xii + 259 + (1) pp. Few woodcuts in the text. Good copy in contemporary blind-ruled, paneled unlettered calf, rebacked, with the original spine laid on.

As FULTON states, Boyle's scientific life began and ended with studies of the air. Published posthumously, this final work is important because it presents Boyle's ultimate conclusions. The publisher says that, though incomplete, Boyle approved the work during his lifetime, and it would have appeared before he died in 1691 "had not the Publisher the last Winter been hastily called out of Town." Boyle discusses the composition of the air and says (p. 3): "It seems then not improbable to me, that our Atmospherical Air may consist of three differing Kinds of Corpuscles." He describes these as 1) vapors ascending from earth, water, minerals, vegetables, animals, etc.; 2) subtle "Magnetical Streams" that "produce what we call Light"; and 3) "Elastical Particles of the Air . . . like the Springs of Watches." Thus, Boyle's concept was both physical and chemical, and on pages 6–7 he came close to the modern kinetic theory: "I . . . suspect, that there may be sometimes mingled with

the Particles that are springy, . . . some others, that owe their Elasticity, not so much to their Structure, as their Motion, which . . . whirling them about, may make them beat off the neighbouring Particles." On pages 208–209 he discusses the combustion of alcohol and other substances in an evacuated receiver, and it is evident that Boyle suspected the presence in air of some substance (i.e., oxygen) that supports combustion. The book also contains barometrical tables, observations, and speculations on meteorological subjects. John Locke saw the book through the press after Boyle's death. (Cushing, 35; Duveen, 97; Ferchl, 65; Fulton, 194; Neu, 622; Osler, 951; Partington, II, 494; Poggendorff, I, 269; Reynolds, 623; Smith, 70; Thornton and Tully, 105; Waller, 12121; Watt, I, 143a; Wellcome, II, 224; Wing B3981)

BOYLE, Robert

An Historical Account of a Degradation of Gold, Made by an Anti-Elixir: a Strange Chymical Narrative. By the Honourable Robert Boyle, Esq. The Second Edition.

London: Printed for R. Montagu, at the Book-Ware-House, in Great Wilde-Street, near Lincoln's-Inn Fields. 1739.

Second edition. 4to. vi, 17, (1) pp. Insignificant toning of final two leaves; otherwise fine large copy, uncut with wide margins (fore and lower untrimmed), printed on thick paper showing stab holes in the gutter; in maroon quarter cloth antique, marbled boards, blue endpapers, spine gilt-lettered and dated, with original blue wrappers bound in.

ONE OF Boyle's more controversial works, and certainly one of his rarest, in which he affirms his belief in transmutation (of mercury into gold) and restates his concept of chemical elements, first set forth in *The Sceptical Chymist* (1661). The extremely rare first edition (London, 1678) was known to Fulton in only four copies, and of the present edition (an exact reprint of the first) he also records only four copies. Partington (II, 499), Poggendorff (I, 268), Wellcome (II, 223), and Watt (I, 142v) list only the 1678 edition. (Duveen, 97; Ferchl, 64; Ferguson, I, 122 [not in Young Coll.]; Ferguson Coll., 113; Fulton, 137; Neu, 659; Thornton & Tully, 104)

BOYLE, Robert

An Historical Account of a Degradation of Gold, made by an Anti-Elixir: a Strange Chymical Narrative. By the Honourable Robert Boyle, Esq. The Second Edition.

London: Printed for R. Montagu, at the Book-Ware-House, in Great Wilde-Street, near Lincoln's-Inn Fields. 1739.

Second edition. 4to. vi, 17, (1) pp. Crisp, clean copy, but with most of the headlines of signatures B2–C3 cropped, and most fore-edges shaved or cropped, affecting text. A very short copy,

with the word *An* cropped from the title; in half calf antique, marbled boards, maroon morocco label.

ONE OF Boyle's more controversial works, in which he affirms his belief in transmutation (of mercury into gold) and restates his concept of chemical elements, first set forth in *The Sceptical Chymist*. The extremely rare first edition (London, 1678) was known to Fulton in only four copies, and of the present edition (an exact reprint of the first) he records only four copies. Partington (II, 499), Poggendorff (I, 268), Wellcome (II, 223), and Watt (I, 142v) mention the 1678 edition only. (Duveen, 97; Ferchl, 64; Ferguson, I, 122 [not in Young Coll.]; Ferguson Coll., 113; Fulton, 137; Neu, 659; Thornton & Tully, 104)

BOYLE, Robert

The Hon. Robert Boyle's "Occasionall Reflections." With a Preface, &c. by John Weyland, Jun. Esq. Published for the Benefit of "The Society for the Conversion and religious Instruction and Education of the Negro Slaves in the British West India Islands."

London: Printed for T. Cadell and W. Davies, Strand; sold also by J. Hatchard, Piccadilly; and J. Parker, Oxford. 1808.

Third edition. 8vo. 2 leaves (half title, title), xlviii + 160 pp. (last 5 unpaginated). Engraved frontispiece portrait of Boyle with chemical apparatus beneath (dated 1 June 1808). Very good copy, in original gilt-ruled half calf, marbled boards, maroon label.

THE FIRST edition to appear in the nineteenth century, preceded by those of 1665 and 1669. Further printings appeared in 1820, 1841, and 1848. The preliminary Discourse is omitted, and only the six sections of the *Occasional Reflections* are included. In the preface the editor gives a short biography of Boyle, mentioning his scientific works but dwelling mainly on his theological studies. (Cushing, B587; Fulton, 66; Keynes, 935)

BOYLE, Robert

Hydrastatical Paradoxes, made out by New Experiments, (for the most part Physical and Easie). By the Honourable Robert Boyle, Fellow of the Royal Society.

Oxford: Printed by William Hall, for Richard Davis, Anno Dom. 1666.

First edition. 8vo. 18 leaves, 247, (1) pp. With 3 large folding copperplates (containing 24 figures), and 1 woodcut (p. 119). Title in red and black. Very good, crisp copy, in contemporary blind-ruled calf, rebaked, with original spine and maroon morocco label laid down. Harvard University duplicate, with bookplate (bought from fund bequeathed by Peter Paul Francis Degrand, 1787–1855).

AN
HISTORICAL ACCOUNT
OF A
DEGRADATION
OF
G O L D,
Made by an
ANTI-ELIXIR:
A STRANGE
CHYMICAL NARRATIVE.

By the HONOURABLE
ROBERT BOYLE, Esq;

The SECOND EDITION.

L O N D O N:
Printed for R. MONTAGU, at the *Book-Ware-House*, in *Great Wilde-
Street*, near *Lincoln's-Inn Fields*.

M D C C X X X I X.

Boyle. Historical Account of a Degradation of Gold. London, 1739.

WRITTEN in response to a request from the Royal Society to report on Blaise Pascal's *Traitez de l'equilibre des liquers* (Paris, 1663; 2nd ed., Paris, 1664), this work "deals rather shortly with his author and then proceeds to describe at length the experiments which convinced him of the fallacies of his French contemporary. . . . The celebrated experiments 'that water may be made as well to depress a Body lighter than itself, as to buoy it up' are recorded in Paradox 8, pp. 160 et seq. The observation is still made in much the same fashion by every student in his 'practical' courses in physics" (Fulton). "This book is a penetrating critique of Pascal's work on hydrostatics, full of acute observations upon Pascal's experimental method, and a presentation of a series of important and ingenious experiments upon fluid pressure" (D.S.B.). (Blocker, 50; Cushing, B573; D.S.B., II, 378; Ferguson Coll., 113; Fulton, 72; Keynes, 903; Madan, 2738; Neu, 623 [imperf.]; Partington, II, 493; Pogendorff, I, 268; Smith, 70; Thornton & Tully, 103; Waller, 11296; Watt, I, 142r; Wing, B3985)

BOYLE, Robert

Medicina Hydrostatica: or, Hydrostaticks Applied to the Materia Medica. Shewing, How by the Weight that divers Bodies, us'd in Physick, have in Water; one may discover Whether they be Genuine or Adulterate. To which is subjoyn'd, A Previous Hydrostatical Way of Estimating Ores. By the Honourable Robert Boyle, Fellow of the Royal Society. London: Printed for Samuel Smith at the Sign of the Prince's Arms, in St. Paul's Church-Yard. 1690.

First edition. 8vo. 13 leaves, 217 + (7) pp., 1 leaf, 14 pp. (Catalogue). Half title lacking. Copperplate frontispiece (balance and apparatus for measuring specific gravity). Inner margin of frontispiece and title neatly strengthened, and blank margins of last 2 leaves of Catalogue frayed; otherwise very good copy in calf antique, spine gilt-lettered. Early signature ("Thos. Green") on signature A3r. Bookplate: Franz Sondheimer.

ONE OF Boyle's last writings and important as the first work in English on determining specific gravity. The title was taken from the *Medicina Statica* of Sanctorius. Although the principle of weighing bodies in air and in water dates from the time of Archimedes, it was Boyle who emphasized the importance of specific gravity to physicists and chemists. At the end there is one of the earliest tables of specific gravities listing ores, salts, metals, stones, minerals, ivory, amber, etc. The "book is not common and has not been reprinted except for the Geneva edition" (Fulton). The "Catalogue of . . . Philosophical Books . . . by . . . Boyle" at the end is rare and was added to only a few copies. It is listed separately by Wing, B3928A. An interesting association copy, from the library of Thomas Green (1658–

1738), bishop of Ely, who directed proceedings against Boyle's friend Richard Bentley (1662–1742). The first course of Boyle Lecture Sermons (1692) was delivered by Bentley (D.N.B.). (Cushing, B575; Ferguson Coll., 114; Fulton, 189; Krivatsy, 1727; Neu, 629; Osler, 950; Partington, II, 494; Reynolds, 626; Thornton & Tully, 105; Waller, 1394; Watt, I, 142z; Wellcome, II, 224; Wing, B3988)

BOYLE, Robert

Medicinal Experiments; or, a Collection of Choice Remedies, for the most part Simple, and Easily Prepared. By the Honourable R. Boyle, Esq; Fellow of the Royal Society. London: Printed for Sam. Smith, at the Prince's Arms in St. Paul's Church-Yard. 1692.

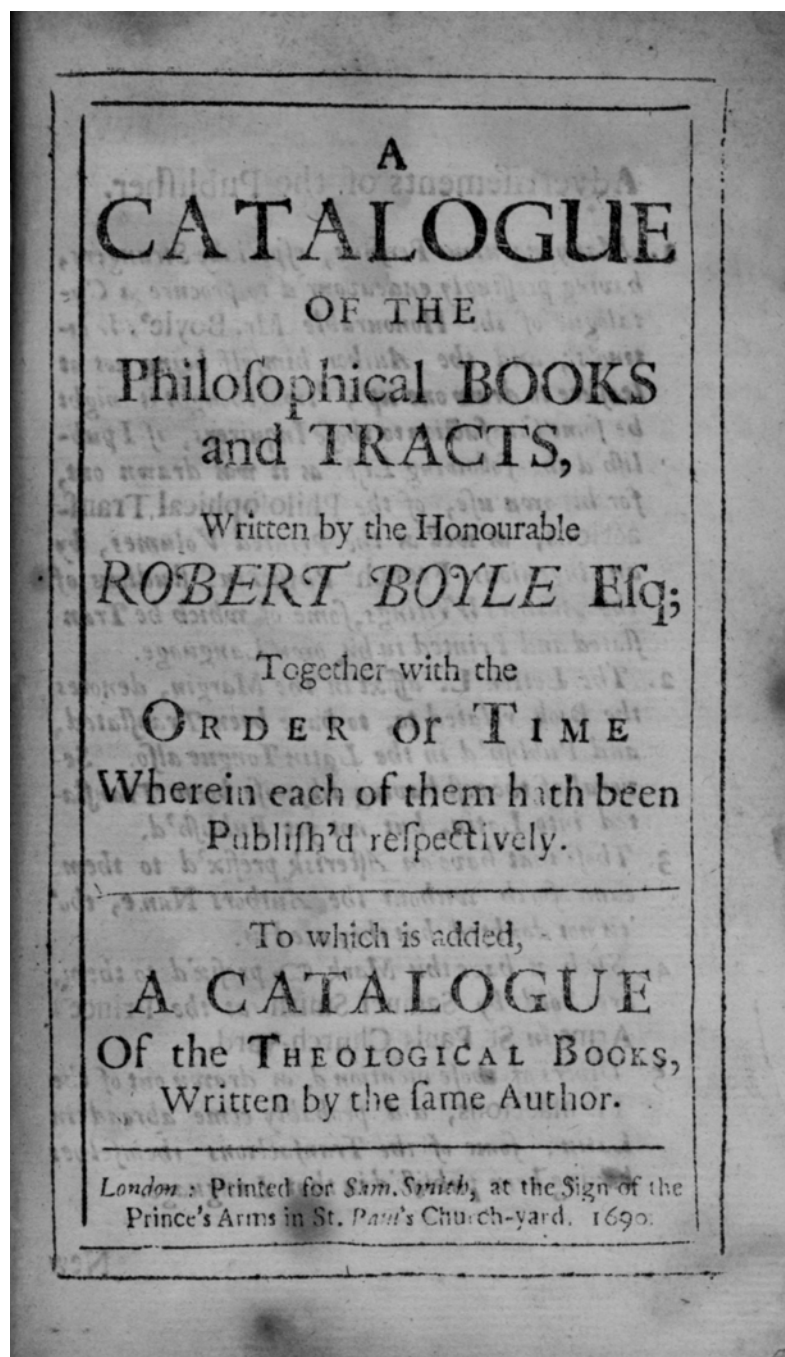
First edition. 12mo. 6 leaves, 11, (1), 88 pp. + 1 leaf, 17, (1) pp. With divisional title pages to the second part (p. 47) and *A Catalogue of the Philosophical Books and Tracts, Written by the Honourable Robert Boyle, Esq.* Corners of most leaves rounded (i.e., worn); otherwise good copy, in original ruled calf, re-backed, maroon morocco label.

THE UNCOMMON first edition, which was greatly enlarged and reprinted in later years. It contains prescriptions for medicines that "are a part of a Collection of Receipts and Processes, that from Time to Time have been recommended to me by the Experience of others, or approved by my own: Receipts that being Parable or Cheap, may easily be made serviceable to poor Countrey People" (preface). "There are numerous statements in this astonishing collection of nostrums which might well shatter one's confidence in Boyle's judgement, but in charity it is perhaps better to look upon them as a commentary on the state of medicine in the seventeenth century rather than as an indictment of a high-minded seeker after truth" (Fulton, who owned only signatures I3–K6). (Cushing, B577; Edelstein, 381; Ferchl, 65; Fulton, 179; Keynes, 909; Krivatsy, 1723; Partington, II, 493; Smith, 71; Thornton & Tully, 105; Watt, I, 143b; Wellcome, II, 224; Wing, B3989)

BOYLE, Robert

Medicinal Experiments: or, a Collection of Choice and Safe Remedies, for the most part Simple and easily prepared: Very Useful in Families, and fitted for the Service of Country People. By the Honourable R. Boyle Esq; Fellow of the Royal Society. In Three Parts. Containing above Five Hundred Choice Receipts. The Fourth Edition: Enlarged with a Supplement.

London: Printed for Sam. Smith, at the Princes's [sic] Arms, and Jo. Taylor at the Ship in St. Paul's Church-Yard. 1703.



Boyle. "Catalogue of. . . Books." See *Medicina Hydrostatica*. London, 1690.

Fourth edition. 12mo. 13 leaves, 168 pp., 12 leaves, 60 pp., 6 leaves (advertisements). Engraved frontispiece portrait of Boyle. Very good copy, in original paneled calf, rebacked, maroon morocco label. Engraved bookplate: Lord Lovaine.

THE FIRST edition of this work to contain the portrait of Boyle. The third volume (first, 1694) has its own title page, and the preface (signed J. W.) states that some of the remedies were from Boyle, while "others were recommended to him by credible Persons, who had Experienced their Benefit in them selves, or their Friends." Fulton considers the third volume, which contains repetitions of receipts in the first two volumes, to have "many of the earmarks of a forgery" despite the statement in the subtitle, "Published from the Author's Original Manuscripts." The preface to the first volume contains Boyle's account of his medical history, mentioned by Fulton, which was not in the first edition of 1692. (Blake, 62; Fulton, 183; Keynes, 913; Neu, 632; Smith, 71; Waller, 1392; Wellcome, II, 224)

BOYLE, Robert

Medicinal Experiments: or, a Collection of Choice and Safe Remedies for the most part Simple, and easily prepar'd: Very Useful in Families, and fitted for the Service of Country People. By the Honourable R. Boyle, Esq; late Fellow of the Royal Society. In Three Parts. Containing above Five Hundred Choice Receipts. The Fifth Edition Corrected.

London: Printed for W. Innys, at the Prince's Arms in St. Paul's Church-Yard. 1712.

Fifth edition. 12mo. 12 leaves, 168 pp., 11 leaves, 61, (1) pp., 6 leaves (advertisements). Engraved frontispiece portrait of Boyle (identical to that in fourth edition, 1703). Very good, crisp copy, in quarter vellum, boards antique. Signature of John Perry (1670–1732), dated 1714, on flyleaf. Perry, a prominent civil engineer and traveler, constructed waterways in Russia, 1698–1712 (see D.N.B.).

A CLOSE PAGINARY reprint of the fourth edition (1703), with a few textual corrections. The original owner, Perry, has entered in ink the prices of a number of scientific and medical works listed in the advertisements ("Books Printed for, and Sold by William Innys") at the end. (Blake, 62; Fulton, 184; Keynes, 914; Wellcome, II, 224)

BOYLE, Robert

Memoirs for the Natural History of Humane Blood, especially the Spirit of that Liquor. By the Honourable Robert Boyle, Fellow of the Royal Society. . . .

London: Printed for Samuel Smith at the Princes Arms in St. Paul's Church-Yard. 1684.

First edition, first issue. 8vo. 8 leaves, 289, (1) pp., 3 leaves. Very good copy, in calf antique, spine gilt-lettered; contained in a crimson quarter morocco cloth slipcase.

THE VERY rare first issue of the first edition, with the uncanceled title bearing the date 1684. The second issue has a cancel title with the date 1683/4 and is an instance in which Boyle insisted on the earlier date in order to avoid possible accusations of plagiarism. Fulton states that this is the most important of Boyle's medical writings and marks the beginning of physiological chemistry. In addition to determining the taste, odor, temperature, density, and other physical properties of human blood, Boyle describes the many chemical experiments he carried out on it. The products obtained by the distillation of blood and the chemical tests he conducted on these products are detailed. He also discusses the chemical and physical tests he carried out on human urine. "There are observations on the functions of the blood in respiration, . . . [and] . . . the book . . . summarizes physiological knowledge of the time" (Fulton). It is a landmark in the history of biochemistry, hematology, and chemistry. Only the second issue is listed by Cushing, Duveen, Garrison-Morton, Krivatsy, Osler, Partington, Smith, and Waller. (Ferguson Coll., 114; Fulton, 146A; Neu, 635; Poggendorff, I, 268; Reynolds, 629; Thornton & Tully, 105; Watt, I, 142w; Wellcome, II, 223; Wing, B3994)

BOYLE, Robert

New Experiments and Observations touching Cold, or an Experimental History of Cold, begun. To which are added an Examen of Antiperistasis, and an Examen of Mr. Hobs's Doctrine about Cold. By the Honorable Robert Boyle, Fellow of the Royal Society. Whereunto is annexed an Account of Freezing, brought in to the Royal Society, by the learned Dr. C. Merret, a Fellow of it. . . .

London: Printed for John Crook, at the Sign of the Ship in St. Paul's Church-Yard. 1665.

First edition. 8vo. 30 leaves, pp. 1–(804), 2 leaves ("An Advertisement," sign. fff2), pp. 805–(848, last 3 unpaginated), 4 leaves, pp. 1–54 (1). Title in red and black. With 2 folding copperplates (thermometers, Italian snowpit). Very good copy, in contemporary calf, rebacked, maroon morocco label, spine dated. Harvard University duplicate, with bookplate (bequest of Daniel Treadwell, Rumford Professor of Science and Arts, 1834–45).

A MILESTONE TREATISE in the history of chemistry, in which Boyle describes his use of the thermometer to study chemical reactions. The first in England to employ a sealed alcohol thermometer, he used the freezing of oil of aniseed

as a fixed point. His discovery of freezing mixtures (by mixing ice with various salts or acids) is described, and a modern explanation of the phenomenon of freezing is given. He proves that water expands slightly before freezing (i.e., has a temperature of maximum density). This work and his *Languid and Unheeded Motion* (1685) "give Boyle just claim to a place in the early history of ideas concerning the kinetics of chemical reactions" (Fulton). It is also noteworthy for the many physiological observations it contains. (Cushing, B580; D.S.B., II, 379; Edelstein, 382; Fulton, 70; Keynes, 921; Krivatsy, 1683; Middleton, 38; Neu, 640; Partington, II, 492; Poggendorff, I, 268; Smith, 71; Thornton & Tully, 103; Waller, 11295; Watt, I, 142r; Wellcome, II, 222; Wing, B3996)

BOYLE, Robert

New Experiments and Observations touching Cold, or, an Experimental History of Cold, begun. To which are added an Examen of Antiperistasis, and an Examen of Mr. Hobs's Doctrine about Cold. Whereunto is annexed an Account of Freezing, brought in to the Royal Society, by the learned Dr. C. Merret, a Fellow of it. Together with an Appendix, containing some promiscuous Experiments and Observations relating to the precedent History of Cold. . . . By the Honourable Robert Boyle, Fellow of the Royal Society.
London: Printed for Richard Davis, Bookseller in Oxford. 1683.

Second edition. 4to. 20 leaves, pp. 1–104, 105–(112) (= 4 pp.), 113–266, 2 leaves, pp. 267–342, 2 leaves, pp. 1–20, 1 leaf, pp. 1–(30). With 2 folding copperplates (identical to those in the 1665 edition, with necessary alterations of type). Fine, crisp copy, in original calf, rebacked, maroon morocco label.

THE FINAL form of this important work, augmented and corrected in many places by Boyle, who complains in the preface that some of his papers were destroyed in a fire and have been rewritten for this edition. Appearing for the first time, the material in the *Appendix* includes detailed descriptions of new experiments and observations by Boyle, as well as reports that were sent to him relating to statements he made in the 1665 edition. (Blocker, 50; Fulton, 71; Keynes, 922; Krivatsy, 1684; Neu, 641; Osler, 942; Partington, II, 493; Poggendorff, I, 268; Smith, 71; Thornton & Tully, 103; Watt, I, 142r; Wellcome, II, 222; Wing, B3997)

BOYLE, Robert

New Experiments Physico-Mechanicall, touching the Spring of the Air, and its Effects (made, for the most part, in a New Pneumatical Engine). Written by way of Letter to the Right Honorable Charles Lord Vicount of Dungarvan, Eldest Son to the Earl of Corke. By the Honorable Robert Boyle Esq.
Oxford: Printed by H. Hall, Printer to the University, for Tho. Robinson. 1660.

First edition. 8vo. 16 leaves, 399, (1) pp. (i.e., 389, pp. 90–99 omitted). Large folding copperplate depicting 16 figures (including pneumatical engine). Fine copy, with half title, in original blind-ruled, unlettered calf.

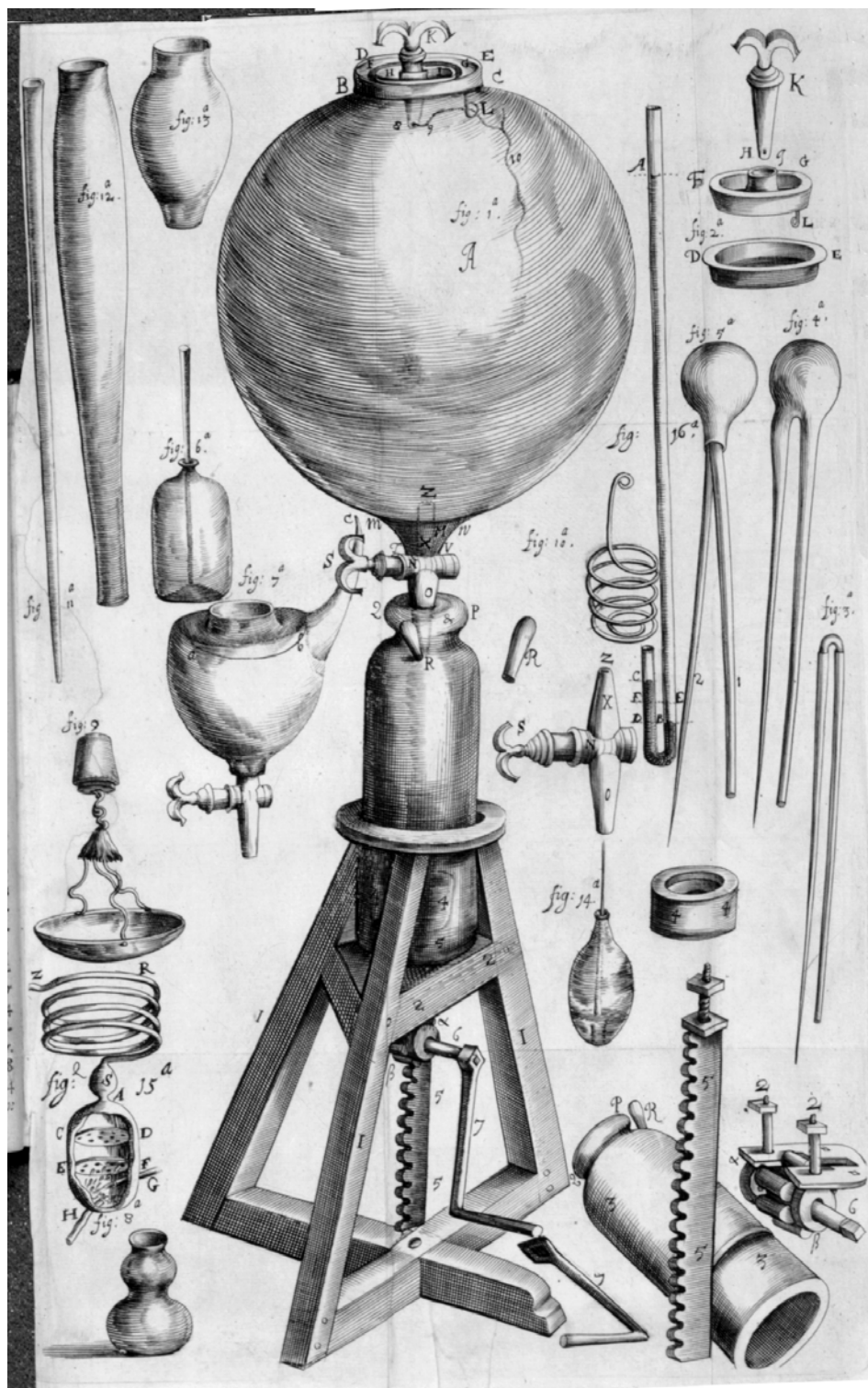
THE FIRST scientific book by Boyle (1627–1691) and one of the great works of the scientific revolution then beginning in England. Influenced by the vacuum pump and experiments carried out with it in 1654 by Otto von Guericke of Magdeburg, first described by Gaspar Schott (*Mechanica Hydraulico-Pneumatica*, 1657), Boyle had his assistant, Robert Hooke (1635–1703), design and construct an improved pump, which is described herein. Boyle devised and carried out a brilliant series of experiments on the physical and chemical properties of the air, proving that it has weight and confirming the experiments of Torricelli. He also proved that sound cannot be transmitted in a vacuum and that air is permanently elastic and is necessary to support life and combustion. Forty-three experiments are carefully described. Dedicated to his nephew, Lord Dungarvan, the book was completed on 20 December 1659 (see p. 399). This book, with the later editions (1662, 1682) and the *Continuations* (1669, 1682), constitutes one of the fundamental works in the history of science. (Cushing, B582; Dibner, 142; D.S.B., II, 377; Fulton, 13; Harrison, 269; Keynes, 923; Krivatsy, 1659; Madan, 2484; Neu, 642; Partington, II, 492; Poggendorff, I, 267; P.M.M., 143; Thornton & Tully, 102; Waller, 11290 [imperf.]; Watt, I, 142p; Wellcome, II, 220; Wing, B3998)

BOYLE, Robert

New Experiments Physico-Mechanical, touching the Spring of the Air, and its Effects (made, for the most part, in a New Pneumatical Engine) . . . (Half title:) Whereunto is added a Defence of the Authors Explication of the Experiments against the Objections of Franciscus Linus, and Thomas Hobbes. . . .

Oxford: Printed by H. Hall, Printer to the University, for Tho. Robinson. 1662.

Second edition. 4to. 8 leaves, 207, (1) pp.; 6 leaves, 122 pp.; 4 leaves, 98 pp. (last blank). Sign. qq4 (blank) lacking. With 2 copperplates (1 folding). An unrecorded (by Fulton) 2-line errata slip is attached to sign. A1 (verso), referring to the



Boyle. *New Experiments Physico-Mechanicall*. Oxford, 1660.

Defence (pp. 100, 102, 103), and *Examen* (p. 2). Fine copy, in original speckled calf, rebacked, maroon morocco label. Armorial bookplate: Algernon Capell, Earl of Essex, etc., dated 1701.

THE FIRST publication of Boyle's law and the edition that carried his name to posterity. The appearance of the first edition (1660) aroused considerable interest and controversy, notably with Franciscus Linus and Thomas Hobbes. In the present edition Boyle reprinted the text of the first edition and added two extensive and completely new parts with separate title pages. It is in the first of these, the *Defence against Linus*, that he describes many new experiments on the air and puts forward his hypothesis that the volume of air in a confined space varies inversely as the pressure (i.e., $pV = \text{constant}$). Two tables of experimental data are given on the compressibility and rarefaction of the air. For a detailed account of his experiments, see Roy G. Neville, *The Discovery of Boyle's Law, 1661–62*, in *Journal of Chemical Education*, vol. 39 (1962), pp. 356–359. The publication of this book was a crucial event in the English scientific renaissance, being the first major work of experimental science by a fellow of the newly founded Royal Society. (Blocker, 50; Dibner, 142; D.S.B., II, 377; Fulton, 14; Garrison-Morton, 666; Horblit, 15; Keynes, 924; Madan, 2586; Neu, 643; Partington, II, 492, 520; Poggendorff, I, 267; P.M.M., 143; Sparrow, 25; Thornton & Tully, 102; Watt, I, 142p; Wellcome, II, 220; Wing, B3999)

BOYLE, Robert

New Experiments Physico-Mechanical, touching the Spring of the Air, and its Effects, made, for the most part, in a New Pnuematical [sic] Engine, . . . (Half title:) *Whereunto is added a Defence of the Author's Explication of the Experiments, against the Objections of Franciscus Linus and Thomas Hobbs.*

London: Printed by Miles Flesher for Richard Davis, Bookseller in Oxford. 1682.

Third (first London) edition. 4to. 8 leaves, 203, (1) pp.; 6 leaves, 117, (1) pp., 1 leaf (blank); 4 leaves, 102 pp., 1 leaf (advertisement of Boyle's works). With 2 copperplates (1 folding). Fine, crisp copy, in original blind-ruled paneled calf, maroon morocco label. Bound with Boyle, Robert, *A continuation of new experiments. The I part* (Oxford, 1669); and *A continuation of new experiments. The second part* (London, 1682).

“THE SEQUENCE of parts is exactly as in the second edition, and the text is unchanged. . . . Leaf o4 is *A Catalogue of all the Philosophical Works Published by our Author*” (Fulton). In this copy the second plate is numbered in ink in a contemporary hand “Tabula 2.” It is a reengraved version of the plate in the 1662 edition with additional lettering, as in

the Keynes copy. (Blocker, 50; Fulton, 15; Keynes, 925; Krivatsy, 1661; Neu, 644; Osler, 938; Partington, II, 492; Poggendorff, I, 267; Smith, 75 [imperf.]; Watt, I, 142p; Wellcome, II, 220; Wing, B4000)

BOYLE, Robert

Observationes de Salsedine Maris. Authore Roberto Boyle . . .
Bologna: Sumptibus Petronii de Ruinettis. 1675.

First Latin edition. 12mo. (2), 3–46, (2) pp. Very good copy in contemporary vellum, maroon morocco label, old ink date on spine. Bound with Boyle, R., *Exercitationes Atmo-Sphaeris Corporum . . . Effluviiorum* (Leyden, 1676).

A PARTIAL LATIN translation of *Tracts . . . About the Saltiness of the Sea* (London, 1674). “This translation includes only the tract on ‘Saltness’” (Fulton). Rare. Not in Ferguson Coll., Keynes, Krivatsy, Sondheimer, etc. (Ferguson, I, 121; Fulton, 114; Wellcome, II, 223)

BOYLE, Robert

Occasional Reflections upon Several Subjects. Whereto is premis'd a Discourse about such kind of Thoughts. . . .

London: Printed by W. Wilson for Henry Herringman, and are to be sold at his Shop at the Anchor in the Lower-walk in the New-Exchange. Anno Dom. 1665.

First edition. 8vo. 20 leaves, pp. 1–80, 161–264, 1–229, (1), 5 leaves (pagination erratic). Title in red and black. Lacks imprimatur leaf (sign. A1), as often; otherwise very good copy in original blind-ruled calf, rebacked, maroon morocco label, spine dated. Signature of “R. Turner 1786” on the title page, probably Richard Turner (1724?–1791), vicar of Elmley Castle and rector of Little Comberton, Worcestershire (see D.N.B.).

DEDICATED to “Sophronia” (i.e., Boyle's “dearest sister,” Lady Ranelagh), the author is seen here in his happiest mood. Written while he was on a holiday at his manor house in Stalbridge, Dorset, Boyle draws in this work a parallel between natural phenomena (e.g., the slaking of quicklime) and his spiritual philosophy. “The *Reflections* show Robert Boyle as he lived and thought and felt. . . . [His] florid style made him the object of playful satire, and Swift confesses that the present work was the inspiration for his *Occasional Meditations on a Broomstick*, and it is usually stated that *Reflection III . . . ‘The Eating of Oysters’* gave birth to *Gulliver's Travels*” (Fulton). Some sections deal with angling, and the book at one time was wrongly attributed to Isaac Walton. The entertaining text displays Boyle's wide-ranging interests and embraces such topics as glowworms, meteorology, horses, apples, syrups, the singing of larks, candles and lanterns, and astronomy. (Cushing, B586; Fulton, 64; Honeyman, 464; Keynes, 933; Neu, 657; Smith, 72; Thornton & Tully, 103; Wellcome, II, 222; Wing, B4005)

BOYLE, Robert

Occasional Reflections upon Several Subjects. Whereto is premis'd a Discourse about such kind of Thoughts. . . .

London: Printed for Henry Herringman, and are to be sold at his Shop at the Anchor in the Lower-walk of the New Exchange. 1669.

Second edition. 8vo. 20 leaves, 413, (1) pp., 5 leaves. Minor tear in imprimatur leaf, 2 old stamps on title, 2 others in text, few headlines and numerals shaved; otherwise very good copy, in original gilt-ruled sheep, rebacked, red morocco label, gilt.

ESSENTIALLY A PAGINARY reprint of the first edition (London, 1665) but without the mispaginations. This printing, which is continuously paginated, is the last of the early editions, the third appearing 139 years later, in 1808. "The 'Reflections' have been more frequently reprinted in modern times than any other of Boyle's works" (Fulton, who lists editions up to 1848). (Fulton, 65; Keynes, 934; Smith, 72; Wellcome, II, 222; Wing, B4006)

BOYLE, Robert

Of the High Veneration Man's Intellect Owes to God; Peculiarly for His Wisdom and Power. . . .

London: Printed by M. F. for Richard Davis, Bookseller in Oxford. 1685.

First edition. 8vo. 2 leaves, 115, (1) pp. Tear repaired in Advertisements leaf, 2 old stamps on title, 2 others in text; otherwise very good copy, in quarter calf antique, marbled boards, maroon morocco label, gilt, spine dated.

THE ONLY early edition in English of this rather disjointed work, which the author admits was composed "at somewhat distant times and places, and hastily tack'd together." Boyle discourses on the majesty of God's universe and rebukes those who would attempt to reduce it to "a Geometrical Figure, or a Mechanical Engine." Discussing topics in chemistry, physics, astronomy, natural history, medicine and other sciences, he concludes that mankind can discover the secrets of the material world in only a superficial way. Boyle maintains (p. 114) that there is an "immense distance betwixt God and us," and we are "unable . . . to penetrate the recesses of that Inscrutable . . . Nature." Not in Krivatsy, Wellcome, etc. (Cushing, B588; Fulton, 152; Keynes, 938; Waller, 19440; Watt, I, 142y; Wing, B4009)

BOYLE, Robert

Of the Reconcilableness of Specifick Medicines to the Corpuscular Philosophy. To which is Annexed a Discourse about the Advantages of the Use of Simple Medicines. By the Honourable Robert Boyle, Fellow of the Royal Society.

London: Printed for Sam. Smith at the Prince's Arms in St. Paul's Church-Yard. 1685.

First edition. 8vo. 7 leaves, pp. 1–136, 1 leaf (divisional title page to "Simple Medicines," misnumbered "Pag. 137"), pp. 137–225, (1), 7 leaves ("Catalogue of Physick Books"). Very fine copy, in spotless condition, bound in full tan calf antique, maroon morocco gilt-lettered label, spine dated in gilt.

IN THE PREFACE Boyle relates how he had a long discussion with an unnamed physician who did not believe in the "Corpuscular Philosophy" (i.e., atomic theory of matter). In this work Boyle states that the reader "will be much mistaken" if he expects "to find . . . a Collection of Receipts of Specifick Remedies." Rather, he emphasizes that this is a "Speculative discourse; since it tends but to show, that, in case there be Specifick Medicines . . . their experienced vertues are reconcileable to the principles of the Corpuscular, or (as many call it) the new Philosophy." He reasons that while physicians treat symptoms of illnesses, diseases have a corpuscular or, as we now say, a molecular basis. In this regard the work is surprisingly modern in concept. Fulton indicates that Boyle reveals clinical insight into such diseases as gangrene, renal stones, nephritis, and the failing heart. The divisional title page to "Simple Medicines" was printed as signature A8 and is present in this copy, as intended, inserted following page 136. (Cushing, 35; Duveen, 96; Ferchl, 64; Fulton, 166; Neu, 660; Osler, 949; Partington, II, 493; Poggendorff, I, 268; Reynolds, 637; Smith, 72; Waller, 1391; Watt, I, 142y; Wellcome, II, 224; Wing B4013)

BOYLE, Robert

The Origine of Formes and Qualities, (According to the Corpuscular Philosophy), Illustrated by Considerations and Experiments (Written formerly by way of Notes upon an Essay about Nitre.) By the Honourable Robert Boyle, Fellow of the Royal Society. . . .

Oxford: Printed by H. Hall, Printer to the University, for Ric. Davis. An. Dom. 1666.

First edition. 8vo. 25 leaves, pp. 1–104, (105–106), 107–140, (141–142), 143–270, 2 leaves, pp. 271–433, (1). Title slightly stained (neatly repaired inner and outer edges, not affecting text); otherwise good, crisp copy, in modern levant morocco (by John P. Gray, Cambridge). With numerous manuscript corrections and annotations, probably by Boyle.

“IN HIS ESSAY on *Colours* and in the present work Boyle paved the way for the Newtonian concept of light” (Fulton). Comparison of the printed errata and additional corrections in ink in this copy with the text of the second edition (1667) indicates that this is the copy that Boyle sent to the printer for the second edition. Inspection of the second edition shows that the errata of the 1666 edition have been corrected, and all of the twelve manuscript corrections in the present copy are also included. Several of the corrections (not in the printed errata) are on chemical details of which only Boyle would be aware: e.g., “inflammable” (p. 325) is corrected to “uninflammable” in the 1667 edition. Again, “Elevating Gold; and though” (p. 370) is corrected in ink to “Elevating Gold would imagine; and though,” which makes sense in the context. There are several similar examples. The writing in all these corrections is almost identical with authentic manuscripts by Boyle of this period. It is probable that Boyle sent the unbound corrected sheets to the printer and that instead of returning them they were bound (albeit incorrectly) and then returned to Boyle (there are notes to this effect). (Cushing, B592; D.S.B., II, 378; Duveen, 92; Fulton, 77; Keynes, 943; Krivatsy, 1686; Neu, 667; Partington, II, 493; Poggendorff, I, 268; Waller, 10757; Wellcome, II, 222; Wing, B4014)

BOYLE, Robert

The Origine of Formes and Qualities (According to the Corpuscular Philosophy), Illustrated by Considerations and Experiments. (Written formerly by way of Notes upon an Essay about Nitre.) The Second Edition, Augmented by a Discourse of Subordinate Formes. By the Honourable Robert Boyle, Fellow of the Royal Society. . . .

Oxford: Printed by H. Hall, Printer to the University. 1667.

Second edition. 8vo. 17 leaves, pp. 1–289, (1), 2 leaves, pp. 291–363, (1). Pp. 263–264 omitted from pagination. The 2 unpaginated starred leaves are correctly placed between signatures V5 and V6. Page 220 is misnumbered 320, and on pages 168 and 316 catchwords are omitted (not noted by Fulton). In this copy (as also in the Keynes copy quoted by Fulton) the original leaf FS (divisional title: “Of the origine of forms”) is still present, and the cancel leaf a4 (“An examen”) with instructions to the printer to be placed before page 71 is still in position as a4 (where it was printed). The original, F8, should have been canceled and replaced with signature a4. Fine, tall, crisp copy, in original ruled calf, rebacked, maroon morocco label, spine dated.

THE IMPORTANT *Free considerations about Subordinate Formes, as they are wont to be maintain'd by divers learned Moderns* (pp. 291–363) appears here for the first time. In the advertisement preceding page 291, Boyle states that this section should have been printed in the first edition (1666), but owing to the bookseller's haste, it was left out. (Edelstein,

385; Ferchl, 64; Fulton, 78; Keynes, 944; Krivatsy, 1687; Madan, 2764; Neu, 668; Partington, II, 493; Poggendorff, I, 268; Thornton & Tully, 104; Waller, 10758; Wellcome, II, 222; Wing, B4015)

BOYLE, Robert

The Philosophical Works of the Honourable Robert Boyle, Esq; Abridged, methodized, and disposed under the General Heads of Physics, Statics, Pneumatics, Natural History, Chymistry, and Medicine. The whole illustrated with Notes, containing the Improvements made in the several Parts of natural and experimental Knowledge since his time. In Three Volumes. By Peter Shaw, M.D.

London: Printed for W. and J. Innys, at the West-End of St. Paul's; and J. Osborn, and T. Longman, in Pater-noster-Row. 1725.

First Shaw edition. 3 vols., 4to. I: 2 leaves, pp. xliii, (i), 730; 1 folding plate. II: pp. xx, 726; 19 folding plates. III: 2 leaves, pp. xv, (i), 756; 1 folding plate. Very fine, crisp set, in original speckled calf (joints cracked), spines richly gilt, red and green morocco labels.

A VALUABLE EDITION of Boyle's scientific works, abridged and edited by Peter Shaw (1694–1763), physician to George II and George III. “His edition of Boyle's works, and his translations of Boerhaave and Stahl, were popular and influential” (D.S.B.). Pertinent and important historical notes have been added by Shaw, who was a prolific author and translator. (Blake, 62; Blocker, 50; Bolton, 335; D.S.B., XII, 365–366; Duveen, 97; Ferchl, 501; Fulton, 244; Morgan, 89; Neu, 671; Partington, II, 495; Smith, 72; Watt, I, 143f; Wellcome, II, 225)

BOYLE, Robert

The Philosophical Works of the Honourable Robert Boyle, Esq; Abridged, methodized, and disposed under the General Heads of Physics, Statics, Pneumatics, Natural History, Chymistry, and Medicine. The whole illustrated with Notes, containing the Improvements made in the several Parts of natural and experimental Knowledge since his time. In Three Volumes. By Peter Shaw, M.D. The Second Edition, Corrected.

London: Printed for W. Innys and R. Manby, at the West-End of St. Paul's; and T. Longman, in Pater-noster-Row. 1738.

Second Shaw edition. 3 vols., 4to. I: 2 leaves, pp. xliii, (i), 730, 1 leaf (advertisement); 1 folding plate. II: pp. xx, 726; 11 folding plates. III: 2 leaves, pp. xv, (i), 756; 1 folding plate. Beautiful frontispiece portrait of Boyle (by G. Vertue after F. Kerseboom, dated 1738) in volume I. The plates are engraved by J. Mynde. Very fine, crisp set, in original gilt-ruled calf, brown morocco labels (2 missing). Armorial bookplate: James Frampton.

A CLOSE PAGINARY reprint of the first edition (London, 1725), edited, annotated, and corrected by Peter Shaw. It is the first printing to contain the beautiful portrait of Boyle and the plates reengraved by Mynde. All the figures of the twenty-two plates of the first edition are redrawn on thirteen plates. (Blake, 62; Blocker, 50; Edelstein, 402; Fulton, 245; Neu, 672; Partington, II, 495; Sotheran, Cat. 773 [1919], 35)

BOYLE, Robert

The Sceptical Chymist: Or Chymico-Physical Doubts & Paradoxes, Touching the Spagyrist's Principles Commonly call'd Hypostatical, As they are wont to be Proposed and Defended by the Generality of Alchymists. Whereunto is praemis'd Part of another Discourse relating to the same Subject. By The Honourable Robert Boyle, Esq.

London: Printed by J. Cadwell for J. Crooke, and are to be Sold at the Ship in St. Paul's Church-Yard. 1661.

First edition. 8vo. 1 leaf (first title), 8 leaves, pp. 1–34, 1 leaf (second title), pp. 35–442. Titles in red and black. Addendum (pp. 437–442) containing apology for misprints. R2 is a cancel. Collation exactly as in Fulton. Fine copy in original unlettered calf, almost invisibly rebacked with original spine laid on. Some neat contemporary (or slightly later) marginal notes in faded brown ink, which inspection reveals to be indices to the text. In a maroon quarter morocco, cloth-board case, spine gilt-lettered and dated.

ONE OF the greatest and rarest books in the history of chemistry. "A masterpiece of scientific literature, seeking to clarify the confused theories and vague concepts then current. Boyle claimed that there were many more than the four Aristotelian elements—earth, air, fire, and water—and that matter is composed of atoms and clusters of atoms in motion" (Grolier Cat.). "*The Sceptical Chymist* is concerned with the relations between chemical substances rather than with transmuting one metal into another or the manufacture of drugs" (P.M.M.). The famous Chemical Revolution of the eighteenth century owes much to this work. For an analysis of the contents, see R. G. Neville, *Journal of Chemical Education*, 38, 106–109 (1961). The first edition is the cornerstone of any great library in the history of chemistry. Fulton (1961) located only twenty-one copies in major libraries, six more in private hands, plus five (in 1937) in unknown private locations. (Bolton, 334; Cushing, B594; D.S.B., II, 380; Ferchl, 64; Ferguson Coll., 115; Fulton, 33; Grolier, 14; Keynes, 947; Neu, 673; Partington, II, 492; P.M.M., 141; Smith, 73; Waller, 11092; Wing, B4021)

BOYLE, Robert

The Sceptical Chymist: or Chymico-Physical Doubts & Paradoxes, touching the Experiments whereby Vulgar Spagirists are wont to endeavour to evince their Salt, Sulphur and Mercury, to be the True Principles of Things. To which in this Edition are subjoyn'd divers Experiments and Notes about the Producibleness of Chymical Principles.

Oxford: Printed by Henry Hall for Ric. Davis, and B. Took at the Ship in St. Paul's Church-Yard. 1680.

Second edition of part I, first edition of part II. 8vo. 10 leaves, 440 pp.; 14 leaves, 268 pp. Divisional title page to part II. Exceptionally fine, crisp copy, in original unlettered paneled calf. Contemporary signature in ink on final leaf: John Wiles.

THE FIRST complete edition of the most famous book in the history of chemistry, marking the beginning of the modern period of the science. One of the most important books in the revolution that established modern experimental science, it stands beside the works of Galileo, Harvey, and Newton. Indeed, Boyle wrote the book in the form of a dialogue, as did Galileo in his *Dialogo*. The text of the first edition is repeated (440 pages) and is followed by the entirely new *Experiments and Notes* (268 pages). This experimental gloss on *The Sceptical Chymist* (1661) has not been discussed in detail by many of the commentators on Boyle. Newton owned a copy of the present edition but not of the first. Published in January 1680, a few copies are known with an advertisement leaf stating that the book was printed in 1679. (Bolton, 334; Cushing, B595; Duveen, 96; Ferchl, 64; Ferguson, I, 121; Ferguson Coll., 115; Fulton, 34; Harrison, 270; Keynes, 948; Krivatsy, 1671; Neu, 674; Partington, II, 492; Poggendorff, I, 268; Smith, 73; Thornton & Tully, 103; Waller, 11093; Watt, I, 142q; Wellcome, II, 221; Wing, B4O22)

BOYLE, Robert

Chymista Scepticus vel Dubia et Paradoxa Chymico-Physica, Circa Spagyricorum Principia, Vulgò dicta Hypostatica, Prout proponi & propugnari solent à Turba Alchymistarum. Cui Pars praemittitur Alterius cujusdam Dissertationis ad idem Argumentum spectans. A Roberto Boyle . . . Editio secunda priori emendatior.

Rotterdam: Et Officinâ Arnoldi Leers. 1668.

Third Latin edition. 12mo. 14 leaves, 392 pp. Engraved and letterpress title pages. Very good copy in early mottled boards, old printed paper label on spine. From the library of the celebrated organic chemist Richard Anschütz (1852–1937), with his signature in ink ("Anschütz 1906") on the first free endpaper.

THE THIRD Latin edition of *The Sceptical Chymist* (London, 1661), by an anonymous translator. The very rare first Latin edition (London, 1662; Fulton, No. 36) was followed by a Latin edition published by Arnold Leers (Rotterdam, 1662; Fulton, No. 37) with the same pagination as the London edition. The present corrected Latin edition, published from a new setting of type by Arnold Leers, is the first with an engraved title page containing symbolic alchemical figures and chemical apparatus. This copy has an important provenance, having belonged to the famous chemist Richard Anschütz, a pupil of August Kekulé at the University of Bonn. Anschütz succeeded Claisen at Bonn, was full professor in charge of the Chemical Institute (1898) after Kekulé died, and became rector of the university during World War I. "He remained director of research until his retirement in 1922. Subsequently, he did important biobibliographical research on Couper and Loschmidt" (D.S.B. [I, 168]). Rare. Not in Bolton, Duveen, Edelstein, Ferguson Coll., etc. (Ferchl, 64; Ferguson, I, 122; Fulton, No. 38; Keynes, 950, Partington, II, 497; Smith, 73; Wellcome, II, 221)

BOYLE, Robert

Chymista Scepticus; vel, Dubia et Paradoxa Chymico-Physica, circa Spagyricorum Principia . . . Roberto Boyle . . . Geneva: Apud Samuelem de Tourne. 1680.

(With:) *Experimenta et Notae circa Producibilitatem Chymicorum Principiorum: quae sunt totidem Partes Appendicis ad Scepticum Chymicum . . . Roberto Boyle . . .* Geneva: Apud Samuelem de Tourne. 1694.

First complete Geneva edition. 2 vols., 4to., in 1. I (1680): 6 leaves, 148 pp. II (1694): 6 leaves, 92 pp. Large woodcut printer's device on each title, woodcut capitals, head- and tailpieces. Small old stamp on title of volume II; otherwise fine copies in blind-ruled calf antique, spine gilt-ruled, dark-maroon morocco label.

THE FIRST complete Latin translation published by de Tourne of the second edition of *The Sceptical Chymist* (Oxford, 1680). Five Latin editions of the first part in English (London, 1661) preceded this edition: i.e., London, 1662; Rotterdam, 1662 and 1668; and Geneva, 1677 and 1680. The present edition contains the first translation of the *Experiments and Notes about the Producibleness of Chymical Principles*, which formed the long appendix in the 1680 edition of *The Sceptical Chymist*. The *Experiments et Notae* first appeared in 1693, bound with the *Chymista Scepticus* (1680), but was also first published separately (as here) in 1694. Fulton did not own a copy of volume II of the 1694 edition. (Vol. I: Fulton, 40; Neu, 679; Wellcome, II, 221. Vol. II: Fulton, 40a; Neu, 605; Wellcome, II, 221)

BOYLE, Robert

Short Memoirs for the Natural Experimental History of Mineral Waters. Addressed by way of Letter to a Friend. By the Honourable Robert Boyle, Fellow of the Royal Society. London: Printed for Samuel Smith at the Prince's Arms in St. Paul's Church-Yard. 1684/5.

First edition. 8vo. 9 leaves, 112 pp., 8 leaves (advertisements, last leaf blank). Fine copy, in original ruled calf, rebacked.

"THIS IS ONE of Boyle's unfinished 'pieces' . . . of special interest because of the insight it gives into the author's methods of work. The tract consists mainly of a series of 'Titles' for a proposed extended treatise on the 'Natural History of Mineral Waters' . . . followed by comments on a few of the titles which he had had time to investigate" (Fulton). Boyle was one of the founders of qualitative inorganic analysis, and in this work he describes the physical tests and the reagents he used to determine the composition of mineral waters. Of great importance is his description of spot tests, in which absorbent papers were impregnated with specific reagents and then dried. By applying a drop of the mineral water to each paper, a color developed that was characteristic of the metal ion in solution (see R. G. Neville, *Isis*, 49 [1958], 438–439). This technique is still employed. A milestone in the literature of analytical chemistry and "a great advance on previous work" (Partington). An "admirable set of analytical directions. Few other chemists of his day seem to have been sufficiently patient to elaborate an analytical procedure, although it became commonplace in the next century" (D.S.B.). (Cushing, B597; D.S.B., II, 381; Duveen, 96; Edelstein, 388; Ferchl, 64; Ferguson Coll., 115; Fulton, 159; Keynes, 951; Krivatsy, 1714; Neu, 680; Osler, 948; Partington, II, 493, 534; Poggendorff, I, 268; Smith, 71; Szabadvary, 30; Thornton & Tully, 105; Waller, 11097; Waring, 775; Watt, I, 142x; Wellcome, II, 224; Wing, B4023)

BOYLE, Robert

Short Memoirs for the Natural Experimental History of Mineral Waters: by the Honourable Robert Boyle, Fellow of the Royal Society. London. 1684/5; Octavo.

First edition. 4to. 2 leaves (pp. 1063–1066, extracted from the *Philosophical Transactions* of the Royal Society). Fine copy in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

AN ANONYMOUS review of Boyle's work on mineral waters, which appeared in *Phil. Trans.*, vol. XV (1685), no. 172. This review is not mentioned by Fulton.

BOYLE, Robert

Some Considerations about the Reconcilableness of Reason and Religion. By T. E. a Lay-man. To which is annex'd by the Publisher, a Discourse of Mr. Boyle, about the Possibility of the Resurrection. . . .

London: Printed by T. N. for H. Herringman, at the Anchor in the Lower Walk of the New Exchange. 1675.

First edition. 8vo. 2 leaves, xviii, (2), 126, (2) pp. (blank); 4 leaves (last blank), 39, (1) pp. (last blank). Errata corrected in ink in a contemporary hand. Very good copy, in original calf, rebacked, maroon morocco label, spine dated.

IN THIS work Boyle attempts to reconcile the inconsistencies of the Holy Scripture with scientific observations. He discusses the atomic and mechanical philosophies and describes numerous experiments in chemistry and physics, with reference to the writings of Francis Bacon, Copernicus, Descartes, Euclid, Galileo, Gilbert, et al. The magnetic properties of lodestones and iron are covered (pp. 56–57, 75–83). Alchemy, the philosopher's stone, and the works that appear in the *Theatrum Chemicum* are also discussed (pp. 99–100). In the second section (with a separate divisional title page) Boyle considers the possibility of the Resurrection from the point of view of the atomic theory. He concludes that the essence of bodies may be resurrected, just as the ashes of calcined plants (when mixed with soil) can reappear as new plants (i.e., palingenesis). Boyle refers to the permanence of atoms and describes how gold dissolved in *aqua regia* "retains its Nature; as may be evinced by Chymical operations, especially by Reductions" (p. 18). Fulton says that the book is "very good reading." Not in Krivatsy, Wellcome, etc. (Fulton, 122; Keynes, 952; Watt, I, 142u; Wing, B4024)

BOYLE, Robert

Some Considerations touching the Style of the H. Scriptures; extracted from several parts of a Discourse, concerning divers Particulars belonging to the Bible, written divers Years since to a Friend: by the Honourable Robert Boyle, Esq. . . .

London: Printed for Henry Herringman, at the Anchor in the Lower Walk of the New-Exchange. 1668.

Third edition. 8vo. 21 leaves, 254 pp. Very good, crisp copy, in original blind-ruled sheep, rebacked, maroon morocco label, spine dated. From the library of William Wilson (1690–1741), Scottish divine (see D.N.B.), with his signature on the title page.

"THROUGHOUT LIFE Boyle's interests were divided between science and theology, but he was generally careful not to mix one with the other, although many of his theological

allusions and arguments were drawn from natural history. *The Style of the Scriptures*, the first of his devotional works, is a remarkable forerunner of modern higher criticism which is said to have begun nearly a century later with Astruc (1753)" (Fulton). In the section "To the Reader," Boyle defends his belief in the atomic theory of matter (signature C2r). There are also references to alchemists (p. 119), the phosphorescence of rotting wood (p. 180), invisible ink (p. 193), etc. The first edition appeared in 1661. (Fulton, 43; Keynes, 954; Wing, B4027)

BOYLE, Robert

Some Considerations touching the Usefulness of Experimental Naturall Philosophy, propos'd in a Familiar Discourse to a Friend, by way of Invitation to the Study of it, by the Honourable Robert Boyle Esq; Fellow of the Royal Society. A Second Edition (since the first published June 1663).

Oxford: Printed by Hen. Hall Printer to the University, for Ric. Davis. Anno Dom. 1664.

Second edition, first issue. 4to. 8 leaves, 126 (i.e., 124) pp., 2 leaves (index to part 1); 416 (i.e., 398) pp., 1 leaf (title label), 8 leaves (index to part II). Very good, crisp copy, in original blind-ruled calf, rebacked, maroon morocco label.

AN INTERESTING work, "Part I of which had, according to Boyle's own statement, been drafted about 1650, is an attempt to justify the activities of the virtuoso experimentalists in the eyes of their contemporaries. Part II, written later, is of interest to present-day biologists for its many allusions to physiology; it is also illuminating for its references to the activities of his contemporaries such as Digby, Pecquet, Wilkins, Wren, and others. The work as a whole shows a most surprising knowledge of natural history, medicine, physics, and chemistry, in many respects far in advance of his age, and it is of special importance for its comments on medicine" (Fulton). The first issue, printed from a completely different setting of type from the second issue, is the rarer of the two. The title of the first issue has the word *Naturall*, but the second issue has it spelled *Natural*. (Blocker, 50; Ferchl, 64; Ferguson Coll., 115; Fulton, 51; Honeyman, 461; Keynes, 959; Madan, 2655; Neu, 683; Partington, II, 492; Smith, 74; Sondheimer, 223; Thornton & Tully, 103; Waller, 10756; Watt, I, 142q; Wellcome, II, 221; Wing, B4030)

BOYLE, Robert

Some Considerations touching the Usefulness of Experimental Natural Philosophy. Propos'd in a Familiar Discourse to a Friend, by way of Invitation to the Study of it. By the Honourable Robert Boyle, Esq; Fellow of the Royal Society. A Second Edition (since the first Published June 1663).

Oxford: Printed by Hen. Hall, Printer to the University, for Ric. Davis. Anno Dom: 1664.

Second edition, second issue. 4to. 8 leaves, 126 pp., 2 leaves (index to part I); 416 pp., 1 leaf (title label), 8 leaves (index to part II). Minor repairs to the title page; otherwise very good, crisp copy, in contemporary calf, rebacked, maroon morocco label. Bound with Boyle, Robert, *Some considerations . . . The Second Tome* (Oxford, 1671).

THIS ISSUE is printed in a completely different setting of type from the first issue. Keynes has pointed out that the second issue usually occurs bound with *The Second Tome* (as here) and is printed on similar paper, indicating that it was probably reprinted from the text of the first issue (1664) in 1671 and published with *The Second Tome* in that year, even though the title page is dated 1664. Wing does not distinguish between the first and second issues. (Ferchl, 64; Ferguson Coll., 116; Fulton, 52; Keynes, 960; Krivatsy, 1677; Neu, 684; Partington, II, 492; Smith, 75 [imperf.]; Thornton & Tully, 103; Waller, 10756a; Watt, I, 142q; Wing, B4030)

BOYLE, Robert

Some Considerations touching the Usefulness of Experimental Naturall Philosophy, propos'd in a familiar discourse to a friend by way of Invitation to the study of it. The Second Tome, containing the later Section of the Second Part. By the Honorable Robert Boyle, Esq; Fellow of the Royal Society.

Oxford: Printed by Henry Hall, Printer to the University for Ric. Davis. 1671.

First edition. 4to. 13 leaves, 47, (1), pp., 2 leaves (first blank), 20 pp., 2 leaves, 14 pp., 1 leaf, 31, (1) pp., 1 leaf, 26 pp., 1 leaf, 50 pp. Very good, crisp copy, in contemporary calf, rebacked, maroon morocco label. Bound with Boyle, Robert, *Some considerations . . . of experimental natural philosophy* (Oxford, 1664).

AN INTERESTING sequel to *Some considerations . . .* (1664). It is "a bibliographical curiosity in that there are six parts, each with separate signatures and pagination; the gathering in consequence is variable and the early binders have made a hodgepodge of most copies" (Fulton). This copy, however, agrees with the collation given by Fulton, although he contends that "it is difficult to find two copies alike." (Duveen, 93; Ferchl, 64; Ferguson Coll., 116; Fulton, 53; Harrison, 272; Keynes, 961; Krivatsy, 1678; Madan, 2882;

Neu, 684; Partington, II, 492; Smith, 75; Thornton & Tully, 103; Watt, I, 142q; Wellcome, II, 221; Wing, B4031)

BOYLE, Robert

Some Motives and Incentives to the Love of God. Pathetically Discours'd of in a Letter to a Friend. By the Honourable Robert Boyle. The Eighth Edition, Corrected. . . .

(London:) In the Savoy: Printed by Edw. Jones, for Henry Herringman; and sold by Thomas Bennet at the Half-Moon in St. Paul's Church-Yard. 1700.

Eighth edition. 8vo. 8 leaves, 174 pp. A1 (blank?) lacking. Some mild embrowning of leaves; otherwise very good, crisp copy, in sheep antique, brown morocco label, spine dated.

THE FIRST of Boyle's numerous theological writings to be published, which originally appeared in 1659. Many editions were printed, on which see Fulton. Although primarily theological and written when the author was only twenty-two, there are occasional references to scientific subjects that reveal his awakening interest in experimental science. The book is generally known as *Seraphick Love*, from the wording of the running title. (Fulton, 8; Keynes, 972; Wing, B4041)

BOYLE, Robert

Tentamen Porologicum sive ad Porositatem Corporum tum Animalium, tum solidorum detegendam. Authore Roberto Boyle . . .

Geneva: Apud Samuelem de Tournes. 1686.

First Geneva edition. 4to. 3 leaves, 46 pp., 1 leaf (blank). Woodcut printer's device on title page, woodcut initials and headpieces. Minor marginal damp stains, tiny hole in blank outer margin of title leaf, and early library stamp on title; otherwise good copy in quarter morocco antique, cloth boards, spine gilt-lettered and dated.

THE SECOND translation into Latin of the *Porosity of Bodies* (London, 1684). The first Latin edition was an octavo (London, 1684; Fulton, 150). The identity of the translator is unknown: his preface is signed D.A.M.D. (Fulton, 151; Krivatsy, 1713; Waller, 1390; Wellcome, II, 224)

BOYLE, Robert

The Theological Works of the Honourable Robert Boyle, Esq; Epitomiz'd. . . . By Richard Boulton, late of Brazen-Nose College in Oxford, who Epitomiz'd his Philosophical Works. London: Printed for, and are to be Sold by W. Taylor, at the Ship in Pater-noster-Row. 1715.

First edition. 3 vols., 8vo. I: 8 leaves (including fine frontispiece portrait of Boyle (Vander Gucht scul.), xxv, (1) 432 pp.,

4 leaves. II: 12 leaves, 440 pp. III: 4 leaves, xxi, (1) pp., 5 leaves, 464 pp. Titles in red and black. Fine, crisp set, in original paneled calf, brown morocco labels.

EDITED BY Richard Boulton, this epitome of Boyle's theological writings is a sequel to the previously published epitome of his scientific works (London, 1699–1700). The greater part of the first volume (pp. 1–372) comprises *The Life of the Honourable Robert Boyle*. (Fulton, 248; Keynes, 975; Wellcome, II, 225 [vol. I only])

BOYLE, Robert

Tracts Consisting of Observations about the Saltness of the Sea: An Account of a Statical Hygroscope and its Uses: Together with an Appendix about the Force of the Air's Moisture: a Fragment about the Natural and Preternatural State of Bodies. By the Honourable Robert Boyle. To all which is premis'd a Sceptical Dialogue about the Positive or Private Nature of Cold: With some Experiments of Mr. Boyle's ferr'd to in that Discourse. By a Member of the Royal Society.

London: Printed by E. Flesher for R. Davis Bookseller in Oxford. 1674.

First edition, first issue. 8vo. 4 leaves (A1 blank), pp. 1–51, (1), 1 leaf, pp. 1–6, 1 leaf, pp. 1–5, (1), 1 leaf, pp. 1–11, (1), 1 leaf, pp. 1–39, (1), 1 leaf, pp. 1–5, (1), 1 leaf, pp. 1–11, (1), 1 leaf (dated 1673), pp. 1–27, (1), 1 leaf (dated 1673), pp. 1–14. Very good copy, in original ruled calf, rebaked with original spine laid down, maroon morocco label, spine dated. The Duveen copy, with crimson bookplate.

“BOYLE'S OMNIVOROUS curiosity had become proverbial even during his lifetime, and none of his works illustrates his versatility of mind more strikingly than *Saltness of the Sea*” (Fulton). Numerous topics are covered, with descriptions of many experiments by Boyle. In the section on cold he describes the lowering of temperature produced by mixing vinegar and salt of tartar, which he measured accurately with a spirit thermometer. His greatest interest was in experiments designed to desalinate seawater to render it potable. The appearance of this book led to extensive correspondence between Boyle and his contemporaries, some of which was reprinted in 1683 in the *Philosophical Transactions* under the title *Salt-Water sweetned*, by Nehemiah Grew. Boyle measured the density of seawater and explained the origin of the salts in it. (Cushing, B606; Duveen, 95; Edelstein, 391; Ferguson Coll., 116; Fulton, 113; Keynes, 985; Krivatsy, 1699; Neu, 695; Partington, II, 493; Poggen-dorff, I, 268; Thornton & Tully, 104; Watt, I, 142u; Wellcome, II, 223; Wing, B4053)

BOYLE, Robert

Tracts: Containing I. Suspicions about some Hidden Qualities of the Air; with an Appendix touching Celestial Magnets, and some other Particulars. II. Animadversions upon Mr. Hobbes's Problemata De Vacuo. III. A Discourse of the Cause of Attraction by Suction. By the Honourable Robert Boyle, Esq; Fellow of the Royal Society.

London: Printed by W. G. and are to be Sold by M. Pitt, at the Angel against the Little North Door of St. Paul's Church. 1674.

First edition. 8vo. 3 leaves, 25, (1) pp., 2 leaves (first blank), 13, (1) pp., 6 leaves (first blank), 94 pp., 4 leaves (first blank), 67, (1) pp., 5 leaves (first and last blank), 17, (1) pp., 1 leaf (blank), 71, (1) pp. Lacking signature A1, which was intended for destruction; otherwise very good copy, in sprinkled calf antique, maroon morocco label, spine dated.

THE SEQUENCE of the six tracts in this copy agrees with Fulton, except for *Suspicions*, which is placed at the end. “Boyle's close approach to the theory of oxidation . . . appeared in the same year as Mayow's *Tractatus Quinque*. Independently of one another . . . they set themselves down as believing that during combustion certain ‘particles’ are extracted from the air. . . . There are many other prescient passages, and in my opinion they entitle Boyle to share with Mayow the credit of first enunciation of the modern theory of oxidation” (Fulton). Of particular metallurgical interest is the tract on the *Growth of Metals in their Ore exposed to the Air*, with discussions of minerals containing tin, lead, iron, silver, and gold. (Bolton, *Second Supplement*, 59; Caillet, 1613; Cushing, B607; Duveen, 95; Edelstein, 392; Ferchl, 64; Fulton, 119; Keynes, 976; Neu, 699; Partington, II, 493; Poggen-dorff, I, 268; Waller, 10763; Watt, I, 142v; Wellcome, II, 223 [imperf.]; Wing, B4054)

BOYLE, Robert

Tracts Written by the Honourable Robert Boyle. About the Cosmicall Qualities of things. Cosmicall Suspicions. The Temperature of the Subterraneall Regions. The Temperature of the Submarine Regions. The Bottom of the Sea. To which is Praefixt, an Introduction to the History of Particular Qualities.

Oxford: Printed by W. H. for Ric. Davis. 1671.

First edition. 8vo. 4 leaves, pp. 1–42, 1 leaf, pp. 1–27, (1), (1–2), 3–25, 22, 23, 28, 1 leaf (blank), 1 leaf (longitudinal label), pp. (1–2), 3–43, (1), (1–2), 3–21, (1), 1 leaf, pp. 1–10, 1 leaf (“Three Tracts”), pp. 13–14, 11–12, 1 leaf (blank), pp. 15–16, 1 leaf (“Advertisement”), 1 leaf (blank). Apparently a combination of Fulton 83 and 84 (sheets of both issues are identical), as this copy contains a stub (following title leaf) showing an inner rule border of the variant title (with woodcut ornament, Fulton,

Fig. 16). Several leaves misbound at the end (as noted above), but complete. The divisional title page (*Three Tracts . . . Subterraneall . . . Submarine . . . Sea*, 1671, with woodcut ornament) is misbound following page 10 of *Bottom of the Sea*. Very fine copy, in original ruled calf, rebaked, brown morocco label, spine dated.

A MILESTONE in the history of theories of chemical combination, this important work serves as a sequel to *The Sceptical Chymist* and *Origine of Formes and Qualities*. Boyle states here that the properties (which he calls "qualities") of chemical compounds can be deduced from two principles: matter and motion (of atoms and clusters of atoms, i.e., molecules). He rejects the Aristotelian four elements and postulates the existence of different simple elements, combinations of which all matter is composed. (Cushing, B605; Duveen, 93; Edelstein, 393; Fulton, 83; Keynes, 979; Madan, 2883; Neu, 690; Partington, II, 493; Poggendorff, I, 268; Smith, 77; Thornton & Tully, 104; Waller, 10759; Watt, I, 142s; Wellcome, II, 222; Wing, B4057)

BOYLE, Robert

Tracts Written By the Honourable Robert Boyle, containing New Experiments, touching the Relation betwixt Flame and Air. And about Explosions. An Hydrostatical Discourse occasion'd by some Objections of Dr. Henry More against some Explications of New Experiments made by the Author of these Tracts: To which is annex't, An Hydrostatical Letter, dilucidating an Experiment about a Way of Weighing Water in Water. New Experiments, Of the Positive or Relative Levity of Bodies under Water. Of the Air's Spring on Bodies under Water. About the Differing Pressure of Heavy Solids and Fluids.

London: Printed for Richard Davis, Book-seller in Oxon. 1672.

First edition, first issue. 8vo. 4 leaves (A1 blank), pp. 1–18, 1 leaf (First Title: . . . *producing flame without air*), pp. 21–49, (1), 1 leaf (Second Title: . . . *preserving flame without air*), pp. 53–83, (1), 1 leaf (Third Title: . . . *Flame in vacuo*), pp. 87–104, 1 leaf (*Air and the flamma vitalis*), pp. 107–130, 1 leaf (Advertisement), pp. 133–142, 1 leaf (*Explosions*), pp. 1–17, (1), 6 leaves (*Hydrostatical Discourse*, etc.), pp. 1–145, (1), 2 leaves (*Hydrostatical Letter*, etc.), pp. 151–176, 2 blank leaves (sign. x7 and x8), 1 leaf (*Levity of bodies*), pp. 1–19, (1), 1 leaf (*Air's spring*), pp. 1–16, 1 leaf (*Solids and fluids*), pp. 1–39, (1). Very good, crisp copy, bound differently from the description given by Fulton, but complete; in original gilt-ruled calf, rebaked, with original spine laid down, red label.

IN THIS important work, which is bibliographically one of Boyle's most difficult, the author approached the modern theory of oxidation. He here points out the connection between living processes and a slowly burning flame and in-

sists on the term *flamma vitalis*. (Blocker, 50; Duveen, 94; Edelstein, 395; Ferchl, 64; Fulton, 101; Keynes, 983; Kri-vatsy, 1695; Neu, 697; Partington, II, 493; Poggendorff, I, 268; Smith, 77; Thornton & Tully, 104; Waller, 10761; Watt, I, 142t; Wellcome, II, 222; Wing, B4060)

BOYLE, Robert

The Works of the Honourable Robert Boyle, Esq. Epitomiz'd . . . By Richard Boulton, of Brazen-Nose College in Oxford. . . . London: Printed for J. Phillips at the King's Arms, and J. Taylor at the Ship in St. Paul's Church-Yard. 1699, 1700.

First edition. 4 vols., 8vo. I: Fine frontispiece portrait of Boyle (Vander Gucht scul.), 14 leaves, 482 (i.e., 472, pp. 129–138 omitted from pagination), 6 leaves (index); 8 copperplates (1 folding). II: 6 leaves, 523, (1) pp., 4 leaves (index); 7 plates. III: 8 leaves, 552 pp., 4 leaves (index); 5 plates. IV: 8 leaves, 365, (3) pp., 2 leaves, 122 pp., 1 leaf (blank). Titles in red and black. Fine copies in original paneled calf, morocco labels on vols. I, II, and IV; vol. III with contemporary ink-lettered paper label.

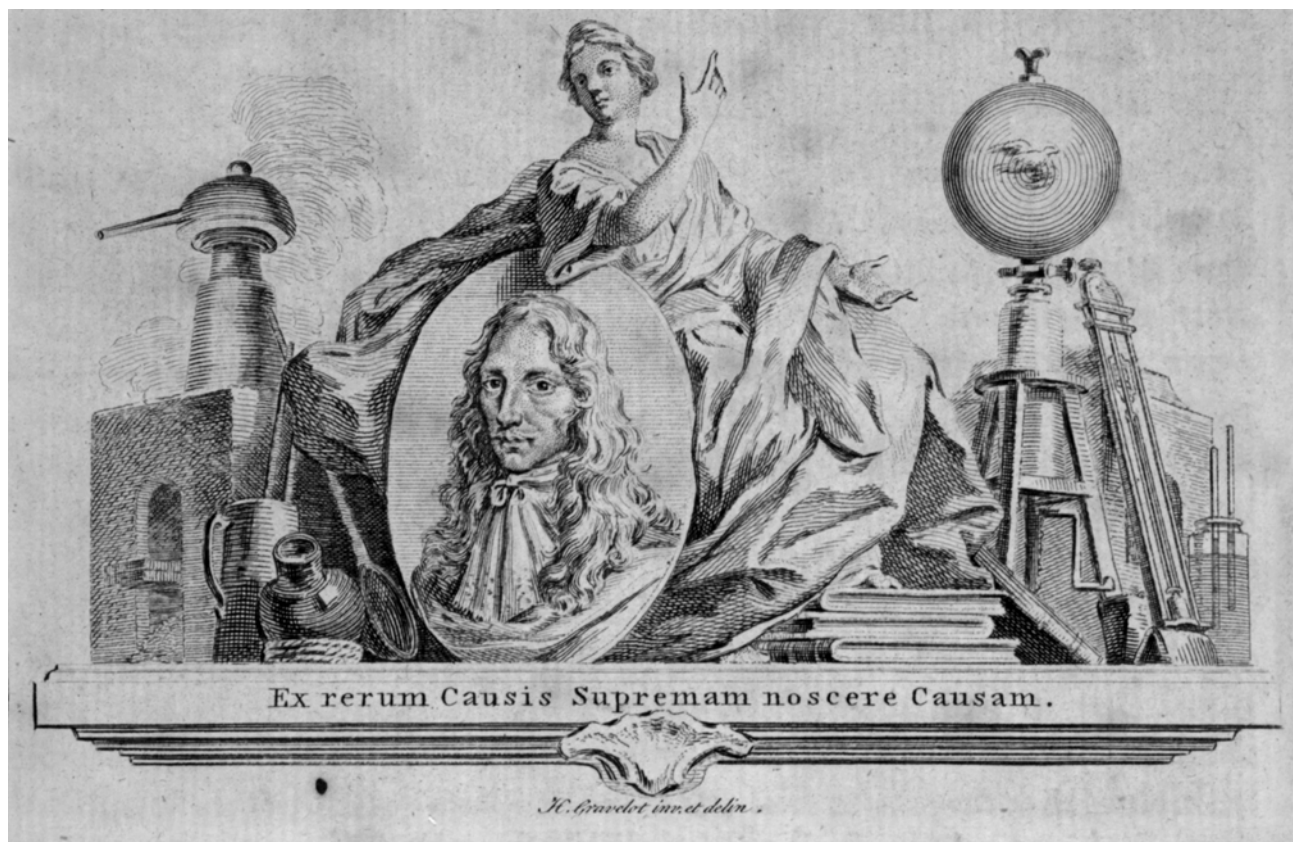
THE FIRST epitome of Boyle's scientific works in English, edited by the Oxford physician Richard Boulton (fl. 1697–1724). The first volume is dated 1699, and the remainder are dated 1700. "Vol. IV must be rare since it is seldom found with the first three volumes" (Fulton). Each volume is complete in itself, and sets of all four volumes are very rare. At the end of volume IV is a section with a separate divisional title page: *A General Idea of the Epitomy of the Works of Robert Boyle, Esq.* (London: Printed in the Year, 1700). To this is added (pp. 45–122) Boyle's *General Heads for the Natural History of a Country*, which was previously omitted. (Bolton, 334–335; Edelstein, 408; Ferchl, 64; Fulton, 243; Keynes, 989; Partington, II, 495; Smith, 67 [vols. I–III only]; Watt, I, 143f; Wellcome, II, 225 [vols. I–III only]; Wing, B3921 [vols. I–III], B3922 [vol. IV])

BOYLE, Robert

The Works of the Honourable Robert Boyle, Esq. Epitomiz'd . . . By Richard Boulton . . . London: Printed for J. Phillips . . . and J. Taylor . . . 1699, 1700.

First edition. Vols. I, II, and IV, 8vo. Collation as in Fulton. Fine copies in original calf, volume II with morocco label, volumes I and IV unlettered.

ANOTHER SET of this work, lacking volume III but including volume IV, which Fulton describes as rare.



Boyle. Works. London, 1772.

BOYLE, Robert

The Works of the Honourable Robert Boyle. In Five Volumes. To which is prefixed The Life of the Author . . .

London: Printed for A. Millar, opposite Catharine-Street, in the Strand. 1744.

First Birch edition. 5 vols., folio. I: 1 leaf, pp. viii, 152 + 583, (1). II: 2 leaves, 565, (1) pp.. III: 2 leaves, 652 pp. IV: 2 leaves, 556 pp. V: 2 leaves, 736 pp., 43 leaves. Text in double column. With 24 plates (J. Mynde sc.) on 15 folding leaves. Engraved frontispiece portrait of Boyle (by B. Baron after J. Kerseboom), and title-vignettes (by H. Gravelot) incorporating another portrait of Boyle. Titles in red and black. Occasional light foxing; otherwise an excellent, tall set, sumptuously bound in full tan calf antique, inner and outer dentelles gilt, spines richly gilt and dated, crimson morocco labels.

THE FIRST collected edition in English of Boyle's complete works, edited by Thomas Birch (1705–1766), containing virtually all of his published writings together with a substantial quantity of previously unpublished material. *The Life of Boyle* (vol. I, pp. 1–139) was the first biography to deal with all aspects of his life and work and has formed

the basis of all subsequent biographies. Birch also printed a number of letters to and from Boyle for the first time. This edition was reprinted in 1772 (6 vols., 4to.) with small additions; but there is no other comprehensive edition of Boyle's works, and his correspondence remains unedited. (Blake, 62; Blocker, 50; D.S.B., II, 382; Eales, 546; Ferchl, 64; Ferguson, I, 122 [not in Young Coll.]; Fulton, 240; Neu, 705; Partington, II, 494; Poggendorff, I, 269; Thorndike, VIII, 170; Thornton & Tully, 106; Watt, I, 143f; Wheeler Gift, 188a)

BOYLE, Robert

The Works of the Honourable Robert Boyle. In Six Volumes. To which is prefixed The Life of the Author. . . . A New Edition.

London: Printed for J. and F. Rivington, L. Davis, etc. 1772.

Second Birch edition. 6 vols., royal 4to. I: 1 leaf, ccxxxviii + 799, (1) pp. II: 1 leaf, 800 pp. III: 1 leaf, 803, (1) pp. IV: 1 leaf, 821, (1) pp. (pp. 425–444 and 645–744 omitted from pagination). V: 1 leaf, 750 pp. VI: 1 leaf, 796 pp., 65 leaves (index to the 6 vols.). With 24 plates (J. Mynde sc.) on 16 folding leaves.

Occasional text woodcuts. Engraved frontispiece portrait of Boyle (by B. Baron after J. Kersseboom) in volume I, and title-vignette (by H. Gravelot) in each volume, incorporating another portrait of Boyle. Very fine, crisp set, with wide margins, in original gilt-ruled calf, strongly rebacked and gilt, 2 maroon morocco labels on each volume. From the library of William Arthur, sixth Duke of Portland, with beautiful engraved armorial bookplate in each volume and ducal coronet surmounting letter *P* in gilt on all covers.

THE DEFINITIVE and most complete edition of Boyle's works, edited by Thomas Birch. "Includes his posthumous remains and correspondence, with a life founded on materials collected with abortive biographical designs by Burnet and Wotton, and embracing Boyle's unfinished narrative of his early years entitled *An Account of Philaretus during his minority*" (D.N.B.). "The several tracts formerly printed are taken from the most improved editions . . . and disposed in the order of time in which they were first published . . . Some very considerable additions are made in this edition, which were never before published" (preface). (Blake, 62; Blocker, 50; D.S.B., II, 382; Eales, 547; Ferguson, I, 122 [not in Young Coll.]; Fulton, 241; Morgan, 90; Neu, 706; Partington, II, 494; Smith, 66; Thorndike, VIII, 170; Thornton & Tully, 106; Wellcome, II, 225)

BOYLE, Robert

The Works of the Honourable Robert Boyle, Esq. Epitomiz'd. . . . By Richard Boulton, of Brazen-Nose College in Oxford. . . . London: Printed for J. Phillips at the King's Arms, and J. Taylor at the Ship in St. Paul's Church-Yard. 1699–1700.

First edition. Vols. I, II, and IV, 8vo., vol. III lacking. I: Fine frontispiece portrait of Boyle (Vander Gucht scul.), 14 leaves, 482 (i.e., 472, pp. 129–138 omitted from pagination), 6 leaves (index); 8 copperplates (1 folding). II: 6 leaves, 523, (1) pp., 4 leaves (index); 7 copperplates. IV: 8 leaves (A1, blank lacking), 365, (3) pp., 2 leaves, 122 pp., 1 leaf (blank). Titles in red and black. Volumes I and IV rebacked. Fine, crisp copies, in original paneled calf, morocco labels.

THE FIRST epitome of Boyle's scientific works in English, edited by the celebrated physician Richard Boulton (fl. 1697–1724). Fulton states that "Vol. IV must be rare since it is seldom found with the first three volumes." Sets of all four volumes are very rare, and each volume is complete in itself. At the end of volume IV is a section with a separate divisional title page: *A General Idea of the Epitomy of the Works of Robert Boyle, Esq.* (London: Printed in the Year, 1700). To this is added (pp. 45–122) Boyle's *General Heads for the Natural History of a Country*, which was previously omitted. (Bolton, 334–335; Edelstein, 408; Ferchl, 64; Fulton, 243; Keynes, 989; Partington, II, 495; Smith, 67 [vols. I–III only]; Watt, I, 143f; Wellcome, II, 225 [vols. I–III only]; Wing, B3921 [vols. I–III], B3922 [vol. IV])

BOYLE, Robert, DEDU, N., and GREW, Nehemiah

Anotomia, ed Anima delle Piante, che contiene una esatta Descrizione della loro origine, nodrimento, progresso, parti, ed usi, e che d'a a divedere come si formino, e come crescano. Con una raccolta di Sperienze, ed Osservazioni curiose sopra il combattimento risultante dalla mescolanza de' corpi, come anche sopra i Saponi, e sopra gli Odori, de' Signori N. Grew, R. Boyle, & N. Dedu. Tradotta dalla Lingua Francese, ed arricchita di figure in rame.

Venice: Per Luigi Pavini. 1763.

First Italian edition. 12mo. 320 pp., 2 leaves (advertisements). With folding copperplate (containing 14 figures). Fine, crisp copy, uncut and unpressed, in original white pasteboards.

A COMPOSITE WORK containing the first Italian translation (pp. 5–180) of the *Anatomie des plantes* (Paris, 1675), which was itself the translation by L. Le Vasseur of *The anatomy of vegetables begun* (London, 1672), by Nehemiah Grew, the very important first work on plant physiology. This is followed by the Italian translation (pp. 181–224) of *De l'âme des plantes* (Paris, 1682), by N. Dedu (see Wellcome, II, 440). Then (pp. 225–278) comes the Italian translation of Grew's *Experiments in consort of the luctation arising from the affusion of several menstruums upon all sorts of bodies* (London, 1678). The fourth work (pp. 278–320) comprises the first Italian translation of Boyle's *Mechanical qualities: tastes and odours* (London, 1675). The translator is unknown. The plate is a reengraved version of that in the original edition of *The anatomy of vegetables* (1672). The second, third, and fourth works have separate divisional title pages (pp. 181, 225, 279). Fulton gives no pagination and does not list the plate. He states that the preface suggests an earlier Italian printing, but in fact there is no such implication: his no. 134 is a ghost. Fulton cites only his own copy and that in the Boston Medical Library. There is also a copy at Yale. Extremely rare. (Fulton, 135)

BOYLE, Robert, GREW, Nehemiah, and LEEUWENHOEK, Antony van

Recueil d'Experiences et Observations sur le Combat, qui procede du mélange des corps. Sur les Saveurs, sur les Odeurs, sur le Sang, sur le Lait, &c. Tres-curieux & utile aux Medecins & à ceux qui s'appliquent à la recherche de la Nature, des Qualitez & des Proprietez de toutes sortes de Corps.

Paris: Chez Estienne Michallet, ruë S. Jacques, à l'Image S. Paul. 1679.

First edition. 12mo. 8 leaves, 262 pp., 1 leaf. With fine engraved frontispiece, and plate facing page 229. Old stamp on

title page; otherwise very good copy in contemporary calf, rebaked, maroon morocco label, spine dated.

“VERY RARE collection of chemical treatises by N. Grew (*Sur le combat qui arrive du melange de diverses liqueurs avec toutes sortes de corps*, on pp. 1–124), Robert Boyle (*Sur les saveurs et sur les odeurs*, the First French translation of *Mechanical Qualities: Tastes and Odours*, on pp. 125–220), and Leeuwenhoek (*Observations sur le sang et sur le lait*, on pp. 223–262). The translator was L. Le Vasseur” (Duveen, whose copy lacked the frontispiece and plate). The work by Grew is the French translation of his *Experiments in consort of the luctation arising from the affusion of several menstruums upon all sorts of bodies* (London, 1678). The investigations on blood and milk by Leeuwenhoek were carried out using his microscope. They were first communicated to the Royal Society by Henry Oldenburg and published in *Phil. Trans.* (1674), 9, 121–128. This paper gave the “first really accurate description of the red blood corpuscles, which Swammerdam had noted in 1658” (Garrison-Morton, 860). Fulton, who did not own a copy of this work, records only five copies. (Duveen, 499; Ferchl, 435; Ferguson, II, 247; Krivatsy, 4991; Neu, 3438; Partington, II, 496, 568; Thornton & Tully, 133; Waller, 3741; Watt, II, 441y; Wellcome, III, 164)

BRACESCO, Giovanni

De Alchemia, Dialogi Duo nunquam ante hac conjunctim sic editi, correcti, & emaculati, praemittuntur propositiones centum viginti novem idem argumentum compendiosa brevitate complectentes. . . .

Hamburg: Apud Johannem Naumannum, & Georgium Wolffium. 1673.

First Hamburg edition. 8vo. 8 leaves, 272 pp. Divisional title to *Lignum Vitae* (pp. 153–272). Title page in red and black, with large woodcut printer’s device. Very good copy, in contemporary overlapping vellum. Bound with Birrius, Martin, *Tres tractatus de metallorum transmutation* (Amsterdam, 1668), and 2 other alchemical works.

THE FIRST edition of this famous work to be printed in Hamburg. Waite (*Lives of Alchemistical Philosophers*, 1888, pp. 151–152) discusses Bracresco and his *Esposizione* but does not mention the present edition. (Duveen, 98; Ferchl, 65; Ferguson, I, 123; Ferguson Coll., 117; Krivatsy, 1739; Neu, 710; Wellcome, II, 226)

BRACESCO, Giovanni

La Esposizione di Geber Filosofo . . . nella quale si dichiarano molti nobilissimi secreti della Natura. Con la tavola nel fine. Venice: Appresso Gabriel Giolito de’ Ferrari. 1562.

Third edition in Italian. 8vo. 160 pp. Three full-page woodcuts of furnaces and distillation apparatus (pp. 132–134). Woodcut printer’s device and head ornament on title, and historiated woodcut capitals. Italic letter. Few minor water stains and some worming to joints; otherwise fresh, crisp copy, in eighteenth-century tree calf, gilt, maroon morocco label.

THE THIRD, final, and best edition in Italian (first: Venice, 1544; second, Venice, 1551), comprising a commentary on Geber’s alchemical work in dialogue form between a certain Demogorgon and Geber. Obviously, the conversation was imaginary, the text being in this form in order to instruct the reader. In the second dialogue, entitled *Lignum vitae* (on the alchemy of Raymund Lull), Bracresco (fl. sixteenth century) discusses the elixir of life and explains the longevity of the Old Testament patriarchs by a drug (*lignum vitae*). Latin translations appeared (Nuremberg, 1544; Lyons, 1544), and Gratarolo reprinted the Latin version in his *Verae alchemiae* (Basel, 1561). “Bracresco . . . spent almost his entire life in alchemical studies poring over the books of the ancients. . . . The leading idea of Bracresco . . . is that mercurial water, the gold of the philosophers, and mercury may all be produced from iron, which is that stone sold for a cheap price to which alchemical tracts constantly refer” (Thorndike [V, 546]). Only Latin translations are listed by Duveen and Edelstein. The Italian editions of 1544 and 1551 are cited by Neu and Wellcome. Very rare. This edition not in the British Library. (Ferchl, 65; Ferguson, I, 123 [not in Young Coll.]; Ferguson Coll., 117; Poggendorff, I, 270)

BRADLEY, Richard

A Philosophical Account of the Works of Nature. Endeavouring to set forth the several Gradations Remarkable in the Mineral, Vegetable, and Animal Parts of the Creation. Tending to the Composition of a Scale of Life. To which is added, an Account of the State of Gardening, as it is now in Great Britain, and other Parts of Europe: Together with several new Experiments relating to the Improvement of Barren Ground, and the Propagating of Timber-Trees, Fruit-Trees, &c. . . .

London: Printed for W. Mears, at the Lamb, without Temple-Bar. 1721.

First edition. 4to. 10 leaves, 194 pp., 1 leaf (adverts.). Title page in red and black, historiated woodcut capitals, head- and tail-pieces. With 28 engraved plates (1 double page; J. Cole sculp.), all delicately hand colored, of mammals, birds, reptiles, fish,

insects, plants, etc. Very fine copy, with wide margins, in original gilt-ruled calf, rebounded, spine dated.

BRADLEY (1688?–1732), F.R.S., professor of botany at Cambridge (1724), a prolific and able writer on a variety of scientific subjects, made notable contributions to botany and agriculture. His principal investigations were on the movement of sap and the sexual reproduction of plants, in which he emphasized the significance of insects in fertilization. He studied the then-novel idea of cross-fertilization and the production of different strains of plants. His clear and readable style did much to encourage a scientific approach to agriculture and gardening (see D.N.B.). The present work, of mineralogical and chemical interest, is a beautiful example of early-eighteenth-century fine printing, and it is unusual to find this book with all of the plates colored. Among the list of subscribers is Sir Isaac Newton, who ordered six copies; the present location of none of these is known (see Harrison, 280). (Blake, 62; D.S.B., II, 390; Eales, 1289; Freeman, 441; Fussell, 108; Henrey, II, 320; Knight, 94; Pritzel, 1077; Wellcome, II, 227)

BRANDE, William Thomas

A Dictionary of Materia Medica and Practical Pharmacy; including a translation of the formulae of the London Pharmacopoeia. . . .

London: John W. Parker. 1839.

First edition. 8vo. 2 leaves, 591, (1) pp. + 20 pp. (advertisements, dated April 1844). Very fine, crisp copy, uncut, in contemporary blind-stamped blue-green cloth, spine gilt-lettered. From the library of the celebrated book collector Frances Mary Richardson Curren (1785–1861), with her armorial bookplate.

A DEFINITIVE WORK on the materia medica which was “said to have been invaluable to medical students of his day” (D.S.B.). Brande originally began lecturing on chemistry and pharmacy in 1808 and in 1812 became superintendent of chemical operations at Apothecaries’ Hall. He assisted greatly in organizing educational policy at the Society of Apothecaries, which “established lectures in botany and materia medica at their Hall in the 1830’s and by 1838 Professor W. T. Brande . . . was suggesting that the course of lectures in materia medica could be changed to the benefit of the students” (L. G. Matthews, *History of Pharmacy in Britain*, 1962, pp. 158, 246–247; *ibid.*, *The Royal Apothecaries*, 1967, p. 162). Having once belonged to Frances Mary Richardson Curren, whose library contained over fifteen thousand volumes (catalogued 1820 and 1833), this copy has a distinguished provenance. Curren published *Extracts from the Literary and Scientific Correspondence of*

Richard Richardson, M.D. (1835). On Richard Richardson (1663–1741), botanist and antiquary, whose valuable library passed to his descendant, Frances Mary Richardson Curren, see the D.N.B. Scarce. Not in the usual chemical bibliographies. (D.S.B., II, 420; Ferchl, 66; Partington, IV, 75; Wellcome, II, 230)

BRANDE, William Thomas

A Dictionary of Science, Literature, & Art: comprising the history, description, and scientific principles of every branch of human knowledge; with the derivation and definition of all the terms in general use. Edited by W. T. Brande, F.R.S. . . . Assisted by Joseph Cauvin, . . .

London: Longman, Brown, Green, and Longmans. 1842.

First edition. 2 vols., 8vo. I: viii, 660 pp. II: 1 leaf, pp. 661–1343, (1). Numerous woodcut engravings in text. Very good copy in contemporary gilt-ruled polished calf, maroon and green morocco labels.

AN ENCYCLOPEDIA work containing much of value to the historian of chemistry, chemical technology, and related subjects. Brande elicited the support of several scientists eminent in their respective fields in its compilation, e.g., J. Lindley (botany), J. C. Loudon (agriculture), T. Gallo-way (mathematics), and R. Owen (anatomy, physiology, zoology). The entries on chemistry, geology, mineralogy, medicine, and the arts and sciences depending on chemical principles were written by Brande himself. “His Dictionary of Science and Arts . . . was a laborious undertaking, supplying a serious want” (D.N.B.). Several updated editions appeared (e.g., London, 1853, 1867, 1875; New York, 1847, 1852, 1865–67, 1875). Scarce. No edition listed by Bolton, Duveen, Edelstein, Morgan, Poggendorff, Smith, Wellcome, etc. (D.S.B., II, 420; Ferchl, 66; Partington, IV, 75; Sondheimer, 240)

BRANDE, William Thomas

A Manual of Chemistry; containing the principal facts of the science, arranged in the order in which they are discussed and illustrated in the lectures at the Royal Institution of Great Britain. . . .

London: John Murray. 1819.

First edition. 8vo. xvii, (1), 652 pp., 2 leaves (advertisements). Folding engraved frontispiece depicting the interior of the laboratory at the Royal Institution, and 2 other folding plates. Numerous woodcuts and line figures in text. Very fine, crisp copy in original gilt-ruled calf, green morocco label.

DEDICATED TO “my first instructor in Chemistry,” Hatchett, this work was “the textbook of the day” (D.N.B.). In writing it, Brande in his preface says that he has relied chiefly

on the works of Thomas Thomson, John Murray, M. The-nard, Sir Humphry Davy, William Henry, and the "Chemical Dictionary of Messrs. Aikin. . . . Much of this work has been written in the Laboratory, where the results of experiments have been immediately transferred to its pages; and where I have uniformly received the active and able assistance of Mr. M. Faraday, whose accuracy and skill as an operator have proved of essential service." A brief history of chemistry is given in the introduction (pp. xvii–xlvii). Five further editions appeared (1821–1848), each kept up to date with advances in chemical research. (Bolton, 335; D.S.B., II, 420; Duveen, 99; Edelstein, 412; Ferchl, 66; Knight, 142; Partington, IV, 75; Poggendorff, I, 276; Smith, 79; Sondheimer, 236; Wellcome, II, 230)

BRANDE, William Thomas

A Manual of Chemistry; containing the principal facts of the science: arranged in the order in which they are discussed and illustrated in the lectures at the Royal Institution of Great Britain. . . .

London: John Murray. 1830.

Third edition. 2 vols., 8vo. I: 6 leaves, cliii, (1) pp., 1 leaf, 493, (1) pp. II: 6, 744 pp. With 3 engraved plates (2 folding; J. Basire sc.). Many tables, woodcuts, and line figures in text. Very good copy in contemporary gilt-ruled half calf, rebaked, cloth boards, maroon morocco label, gilt. Armorial bookplates (nineteenth century): John Lawson.

THE GREATLY enlarged and updated third edition, dedicated (London, May 1830) to Charles Hatchett, F.R.S., whom Brande praises "as one whose researches in the Science have exalted your name to a high station among British Chemists." Volume I contains a detailed 153-page "History of Chemistry." Scarce. Not in Bolton, D.S.B., Duveen, Edelstein, Sondheimer, etc. (Hoover, 164; Partington, IV, 75; Smith, 79; Wellcome, II, 230)

BRANDE, William Thomas

A Manual of Chemistry; containing the Principal Facts of the Science, arranged in the Order in which they are discussed and illustrated in the Lectures at the Royal Institution of Great Britain. By William Thomas Brande, . . . The First American, from the Second London Edition. Three Volumes in One. To which are added Notes and Emendations: by William James Macneven, M.D. . . .

New-York: Printed and Published by George Long. 1821.

First American edition. 8vo. (in 4s) 4 leaves, 638 pp., 1 leaf (index). With 3 engraved plates (2 folding) and numerous woodcut illustrations in the text. Some minor occasional foxing (characteristic of American paper of the period); otherwise a fine copy in contemporary speckled calf, spine gilt-ruled, with original gilt-lettered maroon morocco label.

THE VERY scarce first American edition, from the second English edition (3 vols., 1821). Macneven, professor of chemistry at the College of Physicians and Surgeons of the University of the State of New York, copiously annotated this edition, making it acceptable for student use. On pages 637–638 Macneven added an important historical note on the confirmation of the "law of definite proportions," a cornerstone of Dalton's chemical atomic theory. This is the first announcement of the law of definite proportions in an American book, and this edition is, therefore, a milestone in early American chemical literature. The work is praised by Edgar F. Smith (*Old Chemistries*, New York, 1927, pp. 83–86). This edition is not in Duveen, D.S.B., Ferchl, Partington, Waller, Wellcome, etc. (Bolton, 335; Morgan, 98; Smith, 79)

BRANDE, William Thomas

A Manual of Pharmacy. . . .

London: Printed for Thomas and George Underwood, Fleet-Street. 1825.

First edition. 8vo. xi, (1), 556 pp. Fine copy, in original calf, gilt, covers gilt-ruled, all edges gilt, dark-green label.

IN HIS *Manual of Chemistry* (London, 1819) Brande presented his students with the principal facts of chemistry as they were delivered in his lectures at the Royal Institution. "The object of the present work is to furnish the student with a corresponding outline of the Course of Pharmacy annually given at Apothecaries' Hall. Under the term Pharmacy I include all that relates to the Medical and Chemical History of the different Articles of the Materia Medica" (introduction). Brande's father was apothecary to George III, so it was natural that Brande himself had a profound interest in the chemicals employed in medicine. At the end (pp. 531–537) is a long table of pharmaceutical equivalents (i.e., atomic and molecular weights). Another edition appeared in 1833. Scarce. (D.S.B., II, 420; Partington, IV, 75; Wellcome, II, 230)

BRANDE, William Thomas

Outlines of Geology; being the substance of a course of lectures delivered in the Theatre of the Royal Institution in the year 1816. . . .

London: John Murray. 1817.

First edition. 8vo. viii, 144 pp. Folding aquatint engraved frontispiece (J. Basire sc.) depicting cross-section of strata from London to Cornwall. Crisp, uncut copy, with wide margins, in quarter calf antique, marbled boards, spine gilt-lettered.

BRANDE (1788–1866), F.R.S. (1809), succeeded Sir Humphry Davy as professor of chemistry at the Royal Institution (1813–1854) and later became chief officer of coinage

at the Mint. His father was apothecary to George III. Dedicated to the president and members of the Royal Institution, this work contains much of chemical interest on the analysis and composition of minerals, the formation of metallic veins, and related topics. A "valuable introduction to the subject. Brande, in his chemical and geological writings was sound and thorough" (Knight). Not in Challinor, Hoover, Mather & Mason, Woodward, Zittel, or the usual chemical bibliographies. (D.S.B., II, 420; Knight, 174; Sondheimer, 239; Ward & Carozzi, 298; Wellcome, II, 230)

BRANDE, William Thomas

Outlines of Geology. . . .

London: John Murray. 1829.

First edition. 8vo. xiv, 234 pp. Folding aquatint engraved frontispiece (J. Basire sc.), and 20 large woodcut pictures in text. Fine copy in original gilt-ruled calf, maroon morocco label. Nineteenth-century armorial bookplate: Frederick Montgomerie.

A SEQUEL TO the author's *Outlines of Geology* (London, 1817) but an entirely new work, containing updated information of chemical interest on earthquakes, volcanoes, fossils, minerals, ores, metals, etc. The researches of many earlier and contemporary chemists and geologists are discussed. The frontispiece is identical to that in the *Outlines* (1817). Not in Challinor, Hoover, Mather & Mason, Wellcome, or the usual bibliographies. (D.S.B., II, 420; Ward & Carozzi, 299)

BRANDE, William Thomas

Tables in Illustration of the Theory of Definite Proportionals; shewing the Prime Equivalent Numbers of the Elementary Substances, and the Volume and Weights in which they combine. Compiled for the use of chemical students and manufacturers. . . .

London: John Murray. 1828.

First edition. 8vo. xix, (1), 88 pp. Very good copy in modern maroon cloth, spine gilt-lettered. Bookplate (canceled): Birmingham and Midland Institute Library.

A SIGNIFICANT BOOK in the development of the theory of chemical combination, in which the combining weights of the known elements are presented in tabular form. One unit weight of hydrogen is assumed to combine with 16 unit weights of oxygen, as the "specific gravity of hydrogen is to that of oxygen as 1 to 16" (introduction, p. iii). The book is important because it gave an experimental basis to Dalton's atomic theory and brought the use of equivalent weights into practice. The tables give the molecular weights of numerous chemical compounds, many of which are still approximately valid, while others are about one-half present

values, as Brande considered that each molecule of water consisted of one atom of hydrogen and one atom of oxygen. Bolton erroneously describes the book as 4to. Very scarce. Not in D.S.B., Knight, Wellcome, or the usual chemical bibliographies. (Bolton, 336; Edelstein, 414; Partington, IV, 75)

BRANDE, William Thomas, and TAYLOR, Alfred Swaine

Chemistry. . . .

London: John W. Davies . . . Edinburgh: Maclachlan and Stewart. . . . Dublin: Fannin and Co. 1863.

First edition. 8vo. xi, (1), 892 pp. Fine copy, uncut, in original blind-stamped, gilt-lettered brown cloth, rebacked with spine laid on.

BRANDE'S FINAL book, written in collaboration with A. S. Taylor (1806–1880), F.R.S., professor of chemistry at Guy's Hospital (see D.N.B.). "Our intention in . . . this volume has been . . . to provide the student [with] a selection of the more important facts and doctrines of Modern Chemistry. . . . We have also treated . . . the chemical principles on which Photography is based" (preface, pp. 595–610). Divided into three main parts, the book covers nonmetals, metals, and organic compounds, including a section on the newly discovered aniline dyes (pp. 803–804), mentioning the dye mauveine, made by William Henry Perkin in 1856. Very scarce. Bolton, Edelstein, and Smith list only the American reprint (Philadelphia, 1863). (Partington, IV, 75)

BRANDENBURG, Georg Peter

Kort Afhandling om Viktril Tillverkningen. . . . Under Doct. Christian Wollins . . . Vid Kongl. Lärosätet i Lund den 17 Decembr. MDCCLXXXIII. Af Georg Peter Brandenburg Under-Chirurgus vid Kongl. Amiralitetet.

Lund: Typis Berlingianis. (1783).

First edition. 4to. 22 pp. Very good copy, in maroon quarter cloth antique, marbled boards, spine labeled: Wollin. 3 Dissertations. 1783–1797.

A DISSERTATION ON the chemical reactions of various sulphide minerals (e.g., iron pyrites, chalcopyrite, zinc blende) and the valuable iron, copper, and zinc salts that can be obtained from them. Presented by Brandenburg under the direction of the professor of chemistry at Lund, Christian Wollin (1730–1798), the works of Henckel, Lemery, et al., are cited. Rare. (Ferchl, 588; Poggendorff, II, 1364)

BRANDMULLER, Johann Rudolph

Dissertatio Chymico-Medica de Nitro . . . pro summis in arte medica honoribus & privilegiis doctoralibus legitime obtinendis . . . Johannes Rudolphus Brandmullerus, Basileensis. Ad d. 10. May. Anno MDCCXXXVII.

Basel: Typis Joh. Henrici Deckeri, Acad. Typogr. 1737.

First edition. 4to. 27, (1) pp. Fine, crisp copy, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

THE DOCTORAL dissertation of the Swiss physician Brandmuller (dates unknown) on the chemical and physical properties and pharmaceutical applications of niter (potassium nitrate). The use of niter to produce freezing mixtures is described. Most of the work is on the chemical reactions of niter, with references to Boerhaave, Hoffmann, Neumann, Stahl, Zwelfer, et al. Very rare. Not in Blake, Bolton, Duveen, Edelstein, Ferchl, Ferguson, Neu, Partington, Waller, etc. (Smith, 79; Waring, 638)

BRANDT, Georg

Tal om Färg-Cobolter, hållit för Kongl. Vet. Acad. vid Praesidii nedläggande den 30 Jul. 1760. . . .

Stockholm: Tryckt hos Directeuren Lars Salvius. 1760.

First edition. 8vo. 24 pp. Large engraved title-vignette. Very good copy in half calf antique, marbled boards, spine gilt-lettered and dated.

THE FIRST monograph in book form on cobalt, its ores, and compounds. One of the ablest chemists and mineralogists in eighteenth-century Sweden, Brandt (1694–1768) by his original contributions and leadership laid the groundwork for the eminence that Swedish chemistry achieved under Bergman, Scheele, and Berzelius. He discovered the element cobalt in 1733, which was his most important contribution to science. Cobalt was first described in his dissertation on the half metals (*Acta Literaria et Scientiarum Sveciae*, 1735), and after further researches he published a more complete account (*Acta Societ. reg. Scient.*, 1742). “In 1730 or before, Georg Brandt prepared a dark blue pigment from an ore found at the Skila copperworks (Riddarhytta) in Westmannland. Specimens of this ‘färgcobalt’ are still preserved in the Cederbaum collection at Oskarshamn” (Weeks [*Discovery of the Elements*, 1960, pp. 156–159], who does not list the present title). Brandt’s work is discussed in detail by Partington (III, 168–169), but this title was unknown to him. Rare. Not in Blake, Hoover, Waller, Watt, Wellcome, or the usual chemical bibliographies. (D.S.B., II, 422; Edelstein, 2847; Ferchl, 67)

**BRANDT, Sebastian, and
BADIUS ASCENSIVS, Jodocus**

Navis Stultifera . . .

(Colophon:) (Basel:) Nicolaus Lamparter. 26 August 1406 (i.e., 1506).

First Lamparter edition. 4to. (in 8s and 4s). 107, (1) leaves. Black letter. Title page in red and black with large woodcut. With 115 large woodcuts (some attributed to Dürer). Capitals and illustrations on first 8 leaves neatly highlighted in pale yellow by an early owner. Red ink on title a little faded. Few minor age marks; otherwise an excellent copy, all edges gilt, in blind-ruled mottled calf antique, maroon morocco label.

THE GERMAN humanist and satirical poet Sebastian Brandt (1457–1521) is best known for his *Das Narrenschiff* (Basel, 1494), an allegorical landmark work “telling of a ship laden with fools and steered by fools setting sail for Narragonia, the ‘fool’s paradise.’ The ship allegory . . . presents over 100 fools [including] criminals, drunkards, ill-behaved priests and lecherous monks . . . in this unsparing, bitter, sweeping satire . . . of the vices of his time” (*Encyc. Brit.*). The edition in German is here translated by J. Locher into Latin and completely reinterpreted by Badius Ascensius (1462–1535). The same illustrations as in the 1494 edition are used (some with modification). Of particular interest among the fools is the large woodcut of alchemists in a laboratory (folio 97v) distilling substances, with crucibles and retorts. Accompanying this is a two-page commentary on the futility of alchemy. Other “fools” who are satirized include physicians, philosophers, mathematicians, navigators, soldiers, explorers, and many from other professions and occupations. Although several editions of the ship of fools appeared in the 1490s and early 1500s, the splendid pictures invited vigorous use by readers of all ages and backgrounds; consequently most copies that have survived are in defective and poor condition. Very rare. (British Library, *S.T.C. German Books*, 147; Watt, 1, 147a)

BRASAVOLA, Antonio Musa

Examen Omnium Simplicium Medicamentorum quorum usus in publicis est officinis: opus perinsigne & medicinam facientibus perutile, quod nusquam antea in lucem editum est, sed cum indice locupletissimo recens nascitur. . . .

Venice: Ex officina Erasmiana apud Vincentium Valgrisium. 1545.

Third Valgrisi edition? 8vo. 32 leaves, 629, (1) pp., 1 leaf (blank). Woodcut printer’s device on title page and larger version on page (630). Ornamental woodcut capitals. Italic letter. Neat sixteenth-century marginal annotations in faded ink on some pages; otherwise fine, crisp copy with ample margins, in speckled calf antique, spine gilt-lettered and dated.



Brandt and Badius Ascensius. Navis Stultifera. Basel, 1506.

BRASAVOLA (1500–1555), born in Ferrara, studied at Padua, Bologna, and Paris; took doctorates in law, medicine, and theology; taught logic, natural philosophy, and theory of medicine at Ferrara; and then became physician to Pope Paul III. A man of great learning, Brasavola composed the present book on medical simples in 1534. It is in the form of conversations between Brasavola, an old apothecary, and an herbalist. The first edition appeared at Rome in 1536, and the work was often reprinted, editions up to 1561 being recorded. “Brasavola introduced some new drugs into the pharmacopoeia” (Garrison-Morton, 1804 [describing the 1536 edition]). Thorndike (V, 445–471) devotes the whole of chapter 20 to Brasavola and his influence on pharmacy. Partington (II, 96–97) discusses the chemical content and importance of this work. Other editions are in the British Library, Ferchl, Neu, Partington, Poggendorff, Thorndike, Waller, Watt, etc. The Wellcome copy of this rare edition is imperfect. (Durling, 682; Wellcome, I, 1049)

BRAUN, Joseph Adam

De Admirando Frigore Artificiali quo Mercurius est Congelatus Dissertatio . . . praelecta Septembris VI. MDCCLX. . . I. A. Braunio . . .

(St. Petersburg): Typis Academiae Scientiarum Imperialis Petropolitanae. (1760).

First edition. 4to. 1 leaf, 30 pp. Very good copy with wide margins, in maroon quarter calf, marbled boards, spine gilt-lettered and dated. Bound with Krafft, G. W., and Weitbricht, J., *Sermones in Solenni Academiae Scientiarum . . .* (St. Petersburg, 1742). From the library of Professor Franz Sondheimer, with his bookplate on the front endpaper.

A MILESTONE IN the history of freezing mixtures and thermometry, in which the freezing of mercury is first described. The freezing point of mercury was a matter of much interest to physicists and chemists throughout most of the eighteenth century. Ordinary freezing mixtures of snow and nitric acid would not congeal mercury. On 25 December 1759 Braun immersed his mercury thermometer in a mixture of very cold snow and nitric acid, which broke the bulb of the thermometer, revealing frozen mercury. He was the first person ever to see solid mercury, and he enthusiastically read this paper to the St. Petersburg Academy of Sciences on 6 September 1760. The title may be translated as “Dissertation on the wonderful artificial cold by which mercury is frozen.” This important discovery is fully described by W. E. Knowles Middleton (*A History of the Thermometer*, Baltimore, 1966, pp. 121–123). Braun (1712–1768), a professor of philosophy and physics, published papers on the degrees of heat and cold, meteorology, and other subjects. Poggendorff (I, 283) mentions another paper of

similar title (*Novi Comm. Petrop.*, XI [1765], 268–301), but not this extremely rare first edition. (Sondheimer, 7)

BREMER, Hans Erland

Dissertatio Physico-Medica de Sulphure Minerali ejusque usu praecipue Medico, . . . Praeside D.D. Gustavo Harmens . . . Pro Summis in medicina honoribus obtinendis Examini Publico Subjicit Hans Erland Bremer . . . D. (blank) Martii MDCCLVII . . .

Lund: Ex Officina Directoris Caroli Gustavi Berling. Reg. Acad. Carol. Typograph. (1757).

First edition. 4to. 27, (1) pp. Good copy, uncut with wide margins, in maroon quarter cloth antique, marbled boards, spine lettered in gilt: Harmens. Dissertations. 1748–1760.

A DISSERTATION ON the natural occurrence, medicinal uses, and physical and chemical properties of sulphur and its compounds, presented by Bremer under the direction of Gustav Harmens (1699–1774), professor of medicine and chemistry at the University of Lund. The preparation of pure sulphur and its conversion to sulphuric acid, sulphates, and metal sulphides are described with references to the works of Boyle, Glauber, Helmont, Hoffmann, Juncker, Ruland, Wallerius, and others. (Waring, 702; Watt, I, 467j)

BREWSTER, David

The Life of Sir Isaac Newton. . .

London: John Murray, Albemarle Street. 1831.

First edition. 8vo. xv, (1), 366 pp. With engraved portrait frontispiece of Newton (by W. C. Edwards after G. Kneller), woodcut vignette on title, and illustrations and diagrams in text. Fine copy, uncut, in original publisher's blind-stamped crimson cloth, spine gilt-lettered.

THE FIRST definitive biography of Newton, his work, contemporaries, and times, by Sir David Brewster (1781–1868), an important physicist who made numerous discoveries in his researches on light (see D.S.B., II, 451). Brewster had the use of all the material in the Lymington, Conduit, and Edelston collections. Dedicated to Lord Braybrooke (Richard Griffin Neville, 1783–1858), the first editor of Samuel Pepys's *Diary* (London, 1825), this work is described as a masterpiece by Richard Westfall (*Never at Rest*, 1980, p. x). Written for Murray's Family Library (vol. 41), the book appeared in two bindings: the drab printed cloth of the Family Library (with various dates on the upper board), and the present (probably slightly later) binding of red cloth with no mention of the Family Library. (Babson, 600; Gray, 368; Poggendorff, I, 295; Roller & Goodman, I, 164; Wallis, 368; Wellcome, II, 236)

BREWSTER, David

Memoirs of the Life, Writings, and Discoveries of Sir Isaac Newton. . . .

Edinburgh: Thomas Constable and Co. 1855.

First edition. 2 vols., 8vo. I: xxii, (2), 478 pp. II: xi, (1), 564 pp. With steel-engraved frontispiece portrait of Newton in each volume, 8 woodcut illustrations, and numerous diagrams in text. Pristine copy in contemporary tan calf, double gilt fillets on covers, spines richly gilt, maroon and green morocco labels. Engraved nineteenth-century armorial bookplates: James B. Gallie.

BREWSTER'S CELEBRATED biography dedicated to Prince Albert, originally published in much shorter form without the letters (London, 1831), was the first complete biography of Newton. It remained the "chief authority on Newton's life" (Zeitlinger) until the publication of Richard Westfall's *Never at Rest* (Cambridge, 1980). In the bibliographical essay at the end of his book Westfall describes Brewster's work as "the leading biography." The *Memoirs* hold an important place in any study of Newton because it contains the first appearance of many of his letters and papers, including fourteen letters between Halley and Newton on the publication of the *Principia*, drafts of the *General Scholium*, and several theological pieces. These volumes also include discussions of Newton's interest in and pursuit of alchemy, as evidenced by the large number of manuscripts that he wrote describing his experiments on various attempts to transmute metals, and his transcriptions of alchemical literature. (Babson, 258; D.S.B., II, 454; Gray, 370; Knight, 222; Partington, II, 468; Roller & Goodman, 164; Smith, 80; Wallis, 370)

BRONGNIART, Antoine Louis

Tableau Analytique des Combinaisons & des décompositions de différentes substances, ou Procédés de Chymie, pour servir à l'intelligence de cette science. . . .

Paris: Chez P.-Fr. Gueffier, Libraire-Imprimeur, au bas de la rue de la Harpe. 1778.

First edition. 8vo. 1 leaf, 526 pp., 1 leaf (*privilege*). Woodcut title ornament, woodcut head- and tailpieces. Very fine copy, in contemporary maroon morocco, covers with triple-gilt fillets and corner fleurons, spine richly gilt, all edges gilt.

AN IMPORTANT milestone in the literature of analytical and synthetic chemistry. In 1774 H.-M. Rouelle published his *Tableau de l'analyse chimique*, in which he attempted to summarize the relationships between the then-known elements and their compounds. In the present greatly enlarged work Brongniart (1742–1804) gives details of the synthesis and analysis of the known chemical compounds, with references

to contemporary chemists and their discoveries. The work thus presents a synopsis of the knowledge of chemical composition in 1778. Although inspired by the earlier publications of Geoffroy and Rouelle, this vast survey of chemical data and technical operations is far more comprehensive. Brongniart (1742–1804), professor of chemistry at the Jardin des Plantes in Paris, was an uncle of the famous mineralogist Alexandre Brongniart (1770–1847). Included are chapters on the making of gunpowder, glass, dyeing, and many other technologically important subjects. The final chapter, on gases, covers the latest discoveries of Priestley, Lavoisier, Fourcroy, Sigaud de la Fond, and others. The Wellcome Library Catalogue (II, 245) lists an 8vo. copy of this title, interleaved with manuscript notes by the author, but with completely different pagination (1 leaf, 276 pp.). Rare. (Bolton, 43; Cole, 208; Ferchl, 70; Poggendorff, I, 306; Sondheimer, 253)

BROUGHAM, Henry Peter

Lives of Men of Letters and Science, who flourished in the Time of George III. . . .

(Vol. I) London: Charles Knight and Co. 1845. (Vol. II) London: Henry Colburn. 1846.

First edition. 2 vols., 8vo. I: xvi, 516 pp., 1 leaf (errata). Frontispiece portrait (Voltaire) and 7 steel-engraved portraits. II: xii, 516 pp. Frontispiece portrait (Sir Joseph Banks) and 5 steel-engraved portraits. Fine copies. Volume I in original blind-stamped cloth, spine faded and covers partly faded (as usual). Volume II in contemporary calf, covers gilt-ruled, rebacked, with original gilt spine laid on.

A VALUABLE WORK by Baron Brougham and Vaux (1778–1868), founder of the University of London (see D.N.B.). Volume I contains ten biographies: Voltaire, Rousseau, David Hume, William Robertson, Joseph Black, James Watt, Joseph Priestley, Henry Cavendish, Sir Humphry Davy, and Robert Simson. Volume II contains six biographies: Samuel Johnson, Adam Smith, Lavoisier, Edward Gibbon, Sir Joseph Banks, D'Alembert, plus an additional appendix on J. Banks and A. Smith and a note on Cavendish, Watt, and Black. Only volume I is in the Wellcome Library. (Edelstein, 3789; Morgan, 107; Wellcome, II, 247)

BROUGHAM, Henry Peter

Lives of Philosophers of the Time of George III. . . .

London and Glasgow: Richard Griffin and Company. 1855.

Second edition. 8vo. xvi, 492 pp., 2 leaves. Fine copy, uncut, in original blind-stamped purple cloth.

A REPRINT OF the two-volume first edition (London, 1845, 1846), omitting the engraved plates and biographies of

Hume, Rousseau, and Voltaire. Included are biographies of Adam Smith, Lavoisier, Joseph Banks, and D'Alembert, and additional information on Black, Cavendish, and Watt, plus a useful index. Although pages 290–332 deal with Lavoisier and his researches, this work is not mentioned by Duveen and Klickstein. (Bolton, 183; Partington, II, xiii)

BRUHN, Heinrich

Die Bodenkunde oder die Lehre vom Boden, nach dem gegenwärtigen Standpunkte der Naturwissenschaften und ganz besonders in Bezug auf Dr. J. Liebig's organische Chemie in ihrer Anwendung auf Agricultur und Physiologie, mit einem vorausgehenden Abriss der Chemie und der Gesteinslehre gemeinfasslich und in möglichster Kürze bearbeitet . . .

Dresden und Leipzig: in der Arnoldischen Buchhandlung, 1841.

First edition. 8vo. viii, 134 pp. + 1 leaf (advertisements). Fine copy, uncut, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated, with original printed blue paper wrappers bound in.

AN IMPORTANT book on agricultural chemistry, based on Liebig's classic *Organische Chemie in ihrer Anwendung auf Agricultur und Physiologie* (Braunschweig, 1840). By way of introduction, Bruhn precedes his critique of Liebig's researches with short chapters on chemistry, mineralogy, physics, and botany, as these subjects relate to agricultural theory and practice. A rare book, unknown to the usual bibliographers. (Paoloni, 923)

BRUNSCHWIG, Hieronymus

Bas [sic] buch zu distillieren die zusammen gethonen ding Composita genant, durch die einzigen ding, und das büch Thesaurus pauperum, für die armen, durch experiment von mir Jheronymo Brunschwick uff geklukt und geoffenbart, zu trost und heil den menschen und nutzlich ir leben und leib darusz zu erlengeren und in gesuntheit zu behalten.

Strassburg: Johann Griinger. 1519.

Second edition. Folio. 330 ff. Large woodcut of alcohol still on title, and 145 woodcuts in text (including 1 double page). Gothic type in 2 columns. Lower blank margin of title leaf remargined in sixteenth-century paper and minor toning of several leaves; otherwise fine copy in contemporary pasteboards, rebacked and recorned in unlettered calf antique.

THE SECOND edition of Brunschwig's "great distilling book." The text of the first edition of 1512 was revised, corrected and updated by the author shortly before he died (ca. 1513). This edition contains only about 60 percent of the illustrations of the first (although all the important woodcuts are

retained), and there is less duplication of the figures. The work is divided into five books: I. Techniques of distilling compounded medicines; II. Properties and powers of remedies; III. Diseases and distillates for their treatment; IV. Surgery and distilled medicines for treating wounds; V. Thesaurus pauperum, covering easily obtainable remedies, the "homish apothecayre" as it was styled in its English translation. To this are added ingredients of classic prescriptions, so that they can be prepared at home. Brunschwig was radical in his abrogating the authority and prescriptive control of the contemporary medical profession. It was this that gave the work its immense popularity and led to the appearance of later (usually modified and updated) editions throughout the sixteenth century. The anatomical figures first appeared in Reisch's *Margarita philosophica* (1503). These contain the earliest printed illustration of the structure of the eye. (British Library, *S.T.C. German Books*, 148; Edelstein, 432; Ferguson Coll., 119; Forbes, 368; Hirsch, *Chymie*, III, 130)

BRUNSCHWIG, Hieronymus

Das neüwe distilier Buoch der rechten Kunst, von Meister Jeronimo Brunschwig colligiert, zü distilieren, uss allen Kreütern die Wasser, mit einem leichtern Sinn angezeygt, unnd vorab das Register gerechtvertiget. Auch das Büch des hochberümbten Herrn, Marsilij Ficini, das Lang Leben betreffend, unnd sunst vil nützlichier Stück. . . .

(Colophon: Getruckt und volendet in . . . Strassburg, durch Johann Grüninger. 1531)

Folio. 162 leaves. Collation: A–B6, C4, D6, E4, F–V6, AA–FF6, GG4, HH6. Black letter. Large woodcut on title, double-page woodcut (B3v–B4r), and many large woodcuts in text (chemical apparatus, plants, contemporary scenes). Fine copy with wide margins, in contemporary blind-stamped pigskin over oak boards (clasps gone).

ONE OF the most famous and important of the early works on distillation, by Brunschwig, a physician and surgeon, who was an expert in the preparation of medicines. Originally appearing with the title *Liber de arte destillandi de Simplicibus* and published at Strassburg in 1500, this so-called small book is also an herbal. Other editions with the title modified were published in 1505, 1509, and 1517. The present edition is possibly the fifth. In addition to books I and II on distilling, this edition contains the tract on longevity by Marsilius Ficinus (1433–1499). Brunschwig's books on the distillation of plants introduced the use of chemical techniques into medicine. This and the so-called large book (*Grosses Distillierbuch*, 1512) led to a series of works on distillation (e.g., by Ulstadt, Ryff, and Rossi) throughout the sixteenth century, and these culminated in



Brunschwig. Bas [sic] Buch zu Distillieren. Strassburg, 1519.

the classic writings of Glauber and French in the mid-seventeenth century. Neither Forbes nor Hirsch knew of the present edition: it is not to be confused with the Strassburg (1531) edition of *Liber de arte distillandi*. Very rare. (British Library, *S.T.C. German Books, 1465–1600*, p. 149; Ferguson Coll., 800)

BRUNSCHWIG, Hieronymus

Liber de arte Distillandi de Compositis. Das Büch der waren kunst zu distillieren die Composita und simplicia, and daz Büch thesaurus pauperism. Ein schatz d'armen genant Micarium, die brosamlin gefallen von den büchern d'Artzney, und durch Experiment von mir Jheronimo brunswick uff und geoffenbart zu trost denen die es begeren.
Strassburg: Johann Grüninger. 1512.

First edition. Folio. 344 ff., 6 leaves (i.e., 364 leaves). Large woodcut of alcohol still on title page, double-page plate and 257 woodcuts (some repeated) in text. Gothic type in 2 columns. Occasional minor toning and a few tiny marginal wormholes on several leaves; otherwise very good copy in contemporary German blind-stamped pigskin over oak boards, with 2 brass clasps. From the library of Robert B. Honeyman, preserved in a red half morocco box.

BRUNSCHWIG (ca. 1453–ca. 1513), a surgeon of Strassburg, published books on medicine, plague, and surgery (1497–1512). His most important books were on distillation. The first, so-called *Kleines Distillierbuch* was an herbal on medicines obtained from distilling plants, published in 1500. The present *Grosses Distillierbuch* is considerably more wide-ranging, covering the many chemical compounds that can be prepared by distilling not only plants but animals and minerals. It describes in detail the apparatus and techniques of distillation (with numerous figures) and summarizes all aspects of chemical and pharmacological knowledge at the beginning of the sixteenth century. This is the earliest book on chemistry and chemical technology ever published, although a few earlier books had dealt with chemical subjects in other contexts. An impressive assemblage of Brunshawig's chemical knowledge is contained in this book, adapted to practical use. His innovation was the application of steam distillation to isolate medicinally important substances from their matrix. Not in British Library. (Bolton, 342; Durling, 748; Duveen, *Suppl.*, 60 ["Rare"]; Forbes, 110; Neu, 753; P.M.M., 44; Stillwell, 828; Waller, 1585; Wellcome, I, 1114)

BRUNSCHWIG, Hieronymus

New vollkommen Distillierbüch wolgegründter künstlicher Distillation, sampt Underweisung und Bericht, künstlich abzuziehen oder separirern, die fürnembste distillierte Wasser, köstliche Aquas vitae, Quintam Essentiam, Sirupen, heylsame öl, Balsam . . . Auch . . . der Gefesz und Instrument, desz gantzen Distillierzeugs. . . Hernach durch . . . Gualtherum Ryff (in Truck gegeben) . . . Jetzt aber . . . fleissig ersehen, corrigiert . . . und . . . gebessert.

Frankfurt: Getruckt . . . bey Christian Egenolffs Erben. 1597.

Third edition edited by Ryff. Folio. 6 leaves, 217 (i.e., 216) leaves. Title in red and black. Black letter. Numerous fine woodcuts in text (distillation apparatus, medicinal plants, medical instruments, etc). Fore-edge of title leaf remargined (no loss), small piece cut from blank lower margin of 11 leaves, bottom margin of last few leaves repaired, minor staining of blank margins toward the end, and other minor water stains; otherwise good copy, in eighteenth-century half calf, speckled boards, spine richly gilt, front joint cracked. Bookplate: Starckenstein.

THE THIRD appearance of the recension by Walther Hermann Ryff (fl. 1539) of the books on distillation by Brunshawig (1450–1512). In the present work Ryff has revised the contents of Brunshawig's "small book" (*Kleines Distillierbuch*, 1500) and his "large book" (*Grosses Distillierbuch*, 1512) and has inextricably mixed them together. The text edited by Ryff first appeared as *Das new gross Distillier Buch* (Frankfurt: C. Egenolff, 1545; Durling, 763), with a second edition of the same title (Frankfurt: C. Egenolff, 1556; Ferguson, II, 306–307). Ryff, of Strassburg, studied medicine and became town physician of Nuremberg, where he succeeded Brunshawig. Ryff apparently had few scruples and often appropriated the works of others as his own, a fact that is admitted in the title of the present edition. All the editions of Brunshawig are rare. (Abrahams, *Brunshawig . . . Distillation*, 1971, pp. 58–59; British Library, *S.T.C. German Books*, 149; Durling, 764; Ferguson, II, 307 [not in Young Coll.]; Ferguson Coll., 119; Forbes, 368; Sotheran, Cat. 832 [1932], 5090; Wellcome, I, 1116)



Brunswick. Liber de arte Distillandi. Strassburg, 1512.

BRUNSCHWIG, Hieronymus

The vertuose boke of Distyllacyon of the waters of all maner of Herbes, with the fygures of the styllatoryes, Fyrst made and compyled by the thyrte yeres study and labour of the moste conynge and famous master of phisyke, Master Jherom bruynswyke. And now newly Translate out of Duyche into Englysshe. Nat only to the synguler helpe and profyte of the Surgyens, Phisyeyens, and Pothecaryes But also of all maner of people, Parfytely and in dewe tyme and ordre to lerne to dystyll all maner of Herbes, To the Profyte, cure, & Remedy of all maner dyseases and Infirmytees Apparant and nat apparant. And ye shall understade that the waters be better than the Herbes, as Avicenna testefyeth in his fourth Canon saynge that all maner medicinys used with theyr substance, febleth and maketh aged, and weke. Cum gratia et privilegio regali. . . .

(Colophon: Imprinted at London in the flete strete by me Laurens Andrewe, in the sygne of the golden Crosse. In the yere of our lorde. M.cccc.xxvii [sic], the, xvii [sic], daye of Apryll.)

First state of the first English edition (with colophon misdated 1427 and 17 April. *Recte*: 1527, 18 April). Folio. 138 leaves. Imperfect copy, lacking 31 leaves. Collation: Prelim. ii (lacking title, prelim. iii and iv, a⁶ = 9 leaves), b⁶, c–d⁴, e–f⁶, A–B⁴, C1–C2 (lacking C3 and C4), C5–C6, D⁴, E⁶, F⁴, G⁶, H⁴, I1–I2 (lacking I3 and I4), I5–I6, K⁴, L⁶, M⁴, N⁶, O⁴, P2–P6 (lacking P1), Q⁴, R⁶ (lacking S–T⁴, V⁶, X1–X3 = 17 leaves). Title in photo-facsimile. Black letter, double columns. Numerous large and small woodcuts Apart from the missing leaves and occasional sixteenth- and seventeenth-century marginal annotations in ink, a good copy in nineteenth-century paneled calf antique.

THE EXTREMELY rare first English edition of the so-called small book on distillation by Brunschwig (1450–1512), translated and published by Laurence Andrew (fl. 1510–1537), a native of Calais, who also translated other scientific works (see D.N.B.). The original *Liber de arte destillandi de Simplicibus* (Strassburg, 1500) was reprinted with alterations in 1507 and 1517. At least two states of the title of the English edition exist with different wording on each. (Bolton, 343; Durling, 759; Duveen, 106; Neu, 756; Partington, II, 83; S.T.C., 13435; Waller, 1588; Watt, I, 163g)

BULSTRODE, Whitelocke

An Essay of Transmigration, in Defence of Pythagoras: or, a Discourse of Natural Philosophy. . . .

London: Printed by E. H. for Tho. Basset, at the George in Fleet-Street. 1692.

First edition. 8vo. 28 leaves, 192 pp. (including half title and license leaf). Engraved frontispiece portrait of Pythagoras (W. Elder sculp.). Very fine copy in original paneled calf, gilt, maroon label.

BULSTRODE (1650–1724), an essayist and protonotary of the Marshal's Court, entered the Inner Temple (1664) and was later made commissioner of excise (see D.N.B.). Written in praise of Pythagoras and his philosophy, this book is of considerable interest in the history of chemistry. Pages 117–192 are almost entirely devoted to discussions of metals, salts, minerals, air, water, sulphurous vapors, chemical principles, calcination, Paracelsian *tria prima*, Aristotelian four elements, Descartes' hypotheses, the atomic philosophy of Democritus, Epicurus, Leucippus, etc. Bulstrode opposed Descartes' insistence on quantity and extension and reduced the elements to two: fire and water. Apparently a variant issue of Wing, B5450, as this copy has no initial Greek word in the title. A second edition appeared in 1693 (Wing, B5451), also a Latin translation by Oswald Dyke (London, 1725). (Duveen, 108; Neu, 775; Thorndike, VIII, 350; Watt, I, 169)

BUNSEN, Robert Wilhelm, and BERTHOLD, Arnold Adolph

Das Eisenoxydhydrat, ein Gegengift der arsenigen Säure. . . .
Göttingen: im Verlage der Dieterichschen Buchhandlung. 1834.

First edition. 8vo. vi, 100 pp., 1 leaf (errata). Minor foxing on a few leaves; otherwise very fine copy, in slightly later marbled boards, red gilt-lettered label. Old stamp of Wernigerode library on lower corner of title.

PUBLISHED IN collaboration with the physician Berthold (1803–1861; see Garrison-Morton, 1176) and dedicated to the famous toxicologist at Paris, Orfila (1787–1853), this is the first book-length publication of Bunsen, written when he was only twenty-three years old. It was preceded only by his doctoral thesis of 1830 on different types of hygrometers. "His first research was on the insolubility of metal salts of arsenious acid, . . . in 1834. . . . Bunsen discovered that hydrated ferric oxide could be used as an antidote for arsenic poisoning. The ferric oxide is effective . . . because it combines with arsenic to form ferrous arsenite, a compound insoluble in both water and body fluids. This finding, still used today, was Bunsen's only venture into physiological chemistry" (D.S.B.). "As a monograph on poisoning by arsenic this work should have a place in the library of every toxicologist" (Waring). An enlarged second edition appeared (Göttingen, 1837), as well as a Dutch translation (Assen, 1839; Wellcome, II, 270). Rare. (Bolton, 346; Bugge, II, 78; D.S.B., II, 587; Ferchl, 77; Partington, IV, 283; Pogendorff, I, 340; Waring, 264)

This picture of mayde here shal stand
de for the other picture ca. c. lxxi.

Water of one lady bedstraw shal
be. ca. cc. lxxii.

Water of hie tapes / or tapus ba-
batus, shal be. ca. cc. lxxiii.



This figure of boloso wort shal
stand for the other figure in. ca. c.
lxix. & also this cyte / water of hol-
wort / & this name *Acistologia cotis*
da in lxxxj.

Here endeth this present volume
of the noble & worthy science of the
distillation of waters / practysed by
maister Jerome of brymstowe with
great labour



Printed at London in the stete
of Grete by me Laurens Andrieue in
the sygne of the golden Crosse. In
the yere of our lord. M. ccc. xxvii.
the xxii. daye of May.

Gods grace shall ever endure

officium
inviolabile
inviolabile
vandi

Handwritten notes in a cursive script, likely a library or collector's inscription, located at the bottom right of the page.

Brunschwig. Vertuose boke of Distyllacyon. London, 1527.

BURGHART, Gottfried Heinrich

Die zum allgemeinem Gebrauch wohleingerichtete Destillier-Kunst, welche . . . von Ab- und Eintheilung, Werckzeugen, allgemeinen Arbeiten . . . gnugsame Nachricht giebet . . . die Bereitung verschiedener destillirter Wasser . . . Neue Auflage. Breslau: bey Johann Jacob Korn. 1754.

Third edition. 8vo. 7 leaves, 400 pp. Double-page folding title page in red and black, 3 engraved plates of chemical symbols and 3 plates of distillation apparatus. Light toning of paper; otherwise very good copy in contemporary unlettered half calf, speckled boards. Bound with Burghart, G. H., *Neue Zusätze zu der wohl eingerichteten Destillier-Kunst* (Breslau & Leipzig, 174).

ENLARGED EDITION (first: Breslau, 1736; Blake, 72), and the last to appear in the author's lifetime, of this detailed book on distillation and its use in the purification of chemicals, plant extracts, spirits, various pharmaceuticals, etc. The history of alchemy is traced from Hermes Trismegistus through Paracelsus to Burghart's own time. He describes the principal techniques of distillation, gives a glossary of terms, and advises on the furnishing of a workshop for carrying out most of the processes. The second edition was published at Breslau in 1748 (Wellcome, II, 273). Burghart stands on the watershed of alchemy and chemistry. Although he translated Boerhaave's *Academische Vorlesungen* (1753) and refers to Newton, he repeats alchemical terminology and employs its symbolism. An edition appeared in 1780, with additions by J. C. Wiegand, attesting to the value of this work to practical distillers. This copy is of interest as an early owner has covered the flyleaves with pharmaceutical recipes and one for making marzipan. (Ferchl, 78; Ferguson, I, 132 [not in Young Coll.]; Forbes, 227–228, 369)

BURGHART, Gottfried Heinrich

Neue Zusätze zu der wohl eingerichteten Destillier-Kunst . . . die zum Theil zuvor noch niemals gedruckt, zum Theil wenig bekannt, odor sehr dunckel beschrieben gewesen . . . Allen Liebhabern und Kennern der Chemie . . . Neue und revidirte Auflage.

Breslau & Leipzig: bey Johann Jacob Korn. 1754.

Second edition. 8vo. 8 leaves, 558 pp., 28 leaves (index). Light toning of some leaves; otherwise very good copy. Bound with Burghart, G. S., *Die zum allgemeinem Gebrauch . . . Destillier-Kunst* (Breslau, 1754.).

THE SEQUEL volume (first: Breslau, 1748) to Burghart's *Destillier-Kunst*, containing descriptions of alchemical and metallurgical processes involving distillation, instructions

for the preparation of colors, and chemicals for medicinal use. An interesting section (pp. 132–174) by Christian Erlanger of Sonnenberg (dated Frankfurt, 1730) discusses Rosicrucian alchemy, the Smaragdine Table of Hermes Trismegistus, the philosopher's stone, transmutation of metals, and related subjects. This section refers to the works of Basil Valentine, Michael Sendivogius, Bernhard Trevisanus, Daniel Sennert, Lull, Geber, Paracelsus, and others. Very rarely found with both volumes present, this edition is not in Blake, Poggendorff, Wellcome, or the usual chemical bibliographies. (Ferchl, 78; Ferguson, I, 132 [not in Young Coll.]; Forbes, 227–228, 369)

BURNET, Gilbert

Some Letters Containing, An account of what seemed most remarkable in Switserland, Italy, &c. Written by G. Burnet, D.D. to T.H.R.B. At

Rotterdam: Printed by Abraham Acher, Bookseller by the Exchange. 1686.

First edition. 8vo. 307, (1) pp. Small woodcut ornament on title page. Near-fine copy, all edges gilt, in eighteenth-century red morocco with triple-gilt fillet and floral spray at corners of both covers, gilt dentelles, richly gilt spine, green morocco label. Engraved armorial bookplate (nineteenth century): Robert George Windsor-Clive, Earl of Plymouth.

BURNET (1643–1715), bishop of Salisbury, dedicated this account of his European travels to his good friend "T.H.R.B." (i.e., the Honourable Robert Boyle). In a series of long letters (dated 1 September 1685–20 May 1686), Burnet describes every item of interest and importance during his travels in Paris, Rome, Geneva, Strassburg, Frankfurt, Heidelberg, Utrecht, and other places. Greatly interested in science, the author visited many scientists, chemical laboratories, museums, and libraries. The letters provide much information on everyday life, religion, social customs, architecture, commerce, etc. In 1691 Burnet preached the sermon at the funeral of Boyle, which took place in St. Martin's in the Fields, London. This is the genuine first edition, but two pirated editions in duodecimo format rapidly appeared in 1686. These were followed by three others under this title in 1687 and three more in 1688, 1689, and 1698, respectively. (Fulton, 345; Keynes, 1458; Wing, B5915)

BURNET, Gilbert

Dr. Burnet's Travels, or Letters containing An Account of what Seemed most Remarkable in Switzerland, Italy, France, and Germany, &c. Written by Gilbert Burnet, D.D. to the Honourable R.B., Esq; Fellow of the Royal Society.

At Amsterdam: Printed, for Peter Savouret and W. Fenner in Warmoes-street near the Dam. 1687.

First edition under this title. 12mo. Signatures: A–N6; Aa–Ee6; Aaa–Ccc6; Ddd4. Pagination erratic (text complete): pp. 1–72, 85–92, 45–104, 1–58, (2), 1–42, (2). All catchwords agree. Very good copy in original unlettered, blind-ruled sheep.

THE FIRST and only edition to appear under this revised title in the seventeenth century. In “The Printer to the Reader” the publisher, Peter Savouret, points out that the first printing (Rotterdam, 1686) is full of “gross and innumerable faults, with which the Impression . . . is not throughout only blemisht, but almost render'd unintelligible.” These errors have been corrected in this edition. (Fulton, 345; Keynes, 1459; Wing, B5934)

BURNET, Thomas

The Theory of the Earth: Containing an Account of the Original of the Earth, and of all the General Changes Which it hath already undergone, or is to undergo, Till the Consummation of all Things. The Two First Books Concerning The Deluge, and Concerning Paradise.

London: Printed by R. Norton, for Walter Kettilby, at the Bishops-Head in S. Paul's Church-Yard. 1684.

First edition in English. Folio. 10 leaves, 327, (1) pp. Engraved title page, 2 folding copperplate maps of the world (one showing California as an island), and several large engraved figures in text. Divisional title page (p. 171) to second book. Fine copy with wide margins, in original calf, gilt, maroon morocco label.

MASTER OF the Charterhouse, Burnet (1635?–1715) was the first of the English cosmogonists and one of the first to attempt a scientific explanation of the origin of the Earth. “Burnet maintained that the earth resembled a gigantic egg; the shell was crushed at the deluge, the internal waters burst out, while the fragments of the shell formed the mountains, and at the same catastrophe the equator was diverted from its original coincidence with the ecliptic . . .” (Leslie Stephen, in D.N.B.). Lowndes (I, 304) considers this work “the masterpiece of this writer . . . by the eloquence of its style, and the grandeur of its imagery.” Although in his fanciful geological theories Burnet struggled to reconcile biblical narrative with the ideas of the early metallurgists, he

made a foundation on which eighteenth-century scientists built. Originally appearing as *Telluris Theoria Sacra* (1681), the author published this English version with additions not in the Latin edition. A sequel appeared (Latin, 1689; English, 1690) containing the “Two Last Books.” Newton owned a copy (now lost) of the third edition (1697; Harrison, 316). (D.S.B., II, 613; Norman, 376; Ward & Carozzi, 402; Watt, I, 174a; Wellcome, II, 275; Wing, B5950)

BURTON, William

An Account of the Life and Writings of Herman Boerhaave, Doctor of Philosophy and Medicine; Professor of the Theory, and Practice of Physic; and also of Botany and Chemistry in the University of Leyden; President of the Chirurgical College in that City; Fellow of the Royal Society in London, and of the Royal Academy at Paris. In Two Parts, With an Appendix. By Wm. Burton, M.D. The Second Edition.

London: Printed for Henry Lintot. 1746.

So-called second edition (i.e., first edition, second issue). 8vo. 2 leaves (half title, title), 2 (dedication to Sir Hans Sloane), x, 226 pp. (pagination skips from p. 184 to p. 187, but collation complete). Fine copy, in original calf, rebaked, black morocco label. Old stamp on half title: John Jones, M.D., 1776.

THE AUTHOR of this biography of Boerhaave, William Burton (1703?–1756), is not in the D.N.B. Considered “still the fullest biography of the great physician and chemist” (Zeitlinger), it contains several errors that have been corrected by later scholars. The bibliography of Boerhaave's publications (pp. 223–226) from 1693 to 1742 includes a list of five spurious texts that were attributed to him. The first issue of the first edition was published anonymously (London: H. Lintot, 1743). A note on the verso of the title of this “second edition” states that only the first paragraph of the preface has been altered, and Burton's name also appears. As only the first four pages are reprinted, and these two leaves are attached to the stub of the original signature a3 (title leaf and signature A are conjugate), this is in fact the second issue of the first edition. The errata of the first issue remain but are corrected in the text in ink by an early hand. This copy has an important provenance, having belonged to John Jones, M.D. (1729–1791), an American who in 1775 published the first treatise on military medicine and surgery during the colonial period (see Norman, 1176). Jones attended Benjamin Franklin during his last illness. (Blake, 72; Bolton, 180; Duveen, 85; Partington, II, 741; Sotheran, Cat. 666 [1906], 449; Wellcome, II, 278)

C., D. B.

Simplex & nuda Veritas. Das ist: ein Philosophischer Discurs, und ausführliche Beschreibung des trockenen Particular-Weges oder Augmenti perpetui, wie dann auch des Nassen Universal-Weges der Ubralten, Alten und Neuen Philosophen, wie sie ihren Lapidem Philosophorum Naturgemäss angefangen und glücklich vollendet haben. Worbey auch ein Send-Brieff, darinne die generatio Metallorum und fundamentum Artis & Naturae ausführlich beschrieben, und darneben ein Exempel fürgebildet, wie man die Sophistische Process nach der Natur und den Philosophis, tanquam ad Lydium Lapidem probiren kan. . . .

Halberstadt: Gedruckt bey Andreas Kolwalds seel: nachgelassener Wittwe. 1660.

First edition. 8vo. 5 leaves, 48 pp., 2 leaves (first blank), 42 pp. Fine copy, in later unlettered vellum.

IDENTIFYING HIMSELF only cryptically as “D. B. C.,” a lover of chemistry, the author of this posthumously published treatise attempts to present the “simple and naked truth” about alchemy. He reviews earlier writings on the preparation of the elusive philosopher’s stone and the transmutation of metals into gold by dry and wet processes. The works of Basil Valentine, Lull, Paracelsus, Sendivogius, von Suchten, Tancke, and others are cited. The *tria prima* (philosophical salt, sulphur, and mercury) are discussed, as are the supposed composition of arsenic, lead, copper, iron, mercury, tin, and other metals. Unknown to the bibliographers and not in the British Library, this work is of the greatest rarity and may be unrecorded.

C., H. d.

Wahrhaffter und in der Natur gegründeter Bericht, von der Generation und Regeneration der Metallen zu dem nach dem truckenen Weg, Auf Danielis Georgii Morhofii Epistel an Joelem Langelottum, durch H.d.C.

1716.

First edition? 8vo. 15, (1) pp. Woodcut alchemical symbol on title page, and large woodcut tailpiece. Very good copy in old boards. From the Fürstliche Hofbibliothek, Donaueschingen, with old stamp on verso of title page and final blank page.

A VERY RARE alchemical work by an unknown author on the generation and transmutation of metals. Evidently based on the *De Metallorum Transmutatione ad . . . Joelem Langelottum* (Hamburg, 1673) of Daniel Georg Morhof. Unknown to Bolton, Caillet, Duveen, Edelstein, Ferchl, Ferguson Coll., Guaita, Neu, Partington, Poggendorff, Rosenthal, Smith, Waller, etc. (Ferguson, I, 134)

CABEO, Niccolo

Philosophia Magnetica in qua Magnetis natura penitus explicatur, et omnium quae hoc lapide cernuntur causae propriae afferuntur: nova etiam pyxis construitur, quae propriam poli elevationem, cum suo meridiano, ubique demonstrat. Auctore Nicolao Cabeo Ferrariensi Soc. Iesu. Ad Ludovicum XIII. Galliarum, et Navarrae Regem Christianissimum.

Ferrara: Apud Franciscum Succium. 1629.

First edition, first issue. Folio (in 6s). 8 leaves, 412 pp., 6 leaves (index). With beautiful engraved title page, several large engraved figures, and hundreds of woodcuts in text. Very tall near-mint copy, in original overlapping vellum, unlettered spine. From the library of the professor of chemistry at the University of Heidelberg, Daniel Wilhelm Nebel (1735–1805), with his signature (“D. W. Nobel”) on front pastedown endpaper.

THE FIRST Italian book on magnetism and electricity, and only the second to be published on these subjects, the *De Magnate* (London, 1600) by William Gilbert being the first. The important discovery of electrical repulsion is here first announced (p. 194), and this phenomenon was later systematically investigated by Otto von Guericke in his *Experimenta Nova* (Amsterdam, 1672). Electrical repulsion “seems to have been noticed incidentally by Cabeus, who . . . describes how filings attracted by excited amber sometimes recoiled to a distance of several inches after making contact” (Wolf, I, 303). Cabeo (1585–1650) taught mathematics and theology in Parma for many years and later settled in Genoa, where he taught mathematics. This work, of some chemical interest, describes many experiments on the possibility of telegraphic communication by means of magnetized needles and gives the first picture of the sympathetic telegraph, which fancifully anticipates the actual telegraph. The engraved title page of the present first issue omits the words “multa quoque . . . causis” and is in the rarest and earliest state. A second issue appeared in 1629, comprising the sheets of the first, with engraved and printed titles, each with a Cologne imprint (Gartrell, 94; Ronalds, 92; Wheeler Gift, 97). (Cushing, C3; D.S.B., III, 3; Ekelöf, 103; Ferguson, I, 136; Ferguson Coll., 131; Krivatsy, 1988 [imperf.]; Mottelay, 110; Poggendorff, I, 355; Wellcome, I, 1171)

CADET DE GASSICOURT, Charles Louis

Dictionnaire de Chimie, contenant la théorie et la pratique de cette science, son application à l'histoire naturelle et aux arts. . . .

Paris: Imprimerie de Chaigneau aîné. An XI. 1803.

First edition. 4 vols., 8vo. I: cc., 448 pp., 1 folding engraved plate (Cadet del.). II: 560 pp., 3 folding plates. III: 726 pp., 1 folding plate. IV: 607, (1) pp., 1 folding plate. Very fine copy in contemporary gilt-ruled quarter dark-blue calf, marbled boards. From the library of a member of the Cadet family, with nineteenth-century signature in ink on page 560 (vol. II): Pattan (?) Cadet.

THE ONLY French edition of an important chemical dictionary, compiled by C. L. Cadet de Gassicourt (1769–1821), a lawyer devoted to chemistry, who, in addition to this excellent summary view of the science, also published books on pharmacy and other subjects. He was the son of the chemist Louis Claude Cadet de Gassicourt (1731–1799). “As a scientist Cadet is noteworthy for his part in the diffusion and popularization of the New Chemistry rather than for any specific discovery. His most important work, the four-volume *Dictionnaire de Chimie*, published in 1803 and dedicated to Fourcroy, replaced the older chemical dictionary of Macquer. Cadet’s *Dictionnaire* clearly elucidated the revolutionary changes that had occurred in chemistry and in chemical nomenclature” (D.S.B.). The articles are up-to-date, and several (e.g., that on attraction) are excellent. In the historical introduction (vol. I), Lavoisier is praised for his work in overthrowing the phlogiston doctrine. Cadet states that “Macquer’s dictionary, while ‘excellent for the time when that celebrated man was writing’ was now of value only for anyone seeking technological information, so great had been the changes in the theory and language of chemistry during the previous twenty years” (Neville & Smeaton). Not in Duveen, Edelstein, Morgan, Smith, Waller, etc. (Bolton, 43; D.S.B., III, 6; Ferchl, 80; Ferguson Coll., 131; Neville & Smeaton, *Annals of Science*, 38 [1981], 642, 661; Partington, III, 96; Poggendorff, I, 357; Wellcome, II, 284)

CADET DE VAUX, Antoine Alexis

Instruction Populaire sur le Blanchissage Domestique à la Vapeur. Imprimée et publiée par ordre du Gouvernement.

Paris: Au Bureau du Journal d’Économie Rurale et Domestique. An XIII. 1805.

First edition. 12mo. 39, (1), 98 pp. + 8 pp. (advertisements). With large folding engraved plate (by Gaitte) depicting plans and elevations of domestic and industrial vats. Good, crisp copy in original green boards. Bound with: Curaudau, F. R., *Traité du blanchissage à la vapeur* (Paris, 1806).

A WORK ON the laundering and whitening of various types of fabrics by means of steam, with references to Berthollet, Chaptal, Curaudau, Franklin, et al. Also covered are the use of potash, soap, washing soda, and the economic aspects of different processes for bleaching cloth. The book is divided into three parts: *Instruction populaire sur le blanchissage domestique à la vapeur* (pp. 3–14), *Instruction populaire sur le blanchissage à la vapeur* (pp. 15–40), and *Traité du blanchissage à la vapeur* (pp. 41–98). Originally trained as a pharmaceutical chemist, Cadet de Vaux (1743–1828) later became interested in the application of chemistry to agriculture, nutrition, public health, sanitation, winemaking, etc. With Fourcroy, in 1789, he published an enthusiastic report on Lavoisier’s *Traité élémentaire de chimie*. Not in Duveen, Partington, Smith, Sondheimer, Wellcome, etc. (Bolton, 349; D.S.B., III, 7; Edelstein, 2883; Ferchl, 80; Poggendorff, I, 358)

CAHOURS, August André Thomas

Recherches sur les Radicaux Organométalliques. . . .

Paris: Imprimerie de Mallet-Bachelier. 1860.

First edition. 8vo. 174 pp. Fine copy, uncut, in crimson half morocco antique, marbled boards, spine gilt-lettered and dated, with original printed wrappers bound in.

THE FIRST book devoted exclusively to the important field of organometallic chemistry. On page 174 there is the statement that the contents are extracted from the *Annales de Chimie et de Physique*, 3rd series, volumes 58 and 62. Cahours (1813–1891) carried out a great deal of research on organometallic compounds, and in the present work he describes the preparation, properties, and reactions of alkyl derivatives of aluminum, arsenic, lead, magnesium, phosphorus, and tin. It is historically significant that Cahours prepared alkylmagnesium halides long before Grignard discovered their use and versatility in the synthesis of a wide variety of organic compounds. Cahours was warden of the Paris Mint and from 1871 professor at the École Polytechnique (see Partington, IV, 429–431). The papers on organometallic chemistry in the *Annales de Chimie* (1860) are listed by Partington (IV, 510) and the D.S.B. (III, 11) but not the present book, which is a milestone in the history of chemical literature. Very rare. Not in the usual chemical bibliographies.

CALVERT, Frederick Crace

Lectures on Coal-Tar Colours, and on Recent Improvements and Progress in Dyeing & Calico Printing, embodying copious notes taken at The International Exhibition of 1862, and illustrated with numerous specimens of aniline and other colours. . . .

Manchester: Palmer and Howe, Publishers, . . . London: Trübner & Co. (1862).

First edition. 8vo. 64 pp. With 31 specimens of cloth dyed with natural and aniline colors, still in their pristine brightness. Very good copy in contemporary half sheep, marbled boards.

CALVERT (1819–1873) was professor of chemistry at the Royal Institution, Manchester. From 1835 to 1846 he lived in France, studying chemistry under the great chemist Michel Eugène Chevreul, who was famous for his work on dyestuffs. In the first lecture (pp. 3–20), Calvert describes naturally occurring dyes (e.g., indigo, lac, and madder). The second lecture (pp. 21–43) covers the newly discovered dyes derived from coal tar, and the third (pp. 44–64) describes the techniques of calico printing. On page 23 there is a specimen of cloth dyed with mauveine, discovered by William Henry Perkin in 1856. One of the earliest books on synthetic dyestuffs, the first edition is very rare. It was published again (Manchester, 1876) with an obituary on Calvert by John Stenhouse and C. E. Groves; from the second edition a French translation was made by Auguste Guérout (*Traité de la Teinture* . . . Paris, 1878; Bolton, *First Supplement*, 135). Not in the usual chemical bibliographies. (Edelstein, 2886; Ferchl, 107 [no date]; Lawrie, 27)

CAMDEN, William

Britannia: or, a Chorographical Description of the Flourishing Kingdoms of England, Scotland, and Ireland, and the Islands adjacent; from the Earliest Antiquity. By William Camden. Translated from the edition published by the author in MDCVII. Enlarged by the latest discoveries, by Richard Gough. . . .

London: Printed for John Stockdale, Piccadilly; by J. Nichols and Son, Red Lion Passage, Fleet Street. 1806.

Second “Gough” edition. 4 vols., folio. I: ccvi (recte ccviii), 415, (1) pp., 14 leaves. II: iv, 518 pp., 14 leaves. III: iv, 527, (1) pp., 15 leaves. IV: vi, 570 pp., 15 leaves. Fine engraved frontispiece portrait of Camden (dated 1789), 57 copperplate county maps (most folding), and over 100 engraved plates. Very fine set, in sumptuous contemporary diapered calf, possibly by Charles Lewis (1786–1836; see D.N.B.), spines gilt, inner and outer gilt dentelles on all covers, all edges richly gilt.

THE SPLENDID second, and best, edition, containing a detailed life of Camden; edited and greatly enlarged by the celebrated antiquary Richard Gough (1735–1809), “justly styled the Camden of the 18th century” (Watt). The first Gough edition (London, 1789–90) was in three volumes, folio. The great survey of the British Isles by the eminent antiquary Camden (1551–1623) first appeared in Latin (London, 1586). It “was an immediate success. . . . Camden . . . issued an improved edition in 1607. The first English translation, that of Philemon Holland, appeared in two parts (1610), and of those that followed, the best are by Richard Gough (1789 and 1806)” (*Encycl. Brit.*). Camden studied for years in preparation for this work, reading numerous historians (many in MS) and learning Welsh and Anglo-Saxon. An irreplaceable source of valuable information, the work contains much on the history, topography, mining, metallurgy, etc., of Britain. (Watt, I, 186z, 429g; Wellcome, II, 289)

CAMPBELL, Alexander

Dissertatio medica inauguralis, proponens Observationes quasdam, de Acido Vitriolico. Quam, annuente summo numine, . . . Gulielmi Robertson, . . . pro gradu doctoratus, summisque in medicina . . . Eruditorum examini subjecit Alex. Campbell, Britannus. . . . Ad diem 12. Septembris, hora locoque solitis. . . .

Edinburgh: Apud Balfour et Smellie, Academiae Typographos. 1778.

First edition. Sm. 4to. 2 leaves, 39, (1) pp. Fine copy in maroon half morocco antique, marbled boards, spine gilt-lettered and dated.

THE DOCTORAL dissertation of Campbell (dates unknown), presented under the direction of William Robertson (1721–1793), principal of Edinburgh University. No biographical details on Campbell have been located: he was possibly the “A. Campbell, M.D.” briefly mentioned by Watt (I, 187u), a resident of Hereford who published *Account of the successful treatment of Hydrocephalus by Mercurials* (*Med. Com.*, ix, p. 240, 1785). Almost entirely chemical in content, this dissertation describes the preparation, properties, reactions, and medicinal uses of sulphuric acid and sulphates. The works of Baumé, Glauber, Lewis, Macquer, et al., are cited. On page 28 the preparation of diethyl ether, by distilling a mixture of sulphuric acid and ethyl alcohol, is discussed. Not in Blake, D.S.B., Osler, Reynolds, Waller, Wellcome, or the usual chemical bibliographies. (Blocker, 66; Waring, 705)

CANDOLLE, Augustin Pyramus de

Physiologie Végétale, ou exposition des forces et des fonctions vitales des végétaux, pour servir de suite à l'organographie végétale, et d'introduction à la botanique géographique et agricole. . . .

Paris: Béchét Jeune, libraire de la Faculté de Médecine. 1832.

First edition. 3 vols., 8vo. I: xxxii, 462 pp.; 5 folding tables. II: 2 leaves, pp. 463–1056; 1 folding table. III: 2 leaves, pp. 1057–1579, (1); 1 folding table (colored in beige, green, and yellow). Very fine, crisp copy, in original quarter calf, marbled boards, spines gilt-ruled (by Bruyere, vol. I stamped at foot of spine).

THE FAMOUS plant taxonomist Candolle (1778–1841) was born in Geneva and obtained his medical degree at the University of Paris in 1804. Appointed professor of botany in the medical faculty of the University of Montpellier in 1807, he returned to Geneva in 1816 as professor of natural history, a position he held until he died. “The part of de Candolle’s work which is of chief interest to the agricultural chemist is found in his ‘Physiologie Végétale’ . . . published at Paris in 1832. . . . ‘Plant Physiology,’ a three-volume work of 1,579 pages, contains the most complete summary of pre-existing knowledge of plant chemistry that had yet appeared. For its wealth of detailed and carefully evaluated historical information (with bibliographic references), it is a work that can still be read with profit by the agricultural chemist” (C. A. Browne, who fully discusses this work and the importance of Candolle’s researches). A biography of Candolle is in the D.S.B. (III, 43–45), but the present title is not mentioned. A milestone in the literature of agricultural chemistry. Not in Cushing, Osler, Waller, etc., or the usual chemical bibliographies. (C. A. Browne, *A Source Book of Agricultural Chemistry*, 1944, pp. 211–219; Thornton & Tully, *Supplement*, 1978, p. 58; Wellcome, II, 294)

CANEPARIO, Pietro Maria

De Atramentis cuiuscunque Generis. Opus sanè novum hactenus à nemine promulgatum in sex Descriptiones digestum. Auctore Petro Maria Canepario Cremensi . . .

Venice: Apud Evangelistam Deuchinum. 1619.

First edition. 4to. 8 leaves, 368 pp. Woodcut vignette on title. Repairs to 4 leaves at the end and a few minor wormholes (affecting several words); otherwise near-fine copy, unpressed and uncut with wide margins, in calf antique, spine gilt-lettered and dated.

THE FIRST work on the history, sources of materials, and preparation of all types of inks, together with the most extensive account (pp. 247–368) to that time on the preparation, properties, and uses of sulphuric acid. Canepario (fl.

1619), born at Crema and professor of medicine at Venice, in this important book describes “pyrites, cadmia, magnesia, marcasite, vitriols, the preparation of inks and ink powders, and . . . uses of oil of vitriol. . . . It also deals with mineral colours and pigments, spagyric or chemical medicines prepared by alchemy, the kinds of fire, the anatomy of vitriol, etc.” (Partington). The section on printing inks discusses secret writing, erasing letters, and sympathetic ink. Canepario lists almost two hundred earlier and contemporary authors who have written on these subjects. Rare. Not in British Library, Duveen, Krivatsy, Wellcome, etc. (Edelstein, 2893; Ferchl, 83; Ferguson, I, 139–140; Ferguson Coll., 135; Ferguson, *Books of Secrets*, I, 18; Partington, II, 94; Roller & Goodman, 201; Ron, 175; Thorndike, VII, 250–252)

CANEPARIO, Pietro Maria

De Atramentis Cujuscunque Generis. Opus sanè novum, Hactenus à nemine promulgatum. In sex Descriptiones digestum. Auctore, Petro Maria Canepario, Cremensi, . . .

London: Excudebat J.M. Impensis Jo. Martin, Ja. Alestry, Tho. Dicas, apud quos veneunt ad Insigne Campanae, in Coemeterio Paulino. 1660.

First edition printed in England. 4to, 8 leaves, 568 pp. Very good copy in original calf, gilt, maroon morocco label.

THE FIRST edition (Venice, 1619) was followed by the present edition and a third (Rotterdam, 1718): all three are identical in content. Ferchl and Ferguson list several editions that are ghosts. Newton owned a copy of the present edition. (Bolton, 351; Duveen, 115; Ferchl, 83; Ferguson, I, 140 [not in Young Coll.]; Hoover, 204; Krivatsy, 2106; Wellcome, II, 295; Wing, C425b)

CANESTRINI, Antonio

Dissertatio Inauguralis Chemico-Medica de Mercurio, . . . publicae disquisitioni submisit Antonius Canestrini Tyrolensis Annaniensis . . . Disputabitur in Domo Universitatis die (blank) Mensis Julii Anno MDCCLXVIII.

Oeniponti: Typis Joann. Thomae nob. De Trattnern. (1768).

First edition. 8vo. 8 leaves, 53, (1) pp., 1 leaf. Very good copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated, original marbled wrappers bound in.

A DOCTORAL DISSERTATION on the preparation, physical and chemical properties, and medicinal uses of mercury and its compounds, presented at the University of Vienna by the Tyrol physician Canestrini (dates unknown). The history of the uses of mercury and mercuric compounds is traced from the ancients, through the medieval period, to the eighteenth century, with many references to earlier and

contemporary chemists. A discussion of the barometer light or mercurial phosphor occurs on pages 16–17, which was unknown to E. Newton Harvey (see *History of Luminescence*, 1957, p. 271 et seq.). Rare. Not listed by the usual chemical and medical bibliographers. (Waring, 472)

CANNIZZARO, Stanislao

Scritti intorno alla Teoria Molecolare ed Atomica ed alla Notazione Chimica di S. Cannizzaro. Pubblicati nel 70o Anniversario della sua Nascita (13 Luglio 1896). Palermo: Tipografia “Lo Statuto.” 1896.

First edition. 8vo. 2 leaves, 387, (1) pp., 1 leaf. Woodcut frontispiece portrait of Cannizzaro. Original dark-blue half calf, gilt, cloth boards, red morocco label. Very good presentation copy to the English physical chemist John Hall Gladstone (1827–1902), with inscription in ink on half title: “Al Sigr. John Gladstone coi complimente. S. Cannizzaro.”

THE COLLECTED edition of Cannizzaro’s works on atomic and molecular theory, published on the occasion of his seventieth birthday. Cannizzaro (1826–1910), the great Sicilian chemist and pupil of Raffaele Piria, made many contributions to organic chemistry, but his most important work was the clear exposition of the significance of Avogadro’s hypothesis as the basis for the determination of atomic and molecular weights. He first clearly defined the terms *atom* and *molecule*. This famous collection of important papers illustrates the development of his work toward the decisive establishment of a uniform and consistent system of chemistry. It begins in 1858 with his classic *Sunto di un Corso di Filosofia Chimica* (“The keystone to the edifice of modern chemistry” [Thorpe]). Also reprinted are the important *Lezione sulla Teoria Atomica*, the *Nota sulla Dissociazione*, etc. At the end is a list of Cannizzaro’s papers (1845–1896: eighty-three titles). The *Sunto* (1858) “created a revolution in chemical thought hardly less momentous than that which followed the appearance of Dalton’s *New System* . . . it may be said to have saved the position of the atomic theory” (Thorpe). Cannizzaro’s work led the way to the formulation of the periodic law by Meyer and Mendeleev. Scarce. Not in D.S.B., Duveen, Ferchl, Morgan, etc. (Bolton, *First Supplement*, 117; Edelstein, 455; Partington, IV, 491; Smith, 99; Sondheimer, 272; E. Thorpe, *History of Chemistry*, 1910, vol. II, p. 63; *ibid.*, *Essays in Historical Chemistry*, 1911, p. 513)

CAPECE, Scipio

Scipionis Capicii de Principiis Rerum Libri Duo. Eiusdem de vate maximo libri tres.

(Colophon:) Venice: Apud Aldi Filios. 1546.

First edition. 8vo. 63 leaves (E8, blank, omitted: cut away by printer). Italic letter, with guide letters. Woodcut Aldine device on title, repeated on final leaf (anchor flanked by 2 cherubs, 2 cornucopiae, etc.). Excellent crisp, clean copy, in eighteenth-century gilt-ruled russia, all edges gilt, spine gilt-lettered and dated.

CAPECE (d. 1562?), who came from an old Neapolitan family, was distinguished by his Latin poems and by a work on the Magistracy of the kingdom of Naples compared with that of Rome. Thorndike, who quotes Tiraboschi, states that this celebrated poem was first printed in 1542, but Tiraboschi was in error, as all other authorities agree that the present edition is the first. This is confirmed by the date at the end of the dedication to Cardinal Bembo (verso of title): Iul. M.D.XLV (1545). The preface by Paul Manutius discusses the novelty of Capece’s scientific ideas. In this poem Capece develops his theory that air is the basis of all matter. He claims that “air” (or, as we would now say, primordial gas) condensed to form water, rocks, various elements, metals and nonmetals, etc. A surprisingly modern viewpoint for a sixteenth-century scholar. This work was incorporated with the *De elementis . . . libri quinque* (Paris: N. Dives, 1548) by Gasparo Contareni (1483–1542). An edition also appeared at Frankfurt in 1631. A very fine example of mid-sixteenth-century Italian printing. All editions are rare, particularly the first. Not in D.S.B., Durling, Stillwell, Watt, Wellcome, or the usual chemical bibliographies. (British Library, *S.T.C. Italian Books*, 1465–1600, p. 145; Ferguson, I, 140 [not in Young Coll.]; Thorndike, V, 254)

CAPO BIANCO, Alessandro

Corona e Palma Militare di Arteglieria. Nella quale si tratta dell’Inventione di essa, a dell’operare nelle fattioni da Terra, e Mare, fuochi artificati da Giuoco, e Guerra; & d’un Nuovo Instrumento per misurare di stanze. Con una giunta della fortificatione Moderna, e delli errori scoperti nelle fortexze antiche, tutto a proposito per detto essercitio dell’Artiglieria, con disegni apparenti, & assai intendenti. Nuovamente composta, e data in luce. Dallo strenuo Capitano Alessandro Capo Bianco . . .

Venice: Appresso Gio. Antonio Rampazetto. 1598.

First edition. Folio. (4), 58 leaves. Roman letter. Large woodcut on title depicting the author with guns, cannons, and maps and 96 large woodcuts in text. Very fine copy with wide margins, in eighteenth-century decorated vellum-tipped boards, unlettered vellum spine.

A VERY RARE and finely illustrated work on artillery and fireworks. The author, captain of bombardiers at Crema in the Veneto, was also attached to the Ministry of Artillery in the service of the Venetian Republic. The beautiful woodcuts illustrate the manufacture and uses of artillery, as well as the production of gunpowder and the construction of buildings for its safe storage. On folio 26 (misnumbered 29), a large illustration of a mill for grinding the ingredients of gunpowder is shown. Capo Bianco also invented a telemeter, the uses of which he describes (ff. 51–54). The manufacture of fireworks for war and peace is described, with a discussion of their display on buildings during festive occasions. “Prima edizione molto rara” (Riccardi). Three later editions appeared: Venice, 1602, 1618, and 1647. The British Library has only the 1602 and 1647 editions. (Philip, C010.1; Riccardi, I, [1], 232; Sotheran, Cat. 850 [1936], 20959)

CARDANO, Girolamo

De Rerum Varietate Libri XVII. Adjectus est capitulum, rerum & sententiarum notatu dignissimarum Index. . . .
Basel: Henrichum Petri. 1557.

First 8vo. edition. 16 leaves (last blank), 1194 (i.e., 1203) pp., 32 leaves (pp. 891–899, pagination repeated). Roman and italic letter. Woodcut medallion portrait of Cardano, dated 1553, on verso of title (identical to that in folio ed.). Hundreds of text woodcuts (1 full page, p. 974). Ornamental woodcut capitals. With 3 folding plates (pp. 768–771, 791–792). Fine copy, in contemporary unlettered calf, rebacked.

EVEN RARER than the first folio edition published the same year, the first octavo edition is a continuation and supplement to the author’s famous *De rerum subtilitate* (1550). Encyclopedic in scope, this work contains sections on alchemy, chemistry, technology, mineralogy, botany, zoology, cosmography, etc. Included are chapters on dyestuffs and pigments, glass, paper and writing materials, metallurgy, and many other subjects. In book IX, chapter 48, Cardano describes a method of obtaining the continuous motion of an iron pointer over a circular lodestone, which is quoted in Gilbert’s *De magnete* (London, 1600). Book X, chapter 49, is on fire, and chapter 50 is on distillation (with woodcuts of apparatus). “Cardano must always be credited with having introduced new ideas that inspired new investigations” (D.S.B.). There is a large woodcut of an astrolabe (pp. 769–770). The first edition is “the only one which has not been mutilated” (Sotheran). There were many later editions. Caillet, Ferguson, and Guaita describe only the folio edition. (British Library, *S.T.C. German Books*, p. 182 [imperf.]; Dibner, 139; D.S.B., III, 66; Durling, 844; Duveen, 117; Ferchl, 84; Harvey, 86; Mottelay, 507; Neu, 815; Partington, II, 10; Poggendorff, I, 377; Sotheran, Cat.

789 [1924], 4560; Thorndike, V, 563; Wellcome, I, 1298; Wheeler Gift, 45; Wolf, I, 537)

CARDANO, Girolamo

De Subtilitate Libri XXI. Ab ipsa authoris recognitione, nunc demum emaculatiores & longe perfectiores redditi.
Lyons: Apud Stephanum Michaellem. 1580.

Fifth Lyons edition. 8vo. 718, (2) pp., 28 leaves (last blank). Woodcut printer’s device on title page and many woodcuts in text. Roman and italic letter. Small repair to fore-edge of title, and occasional neat sixteenth-century marginal annotations; otherwise very good copy, in calf antique, spine dated, gilt-lettered maroon morocco label.

CARDANO (1501–1576), Italian physician, mathematician, scientist, and adventurer, was a genius in an age that first caught the spirit of the potential of scientific studies. The *De subtilitate* (first: Nuremberg, 1550) is an encyclopedia of the natural and physical sciences. “It is a mine of facts, both real and imaginary; of notes on the state of the sciences; of superstition, technology, alchemy, and various branches of the occult” (D.S.B.). Often reprinted, it contains much on chemistry and related subjects (e.g., construction of furnaces, metals, minerals, salts, pyrophoric stones, and glass). Of considerable importance in the history of physics, Cardano points out the difference between magnetic and electric attraction. He shows remarkable insight into biological phenomena and believes that evolution plays a role in both living and inanimate things. The book describes a device for teaching the blind to read and write, which is not very different from the modern invention of Braille. Cardano also saw the possibility of teaching the deaf by signs. His many publications are discussed by Partington and Thorndike. Other editions printed at Lyons: 1550, 1551, 1554, and 1559 (all by Rovillius). The present edition is probably the fifth to be printed at Lyons, although another edition in smaller format was published by B. Honoratus in 1580. (British Library, *S.T.C. French Books*, 1470–1600, p. 91; Cushing, C81; Durling, 846)

CAREY, George G.

500 Useful and Amusing Experiments in the Arts and Manufactures; with observations on the properties of the substances employed, and their application to useful purposes. . . .

London: Printed for J. Johnston, 98, Cheapside. 1822.

First edition. 8vo. 2 leaves, pp. v, (1), 9 leaves, 306 pp. With 39 illustrations of apparatus on 4 engraved plates (1 folding). Few minor stains; otherwise very good copy, in original boards, modern gilt-ruled calf spine.

A WORK ON applied chemistry and the useful arts, in which many experiments are clearly described that can be carried out by the layperson or by persons whose chemical knowledge is limited. In the preface Carey states that, apart from the present work, "it may be justly asserted, that there is not one that contains an extensive collection of experiments relating to the various kinds of manufactures which depend upon chemical processes for their economical and successful production." There are chapters on metals, dyes and inks, bleaching, fire, heat and cold, effects of light on various salts (including those of silver), luminescence, gases, acids and alkalies, salts, detection of poisons, adulteration of food, gilding, enameling, etching, explosives, electricity, magnetism, etc. A new edition (i.e., second edition) appeared (London, 1825; Bolton, 353). Very rare. Unknown to the usual bibliographers. (Ferguson Coll., 139; Wellcome, II, 301)

CAREY, George G.

Chemistry as it is, compared with what it was: or, a Systematic View of the Present State of Chemistry, with its application to the Mechanical Arts. To which is added, a Supplement, containing original essays and communications respecting the most modern and approved operations in the useful arts. . . . London: Printed by and for William Cole. 1825.

First edition, 2 parts in 1 vol. 8vo. 2 leaves, 340 pp.; 4 leaves, 104 pp. Woodcut illustrations of apparatus in text. Very good copy, entirely uncut, in dark-blue quarter morocco antique, cloth boards, spine gilt-lettered and dated.

AN INTERESTING work dealing primarily with practical chemistry and its industrial applications. The *Supplement*, with separate signatures and pagination, contains "a number of valuable essays and original papers respecting the mechanical arts, . . . particularly those operations which are immediately dependent on chemistry for their successful cultivation" (advertisement). Carey (dates unknown) describes himself on the title page as a "lecturer on chemistry and natural philosophy." Rare. Not in D.S.B., Waller, Wellcome, or the usual chemical bibliographies. (Smith, 100)

CARL, Johann Samuel

Johann Samuel Carls Zeugnuß von Chymischer Storgerey, sonderlich in neuen Exempeln: 1. Panacea Talci. 2. Antimonii. 3. Solari. 4. Animalii. 5. Vegetabili. 6. Spiritu Mundi & Acidis dulcificatis. Erwiesen aus Chymischen und Medicinischen Gründen und Erfahrungen. Samt einer Nachrede von Fatis Chymicis.

Franckfurt und Leipzig: Bey Johann Christoph Göpner, Buchhändler. 1733.

First edition. 8vo. 8 leaves, 170 pp., 7 leaves. Fine copy in modern maroon quarter calf, patterned boards, spine gilt-lettered and dated.

CARL (1676–1757) studied medicine in Halle under Friedrich Hoffmann and Georg Ernst Stahl and was considered by Stahl to be one of his most distinguished pupils. Carl edited Stahl's lectures and wrote several works supporting Stahl's doctrines. He proved the identity of natural, synthetic, and antimonial cinnabar and gave its composition as six parts mercury to one of sulphur. The contents of the present work are described in the title. Pages 129–170 comprise a long section on alchemy. Very scarce. Not in Bolton, Ferguson Coll., Partington, Smith, Waller, Watt, Wellcome, etc. (Duveen, 119; Ferchl, 85; Ferguson, I, 145; Neu, 831; Poggendorff, I, 379)

CARLISLE, Anthony

Sir Anthony Carlisle's [sic] *Certificate*.

(London:) Langham Place, October 31st, 1832.

First edition. 8vo. 2 leaves (pp. 2–4 blank). Fine copy in contemporary dark-blue half calf, marbled boards, maroon morocco label, spine gilt. Bound with: Kyan, John H., *Copy of a letter to Beilby Thompson (on) Kyan's patent process* (London, 1834).

AN OFFICIAL endorsement of Kyan's process "for preventing the different sorts of Decay or Rot in Timber, and in the woody Fibres of Cordage and Hempen or Flaxen Clothes." Carlisle states that he had directed his attention "for many years past . . . to those Subjects." Kyan received a patent in 1832 for his process of steeping cellulosic materials in mercuric chloride solution to prevent their being attacked and degraded by fungus, insects, marine life, etc. The eminent surgeon Carlisle (1768–1840) wrote on medical, artistic, and scientific subjects (see D.N.B.). In 1800 he collaborated with William Nicholson in the famous (now classic) experiment on the electrolysis of water, showing it to be a compound of hydrogen and oxygen (see D.S.B., III, 68; Partington, IV, 20). Of the greatest rarity (possibly unique), this "certificate" was unknown to R. J. Cole (*Annals of Science*, VIII, [1952], 255–270), who gives an extensive bibliography of works by Carlisle.

CARMINATI, Bassiano

De Animalium ex Mephitibus, et Noxiis Halitibus Interitu, ejusque Propioribus Causis Libri Tres.

Laude Pompeja (Lodi): Excudebant Regii Typographi, Publica Auctoritate. 1777.

First edition. 4to. 4 leaves, 218 pp., 1 leaf (errata). Woodcut ornament on title, historiated woodcut capitals. Very good, wide-margined copy in contemporary vellum, red label gilt.

CARMINATI (1750–1830), professor of materia medica and pathology in Pavia, found that gastric juice of carnivora is neutral when fasting but becomes strongly acidic after feeding. The presence of free hydrochloric acid in gastric juice was later confirmed by Prout. Carminati was an outstanding researcher and collaborated with Spallanzani. An important contribution to the doctrine of irritability, the present book maintains that life is irritability and ceases when irritability is abolished. Noxious gases are discussed (e.g., hydrogen sulphide, sulphur dioxide, carbon monoxide, carbon dioxide, and nitrogen dioxide), with references to Cavendish, Fontana, Macbride, Priestley, et al. The mechanism of respiration, fermentation and its causes, and related biological phenomena are covered. Partington (III, 63) refers to Carminati's researches but not this work. Carminati also carried out interesting experiments on electricity (see Wheeler Gift Cat.). An important and rare work, not mentioned by the usual early medical and chemical bibliographies. (Blake, 78; Wellcome, II, 302)

CARMINATI, Bassiano

Delle Acque Minerali Artefatte e Native del Regno Lombardo Trattato Medico.

Milan: Per Francesco Sonzogno. 1829.

First edition. 8vo. 4 leaves, 161, (1) pp., 1 leaf. Fine, crisp copy, all edges gilt, in contemporary marbled boards.

A WORK IN which the history and virtues of artificial and naturally occurring mineral waters are discussed. Carminati compares the waters of Italy and the whole of Europe, including Great Britain, demonstrating considerable knowledge of their analysis and chemical composition. There are many references to Lavoisier, Fourcroy, Priestley, Magellan, Ingenhousz, Pringle, Bergman, et al. Carminati concludes that in many cases artificially prepared waters are more beneficial than those that occur naturally. Scarce. Not in the usual chemical and medical bibliographies. (Poggendorff, I, 381; Wellcome, II, 302)

CARRADORI, Giovacchino

Dissertazione sopra la Teoria di Crawford intorno al Calore Animale e alla Combustione dedicata all'illustrissimo Sig.

Dottore Gio. Giorgio Hasenohrl de Lagusius . . .

Florence: Nella Stamperia di Giuseppe Tofani. 1784.

First edition. 8vo. 255, (1) pp. With 3 identical copperplates. Very fine copy, unpressed and uncut, with wide margins, in original white pasteboards.

AN IMPORTANT commentary on the *Experiments and Observations on Animal Heat, and the Inflammation of Combustible Bodies* (London, 1779) of Adair Crawford. In the preface of the enlarged second edition of 1788, Crawford states that in the first edition of 1779 he "had fallen into considerable mistakes" in his "conclusions respecting the quantities of heat contained in the permanently elastic fluids" (i.e., gases). Carradori (1758–1818), a chemist and physician who taught at Pisa, here discusses the origin of the theories of heat, latent heat, specific heat, animal heat, combustion of various materials, Lavoisier's experiments on the burning of phosphorus in oxygen (pp. 151–153), and related subjects. He accurately describes (pp. 146–204) the battle that was then raging between the phlogistonists and the anti-phlogistonists, with many references to Lavoisier, Priestley, Scheele, et al. Carradori inclines toward the traditional phlogiston theory of combustion but admits that there is merit in Lavoisier's work. Although Carradori is listed by Poggendorff and Ferchl, the present title is not mentioned. Carradori also published *Saggio dell'opera di Crawford intitolata Experiments and Observations on Animal Heat* (Florence: Jacopo Graziolo, 1789, 81 pp.), dedicated to Felice Fontana, in which he criticizes the second edition (1788) of Crawford's book. Very rare. Not in the usual chemical and medical bibliographies. (Watt, I, 196n)

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CARRADORI, Giovacchino

La Teoria del Calore. . .

Florence: Presso Giuseppe Tofani e Com. 1789.

Second edition. 2 vols., 12mo. I: 203, (1) pp. II: 1 leaf, 190 pp., 1 leaf. Fine copy, uncut with wide margins, in original plain pasteboards, contemporary ink lettering on spines.

THE ENLARGED and best edition (first: Prato, 1787) of this work on the nature of heat, which makes no reference to the first edition. In volume I, Carradori presents his theory of heat, a modification of that of Crawford, and its application to animal heat. The second volume contains applications of the theory to combustion. There are numerous references to Fordyce, Lavoisier, Priestley, Scheele, and others. The author's theories on the nature of phosphorescence are discussed by E. N. Harvey (*History of Luminescence*, pp. 488–489, 548–549, 593). Rare. Not in the usual bibliographies. (Ferchl, 86; Poggendorff, I, 383)

CARTHEUSER, Johann Friedrich

Pharmacologia Theoretico-Practica Rationi et Experientiae Superstructa in qua Medicamentorum Officinalium usitatorum Praeparatio, Natura Modus operandi, Vires atque Usus Medicus perspicue describuntur ac solide explicantur. Cui accedunt Elementa Chymiae Dogmatico-Experimentalis, ac Tabulae Formularum Medicarum.

Venice: Apud Dominicum Deregni. 1756.

First collected edition. 3 vols., 4to., in 1. I: viii, 336 pp. II: 98, (2) pp., 1 leaf (blank). III: 1 leaf, 71, (1) pp. Divisional title pages, with woodcut, to *Elementa chymiae* and *Tabulae formularum*, each with separate signatures. Name of early owner on front free endpaper and title page, few light marginal damp stains; otherwise good copy in original mottled calf, gilt, morocco label (worn).

THE FIRST Venice edition, and first in quarto format, of three important works on pharmaceutical chemistry. The *Pharmacologia theoretico-practica* (first: Berlin, 1745), *Elementa chymiae* (first: Halle, 1736), and *Tabulae formularum* (first: Halle, 1740) all appeared in octavo format. Immensely popular, each passed through several editions. Cartheuser (1704–1777), a doctor of medicine of Halle, held the chairs of chemistry, pharmacy, and materia medica at Frankfurt (1740–1759), to which were later added the chairs of anatomy, botany, therapeutics, and pathology. A member of the Berlin Academy, famed for his knowledge of chemistry and botany, which he used in his chemical examination of plants, he directed the attention of other chemists to various vegetable products. Ferguson describes this exact edition. Not in the usual chemical and medical bibliographies. (Blake, 80; Ferguson, I, 146–147)

CASATI, Paolo

Dissertationes Physicae de Igne, auctore Paulo Casato, . . . In quibus non tantum plura ad ignis naturam spectantia physice explicantur; sed etiam solida totius scientiae physicae fundamenta traduntur. . . .

Frankfurt and Leipzig: Sumtibus Joh. Friederici Gleditsch. 1688.

Second (first Frankfurt) edition. 4to. 4 leaves, 392 pp. (misnumbered 293), 11 leaves (last blank missing). Woodcut printer's device on title, large historiated woodcut initials, woodcut head- and tailpieces. With 3 woodcuts in text (on pp. 15, 47, 54). Fine, crisp copy, with wide margins, in contemporary paneled calf, rebounded in blind-stamped morocco, dark-blue morocco label gilt, spine dated. From the Wellcome Library, with its withdrawal stamp on verso of title leaf.

A COMPREHENSIVE WORK (first edition: Venice, 1686) on all aspects of fire, light, and related phenomena. Divided

into thirteen dissertations, the book is written in the form of a dialogue between three learned men: namely, Gaspar Dandulus Junior, Hieronimus Gradonicus, and Marcus Antonius Maurocenus. Various types of luminescence and phosphorescence are described in dissertation 12 (e.g., luminous mushrooms, wood, insects, the light of the sea, and four kinds of phosphorus: Bolognian, hermetic, smaragdine, and fulgurans). There are discussions on the calcination of metals and extensive references to Boyle's chemical and physical experiments. Harvey and Thorndike cover the contents of this book in some detail. Casati (1617–1707), a Jesuit priest of Piacenza who taught mathematics and theology in Rome and Parma, published works on physics, mechanics, hydrostatics, etc., as well as this work on fire. The Venice (1686) and Parma (1695) editions are listed by Poggendorff (I, 387) and Watt (I, 199r), but not the present 1688 edition, which Duveen says is rare. Not in Bolton, Edelstein, Ferchl, Ferguson Coll., Partington, Sondheimer, Waller, etc. (Duveen, 119; Harvey, 135–137; Neu, 840; Smith, 101; Thorndike, VIII, 397; Wellcome, II, 308)

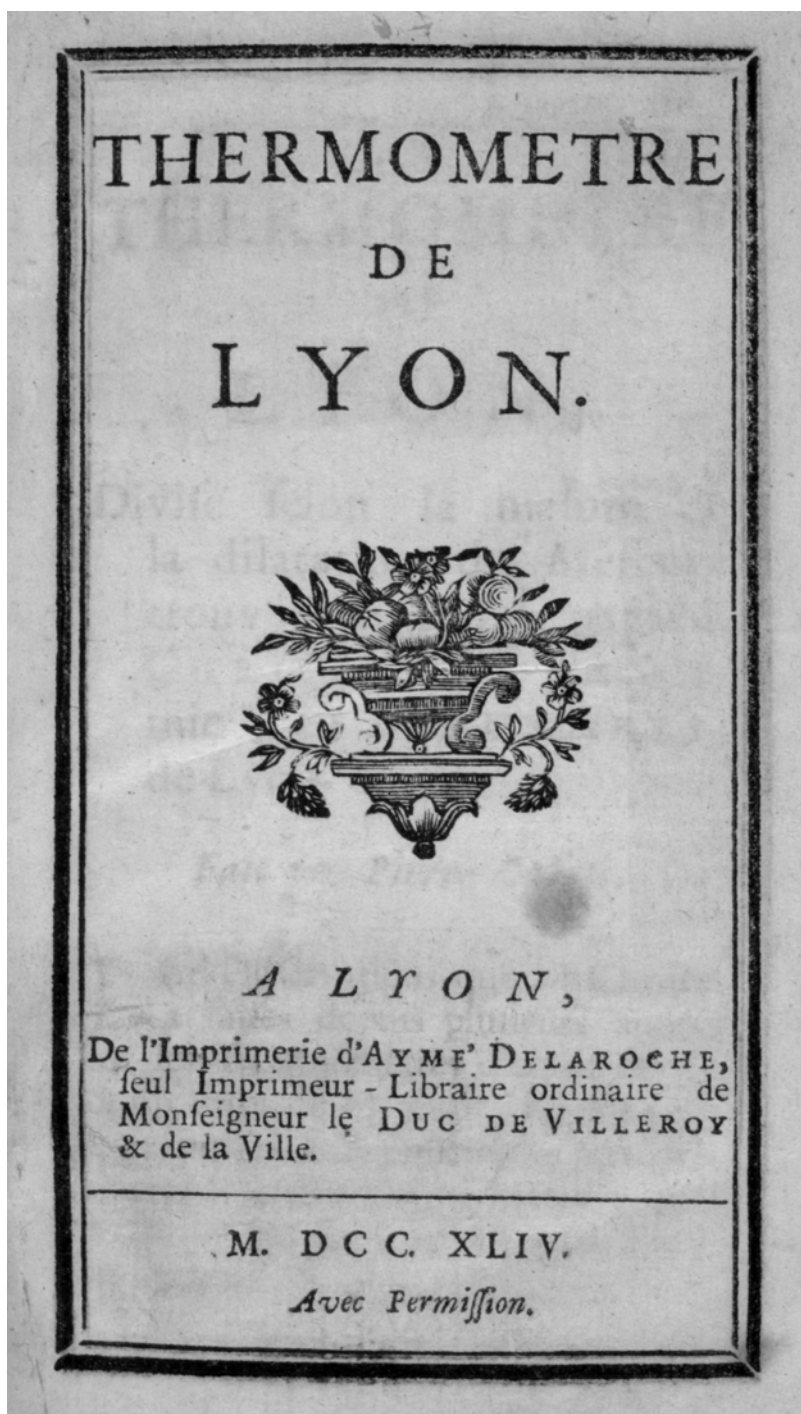
CASATI, Pierre

Thermometre de Lyon.

Lyon: De l'Imprimerie d'Aymé Delaroche, seul Imprimeur-Libraire ordinaire de Monseigneur le Duc de Villeroy & de la Ville. 1744.

First edition. 12mo. 12 pp. Ornamental woodcut on title, and each page surrounded by a double-rule border. Fine copy in modern plain boards.

THE FIRST book to describe the construction of mercury-in-glass thermometers and the first to recommend a centigrade scale, with melting ice at 0 degrees and boiling water at 100 degrees. This diminutive tract was issued by Casati, the first maker of mercury thermometers, and is certainly the first description of them in book form. "The mercury thermometer with fixed points and a centesimal graduation increasing upwards, as in the now familiar Centigrade scale, seems first to have been introduced by Christin of Lyons in 1743, and was described by him in the local papers" (Wolf, *History of Science in the 18th Century*, p. 312). Middleton (*History of the Thermometer*, pp. 101–105) discusses the work of Jean Pierre Christin on thermometers but does not mention this booklet. Of the greatest rarity. Not in the usual bibliographies.



Casati, Pierre. Thermometre de Lyon. Lyon, 1744.

CASSIUS, Andreas

De Extremo illo et Perfectissimo Naturae Opificio ac Principe Terraenorum Sidere Auro. De admiranda ejus natura, generatione, affectionibus, effectis, atque ad operationes artis habitudine. Cogitata Nobilioribus experimentis illustrata. Aurum & Adamas typi aeternitatis.

Hamburg: Sumptibus Georgii Wolffii. 1685.

First edition. 8vo. 4 leaves, 152 pp. Title page in red and black. Very good copy in original vellum, manuscript title on spine. From the library of Prince Liechtenstein, with armorial bookplate.

AN ALCHEMICAL treatise on gold and other metals, by Cassius the Younger (fl. 1668–1700). His father, Andreas (d. 1673), is reputed to have discovered “purple of Cassius” (a colloidal gold sol, made by mixing solutions of stannous chloride and auric chloride). This is described in the present work. In twelve chapters the author discusses the metallurgical, chemical, and physical properties and medicinal uses of gold and its compounds. He believed that metals are composed of mercury and sulphur, their differences depending only on the cooking of mercury and the purity of sulphur. Gold was the most perfect metal, followed by silver, copper, tin, lead, and iron, while antimony, bismuth, zinc, arsenic, and other metals were more imperfect. Ferguson, Partington, and Thorndike give further details. (Bolton, 356; Duveen, 120; Ferchl, 88; Ferguson, I, 148; Partington, II, 371; Poggendorff, I, 393; Thorndike, VIII, 395; Waring, 280; Wellcome, II, 310)

CASSOLA, Filippo

Trattato di Chimica Elementare Teorico-Pratica applicata alla medicina, alla farmacia, all'agricoltura, all'orittognosia, ed alle arti . . .

Naples: Dalla Stamperia Francese. 1830, '30, '31, '34.

First edition. 4 vols., 8vo. I: 3 leaves, 377, (1) pp., 1 leaf (errata). II: 403, (1) pp. III: 408 pp., 1 leaf (errata). IV: 510 pp., 1 leaf (errata); 10 engraved plates (Filippo Fergola inc.) of chemical apparatus. Superb set, in pristine condition, in original polished green quarter calf, spines richly gilt, marbled boards.

AN EXCELLENT and comprehensive chemical textbook, which has escaped the attention of chemical historians. The first three volumes cover inorganic chemistry, and the fourth organic chemistry. The title pages state that the author (1793–1869) was a professor of chemistry at Naples and a member of several learned societies. No other details have been located in the usual source books. Very rare. Bolton lists only the first three volumes. Not in Cushing, D.S.B., Ferchl, Waller, Wellcome, or the usual chemical bibliographies. (Bolton, *First Supplement*, 120)

CASTELLI, Bartholomeo, and BRUNO, Jacob Pancraz

Amaltheum Castello-Brunonianum: sive Lexicon Medicum . . . Ad novaq; Artis Medicae Principia accommodatum . . . Veterum, Recentiorum, quin & Novissimorum Authorum Monumentis . . . Vocabulorum Physio-Pathologicorum, Anatomicorum, Chemicorum, aliorumque Technicorum accessione amplificatum . . . Jacobi Pancratii Brunonis, . . .

Nuremberg: Sumtibus Johannis Danielis Tauberi, Bibliopolae, Literis Henrici Meyeri, Universit. Altdorfinae Typographi. 1688.

First edition. 4to. 10 leaves, 939, (1) pp. Fine engraved frontispiece portrait of Bruno at age 58, dated 1687, and engraved title page of Castelli surrounded by books and chemical apparatus. Copperplate vignette on letterpress title and many woodcut capitals in text. Penultimate leaf repaired (no loss); otherwise fine copy in contemporary calf, rebacked, original maroon label preserved.

BRUNO (1629–1709), physician at Altdorf University, has here greatly enlarged and modernized the *Lexicon medicum* of the celebrated Italian physician Castelli (ca. 1550–ca. 1607). The *Lexicon* (first: Messina, 1598; Durling, 884; Garrison–Morton, 6794) was revised and updated by Adrian Ravenstein (Rotterdam, 1651; Leyden, 1664), and progressively modernized versions appeared as late as 1792. The present edition includes information based on the medical bibliography of Van der Leyden. The preparation of acids, alkalies, salts, metals, and organic compounds is described, with the works of Dorn, Johnson, Libavius, Rolfinck, Ruland, Schroeder, Sylvius, et al., being cited. This edition (preface dated February 1688) is a new version of Bruno's *Castellus renovatus* (Nuremberg, 1682) and is not merely a second edition of that work. (*Heirs of Hippocrates*, 237; Krivatsy, 2229; Watt, I, 202c)

CASTELLI, Pietro

Breve Ricordo dell'Elettione, Qualita, et Virtu dello Spirito, et Oglia Acido di Vitriolo. Di Pietro Castello Filosofo, & Medico Romano. Nel quale s'insegna con l'Autorità di molti Medici, & Chimici Eccellentissimi il vero modo d'adoprare questi salutiferi Medicamenti in più di 170. Infermità. Opera utillissima, & necessaria non solo à Medici, & Spetiali, ma anco à qual si voglia Persona, che desidera la propria Sanità. Rome: Apresso Giacomo Mascardi. 1621. Con Licenza de' Superiori.

First edition. 4to. 30 pp., 1 blank leaf. Woodcut ornament on title page and large historiated woodcut capital on page 5. Fine, crisp copy, in full vellum antique.

A RARE TREATISE on the preparation and uses of sulphuric acid in pharmacy. It is the earliest monograph on sulphuric acid listed by Waring. The book is well documented, and on pages 3–4 are listed 67 iatrochemists and physicians whose works are mentioned in the text (e.g., Libavius, Sala, Penotus, Gesner, Beguin, Croll, and Paracelsus). The differences between “oil of vitriol” (concentrated sulphuric acid) and “spirit of vitriol” (more dilute sulphuric acid) are discussed on pages 8–10. Pages 10–27 list 172 diseases for the treatment of which sulphuric acid is recommended, each with references to the physicians who wrote on them. Castelli (c. 1590–1656) was a professor of medicine in Rome. He was later called to Messina, where he founded the famous botanical garden. Thorndike (vols. VII and VIII) discusses Castelli’s writings but not the present work. Not in Cushing, Duveen, Edelstein, Ferguson, Ferguson Coll., Neu, Osler, Partington, Rosenthal, Smith, Waller, Watt, et al. (Bolton, 356; Ferchl, 88; Poggendorff, I, 394; Waring, 705; Wellcome, I, 1343)

CASTIGLIONE, Giovanni Onorato, and CASTIGLIONE, Branda Francesco

Prospectus Pharmaceutici Editio Secunda, sub quo Autidontarium Mediolanense Galeno-Chimicum Excellentissimi Senatus Iussu, . . . demandatum Ioanni Honorato Castillioneo . . . nunc vero Brandae Francisci Castillionei . . . opera, studio, & labore noviter emendatum, auctum, & in tres partes divisum . . . prima . . . regulas, & tempora Pharmacopolis aptiora . . . ac distincta componendi methodo. Secunda Mantissam Chimicam Spagiricam Nicolai de Lemmery . . . in Italicum traductam. . . . Tertia Tractatus de Tinctura Coralliorum, Alkaest, & Auro Potabile, . . .
Milan: Ex Typographia Caroli Iosephi Quinti . . . 1698.

Second, much enlarged edition. Folio. 23 leaves, 484 pp.; 18 leaves, 216 pp.; 118, (2) pp. Engraved title page (pharmacy and allegorical mining scene), and 1 full-page plate (chemical apparatus). Engraved title slightly cropped at top and bottom; otherwise very good copy, in eighteenth-century quarter calf, boards, spine richly gilt. From the library of Alessandro Volta (1745–1827), with “Sigr. Volta” on verso of penultimate flyleaf.

AN IMPORTANT pharmacopoeia produced at the instigation of the Milanese Senate by G. O. Castiglione (d. 1679) and his son, Branda Francesco (d. 1712), each being physician to the Duke of Milan. The first edition (Milan, 1668; *Heirs of Hippocrates*, 525) contained only two parts. The present edition has been greatly enlarged by B. F. Castiglione with an Italian version of Lemery (*Corso di Chimica*) completely different from other contemporary translations of 1695 and 1697. Parts II and III have divisional titles and are entirely chemical in content. The engraved title is identical to that of the 1668 edition. The page facing the first

page of the first part is dated January 1699, although all titles are dated 1698. This copy has an important provenance, having belonged to the great pioneer of electrical science, Volta, who owned a country house at Como about twenty-five miles from Milan, where this work was published. (Ferchl, 426; Ferguson, II, 228–229 [imperf.]; Krivatsy, 2598; Partington, III, 30; Smith, 102)

CASTLE, George

The Chymical Galenist: a Treatise, wherein the Practise of the Ancients is reconcil'd to the new Discoveries in the Theory of Physick; shewing, that many of their Rules, Methods, and Medicins, are useful for the Curing of Diseases in this Age, and in the Northern parts of the World. In which are some Reflections upon a Book, intituled, Medela Medicinae. By George Castle, Dr. of Physick, lately Fellow of All-souls Colledge in Oxon. . . .

London: Printed by Sarah Griffin for Henry Twyford in Vine Court, middle Temple, and Timothy Twyford at Inner Temple Gate. 1667.

First edition. 8vo. 8 leaves, 196 pp., 6 leaves (contents). Three leaves (signatures A6–A8) of “The Epistle Dedicatory” lacking; otherwise a very good copy in speckled calf antique, dark-green gilt-lettered label, spine gilt-ruled and dated. From the Wellcome Library, with withdrawal stamp on verso of title leaf.

CASTLE (c. 1635–1673), a physician, received a B.A. from Balliol College, Oxford, in 1654 and an M.D. in 1665. He practiced in Westminster and was physician to the Charterhouse. The present work criticizes the *Medela Medicinae* (1665) of Marchamont Nedham (1620–1678), in which that author suggested various educational reforms and complained of the neglect of chemistry in medical practice. In his dedication to Dr. Thomas Millington (1628–1708) Castle says: “We need not . . . in our age, apprehend any danger to Physick from an over-fondness of Antiquity. The growing evil is the other Extream, a fancy of rejecting the wisdom of the Ancients, for the follies and whimsies of some phantastical Pseudo-chymists” (signature A4r). Castle attempts to establish a sensible balance between the traditional Galenical physicians and those who use the new “chemical” medicines. Boyle’s works, especially *The Sceptical Chymist* (1661), are discussed in detail, as are the works of Harvey, Sennert, Willis, et al. On page 10 Castle admits that “the advantages which have come from Chymistry to Medicine . . . have found a more speedy and pleasant way of curing Diseases, than probably was known to the Antients.” Not in Bolton, Duveen, Edelstein, Ferchl, Ferguson, Ferguson Coll., Partington, Smith, Thorndike, Waller, etc. (Cushing, C123; Neu, 847; Osler, 2253; Watt, I, 202; Wellcome, II, 312; Wing, C1233)

CASTORIN, Petrus

Dissertatio Metallurgica de Minerarum Docimasia Humida, quam . . . praeside Mag. Torb. Bergman, . . . publice ventilandam sistit Petrus Castorin, Vestmannus. . . die 7 Jun. Anno 1780.

Uppsala: Apud Joh. Edman. (1780).

First edition. 4to. 1 leaf, 40 pp. Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

AN IMPORTANT dissertation on the analysis of minerals using wet chemical techniques, presented by Castorin with Torbern Bergman presiding. It is a revised and greatly augmented version of the *Chemisk afhandling om järnmalmsofproberande . . .* (Uppsala, 1777), by Anders Schedin (Moström, 116). Again revised, it appeared in the *Opuscula Physica et Chemica* (Uppsala, 1780, vol. 2). French, German, English, and Russian translations appeared, on which see Moström. Rare. Not in the usual early chemical bibliographies. (Moström, 159; Partington, III, 183)

CASTRILLO, Hernando

Historia, y Magia Natural, o Ciencia de Filosofia Oculta, con nuevas noticias de los mas profundos misterios, y secretos del Universo visible, en que se trata de Animales, Pezes, Aves, Plantas, Flores, Yervas, Metales, Piedras, Aguas, Semillas, Parayso, Montes, y Valles. . . . Donde trata de los secretos, que pertenecen a las partes de la tierra. . . .

Madrid: Por Juan Sanz, Portero de Camara de su Magestad, y Impresor de su Real Consejo, y a su costa. 1723.

Third edition. 4to. 5 leaves, 342 pp., 8 leaves (index). Title page within ornamental woodcut border. Occasional minor worming with loss of some letters, but not affecting legibility; otherwise very good copy in contemporary vellum.

BORN IN Cadiz, the Jesuit theologian Castrillo (1586–1667) published this single work: *Magia Natural o Filosofia oculta*. Only the first part appeared in 1636, and this was reprinted in 1649, both of these being in the British Library. Another edition, somewhat enlarged, also appeared (Madrid, 1649, 4to.), which was again reprinted (Madrid, 1692, 4to.). The present third (probably final) edition is a reprint of the 1692 edition to which most authorities refer (e.g., Ferchl and Ferguson). Divided into six books, two chapters are devoted to the history of natural magic in Spain, while in other books the author discourses on astrology, the elements, natural history, springs, etc. Although Ferguson (I, 149) states that this treatise is “not on Chemistry or Alchemy,” the sixth book is of particular chemical interest as it discusses alchemy (pp. 298–299) as well as metals and minerals (pp. 282–342). The contents of this work are discussed by Ferguson (*Books of Secrets*, I, pt. 4, pp. 25–26) and by

Thorndike (VII, 333–334). The 1723 edition is of great rarity, and only the copy in the National Library of Medicine (Blake, 81) could be traced in the usual bibliographies.

CATO, Marcus Porcius, and VARRO, Marcus Terentius

De Re Rustica Libri, per Petrum Victorium, ad veterum exemplarium fidem, suae integritati restituti.

Lyons: Apud Seb. Gryphium. 1549.

First Gryphius edition. 8vo. 226 pp., 7 leaves (index, final blank leaf lacking). Woodcut printer's device (a griffin) on title page. Historiated woodcut capitals. Italic letter. Fine, crisp copy, in limp vellum antique, with silk ties.

CATO (234–149 B.C.) “was the first Latin prose writer of any importance, and the first author of a history of Rome in Latin. His treatise on agriculture (*De Agricultura*, or *De Re Rustica*) is the only work by him that has been preserved. . . . It contains a miscellaneous collection of rules of good husbandry, conveying much curious information on the domestic habits of the Romans” (*Encycl. Brit.*). Cato's work was later merged with that of Varro (116–27 B.C.) and with the writings of Columella and Palladius. “Classic descriptions of the ancient oil mills and presses are found in the works of Cato” (Browne, *A Source Book of Agricultural Chemistry*, 1944, p. 14). Of chemical interest are descriptions of the making of wines, oils, salts, alcohol, perfumes, fertilizers, etc. According to Partington (I, 217), this work was written ca. 160 B.C. An example of sixteenth-century French fine printing. Rare. (British Library, *S.T.C. French Books, 1470–1600*, p. 96; Kress, 30; Rothamsted Catalogue, 178; Watt, I, 203m)

CATO, Marcus Porcius, VARRO, Marcus Terentius, and VICTORIUS, Petrus

Libri De Re Rustica, M. Catonis Lib. I. M. Terentii Varronis Lib. III. Per Petrum Victorium, ad veterum exemplarium fidem, suae integritati restituti.

Paris: Ex officina Roberti Stephani typographi Regii. 1543.

First edition? 8vo. 120 leaves. Woodcut printer's device on title. Printed in italics throughout. Fine copy in sixteenth-century maroon paneled calf with gilt ornamentation on both covers, rebaked with original gilt spine laid on, all edges gilt. Bound with: Victorius, Petrus, *Explicationes suarum in Catonem, Varronem, Columellam castigationum* (Paris, 1543).

A CLASSIC WORK on the agricultural methods of the Romans, including subjects of chemical and technological interest (e.g., preparation of wines, oils, fermentation, inorganic salts, medicines and pharmaceuticals, perfumes, and dyes). Edited by Petrus Victorius, or Vettori (1499–1585),

the dedication is dated 12 July 1541. A beautifully printed book by Robert Estienne (1503–1559), who was the first to use the famous device of a man plucking olives from a tree, with the motto “Noli altum sapere,” as on the present title page. Estienne was royal printer to King Francis I. Ronald B. McKerrow (*An Introduction to Bibliography*, 1928, pp. 277–279) describes the Estienne family as “the most important of the great printer families of the sixteenth century.” Very rare. Not in the Ministry of Agriculture and Fisheries Library, London, nor is it in Durling, Stillwell, Wellcome, etc. (Watt, I, 203m)

CATTIER, Isaac

Divers Traictez, a scavoire, de la Nature des Bains de Bourbon, & des abus qui se commettent à present en la boisson de ces eaux; avec une instruction pour s'en servir utilement. De la Macreuse. De la Poudre de Sympathie. Response à Monsieur Papin Docteur en Medecine touchant la Poudre de Sympathie, en laquelle est traicté de l'Esprit Universel, & des proprietiez de l'Ayman.

Paris: Chez Pierre David, au Palais, à l'entrée de la Gallerie des Prisonniers. 1651.

First edition, second issue. 8vo. 4 leaves, 148 + 56 pp., 2 leaves. Woodcut head- and tailpieces and woodcut capitals. Fine copy in contemporary vellum. Bound with another work by Cattier and two works by Nicolas Papin.

CATTIER (fl. 1637–1657) was professor of medicine at Montpellier and royal physician. In addition to his comments on the use and abuse of the baths and waters of Bourbon, in the present work Cattier criticizes the *De Pulvere Sympathico* (Paris, 1650) of Nicolas Papin, stating that the powder of sympathy had been overrated as a cure for wounds. The privilege is dated 13 August 1650, and although the title is dated 1651, copies must have been circulated in the latter months of 1650. Nicolas Papin obtained a copy and immediately responded with *La Poudre de Sympathie, deffendue contre les objections de Mr Cattier* (Paris, 1651), the *Epistre* of which is dated 20 January 1651. Cattier then immediately published *Response à Monsieur Papin . . . touchant la Poudre de Sympathie* (Paris, 1651), the *Epistre* of which is dated 21 March 1651. The heated controversy seems then to have died down. These works are all very rare. Not in Bolton, Cushing, Ferchl, Partington, Smith, Waller, Watt, etc. (Caillet, 2094; Duveen, 127 [1st issue, 1650]; Ferguson, II, 167 [not in Young Coll.]; Ferguson Coll., 143; Goldsmith, C488; Guaita, 1233; Neu, 851 [first issue, 1650]; Osler, 3613 [lacks first part]; Thorndike, VII, 505; Wellcome, II, 314)

CATTIER, Isaac

Response à Monsieur Papin Docteur en Medecine, touchant la Poudre de Sympathie. Par Isaac Cattier Docteur en Medecine de l'Université de Montpellier, Conseiller et Medecin ordinaire du Roy.

Paris: De l'Imprimerie d'Edme Martin, ruë S. Jacques, au Soleil d'or. Les Exemplaires se distribuent chez l'Auteur Place Dauphine. 1651.

First edition. 8vo. 87 + (1) pp. Errata on final page. Large woodcut on title (basket of fruit and flowers). Fine copy in contemporary vellum. Bound with another work by Cattier and 2 works by Nicolas Papin.

THIS IS Cattier's response to Nicolas Papin's *La Poudre de Sympathie, deffendue . . .* (Paris, 1651), the *Epistre* of which is dated 20 January 1651. The *Epistre* of the present work is dated 21 March 1651, so Cattier wasted no time in rebutting Papin's tract. This counterblast by Cattier evidently settled the controversy. On pages 64–65 there are references to Gilbert and Cabeo on the properties of magnets. Cattier (on pp. 86–87) describes the powder of sympathy and the weapon salve as superstitious remedies, their healing powers being illusory. Nevertheless, belief in these remedies persisted for at least two more decades, as evidenced by the appearance of collected works on the powder of sympathy (e.g., the *Theatrum Sympatheticum* [Nuremberg, 1660, and later editions]). As the wording on the title shows, this book was distributed by the author from his house and is of great rarity. Guaita lists a copy of the four works (by Cattier and Papin) bound together in contemporary vellum and states that such a collection is “fort rares et que l'on trouve bien difficilement réunis.” This fourth work of the collection is the rarest. Unknown to Bolton, Cushing, Duveen, Ferchl, Partington, Smith, Waller, Watt, etc. (Caillet, 2095 [“Fort rare”]; Ferguson Coll., 143; Guaita, 1233; Osler, 3614)

CATULLO, Giovanni

Memoria Mineralogico-Chimica sopra l'acqua minerale di Civillina scoperta dal Signor Giovanni Catullo. A cui s'aggiungono le storie delle malattie sanate con la medesima. Verona: Tipographia Ramanzini. 1819.

First edition. 8vo. 2 leaves, 72 pp. Small woodcut on page 72. Fine, crisp copy in contemporary green boards, covers and spine gilt-ruled.

A SCARCE BALNEOLOGICAL work on the mineral waters of the Mount Civillina region of Italy, which were discovered in 1818 by Catullo, a professor of natural history and mineralogy at the University of Verona. Analyzed by the famous chemist Brugnatelli, the waters were shown to contain

sulphates of iron, calcium, and magnesium, as well as carbonic acid and the carbonates of iron and calcium, and other salts. The waters were found to be effective in treating gastric and intestinal disorders. Catullo had it bottled and sold it through distributors in Venice, Padua, Verona, Milan, and other cities. The first forty pages comprise a chemical and mineralogical description of these waters, with details on their quantitative analyses by several notable chemists. These analyses throw much light on the reagents and techniques used at the time. Poggendorff mentions this title under Tommaso Catullo (b. ca. 1784), a professor of natural history in Padua, but he was probably mistaken in attributing it to him. Giovanni Catullo was obviously a different person, and in the text of this work he is described as being at the University of Verona. Not in Bolton, Duveen, Edelstein, Ferchl, Osler, Partington, Smith, Waller, Watt, Wellcome, etc. (Poggendorff, I, 398)

CAVALLERO, Joseph Garcia

Theorica, y Practica, de la Arte de Ensayar, Oro, Plata, y Vellon Rico. Danse reglas para ligar, religar, alear, y reducir qualesquiera cantidades de oro, y plata a la ley del reyno. Corrigense la Reglas, y Tablas de Juan de Arphe, y aumentanse otras nuevas, para mayor claridad de los que quisieren aprender esta Facultad. . . . Por D. Joseph Garcia Cavallero . . . Madrid: En la Imprenta de Augustin Fernandez. 1713.

First edition. 8vo. 20 leaves, 478 pp., 1 leaf. Large woodcut ornament on leaf 16 (verso) and small woodcut on page 194. With numerous tables throughout. Tiny marginal wormholes on several leaves; otherwise very good copy in original vellum, old ink lettering on spine.

A RARE SPANISH work on the theory and practice of assaying the purity of gold, silver, copper, and their alloys, by Cavallero (fl. ca. 1700), chief assayer to Philip V (1683–1746). Divided into three sections, the first and longest describes assaying processes, impurities found in precious metals (e.g., antimony, carbon, and lead), and apparatus used (e.g., cupels and furnaces). The second section discusses alloys of gold, silver, copper, and other metals; their uses in making coins; and several processes for refining the metals. The brief third section covers various alloys used for coinage. Cavallero mentions the earlier works on assaying by Agricola, Ercker, Libavius, Pantheo, and others. Extensive tables are given for many different alloys, taken (with additions) from the *Quilatador de oro, plata, y piedras* (Valladolid, 1572; Annen, 36; Hoover, 54; Sinkankas, 215) of Juan de Arphe y Villafane (1535–1603). (Roller & Goodman, 443; Wellcome, III, 87)

CAVALLERY, Antoine

Dissertation sur la Cause de la Chaleur et de la Froïder des Eaux minerales. Qui a remporté le Prix, au Jugement de l'Académie Royale des Belles Lettres, Sciences & Arts. Par le R. P. Antoine Cavallery, de la Compagnie de Jesus. Bordeaux: Chez Pierre Brun, Imprimeur Aggrégé de l'Académie Royale, rue Saint Jâmes. 1739.

First edition. 12mo. 2 leaves, 47, (1) pp. Woodcut printer's device on title and large woodcut on page 35. Fine copy in contemporary mottled calf, gilt, with gilt-lettered maroon morocco label. Bound with 3 other works on mineral waters by Bordeu (1750), Hoffmann (1740), and Rouelle (1757) and with a catalogue of dissertations that had won prizes from the Bordeaux Academy (1713–1739). From the library of Professor Franz Sondheimer, with his bookplate on the first endpaper.

CAVALLERY (1698–1765) was professor of mathematics in the University of Cahors and later of theology at Toulouse. He published on the physical cause of the tides and the transparency and opacity of substances. The latter work was awarded a prize by the Bordeaux Academy. The present *Dissertation* also received one of two prizes from the Académie Royale des Belles Lettres, Sciences, and Arts in 1739, the other going to Bertier. The author herein explains the warmth or coldness of mineral waters in terms of chemical and physical principles, with references to the works of Newton, Lemery, Rohault, Mariotte, et al. Not in Bolton, Caillet, Duveen, Edelstein, Ferchl, Ferguson, Neu, Partington, Smith, Waller, Watt, etc. Poggendorff (I, 405) mentions Cavallery but not this title. (Sondheimer, 279; Wellcome, II, 315)

CAVALLERY, Antoine

Dissertation sur la Cause de la Diaphanéité et de l'Opacité des Corps. Qui a remporté le Prix, au Jugement de l'Académie Royale des Belles Lettres, Sciences & Arts. Par le R. P. Antoine Cavallery, de la Compagnie de Jesus. Bordeaux: Chez Pierre Brun, Imprimeur Aggrégé de l'Académie Royale, rue Saint Jâmes. 1738.

First edition. 12mo. 2 leaves, 52 pp., 2 leaves. Woodcut on title. Small piece cut from inner corner of lower margin, nowhere close to text; otherwise a very good copy, all edges gilt, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated, with original marbled wrappers bound in.

CAVALLERY (1698–1765), a Jesuit priest, was professor of mathematics at Cahours and later professor of theology at Toulouse. For this dissertation, on why substances are transparent or opaque, he received the prize of the Royal Academy of Bordeaux in 1738. Of importance to the history of physics and chemistry, this essay discusses the work of New-

ton, Perrault, Malebranche, Descartes, Reaumur, Huygens, et al., with references to the atomic theory, the corpuscular theory of light, etc. The last two leaves list all the prizes awarded by the Bordeaux Academy from 1715 to 1738. Not mentioned by the usual early chemical bibliographies. The copy in the Wellcome Library is imperfect (title page missing). Rare. (Poggendorff, I, 405; Wellcome, II, 315)

CAVALLO, Tiberius

Description of an improved Air-Pump, and the Account of some Experiments made with it.

London, 1783.

First edition. 4to. Pages 435–452, extracted from the *Philosophical Transactions of the Royal Society*, vol. 73, read 3 July 1783. With 3 large folding copperplates of the air pump and its parts (Basire sc.). Fine, crisp copy, in modern brown cloth, black morocco label, gilt.

A DETAILED ACCOUNT of an efficient and greatly improved vacuum pump, jointly designed by Cavallo and the scientific apparatus maker Jacob Barnard Haas, who is described by Cavallo (p. 436) as “an ingenious workman in the philosophical-instrument way.” The pump was capable of achieving a pressure as low as one-thousandth of an atmosphere. On pages 450–452 Cavallo describes electric discharges in air at very low pressures (e.g., 0.025–0.001 atmosphere). At 0.0125–0.0025 atmospheres he observed a “beautiful diffused light inclining to red or purple, and filling the whole receiver.” At 0.001 atmosphere, the greatest vacuum achieved, a “diffused light, filled equally every part of the cavity of the jar. It had hardly any reddish hue.” A very important paper in the history of vacuum technology. (D.S.B., III, 154; Partington, III, 300; Poggendorff, I, 406; Watt, I, 205a)

CAVALLO, Tiberius

The Elements of Natural or Experimental Philosophy. . . .

London: Printed by Luke Hansard, for T. Cadell and W. Davies. 1803.

First edition. 4 vols., 8vo. I: xxiii, (1), 358 pp. II: 1 leaf, 558 pp. III: 1 leaf, 572 pp. IV: 1 leaf, 427, (1) pp., 18 leaves (index). With 29 folding plates (Js. Basire sc.), and 1 folding table (vol. IV, p. 190). Very good copy in contemporary calf, re-backed. From the library of the Society of Writers to the Signet (Edinburgh), with their arms in gilt on both covers of each volume.

CAVALLO'S LAST important work, containing a great deal of information on chemistry (e.g., combustion, gases, composition and synthesis of water, reduction, voltaic piles, precipitation, ethers and esters, and luminescence and phos-

phorescence) and physics (e.g., pneumatics, caloric, optics, magnetism, and electricity). The fourth volume (pp. 316–356) contains information on ballooning additional to that in the author's *History and practice of aerostation* (London, 1785). Several American editions appeared (first: Philadelphia, 1813, 2 vols., 8vo.), as well as a German translation by J. B. Trommsdorff (Erfurt, 1804–1806, 4 vols., 8vo.). (D.S.B., III, 154; Partington, III, 300; Roller & Goodman, 216; Watt, I, 205a; Wellcome, II, 316; Wheeler Gift, 648)

CAVALLO, Tiberius

The History and Practice of Aerostation. . . .

London: Printed for the Author, etc. 1785.

First edition. 8vo. viii, 326 pp., 4 leaves (index). With 2 folding copperplates of chemical apparatus and balloons (Basire sc.). Title leaf laid down; otherwise a fine copy in nineteenth-century maroon half roan, marbled boards, spine richly gilt.

ONE OF the earliest and most important books on aerostation published in England, which was preceded by the appearance of Vincent Lunardi's *An Account of the First Aerial Voyage in England* (London, 1784). “The present work contains the history and practice of this new subject” (Preface). A pioneer of aeronautics, Cavallo describes (pp. 33–34) how, in 1782, he studied the “possibility of constructing a vessel, which, when filled with inflammable air (hydrogen), would ascend into the atmosphere. . . . [T]he only success I had, was to let soap-balls (bubbles), filled with inflammable air, ascend by themselves rapidly into the atmosphere; which was perhaps the first sort of inflammable-air balloon ever made.” Cavallo's *History of Aerostation* “was certainly the most important account of the subject published in England” (Hodgson). Details of the generation of hydrogen are given, the apparatus used being illustrated in the plates. According to Wolf, this work, and that by Faujas de Saint-Fond (1783–84), are two of the best on the subject to appear in the eighteenth century. Very rare. Not in Blake, Cushing, Waller, Wellcome, or the usual chemical bibliographies. (Boffito, I, 193; Brockett, 2610; Caproni, 102; D.S.B., III, 154; Hodgson, *History of Aeronautics in Great Britain*, pp. 95–97; Neu, 855; Poggendorff, I, 406; Sotheran, Cat. 846 [1936], 20623 [“Rare”]; Tissandier, 107; Watt, I, 204z; Wolf, *A History of Science in the 18th Century*, pp. 581–582)

Fig. 1. *Fig. 2.* *Fig. 3.* *Fig. 4.* *Fig. 5.* *Fig. 6.* *Fig. 7.* *Fig. 8.* *Fig. 9.* *Fig. 10.* *Fig. 11.* *Fig. 12.*

Numerical Names	1 st	b 2 ^d	2 ^d	b 3 ^d	# 3 ^d	4 th	# 4 th	5 th	b 6 th	# 6 th	b 7 th	# 7 th	8 ^{ve}
Literal Names	C	# C	D	b D	E	F	# F	G	b G	A	b A	B	C
Vibrations in one Second	128,4	137.	144,4	154.	160,6	171,2	180,5	192,6	205,4	214.	228,3	240,8	256,8
Proportional lengths of the Strings	3600.	3375.	3200.	3000.	2880.	2700.	2560.	2400.	2250.	2160.	2025.	1920.	1800.
	1.	$\frac{15}{16}$	$\frac{8}{9}$	$\frac{5}{6}$	$\frac{4}{5}$	$\frac{3}{4}$	$\frac{32}{45}$	$\frac{2}{3}$	$\frac{5}{8}$	$\frac{3}{5}$	$\frac{9}{16}$	$\frac{8}{15}$	$\frac{1}{2}$
The Notes of an Octave													

Cavallo. Elements of . . . Philosophy. London, 1803.

CAVALLO, Tiberius

A Treatise on the Nature and Properties of Air, and other Permanently Elastic Fluids. To which is prefixed, an Introduction to Chymistry. . . .

London: Printed for the Author. 1781.

First edition. Large 4to. xii, 835, (1) pp., 4 leaves (index). With 3 detailed folding copperplates of apparatus (Basire sc.). Very fine copy with wide margins, in original speckled calf, maroon morocco label, gilt. From the library of William Brodie of Brodie, with eighteenth-century engraved armorial bookplate.

THE SON of a Neapolitan physician, Cavallo (1749–1809) settled in London in 1771. Largely self-taught in chemistry and physics, he showed great skill in designing and improving apparatus and, in 1779, was elected a Fellow of the Royal Society. In this voluminous textbook of chemistry, hydrostatics, and pneumatics, dedicated to Sir Joseph Banks, president of the Royal Society, Cavallo critically examines most of Priestley's work and adds new investigations on the atmosphere, fixed and inflammable airs. He accepts the phlogiston theory but also quotes the work and opinions of Lavoisier. Also described are some extensions of experiments by Ingenhousz on the effect of light on the growth of plants. "His investigations into the influence of air and light on the growth of plants are very original, and advanced him very nearly to the discovery of many new truths in connection with organic life" (D.N.B.). A German translation appeared in 1783. (Blake, 82; Bolton, 357; D.S.B., III, 153–154; Duveen, 127–128; Edelstein, 470; Ferchl, 89 [wrong date, 1782]; Morgan, 124; Neu, 856; Partington, III, 300; Poggendorff, I, 406; Smith, 103; Sondheimer, 280; Sotheran, Cat. 832 [1932], 5100 ["Rare"]; Watt, I, 204z; Wellcome, II, 316)

CAVANDER, Carl Plantin

Dissertatio Chemica de Sulphate Barytae. . . Praeside Mag. Johanne Gadolin, . . . Pro laurea publicae censurae modeste subjecit Carolus Plantin Cavander, Bor. Fenn. In Aedibus Scholae Cathedr. die XXV Junii MDCCCV. . . .

Åbo: Typis Frenckellianis. (1805).

First edition. 4to. 2 leaves, 14 pp. Mint copy, in maroon quarter cloth antique, marbled boards, spine labeled: Gadolin. 11 Dissertations. 1792–1805.

A DISSERTATION ON the history, mineralogy, and physical and chemical properties of native baryte (impure barium sulphate), presented by Cavander under the direction of Gadolin, professor of chemistry at Åbo. The discovery by Vincenzo Cascariolo in 1603 of the phosphorescent property of the so-called Bolognian (or Bononian) phosphorus (i.e., calcined baryte) is discussed. The crystalline habit of

baryte is also described, with references to the work of Romé de Lisle and Haüy. Chemical investigations carried out by earlier and contemporary chemists on barium sulphate are also covered. (Waring, 286)

CAVENDISH, Henry

Experiments on Air. By Henry Cavendish, Esq., F.R.S. and A.S. Read at the Royal Society, June 2, 1785.

London: Printed by J. Nichols. 1785.

First edition (author's separate). Large paper, 4to. 15, (1) pp. With folding copperplate of apparatus (Basire sc.). Few pinpoint marginal wormholes; otherwise very good copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

THE SECOND classic paper by Cavendish in which he reported his discovery of the composition of nitric acid. In the first paper, read to the Royal Society on 15 January 1784, he announced his discovery of the composition of water. "Cavendish's second paper on 'Experiments on Air' (read 2 June 1785), deals with the possible phlogistication of air by the electric spark, which he had left undecided. The experiments showed that the diminution in volume of air on sparking is not due to 'the burning of some inflammable matter in the apparatus,' but 'the real cause of the diminution is very different from what I suspected, and depends upon the conversion of phlogisticated air into nitrous acid.' . . . Cavendish found that although most of the oxygen and nitrogen gases were absorbed by sparking over alkali, there was a small residue. . . . In 1894 Lord Rayleigh discovered that this small residue, prepared in the same manner as by Cavendish, did differ from the rest and that atmospheric nitrogen contains about 1 per cent of a new gas, argon" (Partington, III, 339–341). The present is a very rare author's separate from the *Philosophical Transactions of the Royal Society*, of which only about twenty-five copies were usually printed. Not in Blake, Bolton, Duveen, Edelstein, Ferguson Coll., Neu, Waller, etc. (A. J. Berry, *Henry Cavendish*, 1960, pp. 61–65, 178–179; D.S.B., III, 157; Ferchl, 89; Partington, III, 339; Poggendorff, I, 406; Smith, 103; Watt, I, 205m; Wellcome, II, 316)

CAVENDISH, Henry

Observations on Mr. Hutchins's Experiments for Determining the Degree of Cold at which Quicksilver Freezes. By Mr. Cavendish, F.R.S. Read at the Royal Society, May 1, 1783.

London: Printed by J. Nichols. 1784.

First edition (author's separate). Large paper, 4to. 1 leaf, 26 pp. Very fine, crisp copy, uncut, in quarter speckled calf antique, marbled boards, maroon label gilt. From the library of Robert B. Honeyman (Sotheby auction, 30 April 1979).

A CLASSIC PAPER in the history of thermometry and freezing mixtures, which appeared in the *Philosophical Transactions of the Royal Society* (vol. 73 [1783], pp. 303–328). Discussing this paper, Partington quotes Blagden as authority that Cavendish (1731–1810) was the first in England to freeze mercury, on 26 February 1783, shortly before this paper was read to the Royal Society. “Some well-designed experiments . . . were made at Fort Albany on Hudson’s Bay in the winter of 1781–82 by Thomas Hutchins, at the suggestion of Henry Cavendish and Joseph Black. The experiments were very extensive, made usually with freezing mixtures. . . . Mercury was frozen in a small vessel around the thermometer bulb” (Middleton, *A History of the Thermometer* [1966], p. 123). It is of historical importance to note that Joseph Adam Braun was the first to freeze mercury, on 25 December 1759, using a mixture of very cold snow and nitric acid. Braun (q.v.) reported the experiment to the St. Petersburg Academy of Sciences, 6 September 1760. The present is a very rare author’s separate from the *Philosophical Transactions*, of which only about twenty-five copies were usually made. Cavendish published eighteen papers in the *Philosophical Transactions*, including ten on chemistry, and left a large amount unpublished. Not in Duveen, Edelstein, Morgan, Smith, Waller, etc. (Ferchl, 89; Honeyman, 653; Neu, 858; Partington, III, 308; Poggendorff, I, 406; Sondheimer, 281; Watt, I, 205m)

CAVENDISH, Henry, and KIRWAN, Richard

Four papers from the *Philosophical Transactions of the Royal Society*, vol. 74, as follows:

1. *Henry Cavendish: Experiments on Air. Read Jan. 15, 1784. Pp. 119–153.*
2. *Richard Kirwan: Remarks on Mr. Cavendish’s Experiments on Air. In a Letter from Richard Kirwan, Esq., F.R.S. to Sir Joseph Banks, Bart., P.R.S. Read Feb. 5, 1784. Pp. 154–169.*
3. *Henry Cavendish: Answer to Mr. Kirwan’s Remarks upon the Experiments on Air. Read March 4, 1784. Pp. 170–177.*
4. *Richard Kirwan: Reply to Mr. Cavendish’s Answer. Read March 18, 1784. Pp. 178–180.*

First editions. 4to. Fine copies in half sheep antique, marbled boards, spine gilt-lettered.

1. A FAMOUS PAPER in the history of science in which Cavendish announced his discovery of the composition of water. He passed an electric spark through a mixture of dephlogisticated air (i.e., oxygen) and inflammable air (i.e., hydrogen), and the resulting explosion produced water.

Although the experiments were conducted in the summer of 1781, Cavendish did not publish the results until January 1784 because he was not satisfied with his understanding of them. The delay occasioned a controversy involving Watt and Lavoisier over priority of discovery, but the credit clearly belongs to Cavendish.

2. A dissenting view of Cavendish’s previous paper. At the end it is dated “London, Jan. 29, 1784.”

3. On fixed air (i.e., carbon dioxide) and other gases, in rebuttal to Kirwan’s paper (no. 2 above). This is the only occasion on which Cavendish replied publicly to criticism.

4. Kirwan’s parting shot at Cavendish, which seems to have settled the controversy.

(A. J. Berry, *Henry Cavendish*, 1960, pp. 69–88; D.S.B., III, 157; Edelstein, 472; Ferchl, 89; Partington, III, 329; Poggendorff, I, 406; Smith, 103)

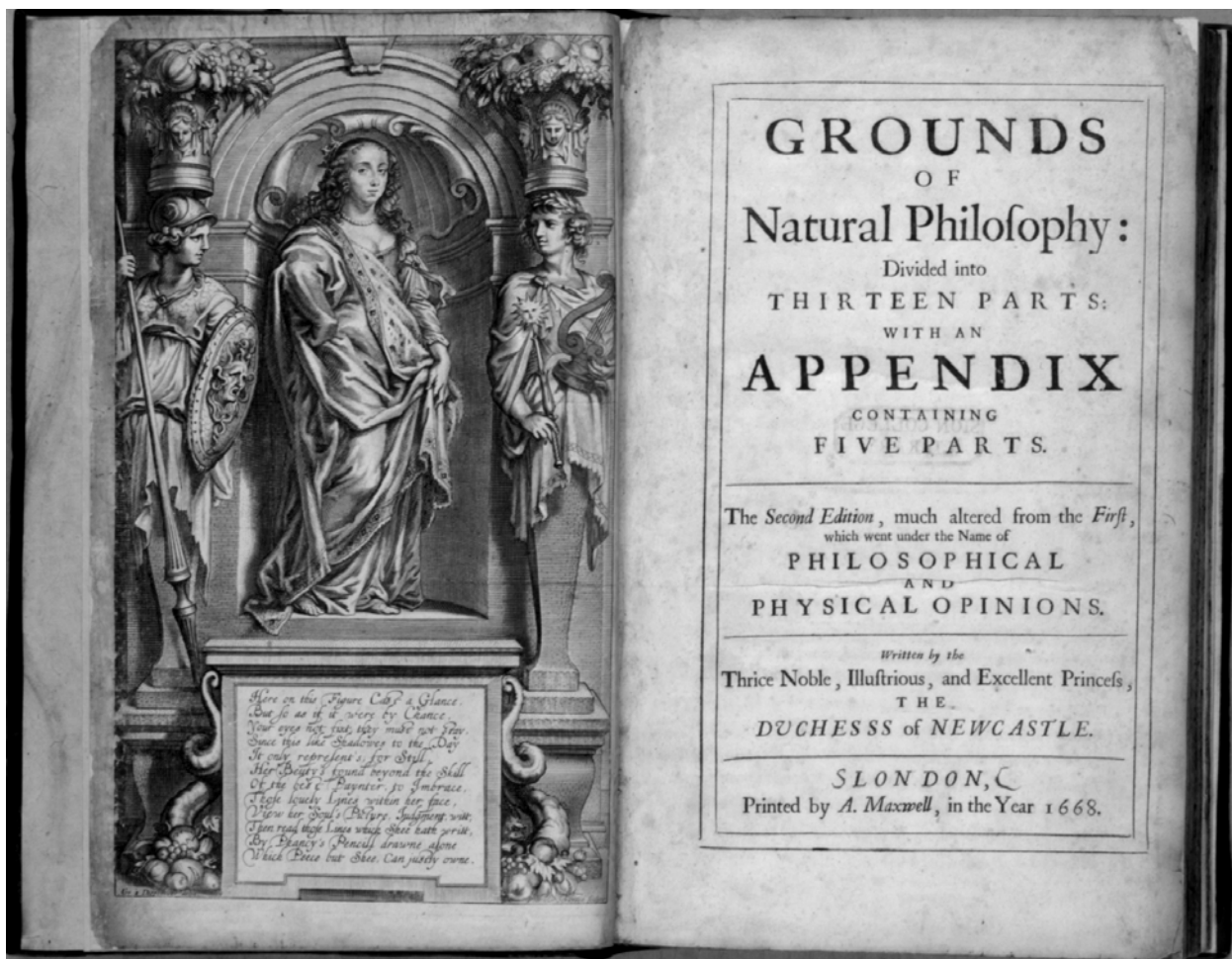
CAVENDISH, Margaret (Duchess of Newcastle)

Grounds of Natural Philosophy: divided into Thirteen Parts: with an Appendix containing Five Parts. The Second Edition, much altered from the First, which went under the Name of Philosophical and Physical Opinions. Written by the Thrice Noble, Illustrious, and Excellent Princess, the Duchess of Newcastle.

London: Printed by A. Maxwell, in the Year 1668.

Second edition. Folio. 6 leaves, 311, (1) pp. With beautiful engraved full-length portrait frontispiece of the author (P. van Schuppen sculpsit). Canceled stamp of Sion College Library on verso of title. Fine copy in contemporary calf, rebacked, maroon morocco label, spine dated.

ORIGINALLY APPEARING as *Philosophical and Physical Opinions* (London, 1655; Wing N863), in this scarce second and best edition, the author made numerous additions, alterations, and corrections, so that it is almost an entirely new work. Although Aristotelian in her outlook, she was receptive to many of the new discoveries of the Royal Society. Topics of chemical and medical interest include chapters on matter, motion, vacuum, elements, metals, density, fire, “oyle of vitriol,” mineral waters, stones, magnets, glass, drugs, blood transfusions, cancers, and various diseases. Some of her ideas are amazingly perceptive for the time, while others display her lack of scientific training. Her clear and direct style of writing gives a remarkably accurate picture of the seventeenth-century layman’s views of scientific and general knowledge. She was buried in Westminster Abbey. (Krivatsy, 8305; Watt, I, 205p; Wing, N851)



Cavendish, Margaret. *Grounds of Natural Philosophy*. London, 1668.

CAVENDISH, Margaret (Duchess of Newcastle)

Observations upon Experimental Philosophy: To which is added, The Description of a New Blazing World. Written by the Thrice Noble, Illustrious, and Excellent Princess, The Duchess of Newcastle. The Second Edition.

London: Printed by A. Maxwell, in the Year 1668.

Second edition. Folio. 37 leaves, 392 pp., 4 leaves, 158 pp., 1 leaf. From Sion College Library, with stamp (canceled) on verso of title. Fine copy in contemporary paneled calf, rebaked, gilt-lettered maroon morocco label, spine dated.

A FASCINATING AND extraordinary work, inspired by the discoveries recorded in Robert Hooke's *Micrographia* (1665). Being of a very practical and down-to-earth turn of mind, the author was quite unimpressed by the microscope: "It is both time and labour lost; for the inspection of the exterior parts of vegetables doth not give us any knowledg how to Sow, Set, Plant and Graft." She observes that "the inspection of a bee will bring him no more honey, nor the inspection of corn more grain." She goes on to show that she can give as much information as any microscope by the use of sound reasoning. Her objection is based on the fact that microscopical examination cannot tell the observer anything about the chemical composition of what is examined. There are sections of chemical interest, e.g., "Of Chymistry, and Chymical Principles" (pp. 313–336), fire, salts, atoms, universal medicine, fermentation, and respiration. Of medical interest are discussions of human sense and reason, whether animal parts separated from their bodies have life, the spleen, anatomy, the plague, etc. There are sections on the microscopical examination of the eyes of flies, snails, leeches, charcoal, etc. The second part, separately paginated, is entitled *The Description of a New World* (London: A. Maxwell, 1668), with its own title page and a separate entry in Wing, although it was almost certainly issued with the *Observations*. It was inspired by Utopian voyages and appears in Esdaile (p. 182). Rare. The first edition appeared in 1666 (Wing, N857). Not in Cushing, Osler, Reynolds, Wellcome, etc. (Watt, I, 205op; Wing, N858 & N850)

CAVENDISH, Margaret (Duchess of Newcastle)

Philosophical Letters: or, Modest Reflections upon some Opinions in Natural Philosophy, maintained by several Famous and Learned Authors of this Age, expressed by way of Letters. By the Thrice Noble, Illustrious, and Excellent Princess, The Lady Marchioness of Newcastle.

London: Printed in the Year 1664.

First edition. Folio. 8 leaves, 542 pp., 1 leaf. Very fine copy in original mottled paneled calf, spine unlettered.

MARGARET CAVENDISH (c. 1624–1674) married William Cavendish (1592–1676), Marquis (later Duke) of Newcastle, in 1645 and lived in Paris, Rotterdam, and Antwerp during the Cromwellian period. On the restoration of Charles II, the marquis was reinstated, and Margaret devoted herself to the composition of philosophical works, plays, and poems. Strictly self-educated, she was a beautiful and very intelligent woman whose interests ranged over a wide field, including chemistry, physics, biology, natural history, and medicine. She was the first Englishwoman to publish extensively and the first to write about science. In this, one of her scarcest works, she put forth her opinions on the ideas of Thomas Hobbes, Descartes, Henry More, and the chemist Van Helmont. A passionate student of natural philosophy, she covers most of the major problems. The book is written in the form of a series of letters to an unnamed lady and is dedicated to the University of Cambridge. Of chemical interest is her long discussion (pp. 234–411) of Helmont's *Physick Refined* (1662) and his *Ternary of Paradoxes* (1650). She takes exception to many of Helmont's statements and attempts to give rational explanations of her own, many of which (in the light of later discoveries) make good sense. (Watt, I, 205o; Wing, N866)

CAVENTOU, Joseph Bienaimé

Nouvelle Nomenclature Chimique, d'après la classification adoptée par M. Thenard; ouvrage spécialement destiné aux personnes qui commencent l'étude de la chimie, et à celles qui ne sont pas au courant des nouveaux noms. Par J. B. Caventou, Pharmacien des Hôpitaux et Hospices civils de Paris. Paris: Chez Crochard, . . . et . . . Gabon. 1816.

First edition. 8vo. 2 leaves, xvi, 298 pp., 1 leaf (errata). Large folding table. Very good copy in contemporary quarter calf, gilt, marbled boards.

A VALUABLE REFERENCE work in dictionary form, containing the ancient and modern nomenclature of chemical elements and their compounds, preceded by discussions of their history and physical and chemical properties. The extensive table of synonyms (pp. 189–298) is very useful to the chemical historian for identifying the modern names of compounds from their earlier names. One of the earliest publications of the distinguished chemist Caventou (1795–1877), a Paris apothecary and professor of toxicology at the École de Pharmacie, who, with Pelletier, became famous for the discovery in 1818–20 of the alkaloids brucine, cinchonine, quinine, strychnine, and veratrine. They also discovered caffeine in 1821, independently of Robiquet and Runge. A revised and enlarged edition appeared (Paris: Méquinon-Marvis, 1825, 8vo.). Very scarce. Wellcome gives the wrong pagination. Bolton, 44, and Waller, 11100, list only the second edition of 1825. Not in Ferchl, Ferguson

Coll., Morgan, Partington, Poggendorff, Watt, etc. (D.S.B., III, 159; Duveen, 128; Edelstein, 480; Smith, 103; Wellcome, II, 316)

CAVENTOU, Joseph Bienaimé

Nouvelle Nomenclature Chimique, d'après la classification adoptée par M. Thenard; ouvrage spécialement destinée aux personnes qui commencent l'étude de la chimie, et à celles qui ne sont pas au courant des nouveaux noms. Par J. B. Caven-tou, . . . Seconde édition, revue, corrigée et augmentée.

Paris: Chez Méquignon-Marvis, Libraire-Éditeur. 1825.

Second edition. 8vo. xxxvi, 371, (1) pp. With large folding table of nomenclature. Very fine, uncut copy, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated, original printed wrappers bound in.

THE GREATLY enlarged and corrected second, final, and best edition, containing a report on the first edition given by N. L. Vauquelin to the Institut Royal de France. This edition, which is rarer than the first, "was made worthwhile because of the many new discoveries and other changes in chemistry" (Cole). Not in D.S.B., Duveen, Edelstein, Ferchl, Morgan, Partington, Poggendorff, etc. (Bolton, 44; Cole, 243; Smith, 103; Waller, 11100; Wellcome, II, 316)

CELSUS, Aulus Cornelius

De Re Medica Libri Octo. Item, Q. Sereni liber de Medicina. Q. Rhemmi Fannii Palaemonis de Ponderibus & Mensuris liber. Vindiciani carmen. Omnia ex diversorum codicum diligentissime collatione castigata, additis ad marginem variis lectionibus.

Lyons: Apud Ioan. Tornaesium, Typogr. Reg. Lugd. 1587.

Third J. de Tournes edition. 16mo. 16 leaves, 575, (1) pp. Woodcut printer's device on title page and last page. Roman and italic letter. Ornamental woodcut capitals. Very good copy, in seventeenth-century half vellum, marbled boards.

A NICELY PRINTED pocket edition of this classic work, the third to be printed by Joannes Tornaesius (i.e., Jean de Tournes) at Lyons. Two earlier editions in 16mo. format had been printed and published in 1549 and 1554 by Tornaesius, in conjunction with Guillaume Gazeau (i.e., G. Gazeus). Copies of these earlier editions are in the British Library, National Library of Medicine, and Wellcome Library. This edition is not in the British Library, Cushing, Osler, Reynolds, Waller, Watt, etc. (Blocker, 71; Durling, 920; Wellcome, I, 1403)

CELSUS, Aulus Cornelius

In hoc volumine haec continentur. Aurelii Cornelii Celsi Medicinae Libri. VIII. Quam emendatissimi, Graecis etiam omnibus dictionibus restitutis. Quinti Sereni liber de medicina et ipse castigatiss. Accedit index in Celsum, et Serenum sane quam copiosus.

(Venice: Aldus & Andrea Asulanus, 1528).

First Aldine edition. 8vo. 8 leaves, 164 leaves (numbered on recto only). With woodcut of the Aldine anchor on the title and verso of folio 164. Very good copy in contemporary limp vellum. Occasional marginal notes in a sixteenth-century hand. From the Wellcome Library, with their withdrawal stamp on verso of title leaf.

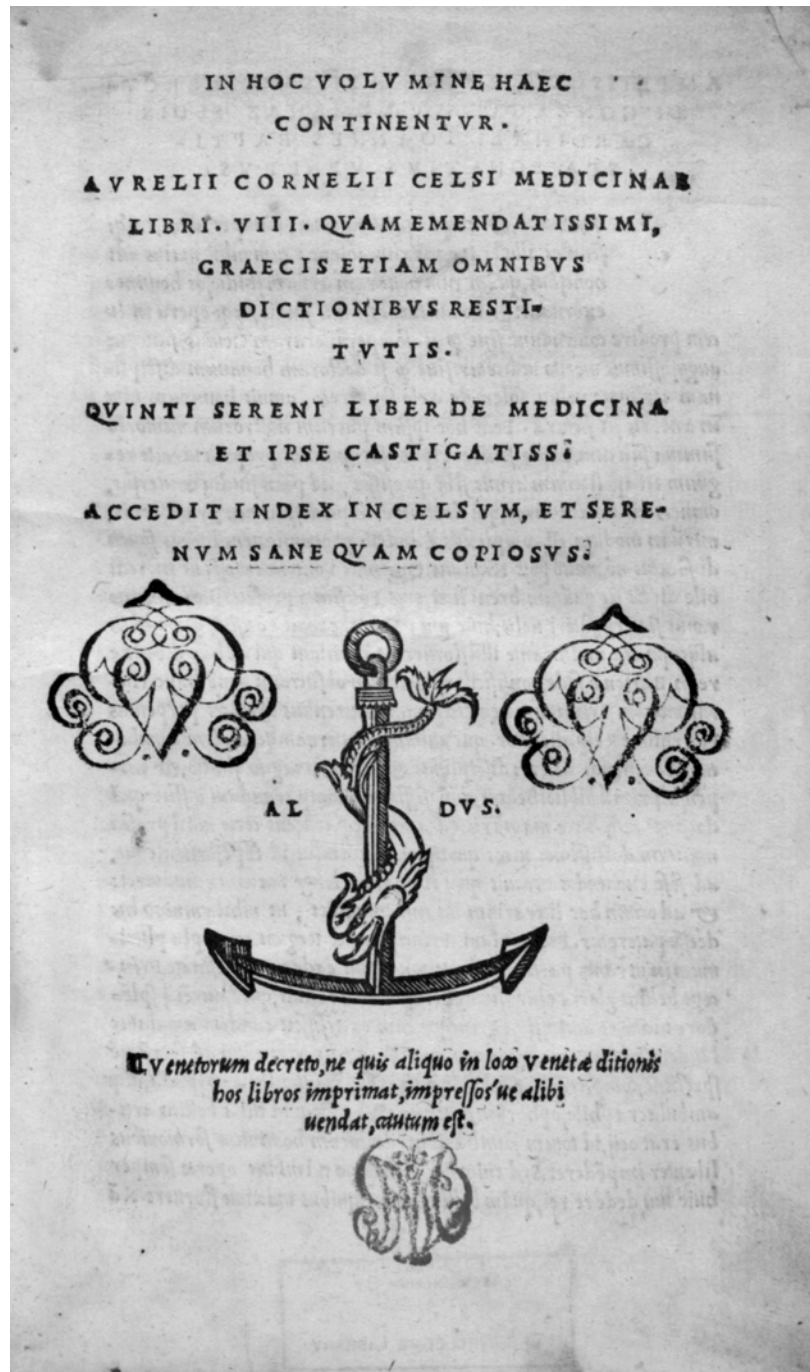
THE RARE first Aldine edition, and of the over one hundred extant editions of Celsus, among the handful selected by Garrison as "most interesting." Printed in elegant italic, this is one of the most attractive from the point of view of book art. The oldest medical document after the Hippocratic writings, compiled ca. 30 A.D., and representing seventy-two medical authors only imperfectly preserved from antiquity, the eight books of Celsus were among the first medical books printed (1478; see Garrison-Morton, 20). They contain the first Western history of medicine, the first use of the term *insanity* (*insania*), the first sketch of heart disease (*cardiacus*), etc., all written in a superb style that won for Celsus the title of "Cicero medicorum." In the surgical chapters are found the first account of the use of ligature, excellent descriptions of lateral lithotomy and herniotomy, and the earliest discussion in Western literature of surgical remedies for mutilations—what is now termed plastic surgery—including operations for the restoration of the nose, lips, eyelids, ears, etc. The *Liber de medicina* of Sereni (Samonicus) often accompanies Celsus, as its author was also a notable stylist—the first known Latin composer of medical teaching in verse. Books V and VI of Celsus on pharmacology are of chemical interest, on which see Partington (I, 188–189). (Cushing, C147; Durling, 908; Osler, 291; Reynolds, 877; Thornton, 8; Watt, I, 208p; Wellcome, I, 1397)

CENSORINUS

De Die Natali. Henric. Lindenbrogius recensuit; et Notis, iterata hac editione passim adauctis, illustravit.

Leyden: Ex Officina Joannis Maire. 1642.

First Lindenbrog edition. 8vo. 8 leaves, 250 pp., 20 leaves. Woodcut title vignette, several astrological woodcuts in text, and folding astrological plate (facing p. 88). Fine copy in contemporary vellum. From the library of the zoologist Charles Atwood Kofoid (1865–1947), with his bookplate. Bound with: Gans, J. L., *Corallorum Historia* (Frankfurt, 1630).



Celsus. Medicinae Libri VIII. Venice, 1528.

THE CELEBRATED Roman chronologer, antiquary, grammarian, and critic Censorinus (fl. third century) carried out important calculations on the calendar. This work on birth dates contains information on many famous personages of the ancient world, including scientists, physicians, and philosophers. There are references to the works of Aristotle, Euclid, Hippocrates, Pliny, Seneca, and others, and the book is of interest in the history of chemistry, physics, mathematics, astronomy, medicine, etc. Watt cites editions from 1497 to 1767. The present version, by Heinrich Lindembrog (1570–1642), is the first recension by this author. The dedication, signed by J. Maire, is dated November 1642. (Watt, I, 208x; Wellcome, II, 320)

CESALPINO, Andrea

De Metallicis Libri Tres. Andrea Caesalpino auctore.
Rome: Ex Typographia Aloysij Zannetti. 1596.

First edition. 4to. 8 leaves, 222 pp., 1 leaf. Engraved arms of Pope Clement VIII on title. Fine copy, sumptuously bound in crimson calf antique, gilt dentelles on covers, inner gilt dentelles, spine richly gilt, black morocco label gilt.

THE RARE first edition of a major work on metallurgy, mineralogy, and chemistry. A distinguished Renaissance scientist, Cesalpino (1519–1603) was professor of botany and medicine in Pisa and first physician to Pope Clement VIII. Succeeding Aldrovandi as director of the botanic garden in Bologna, he made original contributions to chemistry, physiology, botany, and geology. His theory of the circulation of the blood (*Quaestionum peripateticarum*, 1571) predated Harvey's, and his *De plantis* (1583) laid out the principles of botany (used by Tournefort and Ray) leading to the source of the Linnaean system. The *De metallicis*, in three books, discusses metals, minerals, salts, alum manufacture, acids and alkalis, crystallization, glass, increase in weight of lead on calcination, mineral waters, and many other important chemical subjects. The true nature of fossils is also recognized. Mottelay indicates that this book, Agricola's *De re metallica*, and other sixteenth-century works formed the scholarly background for Gilbert's *De magnete* (1600). There are several references to America (e.g., p. 104 mentions Vespucci). Chapter 55 (pp. 151–153) is on the magnet and lodestones. Not in Caillet, Durling, Duveen, Ferguson, Neu, Smith, Sondheimer, Waller, etc. (Adams, 261; Bolton, 349; Cushing, C152; D.S.B., XV, 81; Edelstein, 3795; Ferchl, 80; Ferguson Coll., 144; Hoover, 212; Mottelay, 502; Partington, II, 89–92; Poggendorff, I, 358; Thorndike, VI, 334–335; Watt, I, 181u; Wellcome, I, 1183)

CESALPINO, Andrea

De Metallicis Libri Tres. Andrea Caesalpino Aretino. Medico & Philosopho auctore.

Nuremberg: Recusi, curante Conrado Agricola. 1602.

Second edition. 4to. 8 leaves, 222 pp., 1 leaf. Large woodcut on title and historiated woodcut initials in text. Fine copy with wide margins, bound in boards covered with a fifteenth-century vellum manuscript illuminated in red.

APART FROM omitting the dedication to Pope Clement VIII, which was replaced in this edition by one to Dr. Philip Scherb (1555–1605), this is an exact paginary reprint of the first edition (Rome, 1596), including the incorrect numbering of pages 177–184. Partington discusses the book in detail, stating that the author “shows a sound knowledge of ancient and contemporary material.” “In treating of metals proper Cesalpino sets forth the views of the alchemists, but does not have much sympathy with them” (Thorndike). In 1650 Guy Patin bought a copy of this edition and made notes in it, which is “especially interesting since Cesalpino is credited with concepts of the circulation of the blood before Harvey's statement, and Patin was one of Harvey's most virulent opponents” (Dawson, Cat. 174 [1966], no. 59). The second edition is almost as rare as the first. Not in Cushing, D.S.B., Edelstein, Ferchl, Ferguson, Mottelay, Osler, Poggendorff, Smith, Sondheimer, Waller, etc. (Bolton, 349; Caillet, 1888; Duveen, 112; Ferguson Coll., 144; Hoover, 213; Neu, 868; Partington, II, 90; Watt, I, 181u; Wellcome, I, 1184)

CESI, Bernardo

Mineralogia, sive Naturalis Philosophiae Thesauri, in quibus metallicae concretionis medicamentorumque fossilium miracula, terrarum pretium, colorum & pigmentorum apparatus, concretorum succorum virtus, lapidum atque gemmarum dignitas continentur. . . .

Lyons: Sumptib. Jacobi & Petri Prost. 1636.

First edition. Folio. 8 leaves, 626 pp., 35 leaves. Half title, title page in red and black with large engraving, many historiated woodcut capitals, head- and tailpieces. Text in double columns. Very minor embrowning of some gatherings; otherwise fine copy in contemporary paneled calf, ruled in gilt with gilt fleurons, rebaked with original gilt spine laid on. Bookplates (eighteenth century): J. F. Revolot, Medici Regii, and Henri Tardivi.

THE FIRST large-scale work to use the term *mineralogy* and apparently the first to employ the word in the modern sense. Cesi (Caesius, 1581–1630), a Jesuit who taught at Modena and Parma, compiled this posthumously published and comprehensive book from the works of numerous earlier writers. The medieval and early Renaissance lapidaries were

all small books, which could not compete in scope with Cesi's 626 double-column folio pages. Cesi's contemporaries found his discussion of the signs for discovering minerals and ores useful. For modern scholars "such detailed references are given to the original works . . . that it is of great value as a guide to those who desire to explore the jungle of the earlier literature" (Adams). This book is of value as a storehouse of all that was known on the subject up to the time of Porta. Inorganic pigments and colors, metals, ores, gems, fossils, the philosopher's stone, etc., are covered. There is a chapter on the magnet from the point of view of Porta but not of Gilbert. The dedication is to Carolus de Neufville, not to Franciscus Estensis (as in many copies), and is rare in this state. (Adams, 164; Ferchl, 90; Ferguson Coll., 132; Goldsmith, C145; Hoover, 214; Partington, II, 94; Poggendorff, I, 413; Thorndike, VII, 254; Ward & Carozzi, 457; Wellcome, I, 1190a)

CHALLANT, Comte de

Procédé pour Obtenir par l'Union du Phosphore de Kunkel à des Matières Inflammables renfermées Hermétiquement dans un Tube de Verre des Bougies qui s'allument au simple contact de l'Air. Par M. Le Comte de Challant.

Turin: Chez Jean-Michel Briolo. 1782.

First edition. 8vo. 29, (1) pp., 1 leaf (blank). With the half title. Very fine copy, in pristine condition, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated, with the original marbled wrappers bound in.

AN IMPORTANT early work in chemical technology, describing the author's invention of a self-lighting candle or match, based on the reaction of yellow phosphorus (contained in a thin glass tube) and sulphur-containing wax. On breaking the tube, the phosphorus immediately reacted with atmospheric oxygen (emitting heat) and inflamed the wax. Challant (dates unknown) describes some interesting antecedents. It seems likely that the original experimenter may have been a pupil of G. B. Beccaria, who was then actively working on the relationship between electricity and fire at the University of Turin (see E. N. Harvey, *History of Luminescence*, 1957, which does not mention the present work). A very rare pamphlet that has remained unknown to historians and bibliographers of chemical technology and is not in any of the major early chemical libraries. Partington (IV, 197) briefly mentions Challant and the early manufacture of phosphorus-containing matches (called Turin tapers) but does not describe the present work.

CHAMBERS, Ephraim

Cyclopaedia: Or, An Universal Dictionary of Arts and Sciences. . .

London: Printed for James and John Knapton, etc. 1728.

First edition. 2 vols., folio. I: 2 leaves, xxx, (2), 1–128, *125–*128, 129–154, 161–184, 75–144, 141–368, 161–380, 1–198, 197–252, 245–282 pp. II: 1 leaf, pp. 365–682, 733–740, 737, 342–343, 740, 745, 342–343, 748–749, 350–351, 752–753, 354–355, 756–852, 855–856, 841–944, 951–1038, 1–270, 273–320, 323, 322–392 (pagination irregular, collation and text complete). Titles in red and black. Superb double-page allegorical frontispiece, and 20 large copperplates (1 double-page, 6 folding), numerous woodcuts in text. Fine, crisp copy, in original blind-paneled reversed calf, rebounded, maroon morocco labels.

THE FIRST modern encyclopedia, containing an elaborate cross-indexing system. The irregular pagination is due to the fact that it was issued in parts. Chambers (ca. 1680–1740), who was originally apprenticed to a London cartographer, decided that the *Lexicon Technicum* (London, 1704, 1710) by John Harris (c. 1667–1719) needed to be updated and expanded to include articles on subjects in the humanities and other topics of general interest. He adapted the works of Moreri and Bayle to the common-sense climate of the English Enlightenment, and introduced cross-referencing, which was then a novelty. The *Cyclopaedia* was immediately successful and was revised and imitated throughout the eighteenth century. There were many editions, and the first is very scarce. The French *Encyclopédie* was originally planned as a translation of it, and Samuel Johnson based the style of his *Dictionary* on this work. In recognition of the value of this milestone publication, Chambers was elected F.R.S. in 1729. These volumes contain much on the sciences, especially chemistry and chemical technology. (Collison, 103; D.S.B., IV, 86; Harvey, 161; Knight, 196; Lowndes, I, 406; P.M.M., 171; Watt, I, 210m; Wolf, II, 38)

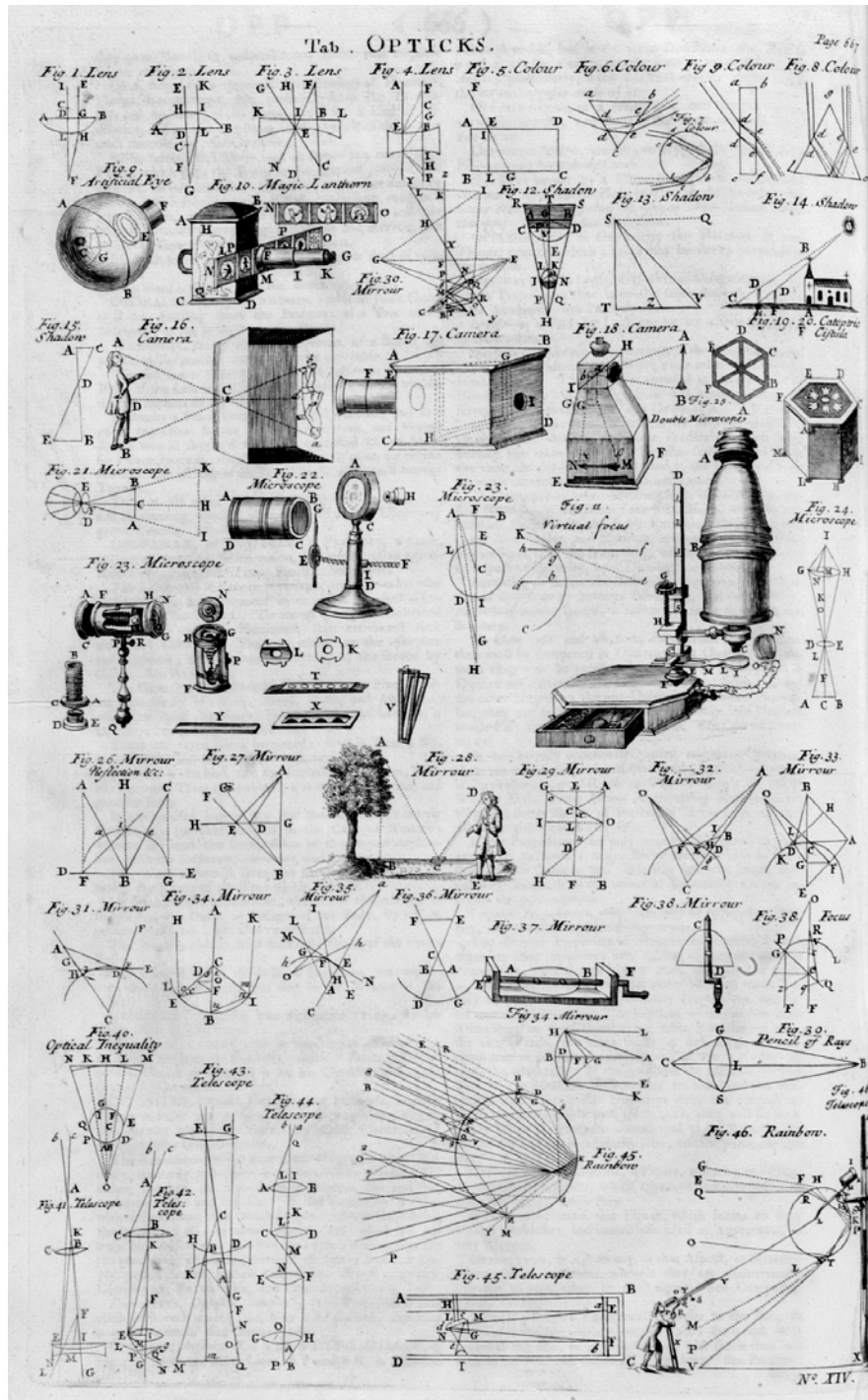
CHAMBERS, Ephraim, and SCOTT, George Lewis

A Supplement to Mr. Chambers's Cyclopaedia: or, Universal Dictionary of Arts and Sciences. . .

London: Printed for W. Innys and J. Richardson, etc. 1753.

First edition. 2 vols., royal folio. I: A–12I². II: 1 leaf, 12K–22R². Both volumes. Unfoliated and unpaginated. Title pages in red and black, with large woodcut ornament on each, and 12 folding copperplates (J. Mynde sc.). Many woodcuts in text. Fine crisp copy, in original blind-paneled reversed calf, maroon and green labels.

QUITE AS bulky as the first edition of the *Cyclopaedia* (London, 1728), this massive *Supplement* was compiled by the



Chambers. Cyclopaedia. London, 1728.

mathematician and barrister George Lewis Scott (1708–1780), who was elected F.R.S. (1737), and was subpreceptor to Prince George (afterwards George III) in 1750. Scott had studied under the mathematician Abraham De Moivre (1667–1754) and was a friend of Charles Burney, Edward Gibbon, Samuel Johnson, and James Thomson. “The materials which Ephraim Chambers left for a supplement to his dictionary of arts and sciences were committed to Scott’s care for selection, revision and expansion. The two volumes appeared in 1753, and he is said to have received fifteen hundred pounds for his services” (D.N.B.). The exceptionally fine plates depict fossils, plants (according to the Linnaean system), animals (mammals, birds, reptiles, fish, invertebrates, etc.), microscopic objects, and chemical furnaces, vessels, and other utensils. These volumes present an important overview of chemistry and chemical technology, as well as the other sciences as they existed in the mid-eighteenth century. (Blake, 83; Collison, 104; Harvey, 163; Watt, I, 210m)

CHAMBON, Joseph

Traité des Metaux, et des Mineraux, et des Remedes qu'on en peut tirer; avec des Dissertations sur le Sel & le Soulfre des Philosophes, & sur la goutte, la Gravelle, la petite Vérole, le Rougeole & autres Maladies: avec un grand nombre de Remedes choisis. Par M. Chambon, cy-devant premier Médecin de Jean Sobieski, Roy de Pologne.
Paris: Claude Jombert, 1714.

First edition. 12mo. 21 leaves, 547 pp., 2 leaves. Very good copy, tastefully rebound in antique-style quarter tree calf, spine gilt-ruled and dated at foot, dark maroon lettering label, gilt, simulated tree calf boards. Small bookplate of B. Louvin on front endpaper.

ON CHAMBON (1656–1732), the author of this very interesting work, see Ferguson (I, 151). Partington (III, 66) states that Nicolas Gobet refers to this work in his *Les Anciens Minéralogistes dur Royaume de France* (Paris, 1779, vol. 2, p. 644). This work deals with the common minerals and their extraction and separation from other minerals in order to prepare medicines. It is also of considerable chemical and metallurgical interest, describing the preparation of sulfuric acid with its use in dissolving metals to form salts (i.e., sulfates and bisulfates). In addition to inorganic compounds, organic compounds are described (e.g., oil of tobacco, extract of coffee, chocolate and tea, oils, perfumes and their preparation, and essential oils). Although certain of the old chemical historians cite an edition of 1713, no such edition exists, the present one of 1714 being the first. A rare book. (Duveen, 129; Ferchl, 91; Ferguson, I, 150–151; Neu, 871; Poggendorff, I, 418; Wellcome, II, 324)

CHANORIER

Mémoire sur un drap bleu teint en laine, et fabriqué avec les toisons du troupeau de race pure d'Espagne établi à Croissy-sur-Seine.

(Colophon:) Paris: De l'Imprimerie de la Republique. Thermidor an VII. (1796).

First separate edition. 8vo. 6, (2) pp. Good copy. Bound with: Dubuisson, F. R. A., *Mémoire sur les Acides Natifs du Verjus* (Paris, 1783), and 7 other chemical tracts.

A BRIEF WORK on dyeing Spanish sheep's wool a beautiful shade of blue. It is followed (pp. 5–6) by a report to the National Institute by Daubenton, Fourcroy, and Desmarest, in which they strongly support the claims of Chanorier (dates unknown). This *Extrait des Mémoires de la Classe des sciences physiques et mathématiques de l'Institut national* is dated 7 July 1796. Extremely rare. No reference to Chanorier or this work has been traced.

CHAPTAL, Jean Antoine Claude

L'Art de faire, gouverner, et perfectionner les vins. . . . Édition Originale, seule avouée par l'Auteur.

Paris: Chez Lenoir, . . . de l'imprimerie de Marchant. An X. 1801.

First edition. 8vo. 2 leaves, 194 pp., 1 leaf. Fine copy, uncut, with wide margins, in half calf antique, marbled boards, maroon morocco label, gilt, spine dated.

CHAPTAL DID much to lay the scientific foundations of the wine industry in France, and in this important work he discusses the chemistry and biology of winemaking. “In the production of wine he proposed that in years in which there had been insufficient sun, and fermentation of the grape juice took place only with difficulty, an improvement could be made by adding sugar. This simple but effective method of improving the yield of wine became known as ‘chaptalization.’ Chaptal showed that in fermentation it was not necessary to leave the vats open to the air, and by enclosing them he prevented the evaporation of the alcohol. He proposed improvements in the apparatus for distilling alcohol in which heat was retained and fuel consumption was drastically reduced” (D.S.B.). The sheets of the present edition were incorporated into the second volume of the *Traité théorique et pratique sur la culture de la vigne* (Paris: Chez Delalain, 1801, 2 vols.), by Chaptal, Rozier, Parmentier, and Dussieux. Not in Duveen, Edelstein, Morgan, Sondheimer, Watt, Wellcome, etc. (Bolton, 361; D.S.B., III, 203; Ferchl, 91; Forbes, *History of . . . Distillation*, 1970, pp. 227, 370; Partington, III, 557; Pigeire, *Chaptal*, 1931, p. 542; Poggendorff, I, 420; Smith, 105 [imprint: Delalain fils]; Vicaire, 164)

CHAPTAL, Jean Antoine Claude

L'Art de faire le Vin, . . .

Paris: De l'Imprimerie de Crapelet. Chez Deterville. 1807.

Second edition. 8vo. xix, (1), 382 pp. With folding engraved plate (Sixdeniers sc.). Fine unpressed, uncut copy, with wide margins, in half calf antique, marbled boards, maroon morocco label, gilt, spine dated, original pink wrappers bound in.

THE SECOND edition of this fundamental work on the chemistry of winemaking, enlarged to twice the size of the first edition (*L'art de faire . . . les vins*, Paris, 1801). It is the first to contain the copperplate of distillation equipment and is dedicated to the distinguished scientist Laplace, his colleague and friend. Chaptal states in the preface that the sections on the production of vinegar, distillation, fermentation, etc., are entirely new, and the rest of the work is updated and improved. His methods produced a revolution in viniculture and oenology, and in 1810 the French Institut awarded him a prize for this book. This edition is not in the usual chemical bibliographies. (D.S.B., III, 203; Forbes, *History of . . . Distillation*, 1970, p. 370; Pigeire, *Chaptal*, 1931, p. 542; Sotheran, Cat. 666 [1906], 758 ["Rare"]; Vicaire, 164)

CHAPTAL, Jean Antoine Claude

L'Art de la Teinture du Coton en Rouge, . . .

Paris: Chez Deterville. 1807.

First edition. 8vo. xi, (1), 172 pp. With 4 finely detailed folding plates of dyeing equipment and processes. Fine copy, in early-nineteenth-century cloth-backed marbled boards, paper label lettered in ink on spine.

AN EXTENSIVE treatise on a special field of chemical technology, namely, the dyeing of cotton a bright turkey red, a color greatly esteemed at the time. The processes described are those that were used in one of the large dye works owned by the author. The book is appropriately dedicated by Chaptal to his friend and colleague C. L. Berthollet, who also published important works on dyeing. Not in Duveen, Morgan, Waller, Wellcome, etc. (Bolton, 361; D.S.B., III, 203; Edelstein, 2902; Ferchl, 91; Lawrie, 28; Partington, III, 557; Pigeire, *Chaptal*, 1931, p. 543; Poggendorff, I, 420; Smith, 105; Sondheimer, 289a; Sotheran, Cat. 832 [1932], 5912)

CHAPTAL, Jean Antoine Claude

Chimie appliquée à l'Agriculture, . . .

Paris: Chez Madame Huzard. 1823.

First edition. 2 vols., 8vo. I: 2 leaves, lvi, 298 pp. II: 2 leaves, 484 pp., 2 leaves (advertisements). Fine copy with wide mar-

gins, top edges gilt, others uncut, in late-nineteenth-century quarter calf, marbled boards, spines richly gilt.

CHAPTAL'S IMPORTANT treatise on agricultural chemistry, and his last book. "After Napoleon's downfall Chaptal withdrew to private life and devoted his remaining years to the management of his estate and to the writing of his *De l'industrie française* (1819) and *Chimie appliquée à l'agriculture* (1823). . . . None of Chaptal's later works exercised so wide an influence. . . . [He] does not limit his discussions to the chemistry of the atmosphere, soils, fertilizers and plant growth, as was done by Davy and most previous writers on agricultural chemistry, . . . he enormously amplifies the scope of his volume by making these subjects . . . an introduction to the main practical part of his book. . . . He discusses the technological processes involved in the preparation of vegetable and animal materials that are produced on the farm. . . . All are described with a wealth of historical references . . . which were the results of Chaptal's immense learning and long years of practical experience" (C. A. Browne). A second edition appeared (Paris, 1829, 2 vols., 8vo.), as well as translations into English (Boston, 1835; New York, 1840), German (1824), and Italian (1824). Not in Duveen, Perkins, Thornton & Tully, Waller, Wellcome, etc. (Bolton, 361; Browne, *A Source Book of Agricultural Chemistry*, 1944, pp. 184-188; D.S.B., III, 203; Edelstein, 484; Ferchl, 91; Forbes, *History of . . . Distillation*, 1970, p. 370; Morgan, 27; Partington, III, 558; Pigeire, *Chaptal*, 1931, p. 544; Poggendorff, I, 420; Smith, 106; Sondheimer, 291; Sotheran, Cat. 832 [1932], 5103)

CHAPTAL, Jean Antoine Claude

Chimie appliquée à l'Agriculture, par M. le Comte Chaptal . . . Deuxième édition, augmentée.

Paris: Chez Madame Huzard. 1829.

Second edition. 2 vols., 8vo. I: 2 leaves, vii, (1), 461, (1) pp. + 2 pp. (advertisements). II: 2 leaves, 418 pp. + 2 pp. (advertisements). Few leaves very lightly foxed (as usual); otherwise good copy, in original half calf, gilt, marbled boards.

THE SECOND and final edition in French of Chaptal's last book. Various matters covered in the first edition (Paris, 1823) have been expanded upon, and the text has been updated. The second edition, unknown to Chaptal's biographer and bibliographer, is rarer than the first. Not in Cole (though mentioned by him), Duveen, Edelstein, Roller & Goodman, Smith, Wellcome, etc. (Bolton, 361; Browne, 188; D.S.B., III, 203; Ferchl, 91; Partington, III, 558; Poggendorff, I, 420)

CHAPTAL, Jean Antoine Claude

Die Agriculturchemie des Grafen Chaptal, . . . Mit Zusätzen und Anmerkungen übersetzt durch Dr. M. F. Eisenbach, . . . und mit einem Anhang versehen von Dr. G. Schübler, . . . Stuttgart: Druck u. Verlag der J.B. Metzler'schen Buchhandlung. 1824.

First German edition. 2 vols., 8vo. I: xlv, (2), 207, (1) pp. II: 1 leaf, iv, 378, (2) pp.; 3 folding printed tables. Very fine copy, in original gilt-ruled half calf, marbled boards, orange morocco labels, gilt.

“CHAPTAL'S ‘CHEMISTRY applied to Agriculture,’ although written for the purpose of improving agricultural conditions in France, was immediately translated into German by Eisenbach . . . and thereby exerted in the next few years a considerable influence in German agricultural circles” (C. A. Browne). Eisenbach added numerous footnotes to this edition, and G. Schübler gives valuable comments in an appendix (II, pp. 325–372). Bolton (*First Supplement*, 123) gives a slightly different title transcription and states that the book was published in Berlin in 1824. He does not mention the Stuttgart imprint. Scarce. Not in D.S.B., Ferchl, Pigeire, Poggendorff, Wellcome, or the usual chemical bibliographies. (Browne, *A Source Book of Agricultural Chemistry*, 1944, p. 188)

CHAPTAL, Jean Antoine Claude

Chymistry applied to Agriculture. . . . Boston: Hilliard, Gray, and Co. 1839.

First American edition, second issue. 12mo. xl, 365, (1) pp. Very good copy in original gilt-ruled calf, tan morocco label, gilt.

THE FIRST translation into the English language of the second French edition of Chaptal's classic *Chimie appliquée à l'agriculture* (Paris, 1829). There was no British translation. The one-volume first issue appeared in Boston in 1835, and the present second issue comprises the sheets of the first issue with a reset title page. It is the second major book on the subject in English, preceded only by the *Elements of Agricultural Chemistry* (London, 1813) of Sir Humphry Davy. Browne (*A Source Book of Agricultural Chemistry*, 1944, pp. 186–188) cites only an edition published in Boston in two volumes (1835–36), with identical content. Bolton and Edelstein cite only the first issue of 1835. “The work had a great popularity in the United States . . . and gave a great stimulus to sugar beet growing . . . in the late eighteen thirties” (Browne). Rare. Not in the usual chemical bibliographies. (Bolton, 361; Edelstein, 486)

CHAPTAL, Jean Antoine Claude

Chimie appliquée aux Arts, . . . Paris: Chez Deterville. 1807.

First edition. 4 vols., 8vo. I: lxxix, (1), 302 pp., 1 leaf (blank); 10 folding plates. II: viii, 544 pp.; 1 folding plate. III: 2 leaves, viii, 534 pp.; 1 folding plate. IV: 2 leaves, viii, 554 pp. Brown stain on last few leaves of volume II and minor water stains in volumes III and IV; otherwise very good set in original quarter calf, gilt, yellow boards.

THE EARLIEST treatise on chemical technology, which is based on the new principles of chemistry. An important and influential work on industrial chemistry, containing a detailed account of contemporary commercial developments. Apart from the wide-ranging survey of new chemical discoveries and their practical application, Chaptal discusses the importance of economic analysis in industry, such as labor costs and the siting of plant in relation to sources of raw materials. The author was one-time Minister of the Interior under Napoleon, to whom the work is dedicated. “One of the best treatises on technical chemistry of its time. . . . [T]he preface contains some economic and political considerations which are still true” (Partington). There are excellent sections on distillation, dyeing, glassmaking, gunpowder, pottery, soapmaking, tanning, and many other subjects. Chaptal did much for the industrial development of France by means of this and other works. George Washington repeatedly invited him to emigrate to the United States to help to develop the resources of the new country, but Chaptal declined and remained loyal to France. The plates by Sixdeniers depict apparatus and processes. (Bolton, 361; D.S.B., III, 202, 203; Duveen, 130; Edelstein, 485; Ferchl, 91; Haber, *Chemical Industry during the Nineteenth Century*, 1958, pp. 6, 39, 268; Morgan, 129; Partington, III, 557; Pigeire, *Chaptal*, 1931, p. 542; Poggendorff, I, 420; Smith, 106; Sondheimer, 293; Wellcome, II, 326)

CHAPTAL, Jean Antoine Claude

Chemistry applied to Arts and Manufactures. . . . London: Printed for Richard Phillips. 1807.

First (only) English edition. 4 vols., 8vo. I: lxxviii, 259, (1) pp.; 10 folding plates. II: xii, 448 pp.; 1 folding plate. III: xvi, 512 pp.; 1 folding plate. IV: xvi, 520, xx pp. An exceptional copy, in pristine condition, in the original gilt-ruled half calf, marbled boards, maroon morocco labels, gilt.

THE TRANSLATION by William Nicholson of Chaptal's important *Chimie appliquée aux arts* (Paris, 1807). The publisher, Sir Richard Phillips (1767–1840), a friend of Joseph Priestley, became sheriff of London in 1807 (see D.N.B.). Translations of Chaptal's work also appeared in German

(Berlin, 1808), Italian (Naples, 1808; Milan, 1820), Spanish (Barcelona, 1816), and Danish (Copenhagen, 1820). Not in Duveen, Ferchl, Morgan, Pigeire, Poggendorff, Thornton & Tully, Waller, Wellcome, etc. (Bolton, 361; D.S.B., III, 203; Edelstein, 2903; Partington, III, 557; Smith, 106; Sondheimer, 294; Watt, I, 213)

CHAPTAL, Jean Antoine Claude

Chimica Applicata alle Arti del S. G.A. Chaptal, . . . Tradotta dal Francese. . .

Naples: Dalla Stamperia Orsiniana. (1807–1808.)

First Italian edition. 4 vols., 8vo. I: xci, (1), 238 pp. 10 folding engraved plates (C. M. Alfano sculp.). Title page undated. II: viii, 408 pp. 1 engraved plate. Title page undated. III: xii, 464 pp. 1 engraved plate. Title page dated 1807. IV: xv, (1), 456 pp. Title page dated 1808. Fine, crisp copy, in contemporary half vellum, marbled boards, spines gilt-lettered. From the library of St. Mary's College, Oscot, Birmingham, with bookplates (canceled) on front endpapers of each volume.

THE RARE first edition of this important work in Italian, by an anonymous translator. Not in D.S.B., Duveen, Edelstein, Ferchl, Ferguson Coll., Morgan, Partington, Poggendorff, Smith, Waller, Watt, Wellcome, etc. (Bolton, *First Supplement*, 123)

CHAPTAL, Jean Antoine Claude

De l'Industrie Française, . . .

Paris: Chez Antoine-Augustin Renouard. 1819.

First edition. 2 vols., 8vo., in 1. I: xlvi, 248, 4 pp.; 4 folding printed tables. II: 2 leaves, 462 pp., 2 leaves. Fine copy in original gilt-ruled quarter calf, marbled boards.

A COMPREHENSIVE ACCOUNT of French industry and one of the most influential books by Chaptal. Subjects covered include French commerce before 1789 (I, pp. 1–136), the progress of agriculture (I, pp. 137–248), the progress of manufactures from 1789 to 1819 (II, pp. 1–204), and the administration of industry (II, pp. 205–462). French commerce with the United States is discussed (I, pp. 103–106), and valuable data are given on different types of industry, including an important section on chemical products (II, pp. 36–113). Chaptal shows how France can improve its industries after the Napoleonic wars and modernize its manufacturing capacity and agricultural methods. Not in Wellcome or the usual chemical bibliographies. (D.S.B., III, 203; Forbes, *History of . . . Distillation*, 1970, p. 370; Haber, *Chemical Industry during the Nineteenth Century*, 1958, pp. 40, 268; Partington, III, 557–558; Pigeire, *Chaptal*, 1931, p. 544; Poggendorff, I, 420; Sotheran, Cat. 800 [1926], 12334)

CHAPTAL, Jean Antoine Claude

Éléments de Chimie, . . .

Montpellier: De l'Imprimerie de Jean-François Picot. 1790.

First edition. 3 vols., 8vo. I: cx, 259, (1) pp. II: 443, (1) pp. III: 460 pp. Some water stains and minor repairs to titles (not affecting text); otherwise good copy in original calf, gilt. From the library of the famous Portuguese scientist Dr. Constantino António Botelho de Lacerda Lobo (1754–1820 or 1822), professor at the University of Coimbra.

ONE OF the most important textbooks of the period, written as a result of the course of chemistry that Chaptal gave at the University of Montpellier. For the next fifteen years it became the breviary of students and scientists the world over. In the *Discours préliminaire* (vol. I, p. xl), Chaptal first suggested the word *nitrogen* to take the place of the word *azote*, as adopted in the *Nomenclature Chimique* (Paris, 1787), which had replaced Priestley's "phlogisticated air." "A very good and popular text book" (Partington). The first edition is rare and is not in the British Library or Bibliothèque Nationale. It was reissued the same year with a Paris imprint, which is the earliest edition listed by Bolton (p. 362) and Poggendorff (I, 420). Not in Ferguson, Morgan, Smith, Waller, etc. (Blake, 84; D.S.B., III, 203; Duveen, 129; Edelstein, 487; Ferchl, 91; Neu, 876; Partington, III, 557; Pigeire, *Chaptal*, 1931, p. 539; Sondheimer, 287; Thornton & Tully, 170; Watt, I, 213h; Wellcome, II, 326)

CHAPTAL, Jean Antoine Claude

Éléments de Chymie de J. A. Chaptal. Seconde Édition . . .

Paris: Chez Deterville, Libraire, rue de Battoir, no. 16, près la rue de l'Éperon. L'An troisième de la République. (1794/1795).

Second edition. 3 vols., 8vo. I: 2 leaves, civ, 270 pp. II: 2 leaves, 445, (1) pp. III: 2 leaves, 436 pp. Very fine set in original tree calf, spines richly gilt, tan and dark-blue morocco labels.

APPEARING FOUR years after the first edition (Montpellier, 1790), the second edition has been revised, updated, and enlarged to include the latest chemical discoveries. In this work Chaptal develops the general principles of chemistry and outlines their applications. He adopts the oxygen theory of Lavoisier, which he found of great benefit in theoretical and practical chemistry. Very scarce. Not in Blake, Cole, Duveen, Edelstein, Ferchl, Neu, Smith, Wellcome, etc. (Bolton, 362; D.S.B., III, 203; Partington, III, 557; Pigeire, *Chaptal*, 1931, p. 539; Roller & Goodman, I, 223)

CHAPTAL, Jean Antoine Claude

Éléments de Chymie de J. A. Chaptal, . . .
Paris: Chez Deterville. 1796.

Third edition. 3 vols., 8vo. I: 2 leaves, xcii, 361, (1) pp. II: 2 leaves, 448 pp. III: 2 leaves, 495, (1) pp. Magnificent set in pristine condition, in original tree calf, spines richly gilt, red and green morocco labels. In this copy the Deterville imprints have been pasted over with slips of paper bearing the Théophile Barrois le jeune imprint.

IN THIS revised and enlarged edition, the errata of the second edition (Paris, 1794) have been carefully corrected. At the request of the Revolutionary government, when France found itself isolated in Europe, Chaptal published in the important third edition the means of utilizing the chemical resources of the country. A detailed description of the production of artificial niter has been added, as well as several new articles (e.g., organic analysis, manufacture of soda from sea salt, soapmaking, tanning, and resins and varnishes for ships). Other chapters have been updated, and the work is about 150 pages longer than the first edition. The fourth and final French edition appeared seven years later (Paris, 1803). Many translations into foreign languages were published. Not in Duveen, Edelstein, Morgan, Sondheimer, Watt, etc. (Blake, 84; Bolton, 362; D.S.B., III, 203; Ferchl, 91; Neu, 877; Partington, III, 557; Pigeire, *Chaptal*, 1931, p. 539; Poggendorff, I, 420; Smith, 106; Wellcome, II, 326)

CHAPTAL, Jean Antoine Claude

Elements of Chemistry. . . . Translated from the French. . . .
London: Printed for G. G. J. and J. Robinson. 1791.

First English edition. 3 vols., 8vo. I: viii, lxxvii, (1), 295, (1) pp. II: xii, 488 pp. III: vii, (1), 408 pp., 4 leaves (last blank). Extremely fine copy in immaculate condition, in original mottled calf, spines richly gilt, black morocco labels, gilt dentelles on all covers. From the library of Thomas Pelham, Earl of Chichester (1756–1826), with engraved bookplate bearing a coronet and buckle in each volume.

FIRST EDITION in English of Chaptal's *Éléments de Chimie* (Montpellier, 1790), translated by the renowned English chemist William Nicholson (1753–1815). Partington states that Chaptal's "books were much read, show originality, and are still pleasant to read." Further English editions followed in 1795, 1800, and 1803; American editions (1796, 1801, 1806, and 1807) also appeared. Duveen and Wellcome list the second edition (London, 1795). (Blake, 84; Bolton, 362; D.S.B., III, 203, X, 109; Edelstein, 488; Ferchl, 382; Partington, III, 557; Pigeire, *Chaptal*, 1931, p. 539; Sondheimer, 288; Watt, I, 213)

CHAPTAL, Jean Antoine Claude

Elements of Chemistry. . . . Translated from the French. . . .
London: Printed for G. G. J. and J. Robinson. 1800.

Third English edition. 3 vols., 8vo. I: viii, lxxvii, (1), 288 pp. II: xii, 488 pp. III: vii, (1), 412 pp. Fine copy in original tree calf, rebounded, maroon morocco labels, gilt, spines dated. Engraved ducal bookplate of Robert Wallace and inscription in ink of A. Russell Pollock, 1849, in each volume.

THE UPDATED third English edition of this celebrated work, translated by William Nicholson, based on the third French edition (Paris, 1796). Not in Bolton, Duveen, Edelstein, Pigeire, Watt, etc. (D.S.B., III, 203; Morgan, 131; Partington, III, 557; Smith, 106; Wellcome, II, 326)

CHAPTAL, Jean Antoine Claude

Elements of Chemistry. . . . Translated from the French. Three Volumes in One.

Philadelphia: Lang & Ustick, for Selves, M. Carey, J. Cruikshank, H. & P. Rice, T. Dobson, R. Campbell, & J. Ormred. 1796.

First American edition. 8vo. 50 + 673 pp., 3 leaves (index and errata). Very good, crisp copy, in contemporary tree calf, spine ruled in gilt, with original maroon gilt-lettered label. From the library of Alexander Hamilton, with his inscription in ink on the title page: "Alexander Hamilton his Book Anno Domini 1804."

THE SCARCE first American edition, being a verbatim reprint of the William Nicholson English translation (London, 1791) of Chaptal's *Éléments de chimie* (Montpellier, 1790). Other American editions followed: second (Philadelphia, 1801), third (Boston, 1806), and fourth (Philadelphia, 1807). In addition to its immense popularity in Europe, this work was acclaimed in America. George Washington wrote three letters to Chaptal urging him to emigrate to America, but the Frenchman declined, preferring to serve his native country. Napoleon showed his appreciation of Chaptal's services in improving the manufactures of France by first making him Administrator of Public Instruction and later Minister of the Interior. A discussion of the American editions of this famous book is given by Edgar Fahs Smith in *Old Chemistries* (New York, 1927, pp. 32–36).

This is a particularly important association copy, as it came from the library of Alexander Hamilton (1755–1804), the great American statesman and scholar. Hamilton and his long-standing enemy, Aaron Burr, fought a duel on 11 July 1804, and Hamilton died of a bullet wound the following day. From the dated inscription on the title page of this copy, Hamilton bought the book shortly before his death.

This edition is not mentioned by Bolton, Cushing, Duveen, Ferchl, Morgan, Partington, Poggendorff, Waller, Watt, Wellcome, etc. (Smith, 106)

CHAPTAL, Jean Antoine Claude

Elementi di Chimica del Sig. G. A. Chaptal . . . Tradotti dal Francese, e corredati di alcune Aggiunte da Niccolò Dallaporta . . .

Venice: Presso Sebastiano Valle. 1792.

First Italian edition. 5 vols., 8vo. I: xliv, 243, (1) pp. II: cxxxii, 179, (1) pp. III: xlvi, (1), 232 pp. IV: lxxvi, 226 pp. V: xvi, 192 pp. Woodcut ornament on each title page. Fine, crisp set, in original half vellum, patterned boards, spines lettered in ink.

THE GREATLY enlarged sole Italian translation, by Niccolò Dallaporta, of Chaptal's *Éléments de chimie* (Montpellier, 1790, 3 vols., 8vo.), containing many additional notes and comments by the translator. Very rare. Not in D.S.B., Pigeire, Watt, Wellcome, or the usual chemical bibliographies. (Blake, 84 [3 vols. only]; Bolton, 362)

CHAPTAL, Jean Antoine Claude

Essai sur le perfectionnement des Arts Chimiques en France.
Paris: Chez Deterville. (An) 8. (1800).

First edition. 8vo. vii, (1), 88 pp. Very fine, crisp copy, in quarter calf antique, marbled boards, maroon morocco label, gilt, spine dated.

AN IMPORTANT essay on the chemical industries of France, which Chaptal wrote to prompt the reorganization of French industry and commerce in view of British competition. His proposals for the organization of trade schools for the different types of chemical industry (e.g., dyeing, bleaching, metallurgy, pottery, and glass) are included. Chaptal "was one of the greatest chemical manufacturers of his age. He was always ready to apply the lessons of the chemistry laboratory to the factory" (D.S.B.). For a good account of this work, which was reprinted in the *Journal de physique*, 50 (1800), pp. 217–233, see J. Pigeire, *La Vie et l'Oeuvre de Chaptal*, 1931, p. 267 et seq. Not in Bolton, Duveen, Morgan, Waller, etc. (Blake, 84; D.S.B., III, 202; Edelstein, 492; Ferchl, 91 [wrong date: 1780]; Partington, III, 557; Pigeire, *Chaptal*, 1931, p. 542; Poggendorff, I, 420; Smith, 106; Wellcome, II, 326)

CHAPTAL, Jean Antoine Claude

Mémoire sur le Sucre de Betteraves . . . Lu à la première Classe de l'Institut Royal de France, le 23 octobre 1815. Nouvelle édition.

Paris: De l'Imprimerie de Madame Huzard (née Vallat la Chapelle), rue de l'Éperon-Saint-André-des-Arts, No. 7. 1818.

First separate edition. 8vo. 61, (1) pp. Very fine copy in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated. From the library of John Yudkin (1910–1995), founder of the first chair of nutrition at the University of London.

THE FIRST edition in book form of this excellent description of the manufacture of sugar from sugar beets, from the preparation of the soil, to the extraction and purification of the syrup, to the production and refining of the crystalline sugar. The original paper appeared in *Annales de Chimie* (1815, vol. 95, 233–293; D.S.B., III, 203; Poggendorff, I, 421), hence the "nouvelle édition" in the title. "Chaptal . . . was an early enthusiast of the possibility of replacing cane sugar with beet sugar. In 1811 he was a member of a committee appointed by the First Class of the Institute to examine the possible production of beet sugar. It was not until 1815, when the end of the war permitted the resumption of trade with the West Indies and threatened the ruin of the sugar beet industry, that Chaptal presented a memoir on the subject to the Institute. He was anxious to show that the industry, if efficiently run, could justify itself economically. It was largely owing to his efforts, with the later support of Thenard, that this industry continued to function in France" (D.S.B.). One of the rarest works by Chaptal, it remained unknown to his biographer, Pigeire (*Chaptal*, 1931), and is not in the usual bibliographies.

CHAPTAL, Jean Antoine Claude

Osservazioni Chimiche sull'Arte di Levare le Macchie dalle Stoffe e di Ristabilirne i Colori Alterati del Sig. G. A. Chaptal traduzione con annotazioni di Giuseppe Moretti. Aggiuntovi in fine l'estratto d'una Memoria del sig. Vauquelin sull'arte d'imbiancare i pannilini macchiati dall'unguento mercuriale.

Piacenza: Dalla Stamperia del Majno. 1808.

First Italian edition. 8vo. 41, (1) pp. Crisp copy in contemporary quarter vellum, marbled boards, black morocco label gilt. Bound with: Trommsdorff, J. B., *La Callopietria* (Milan, 1805).

THE SCARCE Italian translation of Chaptal's *Principes Chimiques sur l'Art du Teinturier-Dégraisseur* (Paris, 1808) on the use of chemicals for dry cleaning fabrics. Moretti (1782–1853) was professor of chemistry at Pavia, close to Piacenza, where this first Italian edition was published. Another edition (possibly the second Italian) appeared in 1808 at Florence, containing more footnotes by Piatti, the printer (see pp. 5 and 16 of the Florence edition). Edelstein (no. 2906) lists only a much later edition (Milan, 1824). Not in the usual early chemical bibliographies.

CHAPTAL, Jean Antoine Claude

Osservazioni Chimiche sull'Arte di Levare le Macchie dalle Stoffe e di Ristabilirne i Colori Alterati . . .
Florence: Presso Guglielmo Piatti. 1808.

Second Italian edition(?) 8vo. 32 pp. Fine large copy, with wide margins, uncut, in half calf antique, marbled boards, maroon morocco label, gilt, original wrappers bound in.

ANOTHER (possibly the second) Italian edition of this important work, translated and annotated by Giuseppe Moretti, containing extra footnotes by the printer, Piatti, on pages 5 and 16. The wording of the title is identical to that of the first edition (Piacenza, 1808). An undated edition also appeared at Milan (see Ferguson Coll., 147). Rare. Not in the usual bibliographies.

CHAPTAL, Jean Antoine Claude

Principes Chimiques sur l'Art du Teinturier-Dégraisseur, . . .
Paris: Chez Deterville. 1808.

First edition. 8vo. x, 68 pp. With folding copperplate of chemical apparatus. Fine large copy, with many fore-edges uncut, in old gilt-ruled quarter tree calf, marbled boards, maroon morocco label, gilt, spine dated.

A TREATISE ON the chemical principles involved in the profession of the dyer-cleaner, containing a scientific system of spot removing. Considered a milestone in the history of dry cleaning, on which see S. M. Edelstein, "The Origins of Dry-cleaning," in *American Dyestuff Reporter*, 46 (1957); idem, *Historical Notes on the Wet-Processing Industry* (New York, 1972). Not in Duveen, Morgan, Partington, Waller, Watt, Wellcome, etc. (Bolton, 361; D.S.B., III, 203; Edelstein, 2907; Ferchl, 91; Ferguson Coll., 146; Pigeire, *Chaptal*, 1931, p. 543; Poggendorff, I, 420; Smith, 106; Sondheimer, 289a; Sotheran, Cat. 879 [1947], 3105)

CHAPTAL, Jean Antoine Claude

Tableau Analytique du Cours de Chymie, fait à Montpellier par M. J. A. Chaptal, . . .
Montpellier: De l'Imprimerie de Jean-François Picot. 1783.

First edition. 8vo. 2 leaves, 209, (1) pp. Fine copy with wide margins, unpressed and uncut, in original brown marbled boards.

CHAPTAL (1756–1832) studied at the University of Montpellier and displayed so much talent that the authorities founded a chair of chemistry specially to enable him to teach in the school of medicine. The present work is an excellent summary of his lectures at Montpellier, instituted in 1781. Oxygen ("l'air déphlogistique") is discussed (p. 12), but Chaptal at this time still believed in phlogiston, which he

equated with hydrogen (p. 13), citing the experiments of Priestley and Kirwan. He states (p. 14) that phlogiston almost always combines with oxygen during combustion. Chaptal soon after abandoned the phlogiston hypothesis and promoted the discoveries of Lavoisier. He was an important pioneer of industrial chemistry in its commercial and scientific aspects, and he established the first French factory for the large-scale production of sulphuric acid, soda, white lead, and other chemicals. For Chaptal's services to France, Napoleon conferred on him the title of Comte de Chanteloup, and in 1819 Louis XVIII made him a peer. Rare. Not in Blake, D.S.B., Waller, Watt, Wellcome, etc. (Bolton, 362; Duveen, 129; Edelstein, 493; Neu, 879; Partington, III, 557; Pigeire, *Chaptal*, 1931, p. 539; Sondheimer, 286; Thornton & Tully, 170)

**CHAPTAL, Jean Antoine Claude,
ROZIER, François, PARMENTIER, Antoine
Augustin, and DUSSIEUX, Louis**

Traité théorique et pratique sur la Culture de la Vigne, avec l'Art de faire le Vin, les Eaux-de-Vie, Esprit-de-Vin, Vinaigres simples et composés, . . .
Paris: Chez Delalain, fils, . . . de l'Imprimerie de Marchant. An IX. 1801.

First edition. 2 vols., 8vo. I: xvi, 408 pp. II: x, (2), 567, (1) pp. With 21 engraved plates and 3 folding tables. Good copy in red quarter morocco, marbled boards. Signed in ink by the publisher, Delalain fils, on verso of half title of first volume.

AN EXHAUSTIVE treatise on the growing of grapes, wine-making, the manufacture of brandies, liqueurs, etc. It was a collaborative effort, with the authors all members of the Paris Agricultural Society. In addition to the present edition, Partington lists editions of 1807 and 1839. Poggendorff and Vicaire list an edition of 1811. Pigeire states that this forms *tome X* of the *Encyclopédie de l'abbé Rozier* (Paris: Moronval, 1801). Not in D.S.B., Wellcome, or the usual chemical bibliographies. (Bolton, *First Supplement*, 123; Forbes, *History of . . . Distillation*, 1970, pp. 227, 369; Partington, III, 557; Pigeire, *Chaptal*, 1931, p. 541; Poggendorff, I, 420 [wrong date: 1802]; Watt, I, 213)

CHAPUIS, Jean Adolphe Achille Abraham

Rôle Chimique des Ferments Figurés. Thèse présentée au Concours pour l'Agrégation (Section des Sciences accessoires—Pharmacologie) et soutenue à la Faculté de Médecine de Paris le (blank) 1880. Par le Dr. A. Chapuis . . .
Lyons: Imprimerie Bellon. 1880.

First edition. 4to. 170 pp. Very fine copy with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A DISTINGUISHED PHARMACEUTICAL chemist of Lyons, Chapuis (fl. 1880) presented this thesis for a fellowship to the Faculty of Medicine at Paris. It is a detailed study, divided into ten chapters, of the biochemical reactions of yeasts and other microorganisms on various substrates of plant and animal origin. The following types of fermentation are discussed: alcoholic, acetic, nitric, gallic, ammoniacal, mannitic, lactic, butyric, and albuminic. The tenth chapter summarizes the whole work, with suggestions for further investigation. There are many references to the researches and theories of contemporary workers (e.g., Pasteur, Bernard, Berthelot, Mitscherlich, Dumas, Duclaux, Béchamp, and Wurtz). Chemical equations are given to explain the formation of organic compounds produced by the several types of yeasts. The author discusses the epic researches of Béchamp, Pasteur, and others and advances his own opinions of the mechanisms by which microorganisms effect the chemical changes and decomposition of plant and animal matter under aerobic and anaerobic conditions. A work of fundamental importance in the history of nineteenth-century organic and biochemistry, which is unknown to most bibliographers. (Bolton, *First Supplement*, 123)

CHARAS, Moyse

Nouvelles Experiences sur la Vipere, ou l'on verra une description exacte de toutes ses parties, la source de son venin, ses divers effets, et les remedes exquis que les Artistes peuvent tirer de la Vipere, tant pour la Guerison de ses Morsures, que pour celle de plusieurs autres Maladies. . . .

Paris: Chez l'Auteur, . . . et Olivier de Varennes. 1669.

First edition. 8vo. 7 leaves, 218 pp., 2 leaves (index) + 1 leaf (privilege). Engraved title page (depicting 2 vipers entwined between chemical apparatus), printed title, and 3 folding engraved plates. Woodcut capitals, head- and tailpieces. Name clipped from blank upper margin of engraved title; otherwise very good copy in original calf.

A TREATISE OF biochemical and medical interest on the asp, or red viper, the first in the French language on the subject. The anatomy of the viper, its poison gland with muscular fascia, the poison duct, and the capsule of the fangs are correctly described. Charas (1619–1698) directly opposed the theory of venom apparatus and injection proposed by Francesco Redi and caused much scientific consternation. Best known for his *Pharmacopoeia* (Paris, 1672), Charas was a physician, apothecary, chemist, and botanist who conducted a course of chemistry for nine years at the Jardin du Roi. He specialized in the medicinal use of vipers and prepared a “viperine salt” by the distillation of snakes, which is discussed in this work. Several editions appeared: e.g., Paris, 1670, 1672, and 1694. The present (1669) edi-

tion was almost immediately translated as *New Experiments upon Vipers* (London, 1670). (Caillet, 2199; Eales, 698; Ferchl, 92; Ferguson, I, 152 [not in Young Coll.]; Goldsmith, C669; Krivatsy, 2366 [imperf.]; Partington, III, 27; Thorndike, VIII, 24; Watt, I, 213k; Wellcome, II, 327)

CHARAS, Moyse

Pharmacopée Royale Galenique et Chymique. . . . Nouvelle édition, revue, corrigée, & augmentée par l'Auteur.

Paris: Chez Laurent d'Houry, rue Saint Jacques devant la Fontaine S. Severin, au Saint Esprit. 1691.

Nouvelle (possibly fifth) edition. 2 vols., 4to., in 1. I: 2 leaves (engraved and letterpress title pages), vi (including engraved portrait of Charas), 424 pp. II: 20 (including title page), 425–858 pp. + 24 leaves (index). With 6 copperplates (5 of chemical apparatus, 1 of chemical symbols). Decorative woodcut capitals, head- and tailpieces. Few minor spots; otherwise fine copy in original speckled calf, spine richly gilt, corners slightly rounded.

APPARENTLY THE fifth edition of this celebrated work, preceded by the Paris editions of 1672, 1676, 1681, and 1682. This is the first edition to contain the beautiful portrait of Charas. Two issues appeared: the first (as here) has both title pages dated 1691; the second has the title of volume I dated 1692. The approbation lists the most famous French physicians of the time (e.g., Antoine Daquin, La Chambre, Renaudot, Esprit, and Fagon). The first issue is rare, with no copy in the British Library or the usual bibliographies. The second issue is listed by Neu, 885; Osler, 2280; Partington, III, 27; and Schelenz, 499. Charas (1618–1698) taught a course of chemistry at the Jardin du Roi for nine years. On the revocation of the Edict of Nantes (1685), he went to England and became pharmacist to Charles II. Shortly thereafter he went to Holland and then to Spain, but he was imprisoned for four months by the Inquisition. Finally, he returned to Paris, was congratulated by Louis XIV, and was elected to the Royal Academy of Sciences. (Caillet, 2198; Parkinson & Lumb, 516)

CHARAS, Moyse

The Royal Pharmacopoeia, Galenical and Chymical, According to the Practice of the Most Eminent and Learned Physicians of France, . . . Faithfully Englished. . . .

London: Printed for John Starkey at the Miter within Temple-Bar, and Moses Pitt at the Angel in St. Paul's Church-Yard. 1678.

First English edition. Folio, 2 parts in 1 vol. 4 leaves, 272, 245, (3) pp., 6 leaves (indices). With 6 full-page engraved plates (5 of chemical apparatus, 1 of “Chymicall Characters”). Very fine copy, complete with the leaf “Physick Books Printed for John Starkey,” in original calf, maroon label.

THE ONLY English translation of one of the most important and influential pharmaceutical works of the seventeenth century, of which progressively enlarged French editions appeared (1672–1753). The first section (50 pp.), covering the terms used in pharmacy, is followed by descriptions of pharmaceutical preparations (pp. 51–272). The second section (222 pp.) is entirely on the preparation of recognizable chemical compounds. In the final section (pp. 223–245) medicinal recipes by “several famous authors” are listed. Written in unambiguous prose, the book is beautifully illustrated. Forbes (*History of Distillation*) discusses the distillation apparatus and techniques used by Charas but does not mention this English edition. (Bolton, 362; Cushing, C182; Duveen, *Supplement*, 69; Edelstein, 497; Ferchl, 92; Ferguson, I, 151 [not in Young Coll.]; Ferguson Coll., 147; Kremers & Urdang, 404; Krivatsy, 2376; Neu, 889; Osler, 2281; Partington, III, 27; Smith, 106 [imperf.]; Sondheimer, 295; Thorndike, VIII, 31; Watt, I, 213j; Wellcome, II, 327; Wing, C2040)

CHARLETON, Rice

A Chymical Analysis of the Bath Waters, containing an account of the mineral substances which the Bath waters bring up with them out of the earth; the chalybeate, sulphureous, saline, and earthy principles of them; and how the Bath waters are generated. . . .

Bath: Printed by R. Cruttwell, for W. Taylor, . . . and sold by R. Baldwin, . . . London. 1776.

Second (first separate) edition. 8vo. 5 leaves, 56 pp., 1 leaf. With engraved frontispiece of crystals of salts in Bath water. Fine copy in marbled boards antique, maroon morocco label, gilt.

ORIGINALLY PUBLISHED with two other works under the title *Three tracts on Bath Waters* (Bath, 1774; Duveen, p. 130), the text of this work “has long been out of print. The author’s desire of rendering it more perfect is the reason why it was not sooner republished” (advertisement). Many chemical experiments on the analysis of Bath waters are described, with discussions of reagents used and data obtained. The works of numerous earlier and contemporary chemists are cited, and the author quotes Boyle (p. 56): “To discover the nature of mineral waters is a far more difficult task than those who have not tried would imagine.” An accomplished chemist, Charleton (1710–1789) was physician at the General Hospital at Bath. Rare. Not in Waring, Watt, Wellcome, or the usual chemical bibliographies. (Blake, 85)

CHARLETON, Walter

Exercitationes de Differentiis & Nominibus Animalium. Quibus accedunt Mantissa Anatomica, et quaedam de variis Fossilium generibus, deque differentiis & nominibus Colorum. Editione secunda, duplo fere auctior priori, novisque iconibus ornata.

Oxford: E Theatro Sheldoniano. 1677.

Second edition. Folio. 10 leaves, 119, (1), 106 pp., 1 leaf (blank), 1 leaf (divisional title page: Fossilium), 78 pp., 10 leaves. Large engraving of Sheldonian Theatre on title page, and 14 engravings of birds, fish, amphibians, etc., in text. Crisp copy in half vellum antique, dark-maroon boards.

THE SECOND, greatly enlarged, and best edition of the author’s *Onomasticon Zoicon* (London, 1668; reissued, 1671). There was no first edition with this title. “Regarded as a classic treatise in zoology” (Thornton & Tully), the book is divided into three parts: quadrupeds, insects, birds, etc.; fish, zoophytes, amphibians, etc.; and fossils, minerals, ores, metals, salts, etc. At the end there is an appendix on colors. “A list, with English, Latin, and Greek names, of all known animals, including an account of the contents of Charles II’s menagerie in St. James’s Park, and a general description of fossils” (D.N.B.). Sir George Ent’s first zootomical monograph appeared in this book as *Mantissa Anatomica* (pt. II, pp. 71–93) and includes observations on the anatomy of the fishing frog, the dogfish, and the true frog. In his introduction to Ent’s treatise, Charleton uses the words *Anotamiae Comparativae* (p. 71), a very early use of this term. The section on fossils is of chemical, metallurgical, and mineralogical interest. Large-paper copies were issued with three folding plates of birds, usually not found in the regular issue (as here). (Eales, 508; Garrison–Morton, 292 [1668 ed.]; Hoover, 218; Madan, 3137; Osler, 2292; Thornton & Tully, 127; Watt, I, 216j; Wellcome, II, 329; Wing, C3672)

CHARLETON, Walter

Physiologia Epicuro–Gassendo–Charltoniana: or a Fabrick of Science Natural, upon the Hypothesis of Atoms, founded repaired augmented by Epicurus, Petrus Gassendus, Walter Charleton, . . . The First Part. . . .

London: Printed by Tho. Newcomb, for Thomas Heath, and are to be sold at his shop in Russel-street, neer the Piazza of Covent-Garden. 1654.

First edition. Folio (in 4s). 16 leaves (last blank), 475, (1) pp., 2 leaves. With 7 copperplates in text (pp. 38, 60, 169, 170, 173, 178, 179), and 5 woodcuts (pp. 118, 227, 334, 458, 459). A superb copy in mint condition, in the original blind-ruled calf, seventeenth-century paper label on spine lettered in ink.

AN IMPORTANT encyclopedia of seventeenth-century science, of considerable chemical interest, in which Charleton attempts to establish the existence of atoms. Although designated "The First Part," no more was published. His "most important work . . . based on the atomic theory of Epicurus and Gassendi . . . This was the first work in English on atomism, and [it] presents a critical, historical review of the subject" (Thornton & Tully). "Largely instrumental in popularizing atomism in the 1650s and 1660s" (R. H. Kargon, *Atomism in England* [1966], chap. VIII). It was "read by . . . Boyle and Newton" (D.S.B.). Partington discusses the chemical content at length. Preceding the first flyleaf in this copy are two stubs, on the second of which are the words "See cap: of species visible fully" neatly written in ink in a hand that is possibly that of Newton. Chapter II (p. 136) discusses "Species visible," stating that light consists of "corporeal emanations" from objects. It is possible that Newton studied this copy and from it deduced his corpuscular theory of light. There was no copy of this work in Newton's library (see Harrison), and it is possible that he borrowed this copy from a colleague whose name has been erased from the flyleaf. Not in Duveen, Edelstein, Neu, Sondheimer, etc. (Cushing, C190; D.S.B., III, 209; Osler, 2289; Partington, II, 241, 467–468; Thorndike, VII, 459–463; Thornton & Tully, 126–127; Waller, 11312a; Watt, I, 216g; Wellcome, II, 329; Wheeler Gift, 137; Wing, C3691)

CHARLETON, Walter

Spiritus Gorgonicus, vi sua saxipara exutus; sive de Causis, Signis, & Sanatione Lithiaseos, Diatriba. Auctore Gualtero Charleton, M.D. & Augustissimae Caroli Magnae Britanniae Regis Majestati Medico. Lugd. Batav. (Leyden): Ex Officinâ Elseviriorum. 1650.

First edition. 8vo. 6 leaves, 242 pp., 1 leaf (blank). Some fore-margins at beginning and end slightly frayed; otherwise a very good copy in contemporary blind-ruled speckled calf.

CHARLETON (1619–1707) was physician to Charles I and Charles II, when the latter was in exile on the Continent. He received an M.D. from Oxford (1643), was an original F.R.S. (1663), and was president of the Royal College of Physicians (1689–91). In 1644 and 1648 the works of van Helmont appeared, and the youthful Charleton applied himself immediately to understanding these books. His study of van Helmont's texts, and particularly the *De Lithiasi*, resulted in the publication of the *Spiritus Gorgonicus*. This work is thoroughly Helmontian and discusses a supposedly universal stone-forming spirit that is responsible for the growth of both macrocosmic and microcosmic concretions. Van Helmont's views on tartar are carefully examined and compared and contrasted with those of other

iatrochemists (e.g., Paracelsus, Severinus, and Libavius). Owing to the generally poor dietary intake in the seventeenth century, the formation of stones in the bile duct, kidneys, and bladder was common. In the later sections of this work Charleton gives prescriptions for the voiding of calculi and alleviation of the pain they cause. Not in Bolton, Duveen, Ferguson, Garrison-Morton, Neu, Poggendorff, Smith, Waller, etc. (Caillet, 2227; Cushing, C191; Debus, 470; D.S.B., III, 208; Ferchl, 92; Monk, I, 392; Osler, 2288; Partington, II, 241; Watt, I, 216f; Wellcome, II, 329)

CHARPENTIER, Jacques

L'Osmose. Thèse présentée au concours pour l'agrégation (section de physique médicale) et soutenue à la Faculté de Médecine de Paris par le Dr. Augustin Charpentier. Paris: A. Parent, Imprimeur de la Faculté de Médecine. 1878.

First edition. 4to. 2 leaves, 119, (1) pp. Very good copy with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

THE THESIS presented by Charpentier, a physician, for a fellowship in the medical faculty at Paris. A definitive study of osmosis, it is preceded by a historical introduction with references to the pioneering researches of Dutrochet, Fischer, Graham, Parrot, Potter, et al. The entire subject of diffusion is covered: liquids into liquids, gases into liquids, semipermeable membranes, etc. The biological importance of osmotic processes is discussed, and the diffusion of inorganic salts and other solutes through natural membranes is covered. The effects of heat and electric current on diffusion are also described. The various theories of why diffusion occurs are of great interest and importance, as they precede the theory of electrolytic dissociation of salts of Arrhenius. Rare. Unknown to the usual bibliographers.

CHARPENTIER, Jacques

Platonis cum Aristotele in Universa Philosophia, Comparatio. Quae hoc Commentario, in Alcinoi Institutionem ad eiusdem Platonis doctrinam, explicatur. . . . Ad illustrissimum Galliae Cardinalem & Principem, Carolum Lotharingum.

Bound with: *Pars Posterior Platonicae et Aristotelicae Comparationis in Universa Philosophia. Quae de animorum immortalitate, de fato & libero arbitrio disputationem continet, itemque explicationem eorum quae ad philosophiam moralem pertinent. . . . Adiecta est eiusdem Carpentarij calumniatorem. Ad O.V. Paulum Foxium.* Paris: Ex officina Iacobi du Puy. 1573.

First edition of each work. 2 vols., 4to., in 1. I: 44 leaves, 478 pp., 1 leaf (blank). II: 4 leaves, 330 pp., 2 leaves (errata). Large woodcut printer's device on each title page, historiated woodcut

capitals, head- and tailpieces. Roman and italic letter. Fine, crisp copy in contemporary limp vellum (some wear).

THE PHILOSOPHER-PHYSICIAN Charpentier (1524–1574), physician to Charles IX of France, was a staunch defender of the doctrines of Aristotle. In these two books he compares the teachings of Aristotle and Plato, always coming down on the side of Aristotle. Besides their interest and importance to the history of ancient philosophy, these works are also valuable for the sixteenth-century opinions on the structure of the universe, the elements, fire, metals and salts, astronomical observations, commentaries on Cardan's views, medical theories (for and against Hippocrates), Galen's teachings on medicine (for and against), Averroes's and Avicenna's philosophy of science and medicine, the nature of heat, cold, light, colors, lodestone, and other matters. An implacable enemy of Pierre de La Ramée (Ramus, 1515–1572), a celebrated professor of philosophy and logic at Paris, Charpentier is occasionally accused of having plotted the murder of La Ramée. Thorndike (V, 556; VI, 450) discusses Charpentier, but not these two very rare works. (British Library, *S.T.C. French Books*, p. 9)

CHÂTELET, Gabrielle-Émilie Le Tonnelier De Breteuil, Marquise Du

Dissertation sur la Nature et la Propagation du Feu.
Paris: Chez Prault, Fils. 1744.

First separate edition. 8vo. 2 leaves, 139 pp. With engraved vignette on title (repeated on p. 1), and 1 small copperplate (facing p. 55). Fine, crisp presentation copy, in contemporary calf, gilt rules around sides, spine richly gilt, maroon morocco lettering label. Inscribed in ink on flyleaf: "Pour Mr. Malouin de la part de M(adam)e la M(arqu)ise du Chatellet."

MADAME DU CHÂTELET (1706–1749), an intimate friend of Voltaire, is best known in the history of science for her translation of Newton's *Principia* into French. "At the end of August 1737 Mme. du Châtelet finished an important memoir on fire, written for a prize competition organized by the Académie des Sciences. Voltaire entered the same contest. . . . The results of the competition were announced on 16 April 1738; the prize was divided among Euler and two authors of second rank. However, Voltaire arranged for his memoir and that of Mme. du Châtelet to be included with the winning memoirs . . . in April 1739. In 1744 Mme. du Châtelet secured the publication of a slightly modified edition of her memoir" (D.S.B.). One of the subjects dealt with in this memoir (pp. 23–34) is the problem of the increase in weight of metals when they are calcined. She concludes (unlike Voltaire) that fire is very nearly weightless and that the increase in weight on calcination must be due to the intrusion of extraneous matter. In an

other section (pp. 89–92) she deals with fire as the cause of electricity. This copy is bound with a work by Mairan and another work by Mme. du Châtelet, both dated 1741. A most desirable copy, having been presented by Mme. du Châtelet to the royal physician and chemist Paul-Jacques Malouin (1701–1778), who took an active interest in the developing science of chemistry to which he contributed several publications. Rare. Not in Bolton, Duveen, Ferchl, Ferguson, Smith, Waller, Wellcome, etc. (Cioranescu, 25722; D.S.B., III, 215; Edelstein, 499; Guerlac, *Lavoisier—The Crucial Year*, p. 121; Partington, III, 606 [1752 ed. only]; Poggendorff, I, 425; Watt, I, 218a)

CHÂTELET, Gabrielle-Émilie Le Tonnelier De Breteuil, Marquise Du

*Réponse de Madame *** à la Lettre que M. De Mairan, Secrétaire perpétuel de l'Académie Royale des Sciences, lui a écrite le 18 février 1741, sur la question des forces vives.*
Bruxelles: Chez Foppens. 1741.

First edition. 8vo. 1 leaf, 45 pp. Fine copy, bound in contemporary calf with Châtelet, Gabrielle-Émilie, *Dissertation sur la Nature . . . du Feu* (Paris, 1744), and with de Mairan, Jean Jacques d'Ortous, *Lettre de M. De Mairan* (Paris, 1741).

A DIRECT ATTACK against Mairan for the remarks he made in his *Lettre de M. Mairan . . . à Madame La Marquise Du Chastellet* (Paris, 1741). Madame du Châtelet herein defends Leibniz's point of view on *forces vives*. Rare. Not in Waller, Watt, Wellcome, etc. (D.S.B., III, 216; Poggendorff, I, 425)

CHEMICAL RECREATIONS

Chemical Recreations. Directions for performing in a ready manner a variety of amusing and striking chemical experiments, by means of a select number of chemical preparations, contained in the phials of a portable chest. Intended for the entertainment and instruction of young students in chemistry.
London: Printed for W. and S. Jones. 1800.

First edition. Sm. 4to. 2 leaves, 46 pp., 2 leaves (advertisements). Fine copy in contemporary speckled calf, rebound, gilt, maroon morocco labels. Bound with: Göttling, J. F. A., *Description of a portable chest of chemistry* (London, 1791).

A BOOKLET DESCRIBING eighty-one instructive experiments, printed to accompany the portable chests of chemicals and apparatus manufactured by W. and S. Jones, "philosophical instrument makers, Holborn." A note at the foot of the title states: "N.B. This Pamphlet is not sold separately from the Chest." Very rare. Unrecorded by the bibliographers.

DISSERTATION
SUR LA NATURE
E T
LA PROPAGATION
DU FEU.

Ignea convexi vis , & sine pondere cœli
Emicuit , summâque locum sibi legit in arce.
Ovid.



A PARIS,
Chez PRAULT, Fils, Quai de Conti, vis-à-vis
la descente du Pont-Neuf, à la Charité.

M. DCC. XLIV.

Avec Approbation & Privilège du Roi.

CHEMISCHE BELUSTIGUNGEN

Chemische Belustigungen. Oder Sammlung auserlesener Kunststücke, die zur Bewunderung und zum Vergnügen gereichen.

Leipzig: bey Friedrich August Leo. 1794.

First edition. 8vo. xx, 258 pp., 7 leaves (last blank). With 2 engraved plates. Fine copy, uncut with wide margins, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A BOOK OF chemical experiments designed to amuse and instruct an audience. "This is not a treatise on Chemistry but a couple of hundred startling effects produced by chemical action, arranged in eight classes: 1. Tricks with colours; 2. Sympathetic inks; 3. Tree of Diana, etc.; 4. Phosphorus; 5. Combustion experiments; 6. Explosions; 7. Gases; 8. Miscellaneous experiments. It is a collection of popular lecture demonstrations. The author has not given his name" (Ferguson). It is possible that Friedrich Christian Accum (1769–1838) based his *Chemical Amusement* (London, 1817) on this work, as their arrangement and general content are similar. Accum, who went to England from Germany in 1793, would certainly have kept up with German chemical literature. He was forty-eight years old when *Chemical Amusement* was published. Very rare. Not in Blake, Caillet, D.S.B., Rosenthal, Watt, Wellcome, or the usual chemical bibliographies. (Ferchl, 93; Ferguson, I, 154)

CHEMIST

The Chemist. . . .

London: Knight and Lacey, Publishers. 1824, 1825.

First (only) edition. 2 vols., 8vo. I: viii, 448 pp., 4 leaves (index). II: 4 leaves, 480 pp., 4 leaves (index). With many large woodcuts in text. Fine copy, uncut, in the original publisher's pictorial boards, gilt-lettered cloth spines, complete with half titles and leaf announcing discontinuance of publication. From the library of the Boston Athenaeum, with old stamps (canceled).

A COMPLETE SET of the short-lived first English periodical on chemistry, a weekly publication from 13 March 1824 to 16 April 1825. Established as "a repository of every valuable discovery, either in chemistry or the sciences connected with it." Publication ceased after the second volume appeared, because (as the leaf following the title states): "It has been ascertained, by a whole year's experience, that the Chemist is not likely to pay." Bolton suggests that the editor might have been Augustus Mongrédieu (1807–1888). "The second volume is specially rare, and still more so its title and notice (contained in the above copy), which are nearly always missing" (Sotheran). An important milestone

in chemical periodical literature. Not in D.S.B., Morgan, Partington, Waller, Wellcome, etc. (Bolton, 1096; Duveen, 131; Edelstein, 2700; Knight, *Natural Science Books in English, 1600–1900*, 1972, p. 227; Smith, 109; Sondheimer, 305; Sotheran, Cat. 832 [1932], 5114; *ibid.*, Cat. 879 [1947], 2528)

CHEMIST

Remarks upon Dr. William Redmond's Principles and Constituence of Antimony, and several other of the Doctor's Opinions in Chemistry. By a Chemist. . . .

London: Printed for James Fletcher, and Co. at the Oxford Theatre, in St. Paul's Church Yard. 1764.

First edition. 8vo. viii, 9–55, (1) pp. Fine, crisp copy, in quarter calf antique, marbled boards, spine gilt-lettered and dated.

A SPIRITED ATTACK ON *The principles and constituence of antimony* (London, 1762), published by William Redmond. The anonymous author accuses Redmond of going "back to some of the ancients' opinions, which . . . are now deservedly looked upon as mere follies." A number of careful experiments on antimony and its compounds are described in order to demonstrate that Redmond is wrong in his conclusions. The author was possibly John Huxham (1692–1768), whose *Medical and chemical observations upon antimony* (London, 1756) is vigorously defended (pp. 18–20). Very rare. Not in Blake, Cole, Duveen, Edelstein, Partington, Wellcome, etc. (Watt, III, sign. H2)

CHENEVIX, Richard

Analysis of Corundum, and of some of the Substances which accompany it; with Observations on the Affinities which the Earths have been supposed to have for each other, in the humid way. By Richard Chenevix, Esq., F.R.S. and M.R.I.A. From the Philosophical Transactions.

London: Printed by W. Bulmer and Co. 1802.

First separate edition. 4to. 23, (1) pp. Fine copy with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated. Presentation copy, inscribed in ink by Chenevix on title page: "To the Royal Institution from the Author." With old stamp of the Royal Institution on title.

AUTHOR'S SEPARATE printing of his important analyses of different kinds of corundum (naturally occurring aluminum oxide, Al₂O₃). Chenevix refers to the earlier analyses of Klaproth, comparing them with his own, and gives the chemical composition of rubies and sapphires from various parts of the world. On pages 15–23 he discusses the affinities of different earths (i.e., amphoteric oxides and hydroxides), with comments on the works of Guyton de Morveau,

Kirwan, Darracq, Berthollet, et al. Chenevix was awarded the Copley Medal of the Royal Society in 1803 "for his various chemical papers printed in the *Philosophical Transactions*." He also published *Remarks upon Chemical Nomenclature, according to the Principles of the French Neologists* (London, 1802), his only book, in which he examined the "merits and weaknesses of the French and other novel nomenclatures" (Duveen). Presentation copies of the author's separates are extremely rare, as it was usual to print only twenty to twenty-five copies. Not in the usual early chemical libraries. (D.S.B., III, 232; Ferchl, 93; Partington, III, 712; Poggendorff, I, 428; Watt, I, 219r)

CHENEVIX, Richard

Observations and Experiments upon Oxygenized and Hyperoxygenized Muriatic Acid; and upon some Combinations of the Muriatic Acid in its Three States. By Richard Chenevix, Esq., F.R.S., M.R.I.A. From the Philosophical Transactions.

London: Printed by W. Bulmer and Co. 1802.

First separate edition. 4to. 44 pp. Fine copy with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated. Inscribed in ink by Chenevix on verso of title: "Presenter to the Royal Institution of Great Britain, by the Author, May, 1802." With several textual corrections by him in ink and old stamp of the Royal Institution on title.

AUTHOR'S SEPARATE printing of his important researches on the preparation and properties of the explosive gas, chlorine dioxide (ClO_2), by the action of sulphuric acid on potassium chlorate. Also described are the preparations of chlorous acid (HClO_2) and its salts. The explosive properties of chlorine dioxide are discussed on pages 17–18. Chenevix (1774–1830) was an excellent chemist who, after an "unfortunate dispute with Wollaston . . . lived mostly in France" (Partington). He read the present paper to the Royal Society on 28 January 1802. Presentation copies of the author's separates are of extreme rarity, as only twenty to twenty-five copies were printed. Not in Bolton, D.S.B., Duveen, Edelstein, Ferguson Coll., Smith, Waller, etc. (Ferchl, 93; Partington, III, 712; Poggendorff, I, 428; Watt, I, 219r)

CHEVENIX, Richard

Remarks upon Chemical Nomenclature, according to the Principles of the French Neologists. By Richard Chenevix, Esq., F.R.S., M.R.I.A. &c. . . .

London: Printed for J. Bell, no. 148, Oxford-Street, by Wilks and Taylor, Chancery Lane. 1802.

First edition. 12mo. 2 leaves, 246 pp., 1 leaf (errata). Chemical symbols in text. Few very minor stains; otherwise fine, crisp copy, uncut with wide margins, in original blue boards (spine worn); contained in a protective box with black morocco spine, marbled boards, gilt-lettered and dated maroon label.

ELECTED F.R.S. (1801), Chenevix published the present work "to remind writers of the principles upon which the system of nomenclature was founded by Guyton de Morveau, Lavoisier et al., and to point out errors most frequently made. . . . In Chap. X (pp. 204–231) the author suggests some modifications of the Hassenfratz-Adet scheme of chemical signs and points out mistakes in the works of Bouillon-La Grange, Parkinson and G. Pearson" (Cole). A very scarce and important milestone work in the early development of chemical nomenclature. Not in Edelstein, Morgan, Roller & Goodman, etc. (Bolton, 44, 99; Cole, 273; D.S.B., III, 232–233 ["major work"]; Duveen, 132; Ferchl, 93; Partington, III, 373, 712; Poggendorff, I, 428; Smith, 109; Sotheran, Cat. 773 [1919], 2457 ["Rare"]; Watt, I, 219q; Wellcome, II, 334)

CHEVALLIER, Jean Baptiste Alphonse, and BARSE, Jules

Manuel pratique de l'appareil de Marsh, ou guide de l'expert toxicologiste dans la recherche de l'antimoine et de l'arsenic; contenant un exposé de la nouvelle méthode Reinsch applicable à la recherche médico-légale de ces poisons. . . .

Paris: Ancienne Maison Béchet Jeune, Labé succr., Libraire de la Faculté de Médecine. 1843.

First edition. 8vo. 2 leaves, 444 pp. Many woodcuts of chemical apparatus. Fine, crisp copy, in original gilt-ruled quarter calf, marbled boards, maroon morocco label, gilt. Presentation inscription in ink on recto of half title: "Monsieur Flandin de la part des auteurs. A. Ch[evallier]" (name abbreviated).

THE FIRST comprehensive book on the Marsh test for arsenic and antimony and a milestone of analytical chemistry and toxicology. One of Faraday's assistants, James Marsh (ca. 1790–1846) showed that if the hydrogen made by the action of an acid on zinc, mixed with an arsenic or antimony compound, was burned and the flame held beneath a piece of cold porcelain, an arsenic or antimony mirror was produced. Arsenic was distinguished from antimony by its solubility in sodium hypochlorite or bleaching-powder solution (antimony was insoluble). Marsh first published a description of his very sensitive test in 1836 (in *Edin. N. Phil. J.*, XXI, 229–236). The test for arsenic discovered by Reinsch in 1838 is also described in this book. The apparatus for conducting the Marsh test, designed by Charles Flandin (b. 1803), to whom this copy is inscribed, and

Ferdinand Danger (b. 1802), is discussed on pages 100–102, with woodcut. Arsenic was a favorite poison of murderers until the 1840s, and it was the application of the Marsh test that reduced the number of deaths resulting from this cause. On Chevallier (1793–1879), see Ferchl (pp. 93–94). No information on Barse has been located; on the title he is described as a pharmaceutical chemist at Riom. A rare book, unknown to the usual bibliographers. (Bolton, 365)

CHEVREUL, Michel Eugène

Considérations Générales sur l'Analyse Organique et sur ses Applications.

Paris: Chez F. G. Levrault. 1824.

First edition. 8vo. 3 leaves, xxi, (1), 256 pp., 1 leaf (errata). Fine, crisp copy. Bound with: Chevreul, M. E., *Recherches chimiques sur les corps gras* (Paris, 1823).

THE SECOND book by Chevreul on organic chemistry, dedicated to J. L. Gay-Lussac and L. J. Thenard, and a landmark in the history of organic chemical analysis. "Following the completion of his investigation into the chemistry of fats, Chevreul wrote in 1824 a work of a more general nature, the *Considérations générales sur l'analyse organique*, which represents the consequences of twelve years of research on fats. In this general treatise on organic analysis, . . . Chevreul considered the methods of analytical research in organic chemistry, methods which he himself used with such success in his fat researches. Chevreul described the methods to be used in handling natural products and in isolating pure substances from them in unaltered form. He showed how to recognize pure substances, giving exact criteria of what constitutes a pure organic compound. Chevreul presented for the first time a clear and accurate account of the methods of immediate analysis which must necessarily precede an ultimate analysis" (Albert B. Costa). Not in Duveen, Ferchl, Morgan, Waller, Wellcome, etc. (Bolton, 365; Costa, *Chevreul, Pioneer of Organic Chemistry*, 1962, pp. 60–61; D.S.B., III, 243; Edelstein, 509; Malloizel, 40; Partington, III, 343; Poggendorff, I, 433; Smith, 109; Sondheimer, 310; Sotheran, Cat. 666 [1906], 774)

CHEVREUL, Michel Eugène

Histoire des Connaissances Chimiques. Tome premier.

Paris: L. Guérin and Théodore Morgand. 1866.

First edition. 8vo. 4 leaves, 479 pp. + 42 pp. (Morgand's bookseller's catalogue). With large folding plate (colored diagram) at the end, and folding table facing page 130. Figures in text at pages 89, 154, 156, and 157. Tables at pages 96, 462, and 463. Fine copy, uncut, in contemporary dark-blue morocco,

spine gilt-lettered, with the original printed blue wrappers bound in.

THE INTRODUCTORY volume, and the only one ever to appear, of a proposed general history of chemistry by the great French chemist. Chevreul attempts to relate the development of chemistry to other physical and biological sciences in five books, but his project was evidently too ambitious for him and he hardly comes to grips with the history of chemistry, except in a superficial way. Although he published a number of journal articles on the history of chemistry, including alchemy, Chevreul abandoned writing any further books on the subject. This work is not mentioned by Caillet, Morgan, Poggendorff, or Waller. (Bolton, 100; D.S.B., III, 243; Duveen, 133; Ferchl, 94; Malloizel, 332; Partington, IV, 245; Smith, 109; Sondheimer, 318)

CHEVREUL, Michel Eugène

The Laws of Contrast of Colour and their Applications to the Arts and Manufactures. . . . Translated from the French by John Spanton.

London: George Routledge and Sons. 1883.

Third edition, revised. 8vo. 9 leaves, 243, (1) pp. With colored frontispiece and 16 other plates (mostly colored). Very good copy in original gilt-lettered publisher's cloth.

CHEVREUL'S FAMOUS investigations on the laws governing color contrasts were carried out while he was director of the Gobelins tapestry works, where he studied dyes and how they contrasted with each other. The results of his research were published in *De la loi du contraste simultané des couleurs* (Paris, 1839, 2 vols.), which was translated into English by John Spanton in 1857. Other English editions followed in 1858 and 1860. The present edition of 1883 is the best, as it "has been entirely revised, some obscurities cleared up, and a chapter on Military Clothing added. . . . The value of this book has been universally recognised. . . . The minuteness of investigation, and the copiousness of illustration . . . are truly remarkable" (preface). Very scarce. D.S.B. and Edelstein, respectively, cite the first and second English editions. Not mentioned by Bolton, Costa, Duveen, Partington, Smith, etc.

CHEVREUL, Michel Eugène

Leçons de Chimie appliquée à la Teinture. . . .

Paris: Pichon et Didier. 1829, 1830.

First edition. 2 vols., 8vo. I: Leçons 1–15 (separately paginated). II: Leçons 16–30 (separately paginated). With half titles and 3 lithographic plates. Fine, complete set, in gilt-ruled quarter calf antique, marbled boards.

IN 1824 CHEVREUL succeeded C. L. Berthollet as director of dyeing at the Manufactures Royales des Gobelins, the national tapestry workshop, and taught a course of chemistry there from 1826 to 1840. "This course appeared in print in 1829–1830 as *Leçons de chimie appliquée à la teinture*, comprising thirty lessons of which only the last two are dedicated wholly to dyeing; it is really a complete treatise on chemistry" (Costa). "Chevreul's immediate task at Gobelins was to work on the improvement of color intensity and fastness in wools. He had been selected for this position because he was an outstanding chemist, and his initial studies were on the chemical aspects of dyes and dyeing, attempting to place the art of dyeing on a more rational basis than the complicated and empirical procedures then employed . . . his two-volume *Leçons* . . . (1829–1830) rendered an important service to the dye industry during the years prior to the advent of synthetic dyestuffs" (D.S.B.). Brunet describes the work as "recherchés et devenus rare." Not in Caillet, Duveen, Morgan, Wellcome, etc. (Bolton, 365; Brunet, I, 1841; Costa, *Chevreur*, 1962, p. 7; D.S.B., III, 241; Edelstein, 2918; Farber, *Great Chemists*, 1961, p. 445; Ferchl, 94; Honeyman, 682; Lawrie, 119; Malloizel, 53–56; Partington, IV, 247; Poggendorff, I, 433; Smith, 109; Sondheimer, 311; Sotheran, Cat. 832 [1932], 5117)

CHEVREUL, Michel Eugène

Oeuvres Scientifiques de Michel-Eugène Chevreul doyen des étudiants de France 1806–1886. Par Godefroy Malloizel . . . Avec une introduction de M. J. Desnoyers . . . et une préface de M. Charles Brongniart, . . .
Paris. 1886.

First edition. 8vo. 298 pp., 1 leaf. With frontispiece portrait of Chevreul aged 101 (engraved by Champollion, 1887, from a photograph by Nadar). Title in red and black. Fine copy, uncut, in publisher's printed wrappers.

THE DEFINITIVE bibliography of the great French chemist, fully describing 547 papers and books. Chevreul was an active chemist for eighty years, and this work was published to commemorate his birth in 1786 (he died in 1889). Not in Caillet, Duveen, Morgan, etc. (Bolton, 188; D.S.B., III, 243; Edelstein, 521; Ferchl, 94; Ferguson Coll., 443; Partington, IV, 246; Smith, 312; Sondheimer, 320; Waller, 18716)

CHEVREUL, Michel Eugène

Recherches Chimiques sur les Corps Gras d'Origine Animale.
Paris: Chez F. G. Levrault. 1823.

First edition. 8vo. 3 leaves, xvi, 484 pp., 1 leaf (errata). With engraved plate (Adam sculp.), and 3 folding tables. Fine, crisp

copy, in contemporary mottled calf, gilt, green morocco label. Bound with: Chevreul, M. E., *Considérations générales sur l'analyse organique* (Paris, 1824).

ONE OF the great books of early organic chemistry, the result of ten years' research. "A classic study of animal fats. Chevreul discovered that fats are composed of fatty acids and glycerol" (Garrison-Morton). "One of his most significant books . . . a model of complete, exhaustive research in organic chemistry. . . [T]here was no one comparable to Chevreul in this field until Thomas Percy Hilditch in Great Britain, a century later" (D.S.B.). Berzelius praised the book as "a model for young chemists, the best and most completely executed which chemistry can show" (Partington). A new edition appeared sixty-six years later (Paris, 1889). A pupil of A. F. Fourcroy and L. N. Vauquelin (to whom the book is dedicated), Chevreul (1786–1889) spent a long and productive life carrying out research on a wide variety of subjects (e.g., fats, oils, dyes, theories of color, and history of chemistry). His contemporaries regarded him as "one of the most distinguished scientists of the century" (D.S.B.). A bibliography of his numerous publications was issued on the occasion of his centenary by Godefroy Malloizel, *Oeuvres scientifiques de M. E. Chevreul* (Paris, 1886). (Bolton, 365; D.S.B., III, 243; Duveen, 133; Edelstein, 517; Ferchl, 94; Garrison-Morton, 669; Honeyman, 681; Malloizel, 26; Partington, IV, 247; Poggendorff, I, 433; Sondheimer, 309; Sotheran, Cat. 702 [191], 6860 ["Very Scarce"]; Wellcome, II, 338)

CHEVREUL, Michel Eugène

Théorie des Effets Optiques que présentent les Étoffes de Soie. . .

Paris: Typographie de Firmin Didot Frères. 1846.

First edition. 8vo. 208 pp. With double-page folding chromolithographed plate. Very good copy with wide margins, uncut, in half calf antique, marbled boards, maroon morocco label, gilt, spine dated, original printed wrappers bound in. Presentation inscription on verso of front wrapper: "Offert par la Chambre de Commerce de Lyon à M. —" (recipient's name erased).

BASED ON the course of lectures Chevreul gave at Lyons in 1842 and 1843, this important work deals with the application of his famous theory of simultaneous contrast of colors to the manufacture of silken fabrics. "Explains the optical principles underlying the sheen and watered effect on different kinds of silk" (Honeyman Cat.). The book was printed at the expense of the Chamber of Commerce of Lyons, from whom the recipient received this copy. Not in Bolton, Caillet, Costa, D.S.B., Duveen, Morgan, Partington, Smith, Wellcome, etc. (British Optical Association

Cat., II, p. 21; Edelstein, 2927; Ferchl, 94; Honeyman, 683; Lawrie, 120B; Malloizel, p. 95; Poggendorff, I, 433; Sondheimer, 313; Sotheran, Cat. 832 [1932], 5919)

CHEYNE, George

Philosophical Principles of Natural Religion: Containing the Elements of Natural Philosophy, and the Proofs for Natural Religion, Arising from them. By George Cheyne, M.D. and F.R.S.

London: Printed for George Strahan at the Golden Ball in Cornhill over against the Royal Exchange. 1705.

First edition. 8vo. 17 leaves, 118 pp., 1 leaf (blank), 282, 68 pp. Signature Q8 (pp. 239–240) torn (no loss); otherwise a very good copy in contemporary paneled calf, gilt-lettered maroon morocco label. From the library of the famous Scottish poet James Thomson (1700–1748), with his signature in ink on the title page and page 1.

FIRST EDUCATED for the ministry, Cheyne (1671–1743) studied medicine at Edinburgh under the Scottish iatromechanist Archibald Pitcairne. In 1702 he moved to London, where he joined the Royal Society and established a medical practice. After publishing books on fevers (1702) and mathematics (1703), he directed his attention to the theological significance of Newtonian science, which produced the present work. Cheyne maintained that the phenomenon of attraction in the universe is proof of the existence of God, and he discourses here on physical laws, the atomic theory, gravitation, nature of light, properties of chemical compounds, etc. Every aspect of nature is discussed in order to prove the existence of an intelligent God throughout the universe.

This copy has an important provenance, having belonged to the poet James Thomson, who wrote *The Seasons* (1726–1730). Thomson must have studied this copy in writing his epic poem. See Thomson's biography in the *Encyclopedia Britannica*, which states that he had an "elated sympathy with Newtonian science, and his convictions that scientist and poet must collaborate in the service of God known through his Creation." Newton owned a copy of this edition. Scarce. Not in Blake, Cushing, Neu, Osler, Poggendorff, Waller, etc. (D.S.B., III, 244; Wallis, *Library of Newton*, no. 370; Watt, I, 220z; Wellcome, II, 338)

CHILDREY, Joshua

Britannia Baconica: Or, The Natural Rarities of England, Scotland, & Wales. According as they are to be found in every Shire. Historically related, according to the Precepts of the Lord Bacon; Methodically digested; and the Causes of many of them Philosophically attempted. With Observations upon them, and Deductions from them, whereby divers Secrets in Nature are discovered, and some things hitherto reckoned Prodigies, are fain to confess the cause whence they proceed. Usefull for all ingenious men of what Profession or Quality soever. By J. Childrey. *Res semper aliquid apporpat novi.* Terent.

London, Printed for the Author, and are to be sold by H. E. at the sign of the Grey-hound in St. Paul's Churchyard, 1662.

Third edition. 8vo. 16 leaves, 184 pp. Woodcut diagram on page 72. A1 (blank) missing in this copy. Seventeenth-century signature ("E. Levett") neatly written in ink at top of title page. Good copy in contemporary blind-ruled calf, rebaked, spine gilt-lettered and dated.

CHILDREY (1623–1670), an antiquary, was clerk of Magdalen College, Oxford, 1640; B.A., 1646; M.A., 1661; prebendary of Salisbury, rector of Upwey, Dorsetshire, and archdeacon of Sarum, 1664. He published two astrological tracts (*Indago astrologia*, 1652, and *Syzygiasticon instauratum*, 1653) and the *Britannia Baconica*, which rapidly ran through three editions (London, 1660, 1661, and 1662). Childrey corresponded with Oldenburg, secretary of the newly formed Royal Society. The *Britannia Baconica* is patterned after the precepts of Sir Francis Bacon and describes the natural features of every county in England, Scotland, and Wales. Topics of interest to the chemical historian include mineral waters (with a long section on those of Bath), minerals and metallic ores and their extraction, sulphur, bitumen, coal and tar, arsenic, lime, and saltworks. Thorndike discusses Childrey and this title, of which two French editions appeared (Paris, 1667, and n.d.). Rare. (Thorndike, VIII, 305; Watt, I, 222x; Wellcome, II, 341 [2nd ed., 1661]; Wing, C3872)

CHORON, Frédéric

Théorie des Atomes et des Équivalents Chimiques, suivie d'une table très-étendue. Deuxième édition revue, corrigée et augmentée.

Paris: Béchét Jeune, Libraire de la Faculté de Médecine. 1839.

Second edition. 8vo. iv, 93, (1) pp. Fine copy, in contemporary gilt-ruled quarter calf, marbled boards, brown morocco label, gilt.

THE FINAL and best edition (first: Paris, 1837) of an excellent work on the atomic theory and chemical equivalents. A table on the last page lists the elements then known. Rare. Not in D.S.B., Poggendorff, Wellcome, or the usual chemical bibliographies. (Bolton, *First Supplement*, 126; Sotheran, Cat. 800 [1926], 10470)

CHRISTAN, Thomas

Thomae Christan Carnioli Veldensis Dissertatio Inauguralis Chémico-Médica Historiam Acidi Sistens, quam auctoritate, et consensu . . . DD. Professorum . . . Pro supremis in Medicina honoribus, & privilegiis Doctoralibus legitime obtinendis Publicae Disquisitioni submittit [sic]. Disputabitur in Palatio universitatis Mense (left blank) Die (left blank) M.DCC.LXXI.

Typis Leopoldi Joannis Kaliwoda. (1771).

First (only) edition. 8vo. 44 pp., 2 folding tables. Fine copy, bound in antique style maroon half morocco, marbled boards, spine gilt-lettered and dated.

THE DOCTORAL dissertation of Thomas Christan, presented to the medical faculty of the University of Vienna. No biographical information on the author has been found. After discussing the properties of acids in general, Christan describes their medicinal virtues, their different types, origins in the vegetable and mineral kingdoms, etc. The then-known acids are described, including carbonic acid, acetic acid, formic acid, tartaric acid, succinic acid, and the mineral acids: hydrochloric, sulphuric, and nitric. Many salts of these acids are also described, with examples of their preparation and properties. The statements of many contemporary chemists on acids and salts are quoted: e.g., those of Boerhaave, Crantz, Haen, Hoffmann, Helmont, Spielmann, and Stahl. The tables of acids and alkalies, and salts formed by their reaction, are useful for the names of the salts, many of which were changed by Lavoisier and his coworkers in their famous *Méthode de Nomenclature Chimique* (Paris, 1787). A rare work, which has been overlooked by chemical historians. Not mentioned by Bolton, Duveen, Ferguson, Neu, Partington, Poggendorff, Smith, Waller, Watt, Wellcome, etc. (Ferchl, 95)

CHURCH, Henry

Miscellanea Philo-Theologica, or, God, & Man. A Treatise compendiously describing the Nature of God in his Attributes, with a lively pourtraiture of his Wisedome in ordering, and disposing of the Celestiall, and terrestriall Bodies. Containing much variety of Matter Theologicall and Philosophicall; wherein many secrets in Scripture, and in Nature, are unborwelled, with solid Prooves, and apt Applications singular for brevity, and perspicuity. By Henry Church. . . .

London: Printed for John Rothwell, and are to be sold at the Sunne, in Paul's Church-yard. 1637.

First edition. 4to. 14 leaves, 280 + 83 + (1) pp. This copy also has a cancel title page (with imprint: I. N. for John Rothwell, 1638), which was again canceled (with imprint: J. Rothwell & I. N(orton), 1638; S.T.C., 5218). The cancel title page of this copy is apparently unrecorded. A very good copy in contemporary blind-ruled, unlettered calf.

IN THE "To the Reader" (page following the cancel title, dated 1638), Thomas Weekes states that the author suddenly died, which accounts for the delay in the appearance of the book and the additional prefatory pages. No biographical information on the author has been found, except that which is briefly given in the Advertisement (signature A3-4). Church was a "godly Man," a "good Christian, and a provident Husband." He was very scholarly; studied many religious, philosophical, and scientific books; and wrote the present work as the result of his life-long studies. In sixty-eight sections, Church covers a wide variety of subjects of theological, medical, and scientific interest. Among these are discussions on the Sunne, Light, Aire, Earth, Water, Fire, Metals, Mineralls, Meteors, Rainebows, Eyes, Eares, Breasts, and Bellie. Rare. Not in Duveen, Ferguson, Thorndike, Waller, etc. (S.T.C., 5217; Watt, I, 228s; Wellcome, I, 1467)

CHYMIA

H.M.H.S.P.M.C. Chymia Curiosa Variis, non solum ex Regno Vegetabili, sed etiam ex Minerali et Animalis, Experimentis adornata. . . .

London: Impensis Henrici Gellords, et Christiani Wallich. 1687.

First edition. 8vo. 2 leaves, 16 pp., 6 leaves. Fine copy with wide fore- and lower margins, in quarter speckled calf antique, marbled boards, maroon morocco label gilt.

A VERY RARE book on chemical curiosities. The author cryptically identifies himself only by the letters H.M.H.M.C. (verso of second leaf). In the first of six chapters he praises chemistry, and in the other five the preparation of various

chemicals from plants, animals, minerals, and metals is covered. Although ostensibly printed in London, this curious work appears from the paper and typography to have been printed in Germany. "I have not been able to trace this booklet in any of the usual bibliographies. Sheet A (8 leaves) is numbered 1–16, sheet B (6 leaves) has no heading or pagination and the catchword does not tally between A8 and B1. It seems however that the book is complete" (Duveen). The Wellcome catalog suggests that there might be two leaves missing between A8 and B1. However, the text of paragraph 2 (A8v) continues logically on B1 and is followed by paragraph 3 on the same page. Wing, who misspells *Curiosa* as *Curiose* in the title and *Wallich* as *Welllich* in the imprint, lists only three copies: British Library, Wellcome, and the Cushing Library at Yale. Not in Edelstein, Ferchl, Ferguson, Ferguson Coll., Smith, Waller, Watt, etc. (Duveen, 277; Neu, 916 [imperfect: lacking six leaves of signature B]; Wellcome, II, 347; Wing, C4280A)

CHYMISCH-UNTERIRDISCHER

Chymisch-Unterirdischer Sonnen-Glantz; des ist: Ausführlicher Unterricht, von dem Wahren Philosophisch-Chymischen Subjecto, und dessen natürlich- und nöthigen Hand-Arbeiten, den sogenannten Lapidem Philosophorum aus allen dreyen Reichen sunder Anstand, Schaden und Unkosten zu verfertigen, Gott zu Ehren, der Wahrheit zu Steuer, denen armen Suchenden und Seuffzenden zum Trost und größten Vergnügen ans Licht gegeben, von einem der Wahrheit besitzend und liebenden Freunde, der sich verdeckt nennet, Christlich, Fürsichtig Vnd Stille, ist des Authoris Ernster Wille.

Frankfurt und Leipzig. 1728.

First edition. 8vo. 7 leaves (including frontispiece), 424 pp., 1 leaf (errata), 1 leaf (blank, missing). Engraved frontispiece (mining scene, with chemist surrounded by apparatus in the open air). Title in red and black. Very good copy in old marbled boards, crimson lettering label, spine dated.

A VOLUME OF nine alchemical tracts: 1) "Chymisch-Unterirdischer Sonnen-Glantz," p. 1; 2) "Die drei letzten Capitel de Occulta Philosophorum Chymia," p. 24; 3) "Von Natürlichen und übernatürlichen Dingen" (by Basil Valentine), p. 43; 4) "Dicta Alani," p. 152; 5) "Metallurgia des Doctor Tanckii," p. 169; 6 and 7) "Das 3te und 4te Buch aus der Wunderbahren Begebenheiten eines unbekandten Philosophi," pp. 226, 282; 8) "Ein Dialogus vom Stein der Weisen wo der Praeceptor Georgius und Discipulus Albertus über Bernhardi Fontinlein herrlich discurren," p. 333; and 9) "Aula Lucis, oder: Das Hauss des Lichts durch S.N.," p. 394. The author of this compilation is unknown:

C. F. von Sabor, C. F. S. von Siebenstern, or C. F. von Steinbergen have been suggested (see Ferguson). The copy in the Young Collection has a folding plate of chemical symbols probably added from another work; such a plate is not found in other copies located (e.g., N.U.C., Wellcome). In the Wellcome copy (which also lacks the errata leaf here present) the name Chrisostomo Ferdinand von Sabor is written in an eighteenth-century hand on the title page. Very rare. Not in the usual bibliographies. (Ferchl, 96; Ferguson, I, 159–160; N.U.C. [1 copy]; Wellcome, 348)

CIAMPINI, Giovanni Giustino

De Incombustibili Lino, sive Lapide Amianto deque illius filandi modo Epistolaris Dissertatio ad Reverendissimum Patrem Fr. Bernardum Josephum a Jesu Maria . . .
Rome: Typis Rev. Camerae Apostolicae. 1691.

First edition. 4to. 16 pp. (last blank). Large folding frontispiece of Ciampini kneeling and presenting this work to the dedicatee, Fr. Bernard Joseph (Gio. Batta Lenardi delin., Arnold V. Westerhout sc.). Fine, crisp copy, in modern boards.

THE LEARNED ecclesiastic Ciampini (1633–1698) was born in Rome and resided there throughout his lifetime, publishing many books on the ancient buildings and artifacts and on a variety of theological subjects. Greatly interested in asbestos minerals, in the present work he distinguishes four distinct types in his private museum: a) from Corsica or Corfu, b) from Liguria, c) from an undisclosed source, and d) from the Pyrenees Mountains, given to him by Boccone. On each of these specimens he carried out chemical and physical experiments. Ciampini notes the incombustibility of asbestos and describes how he developed a process for spinning its fibers into incombustible cloth: a remarkable accomplishment for its time. He quotes works by Agricola, Boccone, Dioscorides, Mattioli, Panciroli, et al. This tract was considered so important that an account of it appeared in the *Philosophical Transactions of the Royal Society* (1701), no. 273, p. 911. A rare and important work in the history of chemistry, chemical technology, and mineralogy. (British Library, *17th Century Italian*, I, 228; Osler, 2313; Poggendorff, I, 444; Watt, I, 226g)

CICERO, Marcus Tullius

M. Tullii Ciceronis Officia diligenter restituta. Eiusdem de Amicitia & Senectute dialogi singuli: item Paradoxa, & Somnium Scipionis: cum annotationibus Erasmi Roterodami, & Philippi Melanchthonis. Item, Annotat. Bartholomaei Latomi in Paradoxa.

Paris: Apud Simonem Colinaeum. 1541.

Second Colines edition. 8vo. 8 leaves, 180 folios. Large woodcut printer's device on title. Numerous large and small criblé woodcut capitals. Good, crisp copy in seventeenth-century calf, gilt, maroon morocco label, rebaked with original spine laid on.

A BEAUTIFUL EDITION by the Paris printer Simon de Colines (first: Paris, 1533), containing the commentaries by Erasmus of Rotterdam (dated May 1498 and September 1519), plus the arguments by Phillip Melanchthon. Cicero (106–43 B.C.), the greatest Roman orator of his time, “derived his material from Stoic, Academic, Epicurean and Peripatetic sources” (*Encycl. Brit.*). Although not a scientific work per se, there are inter alia references to agriculture, natural phenomena, chemical and metallurgical subjects, etc. Partington (I, 165–166) discusses the scientific writings of Cicero. Various works by Cicero are in Wellcome (vols. I and II), but not the present edition. The first Colines edition (1533) is in the British Library, but not this 1541 edition. Rare. (Watt, I, 227u)

CIONI, Gaetano, and PETRINI, Pietro

Lettera di G. Cioni e P. Petrini al chiarissimo Signore Dot. Francesco Pacchiani . . . (Pistoia: 4 Settembre 1805.)

Bound with: Cioni, G. and Petrini, P. *Lettera di G. Cioni e P. Petrini al chiarissimo Sig. Dott. Ottaviano Targioni Tozzetti . . .* (Pistoia: Nella Stamperia Manfredini. 12 Ottobre 1805.)

Bound with: Three tracts by Pacchiani, and one each by Mascagni, Sangiorgio, and Thenard and Biot, all of 1805.

I: First edition. 8vo. 11, (1) pp. II: First edition. 8vo. 20 pp. Very good copies, uncut, in maroon quarter cloth, marbled boards, spine gilt-lettered and dated.

I: A LETTER TO Pacchiani with comments on his experiments on the electrolysis of dilute solutions of hydrochloric acid and with observations on the very important experiments of Nicholson and Carlisle (in 1800) on the electrolysis of water. II: A letter to Targioni-Tozzetti (1755–1826), professor of botany at Pisa, on the electrolysis of dilute solutions of sea salt, with references to the researches of Pacchiani, Mascagni, et al. Partington (III, 449) briefly mentions Cioni, who (with Giorgi in Florence) passed steam over red-hot iron. Petrini (1785–1822) was profes-

sor of physics at Pisa. These papers are probably offprints from Brugnatelli's *Ann. di Chim.* (1805). Very rare. Not in Ekelöf, Wellcome, Wheeler Gift, etc, or the usual chemical bibliographies. (Mottelay, 337)

CLARKE, Edward Daniel

The Gas Blow-Pipe, or Art of Fusion by Burning the Gaseous Constituents of Water: giving the history of the philosophical apparatus so denominated; the proofs of analogy in its operations to the nature of volcanoes; together with an appendix, containing an account of experiments with this blow-pipe. . . .

London: Printed for T. Cadell and W. Davies. 1819.

First edition. 8vo. 2 leaves, iii, (1), 109, (1) pp. With engraved frontispiece (J. Shury sculpt.) of the gas blowpipe and two operators working behind a safety wall. Small woodcut of “The Safety-Cylinder invented by Professor Cumming for the Gas Blow-Pipe” (p. i). Very fine copy with wide margins, uncut and unpressed, in modern boards, engraved and printed label on front cover.

THE FIRST extensive work on the oxy-hydrogen blowpipe, by the use of which extremely high temperatures were achieved, thus enabling the fusion of refractory minerals and metals. “In 1816 Clarke began to study the response of a wide variety of refractory substances . . . to high temperatures with the oxy hydrogen blowpipe. Volcanological analogies were drawn and some important improvements were made to the blowpipe” (D.S.B.). This work lists experiments on ninety-six minerals. Clarke combusted a mixture of exactly two volumes of hydrogen and one volume of oxygen to attain very high temperatures: the product was steam (pp. 26–27). Earlier investigators (e.g., Lavoisier and Robert Hare) had used hydrogen and oxygen from separate sources, which were mixed in varying proportions just prior to combustion. Such mixtures did not produce the high temperatures that Clarke consistently achieved (pp. 6–8). At first professor of mineralogy at Cambridge and later University Librarian, Clarke (1769–1822) was an avid traveler and collector of manuscripts, minerals, and antiquities. William Otter (1768–1840), bishop of Chichester, published *The Life and Remains of E. D. Clarke* (London, 1824, 4to.). (Bolton, 368; D.S.B., III, 292; Edelstein, 529; Partington, III, 725; Smith, 112; Sondheimer, 324)

CLARKE, Edward Daniel

The Life and Remains of the Rev. Edward Daniel Clarke, LL.D. Professor of Mineralogy in the University of Cambridge.

London: J. F. Dove, 1824.

M. TVLLII CICE-
RONIS OFFICIA DILLI-
GENTER RESTITVTA.

Eiusdem de Amicitia & Senectute dialogi
singuli:

Item Paradoxa, & Somnium Scipionis:
Cum annotationibus Erasmi Roterodami,
& Philippi Melanchthonis.

Item, Annotat. Bartholomæi Latomi in
Paradoxa.



Parisijs Apud Simonem Colinæum.

I 5 4 1.

Cicero. M. Tullii Ciceronis Officia diligenter restituta. Paris, 1541.

First edition. 4to. With fine engraved frontispiece portrait of Clarke (from the painting by J. Opie, 1807). Fine copy, with wide margins, in the original half calf, marbled boards, strongly and tastefully rebacked, with the original green morocco lettering label preserved.

THE DEFINITIVE biography of Clarke (1769–1822), who greatly improved upon the oxy-hydrogen blowpipe invented by the American chemist Robert Hare (1781–1858). Partington (III, 724–725) discusses the details. Scarce. (Partington, III, 725)

CLARKE, William

The Natural History of Nitre: or, a Philosophical Discourse of the Nature, Generation, Place, and Artificial Extraction of Nitre, with its Vertues and Uses. . . .

London: Printed by E. Okes for Nathaniel Brook at the Angel in Cornhill near the Royal Exchange. 1670.

First edition. 8vo. 8 leaves, 93, (1) pp., 1 leaf (blank). Very good copy in original calf, rebacked, green morocco label. From the library of John, third Earl of Bute, tutor and first prime minister to George III.

AN IMPORTANT chemical and medical monograph containing “all information then available on the subject” (D.N.B.). The four chapters trace the history, extraction, purification, analysis, and uses of niter (potassium nitrate). Also described are the preparation of nitric acid, aqua regia, and various nitrates. The manufacture of gunpowder for military applications is covered (pp. 76–90). Foreshadowing the discovery of oxygen, this work (like the *Tractatus Quinque*, 1674, of John Mayow) contains references to the presence in the air of “nitre” (i.e., a substance that supports combustion). The life of animals is compared to “a burning Sulphur . . . at first kindled . . . by the Nitrous Air receiv’d into the Lungs, and communicated to the heart. . . . This Universal spirit affords the like use to Vegetables, as to Animals” (pp. 36–37). Clarke (1640?–1684), physician and nephew of William Prynne, practiced at Bath. Reprinted in the *Philosophical Transactions of the Royal Society* (No. 61), this work was translated into Latin (Frankfurt and Hamburg, 1675) and went through several editions. In 1663 Clarke was elected a fellow of Merton College, in Oxford, where he undoubtedly met Robert Boyle. (Bolton, 368; Cole, 280; Duveen, 136; Edelstein, 530; Ferchl, 97; Ferguson, I, 161; Ferguson Coll., 153; Krivatsy, 2477; Neu, 923; Partington, II, 559; Thorndike, VIII, 426; Waring, 637; Watt, I, 236h; Wing, C4564)

CLAUDER, Gabriel

Dissertatio de Tinctura Universali, (vulgò Lapis Philosophorum dictâ) in qua 1. quid haec sit. 2. quod detur in rerum natura; an Christiano consultum sit immediatè in hanc inquirere; 4. [sic] è qua materia; & 5. [sic] quomodo praeparetur, per rationes, & variorum experientiam perspicuè proponitur; aliaque curiosa & utilia, huic analogâ, adnectuntur. Ad Normam Academiae Naturae Curiosorum. . . . Altenburg: apud Godofredum Richterum. 1678.

First edition. 4to. 6 leaves, 272 pp., 12 leaves (index). Brownd owing to quality of paper; otherwise a very good copy in contemporary half vellum, speckled boards, gilt-lettered and dated orange and black labels. From the library of Prince Liechtenstein, with armorial bookplate on front pastedown endpaper.

CLAUDER (1633–1691), apothecary and alchemist, was a pupil of Werner Rolfinck. He studied at Jena and Leipzig, graduated with an M.D., was physician to several Saxon princes, and contributed papers to the Academia Naturae Curiosorum. In the present work Clauder refutes the attacks on alchemy made by Athanius Kircher in his *Mundus Subterraneus* (1664–65) and contends that transmutation is possible, citing many earlier and contemporary authors (e.g., Roger Bacon, Khunrath, Libavius, Fludd, and Helvetius). He also refers to recent experiments on air (perhaps those of John Mayow, as he mentions William Harvey on pp. 2–3) and speaks of a volatile “salt of air” that cannot be combined with fixed “salt of earth” except by “fermentation” (i.e., nitrification). The text was reprinted by Manget (*Bibliotheca Chemica Curiosa*, 1702), and another Latin edition appeared fifty-eight years later (Nuremberg, 1736). It was also translated into German (Nuremberg, 1682). Not in Smith or Waller. (Bolton, 967; Caillet, 2383; Duveen, 137; Edelstein, 533; Ferchl, 97; Ferguson, I, 161; Ferguson Coll., 154; Neu, 925; Partington, II, 314, 331; Poggendorff, I, 452; Watt, I, 236v; Wellcome, II, 355)

CLAUDER, Gabriel

Inventum Cinnabarinum, hoc est, Dissertatio de Cinnabari Nativa Hungarica, longa circulatione in majorem efficaciam fixata et exaltata. Ad Normam Academiae Naturae Curiosorum.

Jena: Sumtibus Johannis Bielkii. 1684.

First edition. 4to. 2 leaves, 68 pp. Title in red and black, with large woodcut device. Fine copy in quarter morocco antique, marbled boards, spine lettered and dated in gilt.

AN INTERESTING monograph on native Hungarian cinnabar (mercuric sulphide). In fifteen chapters Clauder describes chemical processes by which cinnabar can be made suitable for use in medicines. Native antimony sulphide is

also discussed and its properties compared with those of cinnabar. The works of many earlier and contemporary chemists are cited, and in chapter IV (pp. 11–13) Clauder inveighs against the disbelievers in the use of mercurial medicines, whom he styles “mischymists.” Not in Bolton, Caillet, Partington, Smith, Waller, etc. (Duveen, 137; Ferchl, 97; Ferguson, I, 162 [not in Young Coll.]; Ferguson Coll., 154; Neu, 924; Poggendorff, I, 452; Thorndike, VIII, 387; Waring, 497; Watt, I, 236v; Wellcome, II, 356)

CLAUDER, Gabriel

Methodus Balsamandi Corpora Humana, aliaque majora sine evisceratione et sectione hucusque solita. Ubi non modo de condituris veterum Aegyptiorum, Arabum, Ebraeorum, ac in specie corporis Christi, ut & modernorum diversa proponuntur; sed etiam modus subjungitur, quomodo cadavera integra sine exenteratione possint conditi. Adnexa item est methodus parandi varias essentias atque spiritus chymicos extemporaneae, sine igne aut destillatione. Ad Normam Academiae Naturae Curiosorum. . .

Altenburg: apud Godofredum Richter. 1679.

First edition. 4to. 8 leaves, 216 pp., 6 leaves (index). Hole in title page owing to removal of imprint (Wellcome states that it was over-pasted) and embrowned owing to quality of paper; otherwise a good copy in contemporary vellum.

AN IMPORTANT work in which Clauder gives a comprehensive survey of the history and practice of embalming by the Egyptians, Arabs, Hebrews, and Europeans, with mention of the methods used in Japan, China, Peru, Brazil, and other countries. The author describes his new method of preserving bodies without disemboweling, which he considered superior to that of the Dutch practitioner Louis de Bils, “who achieved unpopular notoriety as a result of his secretiveness” (Mettler, *History of Medicine*, p. 544). Chapter VII (pp. 181–216) deals with chemical preparations made without the use of fire or distillation. Thorndike (VIII, 387), who discusses other books by Clauder, says that he had “not examined” this work. Not in Bolton, Caillet, Duveen, Edelstein, Neu, Partington, Smith, etc. (Ferchl, 97; Ferguson, I, 162 [not in Young Coll.]; Ferguson Coll., 154; Poggendorff, I, 452; Waller, 1999; Watt, I, 236v; Wellcome, II, 356)

CLAUDER, Johann Christian

Dissertatio Medica Inauguralis de Dulcium Natura, Usu et Abusu, . . . Praeside Georgio Wolffgango Wedelio, . . . publicae . . . tradit Johannes Christianus Clauderus, Altenburgensis, ad diem (blank) Maji Anni MDCXCIV. . .

Jena: Literis Krebsianis. (1694).

First edition. 4to. 28 pp. Very good copy, in maroon half morocco antique, marbled boards, spine gilt-lettered and dated.

THE DOCTORAL dissertation of Clauder (dates unknown), a citizen of Altenburg, on the use and abuse of sweet substances, presented at the University of Jena under the direction of the professor of chemistry and medicine, G. W. Wedel (1645–1721). All sweet-tasting substances (e.g., sugar and honey) are described, including such poisonous salts as “sugar of lead” (lead acetate), with references to numerous earlier and contemporary chemists and physicians. Of chemical interest are discussions of the extraction of sugar from various plants, its solubility and decomposition by heat, conversion to alcohol by fermentation, etc. The preparation and harmful physiological effects of lead acetate are described. Unknown to Waring and the usual bibliographers. (Wellcome, II, 356)

CLAUSIUS, Rudolf Julius Emanuel

The Mechanical Theory of Heat. By R. Clausius. Translated by Walter R. Browne, M.A. . . .

London: Macmillan and Co., 1879.

First edition of this translation. 8vo. With 32 woodcut figures in text. Name of former owner on title; otherwise a very good copy in original cloth.

ONE OF the great classics of thermodynamics, this is a translation of the second, considerably revised edition of the *Abhandlungen*, with three appendices by the translator. The first English edition of this epoch-making work, which first placed thermodynamics on a sound scientific basis, was published in 1867 and was translated by various hands from the *Abhandlungen über die mechanische Wärmttheorie* (1864–67). A rare book. (Sotheran, Cat. 666 [1906], item 813)

CLAYTON, Thomas

Dissertatio Medica Inauguralis, De Parca et simplici Medicina, quam, annuente summo numine, ex auctoritate Reverendi admodum Viri D. Joannis Gowdie, Academiae Edinburgensae Praefecti; nec non Amplissimi Senatus Academici consensu, et nobilissimae Facultatis Medicae decreto; pro Gradu Doctoratus, summisque in medicina honoribus et privilegiis rite et legitime consequendis, eruditorum examini subjicit Thomas Clayton, Virginiensis. . . Ad diem 19 Maii, hora quarta post meridiem.

Edinburgh: Apud Hamilton, Balfour, & Neill, Academiae Typographos. 1758.

First edition. Sm. 4to. 2 leaves, 23 pp. Fine, crisp copy, in quarter maroon morocco antique, marbled boards, spine gilt-lettered and dated.

THE DOCTORAL dissertation of Thomas Clayton (dates unknown), on the history of pharmaceutical chemical medicines, with references to ancient writers (e.g., Celsus, Galen, and Hippocrates), as well as more modern authors (e.g., Francis Bacon, Sydenham, Baglivi, Bohn, Huxham, and Pringle). The preparation of medicines from salts, acids, alkalis, antimony, mercury, etc., is discussed. The work is dedicated to his father, John Clayton (1693–1773), a famous botanist who went to Virginia in 1705 and collected American plants for European botanists (see D.N.B.). John Clayton collaborated with Johann Friedrich Gronovius to produce the definitive work on the plants of Virginia, entitled *Flora Virginica* (Leiden, 1739–43) (see D.S.B., III, 350). One of Clayton's ancestors (possibly a grandfather) was the famous John Clayton (1657–1725), who first made coal gas (see Partington, III, 109). Very rare. No bibliographical reference has been found to Thomas Clayton or to this colonial American physician's work.

CLEGG, Samuel

A Practical Treatise on the Manufacture and Distribution of Coal-Gas, Its Introduction and Progressive Improvement. Illustrated by engravings from working drawings, with general estimates . . .

London: John Weale, 1853.

Second edition. 4to. With 19 engraved plates (some double page) and numerous lines and wood engravings in text. Fine copy in modern embossed cloth.

ONE OF the very important pioneering works on coal-gas manufacture. The first edition appeared in 1841, and a third in 1859. Clegg was one of the fathers of gas technology. Very scarce. Not in Bolton, Duveen, Ferchl, Morgan, Smith, Waller, or Wellcome. (Partington, III, 826)

CLUVIER, Philip

Introductionis in Universam Geographiam, tam Veterem quam Novam, Libri VI.

Leyden: Ex officina Elzeviriana. 1629.

First edition. 16mo. 252 pp., 4 leaves. With engraved title page. Small piece lacking from lower corner of contents leaf (affecting two or three words); otherwise very fine copy, in original blind-ruled speckled calf, orange morocco label.

CLUVIER (1580–1623), a learned scholar and native of Danzig, was sent by his father to Leiden, where he was induced (by the advice of the younger Scaliger) to study geography. This charming little pocket edition was posthumously published by Joseph Vorstius. It surveys the whole world (including references to America, California, etc.) and contains

information on mines, minerals, spas, ores, metals, etc. For details on Cluvier, see Moreri (*Dictionnaire Historique*, Paris, 1712, II, 351–352) and Gorton (*General Biographical Dictionary*, London, 1851). Wellcome (I, 1516–1518) cites two other works by Cluvier but not this title.

COCCHI, Antonio Celestino

Dissertatio Physico-Practica continens vindicias Corticis Peruviani.

Leyden: Apud Cornelium de Pecker. 1750.

First Dutch edition. 8vo. 63, (1) pp., 2 leaves (advertisements of books for sale by Corn. de Pecker). Woodcut ornament on title and woodcut tailpiece. Fine, crisp copy, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated, with old marbled wrappers bound in.

THE FIRST edition appeared as *Corticis Peruviani vindiciae dissertatio physico-practica* (Rome: Komarek, 1746, 8vo.). Cocchi (1699–1747) describes the many uses of Peruvian cinchona bark for curing fevers and other conditions. We now know that the bark contains quinine and other alkaloids. He describes attempts to extract the active principles from the bark and mentions Boerhaave, Tournefort, Bauhin, Tuvry, and other chemists. Wellcome (II, 363) lists the Rome (1746) edition but not the present edition. Very scarce. Not mentioned by the usual early chemical bibliographers. (Blake, 91; Waring, 342)

COCHLOVIUS, Karl Benjamin

Dissertatio Inauguralis Medica de Fonticulorum Usu Medico quam praeside Dn. Friderico Hoffmanno . . . Ad d. (blank) Augusti MDCCXXXVII. Pro . . . doctorales in arte medica . . . publicae disquisitioni exponet Carolus Benjamin Cochlovius, Bicinensis Silesius.

Halle: Typis Jo. Christiani Hilligeri, Acad. Typogr. (1727).

First edition. 4to. 28 pp. Historiated woodcut capital and headpiece. Very good copy, in maroon quarter cloth antique, spine gilt-lettered and dated.

THE DOCTORAL dissertation of Cochlovius (dates unknown), on the chemical and medicinal properties of mineral waters, presented under the direction of the great authority on balneotherapy Friedrich Hoffmann (1660–1742). The history of the medical uses of mineral waters from antiquity to the eighteenth century is discussed, with references to the works of earlier and contemporary chemists and physicians. Rare. Not in Blake, Blocker, Waring, or the usual chemical bibliographies. (Waller, 4711; Wellcome, II, 363)

COCHRANE, Archibald, Earl of Dundonald

Account of the Qualities and Uses of Coal Tar and Coal Varnish. With Certificates from Ship-Masters and others. London: Printed for T. and G. Wilkie. 1785.

Second edition. 4to. 43, (1) pp. Fine copy in contemporary Italian half vellum, marbled boards, spine lettered in ink. From the library of Giovanni Fabbioni (1752–1822), celebrated Italian chemist, with his engraved bookplate on verso of first flyleaf. Bound with: Cochrane, A., *The present state of the manufacture of salt* (London, 1785).

THE FINAL and best edition, the first of only twenty-three pages having appeared the previous year (Edinburgh: W. Smellie, 1784). In 1780 Cochrane (1749–1831), ninth Earl of Dundonald, discovered “a new and easy method of extracting tar from coal, for which a patent was obtained” (p. 3). He sold the tar to shipmasters for treating the bottoms of wooden ships to minimize attacks by marine organisms. The tar was also used to treat iron to prevent rust. The “coal varnish” mentioned in the title was made by dissolving rosin in the “essential oil of coal” (i.e., the low-boiling distillate, containing benzene, toluene, and xylenes). An important work that marks the beginning of the commercial coal-tar distillation industry, which, in turn, began the coal-gas, chemical, and dyestuffs industries at the start of the nineteenth century. The use of tar for treating wooden ships was cut short by the introduction of copper sheeting soon after the publication of this book. Cochrane “spent most of his long life attempting to apply science to the art of manufactures; he achieved considerable technical but little commercial success. . . . [H]e died in poverty in Paris in 1831” (D.S.B.). Cochrane deserves to be remembered as a pioneer of industrial chemistry, and in many respects he was ahead of his time. Not in Blake or the usual chemical bibliographies. (A. & N. L. Clow, *The Chemical Revolution*, 1952, pp. 389–423; Ferchl, 99; Poggendorff, I, 459; Singer et al. *A History of Technology*, 1958, vol. IV, pp. 252–257; Watt, I, 242n; Wellcome, II, 363)

COCHRANE, Archibald, Earl of Dundonald

The Present State of the Manufacture of Salt explained; and a new Mode suggested of refining British Salt, so as to render it equal, or superior to the finest Foreign Salt. To which is subjoined, a plan for abolishing the present duties and restrictions on the manufacture of salt, and for substituting other duties, less burthensome to the subjects, more beneficial to the revenue, and better qualified to promote the trade of Great Britain. By the Earl of Dundonald.

London: Printed by W. and A. Strahan: for T. Cadell, . . . J. Stockdale, . . . G. and T. Wilkie, . . . and W. Richardson. 1785.

First edition. 4to. 1 leaf, 84 pp., 1 leaf (advertisement announcing publication of his work on coal tar). Fine copy, from the library of Giovanni Fabbioni (1752–1822), with his bookplate. Bound with: Cochrane, A., *Account of the qualities and uses of coal tar* (London, 1785).

AN IMPORTANT work on the manufacture of common salt (sodium chloride), principally from the naturally occurring rock salt of Cheshire. Cochrane’s arguments, stated herein, are extremely cogent. The book was well received, and a second edition containing a seventeen-page appendix was published the same year (17 May 1785). Not in Blake, Wellcome, or the usual chemical bibliographies. (Bolton, 372; A. & N. L. Clow, *The Chemical Revolution*, 1952, p. 100; D.S.B., IV, 250; Ferchl, 99; Ferguson Coll., 156; Poggendorff, I, 459; Watt, I, 242n)

COCHRANE, Archibald, Earl of Dundonald

The Present State of the Manufacture of Salt explained; and a new Mode suggested of refining British Salt, so as to render it equal, or superior to the finest Foreign Salt. . . . By the Earl of Dundonald. The Second Edition, with an Appendix, 17th May, 1785.

London: Printed by W. and A. Strahan: for T. Cadeli, . . . J. Stockdale, . . . G. and T. Wilkie, . . . and W. Richardson. 1785.

Second edition. 4to. 1 leaf, 85, (1) pp., 1 leaf (blank), xxvii, (1) pp. Fine copy in gilt-ruled quarter calf antique, marbled boards.

THE RARE second edition of this important work. In the appendix the author observes that in the first edition (published earlier the same year), he had underestimated the population of England and had overestimated that of France. These errors led to unrealistic estimates of the duties and other revenues that could be collected on salt. The appendix attempts to correct these errors. Not in Blake or the usual chemical bibliographies. (Sotheran, Cat. 702 [1910], 7399; Wellcome, II, 363)

COCHRANE, Archibald, Earl of Dundonald

A Treatise, showing the Intimate Connection that subsists between Agriculture and Chemistry. Addressed to the Cultivators of the Soil, to the Proprietors of Fens and Mosses, in Great Britain and Ireland; and to the Proprietors of West India Estates. By the Earl of Dundonald. . . .

London: Printed for J. Murray and S. Highley (Successors to the late Mr. Murray), No. 32, Fleet-Street. 1795. (Drawback.)

First edition, first issue. Large 4to. vii, (1), 252 pp. Magnificent copy in pristine condition, printed on bluish paper with very wide margins, in original full tree calf, gilt, crimson morocco label, gilt.

A SIGNIFICANT WORK on chemistry as it applies to agriculture, which also covers the analysis of soils (pp. 151–159). “His treatise on the connection between agriculture and chemistry foreshadowed much of Humphry Davy’s *Elements of Agricultural Chemistry*, including the recognition of phosphorus as an essential plant nutrient” (D.S.B.). Davy was undoubtedly influenced by this work, but he carried his experiments and conclusions further than Cochrane. Two states of the imprint exist: 1) “Printed for the Author, and sold by R. Edwards, March, 1795,” and 2) as above. No priority of state has been established. The second issue of the first edition appeared in 1803. Unknown to C. A. Browne (*A Source Book of Agricultural Chemistry*, 1944). Not in Blake, Duveen, Edelstein, Morgan, Neu, Perkins, Waller, etc. (Bolton, 372; D.S.B., IV, 250; Ferchl, 99; *Goldsmid’s Library of Economic Literature*, 16238; Lowndes, II, 629; McDonald, *Agricultural Writers, 1200–1800*, 1908, p. 222; Partington, IV, 39; Poggendorff, I, 459; Rothamsted Catalogue, p. 37; Sabin, 14071; Smith, 156; Sondheimer, 457; Sotheran, Cat. 832 [1932], 5189 [“Rare”]; Watt, I, 242n; Wellcome, II, 364)

COCHRANE, Archibald, Earl of Dundonald

A Treatise, shewing the Intimate Connection that subsists between Agriculture and Chemistry. . . . A New Edition. London: Printed for John Murray, 32, Fleet-Street; and J. Harding, 36, St. James’s-Street. 1803. Price 10s. 6d. in Boards.

First edition, second issue. Large 4to. vii, (1), 252 pp. Extremely fine copy, in pristine condition, printed on bluish paper with very wide margins, entirely uncut and unpressed, in original boards, printed paper label on spine. From the library of Viscount Melville, an early advocate of chemical methods of farming, with his neat signature at top of title page.

ALTHOUGH THE title states that this is a “new edition,” it is actually made up of the sheets of the first issue of 1795, with the errata uncorrected. Only the title page has been reprinted, and it is attached to the stub of the 1795 title leaf. Even the half title is that of the 1795 issue. Relatively few copies of the sheets of the first issue must have remained, as the 1803 issue is very rare. The appendix (pp. 243–252) is of interest for the analyses of the soils of the West Indian Islands (e.g., Antigua, Barbados, Grenada, and Jamaica). Not in D.S.B. or the usual chemical bibliographies. (Sotheran, Cat. 702 [1910], 7401 [“Rare”]; Wellcome, II, 364)

COETLOGON, Denis de

An Universal History of Arts and Sciences: or, a comprehensive illustration, definition, and description of all sciences, divine and human; and of all arts, liberal and mechanical. The origin and progresses of all religions . . . the description of all countries . . . the different systems of philosophers . . . observations of astronomers . . . the history of all Orders . . . the manner of travelling into foreign parts. The whole extracted from the best authors in all languages, and enriched with the new systems, hypotheses, maxims, and reflections of the author. . . .

London: Printed and Sold by John Hart, in Popping’s Court, Fleet-street. 1745.

First edition. 2 vols., folio. I: 2 leaves, viii, 1203, (1) pp. II: 1 leaf, 1244 pp., 13 leaves (index). Engraved frontispiece in each volume (by Gravelot, Cole, etc.) and 32 engraved plates. Title pages in red and black. Historiated woodcut initials, head- and tailpieces. Fine, crisp copy, in contemporary gilt-ruled calf, strongly rebacked with original richly gilt spines laid down, maroon and black morocco labels.

A MONUMENTAL WORK of scholarship, giving a complete picture of the sciences, technology, and arts of the mid-eighteenth century. It is an important milestone in the development of the great encyclopedias of the later decades of that century. Although the list of subscribers gives about 350 names, the work is now very scarce. It contains a considerable amount on chemistry, chemical technology, and related subjects. “The excellent nine-page article on ‘Phosphorus,’ which includes all types of luminescence, is an appendix to the subject ‘Opticks.’” (See E. N. Harvey, *History of Luminescence* [1957], p. 161.) (Collison, *Encyclopedias* [1966], p. 106; Watt, I, 244d; Wellcome, II, 365)

COHAUSEN, Johann Heinrich

Hermippus Redivivus: or, the Sage’s Triumph over Old Age and the Grave. Wherein, a Method is laid down for Prolonging the Life and Vigour of Man. Including, a Commentary upon an Antient Inscription, in which this great Secret is revealed; supported by numerous authorities. The Whole Interspersed with a great Variety of remarkable, and well attested Relations. The Second Edition carefully corrected and much enlarged.

London: Printed for J. Nourse, at the Lamb, against Catherine-Street in the Strand. 1749.

Second edition. 8vo. 4 leaves, 248 pp. Very good copy in worn contemporary quarter calf, gilt, marbled boards, maroon morocco label (entitled “Pamphle[ts]”). Bound with: Venuti, Marquis Don Marcello di, *A description of . . . Herculanæum* (London, n.d., ca. 1750); and, Marmontel, Jean François, *The life of Belisarius* (London, 1759).

THE SECOND and best English edition, translated by John Campbell (1708–1775), of *Hermippus Redivivus sive exercitatio physico-medica curiosa* (Frankfurt, 1742). The first English edition (London, 1744; 168 pp.) contained numerous errors, which were corrected in the present edition, to which Campbell added many valuable footnotes. Campbell was a friend of Dr. Samuel Johnson. In Boswell's *Life*, Johnson described this book as "very entertaining as an account of the hermetic philosophy." The works of many alchemists and chemists are cited (e.g., Lull, Flamel, Basil Valentine, Digby, Boyle, and Newton). Cohausen held the curious belief that old age could be attained by regularly "inhaling the breath of young people" (Osler). Further editions appeared (London, 1771; Edinburgh, 1885). Duveen and Edelstein list the first English edition, and Waller the third. (Blake, 92; Blocker, 82; Ferguson, I, 168 [not in Young Coll.]; Ferguson Coll., 158; Neu, 954; Osler, 2338; Partington, II, 545; Smith, 115; Sotheran, Cat. 832 [1932], 5132; Watt, I, 189y, 244n; Wellcome, II, 366)

COHAUSEN, Johann Heinrich

Hermippus Redivivus, ou le Triomphe du Sage, sur la Vieillesse et le Tombeau; contenant une méthode pour prolonger la vie & la vigueur de l'homme; traduction de l'Anglois, d'après le Docteur Cohausen, & la seconde édition de Londres. Par M. De La Place. . .

Brussels: Chez Maradan. 1789.

First French edition. 2 vols., 8vo., in 1. I: xvi, 192 pp. II: 1 leaf, 194 pp. With frontispiece portrait bust of the translator (engraved by B. A. Nicollet after a drawing by C. N. Cochin, 1788), in volume I. Very good copy in original quarter calf, gilt, marbled boards, two maroon morocco labels.

A TRANSLATION OF John Campbell's second English edition of *Hermippus Redivivus* (London, 1749). According to the inscription in the frontispiece, Pierre Antoine De La Place, the translator, was born at Calais, 1 March 1707. He died in 1793 and was probably related to the famous physicist and astronomer Pierre-Simon, Marquis De La Place (1749–1827). Dedicated to Dr. Sayffert, physician to the Duke and Duchess of Orleans, the book contains notes by the translator. "Livre curieux et rare" (Caillet). Not in the usual chemical bibliographies. (Blake, 92; Caillet, 2425; Guaita, 170; Osler, 2340; Wellcome, II, 366)

COHAUSEN, Johann Heinrich

Lumen Novum Phosphoris Accensum, sive Exercitatio Physico-Chymica, de causa lucis in Phosphoris tam naturalibus quam artificialibus, exarata ad provocationem celebrerrimae Regiae in Galliis Burdegalsium Academiae . . .
Amsterdam: Apud Joannem Oosterwyk. 1717.

First edition. 8vo. 14 leaves, 306 pp., 12 leaves (including 2 leaves of advertisements of books sold by Oosterwyk, and 1 blank leaf). Letterpress title in red and black. Engraved title (by F. Ottens) and 5 other engraved plates. Fine copy in contemporary mottled calf, gilt, maroon morocco label. Old stamp on verso of printed title: "Huzard de l'Institut."

COHAUSEN (1665–1750), a learned writer and physician to the bishop of Münster, published several books. The present comprehensive work was submitted for the prize offered by the Bordeaux Academy of Science. "This extensive monograph . . . considered most of the known luminescences and marshalled a considerable array of facts" (E. N. Harvey). Divided into three parts, the book covers 1) natural phosphors (e.g., atmospheric, marine, mineral, and animal); 2) artificial phosphors (e.g., Bononian stone and mercurial); and 3) hermetic phosphors. Cohausen, who refers to many earlier and contemporary authors, attempts "not only to describe the luminescence but to explain the light itself . . . based on the chemistry of the day" (E. N. Harvey). "A learned treatise on phosphorus and phosphorescence" (Sotheran). The beautifully engraved plates illustrate all types of luminescence, and there is an excellent index. The third part, *De Phosphoric Hermeticis*, has a plate by Cohausen, after Robert Fludd. (Blake, 92; Bolton, 372; Caillet, 2426; Duveen, 139–140; Edelstein, 549; Ferchl, 100; Ferguson, I, 168; Ferguson Coll., 158; E. N. Harvey, *A History of Luminescence*, 1957, pp. 154–155; Neu, 955; Partington, II, 545; Poggendorff, I, 460; Smith, 115; Sotheran, Cat. 832 [1932], 5133 ["Rare"]; Waller, 10780; Watt, I, 244m; Wellcome, II, 366)

COLBATCH, John

A Collection of Tracts, Chirurgical and Medical; viz. I. A New Light of Chirurgery . . . II. The new Light of Chirurgery vindicated . . . III. A Physico-medical Essay concerning Alkaly and Acid . . . IV. Further Considerations concerning Alkaly and Acid . . . V. A Treatise of the Gout . . . VI. The Doctrine of Acids in the Cure of Diseases . . . VII. A Relation of a sudden and extraordinary Cure of a Person bitten by a Viper, by the means of Acids, &c. . .

London: Printed for Dan. Brown at the Black Swan and Bible without Temple-Bar. 1704.

Second collected edition. 8vo. 2 leaves, 568 pp., 8 leaves. Bookseller's advertisement (2 pp.) before general title page and divisional title pages to each part. Few minor stains; otherwise fine copy in original unlettered paneled calf.

THE FINAL and best edition of this collection of seven tracts. The first edition of 1699 (Wellcome, II, 368; Wing, C4992), reissued in 1700 (Waller, 2058), contained a number of errors that necessitated the publication of the present edition. Originally trained as an apothecary in Worcester, in 1696 Colbatch (1670–1728) was admitted a licentiate of the Royal College of Physicians and was knighted by George I in 1716 (see Munk, I, 517). He “undertook to show specifically that the causes of many diseases were alkaline and that to employ alkaline remedies for these was very injurious” (Thorndike, VIII, 446). Colbatch published works (1689–1699) advocating the use of acids in medicine, which are here reprinted. “He says experience had proved that scurvy among sailors is relieved by eating apples, oranges, and lemons, and in general his remedies are sensible” (Partington). Rare. The copy in the British Library lacks the general title page and advertisement leaf. (Blake, 93; Neu, 957; Partington, II, 290; Watt, I, 245i)

COLBATCH, John

A Physico Medical essay, concerning Alkaly and Acid, so far as they have relation to the Cause or Cure of Distempers; wherein is endeavoured to be proved, that Acids are not (as is generally, and erroneously supposed) the Cause of all or most Distempers; but that Alkalies are. Together with an Account of some Distempers, and the Medicines, with their Preparations, proper to be used in the Cure of them: as also A Short Digression, concerning Specifick Remedies. By John Colbatch Physician.

London: Printed for Dan. Browne at the Black Swan without Temple-Bar. 1696.

First edition. 8vo. 15 leaves, 1–55, 52, 53, 58, 59, 56, 57, 62, 73–147 (1) pp. (i.e., 137 pp.). Pagination erratic, but text complete. Lacks 1 leaf (signature A8 of preface); otherwise very good copy in contemporary dark-blue sheep, all edges gilt, ornamental gilt cartouche on each cover, spine richly gilt.

AN IATROCHEMICAL treatise in which the author propounds the hypothesis that “the causes of many diseases were alkaline, not acid, and that acid and not alkaline remedies should be used. He says that experience had proved that scurvy among sailors is relieved by eating apples, oranges, and lemons, and in general his remedies are sensible” (Partington). He refers to the works of Robert Boyle (of whom he speaks highly) and to those of Burnet, Glauber, Helmont, Johnson, Willis, and others. The book ends with a discussion of the

relative merits of acidic, alkaline, and nitro-sulphurous mineral waters. Scarce. Not in Duveen, Edelstein, Ferguson Coll., Neu, Smith, Waller, etc. (Cushing, C308; Ferchl, 101; Krivatsy, 2559; Manget, *Bibliotheca Scriptorum Medicorum*, I, pt. 1, p. 94 [under “Colbath”]; Munk, I, 517; Partington, II, 290; Thorndike, VIII, 446; Watt, I, 245h; Wellcome, II, 368; Wing, C5003)

COLLECTANEA CHYMICA

Collectanea Chymica: a Collection of the Ten Several Treatises in Chymistry, concerning the Liquor Alkabeth, the Mercury of Philosophers, and other Curiosities worthy the Perusal. Written by Eir. Philaletha, Anonymus, Job. Bapt. Van-Helmont, Dr. Fr. Antonie, Bernhard, Earl of Trevisan, Sir Geo. Ripley, Rog. Bacon, Geo. Starkey, Sir Hugh Platt, and the Tomb of Semiramis, see more in the Contents.

London: Printed for William Cooper, at the Pelican in Little Britain. 1684.

First edition. 8vo. .3 leaves, 32 pp., 16 pp. (*Starkey's Pill Vindicated*), 193, (5) pp. (last blank). Few faded pen strokes on title and lower blank corner cut off (not affecting text); otherwise fine copy, in mid-eighteenth-century tree calf, black morocco label, spine gilt-ruled and dated.

A VALUABLE COLLECTION of alchemical tracts, complete with the exceedingly rare *George Starkey's Pill Vindicated* (16 pp.), which was also in the Duveen copy but was missing from the Young copy. The titles of the ten tracts in this collection are listed by Ferguson. This copy agrees completely with that described by Duveen, but the sequence of the tracts is different. Each tract has a separate title dated 1683, with the exception of the *Tomb of Semiramis*, which is dated 1684. This collection of tracts is one of the rarest items in alchemical literature, especially so when in such fine condition and with the added *Starkey's Pill Vindicated*. (Bolton, 968–969; Duveen, 141; Edelstein, 553; Ferchl, 101; Ferguson, I, 169; Ferguson Coll., 159; Heym, *Ambix*, 1, 53 [1937]; Krivatsy, 2586; Neu, 964; Pritchard, 118; Sotheran, Cat. 800 [1926], 10504 [“Rare”]; Thorndike, VIII, 367; Waite, 283; Wing, C5103)

COLONNA, Francesco Maria Pompeo

Les Secrets les plus Cachés de la Philosophie des Anciens, découverts et expliqués, à la suite d'un Histoire des plus curieuses. Par M. Crosset de la Haumerie.

Paris: Chez la Veuve d'Houry. 1762.

Second edition. 12mo. xvi, 333, (1) pp. Woodcut on title page, woodcut head- and tail pieces. Fine copy, unpressed and uncut, in speckled, gilt-ruled, half calf antique, marbled boards, maroon morocco label, gilt, original marbled wrappers bound in.

A VERY RARE alchemical work. Duveen (p. 345) states that considerable doubt exists as to the true identity of Crosset de la Haumerie. Ferguson mentions this title under Le Crom, which Duveen follows. Caillet (no. 2511) correctly lists the first edition (Paris: d'Houry fils, 1722) under Colonne. According to Pogendorff (I, 467), Colonna was born on 10 September 1644 in Rome but lived most of his life in Paris, where he perished when his house burned down on 6 March 1726. He was especially interested in alchemy, and in addition to the present work he published several others that are listed by Ferguson. Although the first edition is cited by Caillet, Duveen, Ferchl, and Neu, neither these authorities nor Blake, Bolton, Edelstein, Mellon, Smith, Waite, Watt, et al., mention the present 1762 edition. (Ferguson, II, 16 [not in Young Coll.]; Ferguson Coll., 161; Wellcome, II, 375)

COLSON, Lancelot

Philosophia Maturata: an Exact Piece of Philosophy, containing the Practick and Operative part thereof in gaining the Philosophers Stone; with the wayes how to make the Mineral Stone, and the Calcination of Mettals. Whereunto is added, a Work Compiled by St. Dunstan, concerning the Philosophers Stone, and the experiments of Rumelius and Preparations of Angelo Sala, all most famous Chymists in their time. . . .

London: Printed for G. Sawbridge, and are to be sold at his house upon Clerken-well-Green. 1668.

First edition. 12mo. 6 leaves (1st blank), 142 pp. Some leaves dust stained and several corners worn; otherwise good copy in original unlettered blind-ruled calf.

COLSON (or Coelson, fl. 1660–87), astrologer, physician, and chemist, practiced in London on Great Tower Hill and published almanacs (1660–87). The preface contains the life of St. Dunstan (924–988), archbishop of Canterbury, reputedly the author of this alchemical work, according to Colson. Ferguson, who discusses the contents, strongly doubts the attribution. “One of the leading works on the philosophers’ stone” (D.N.B.). “Very scarce” (Duveen). A German translation (Hamburg, 1696) appeared. (Cooper, 94; Duveen, 141; Edelstein, 555; Ferchl, 101; Ferguson, I, 171; Ferguson Coll., 161; Krivatsy, 2621; Neu, 975; Pritchard, 120; Watt, I, 249w; Wellcome, II, 375; Wing, C4883)

COLUMBIAN CHEMICAL SOCIETY

Memoirs of the Columbian Chemical Society, of Philadelphia. Volume I.

(Philadelphia:) Published by Isaac Peirce No. 3, South Fourth Street. 1813.

First edition. 8vo. (in 4s). 8 leaves, 221, (1) pp. Woodcut figure on page 193. Occasional minor browning; otherwise fine copy, uncut with wide margins, in original unlettered boards. Old stamp of Stephen Paschall Sharples (b. 1842), Massachusetts State Assayer, dated 5 April 1884, on first free endpaper, and his neat signature on title page.

ALL THAT was published of this important but short-lived society, which disappeared in 1814. Thomas D. Mitchell (1791–1865), who attended the University of Pennsylvania Medical School, while still a student “helped organize the Columbian Chemical Society in 1811 and was the first president of the organization. He published material from his thesis on acidification and combustion in *Memoirs of the Columbian Chemical Society*, 1813. Only one volume of the *Memoirs* appeared, and to this volume Mitchell contributed 9 of the 26 articles” (W. D. Miles). In his *Chemistry in America* (1914, pp. 209–218), Edgar Fahs Smith reprints the list of contents, officers, and members of the society, which includes many famous American and European chemists. See also *James Cutbush* (1919), by E. F. Smith, who describes the activities of this society. Although page 219 refers to a frontispiece of a Woulfe bottle, very few known copies contain it. This copy shows no sign of ever having had a frontispiece, and the copies at Yale and the University of Pennsylvania are without it. Extremely rare. (Bolton, 1128; Miles, *American Chemists and Chemical Engineers* [1976, p. 341]; Smith, 118)

COLUMELLA, Lucius Junius Moderatus

De Re Rustica Libri XII. Eiusdem de Arboribus liber, separatus ab aliis.

Lyons: Apud Seb. Gryphium. 1548.

First Gryphius edition. 8vo. 491, (1) pp., 10 leaves (1 blank). Final leaf with large printer’s device (a griffin) on verso. Different woodcut device (griffin) on title page. Historiated woodcut capitals and diagrams in text. Italic letter. Few headlines shaved; otherwise very good copy in late-seventeenth-century paneled calf, gilt, maroon morocco label. From the library of Hugh, Earl of Loudoun, Lord Machline: i.e., Hugh Campbell, third Earl of Loudoun (d. 1731), Scottish privy councillor (1696) and joint secretary of state for Scotland (1704), on whom see D.N.B., with fine engraved armorial bookplate (ca. 1700). Bound with: Merula, Georgius, *Enarrationes vocum priscarum in libris de re rustica* (Lyons, 1549).

COLUMELLA (1st century A.D.), a Roman soldier and farmer, wrote extensively on agriculture and related subjects in the hope of arousing a love for farming and the simple life. A Spaniard by birth, he first became a tribune of the Legio VI Ferrata, which was stationed in Syria; but neither an army career nor the law attracted him, and he successfully took up farming in Italy. His great work, *De Re Rustica*, in twelve books, on farming and country life has survived, along with a treatise, *De Arboribus*, on trees, which was part of an earlier work. Partington, Browne, et al., discuss the subjects of chemical interest in this work. The present edition is the first of Columella's books to have been printed by the press of Sébastien Gryphe of Lyons. Rare. For references to Columella's *De Re Rustica* and the chemical matter it contains, see Partington (I, 212–214); Browne, *Source Book of Agricultural Chemistry* (1944, pp. 14–15); the *Encyclopedia Britannica*, etc. (British Library, *S.T.C. French Books, 1470–1600*, p. 120; Watt, I, 250e)

COMBRUNE, Michael

The Theory and Practice of Brewing . . . Printed with Permission of the Master, Wardens, and Court of Assistants of the Worshipful Company of Brewers.

London: Printed by J. Haberkorn. Sold by R. and J. Dodsley in Pall-Mall; T. Becket and P. A. de Hondt at Tully's Head in the Strand; and T. Longman in Pater-Noster Row. 1762.

First edition. 4to. 1 leaf, vi, xii, 298 pp., 1 leaf (errata). A note on the verso of the title page states that "every Copy is signed by the Author," whose signature in ink in a flowing hand appears below. Late-eighteenth-century name (R. Peele) written in capitals at top of title; otherwise very fine copy (large paper), in contemporary marbled boards, rebounded in calf antique with original green morocco label preserved.

DEDICATED TO Peter Shaw, the first part of this work comprises a revised version of the author's *Essay on Brewing* (London, 1758). In the preface Combrune states that he began his experimental investigations as a brewer in 1741 and claims to have been the first "to reduce this art to rules and principles." Printed with the permission of the Brewers' Company of the City of London, part I covers the physical and chemical theory of brewing (fermentation, malting, etc.); part II is entirely practical. The author emphasizes the value and use of the thermometer and gives a brief history of it with references to Boyle, Newton, Martine, et al. A milestone work, this comprehensive treatise was the standard textbook of the time and put the technology of brewing on a scientific basis. (Bolton, *Second Supplement*, 71; Neu, 979; Smith, 118; Sotheran, Cat. 666 [1906], 854 ["Rare"]; Watt, I, 251f)

COMPAGNONI, Giuseppe

La Chimica per le Donne . . .

Venice: Dalla Tipografia Pepoliana Presso Antonio Curti q. Giacomo. 1796.

First edition. 2 vols., 8vo. I: xx, 243, (1) pp. II: viii, 233 pp. (p. 234, unnumbered, is the license, dated 12th and 19th January 1795). Very good copy in original full vellum, spines lettered in gilt.

AN EXCELLENT textbook for women readers, based on the new chemistry of Lavoisier as enunciated in the *Fondamenti della Scienza Fisico-Chimica* of Vincenzo Dandolo. Presented in a series of 101 letters, this work covers the history of chemistry, elements and compounds, attraction, affinity, caloric, fire and light, the phlogistic versus the new chemistry, gases, combustion, acids and alkalies, salts, the old and new nomenclature, minerals, etc. Pages 147–233 (vol. II), entitled *Lettere Aerologiche*, discuss the physical and chemical properties of the atmosphere and various gases, with references to ballooning by the Montgolfier brothers, et al. On the author, Compagnoni (1754–1833), and his literary and political activities, see *Enciclopedia Treccani* (vol. X, p. 1000). Very rare. Bolton (*First Supplement*, p. 131) cites only the second edition (Venice, 1797, 2 vols., 8vo.). Unknown to the usual chemical historians. (Blake, 96; Wellcome, II, 379)

COMPLETE DISTILLER

The Complete Distiller; combining Theory and Practice; and explaining the Mysteries and most recent Improvements of Distilling and Brewing, in a most simple, easy, and familiar manner. And containing all the Instructions necessary for a complete Acquirement of these useful Arts. In four parts. Part I. Containing the Distilling of Spirits from various Substances, with the best Methods of rectifying and colouring Spirits, &c. Part II. Of the Method of making Compound, Cordial, and Medicinal Waters. Part III. Of brewing, preserving, and recovering of Malt Liquors in general. Part IV. Of making, refining, preserving, and recovering British and other Wines. Adapted for the Use of Private Families, Apothecaries, Distillers, and Dealers in Spirits or Wines. By a Gentleman of Extensive Practice and Long Experience.

Edinburgh: Printed for Peter Hill; and G. Kearsley, London. 1793.

First edition. 8vo. (in 4s). viii, 151, (1) pp. Fine copy, in original tree calf, spine gilt-ruled, maroon morocco label. Old stamp in red on first free endpaper: T. Smith Senr; probably Thomas Smith, M.D. (1765–1848; see *Munk's Roll*, III, 92). Armorial bookplate (eighteenth century): Fullerton of Carstairs.

AN ANONYMOUS work that is not to be confused with a book of similar title by Ambrose Cooper, published in 1757. In the preface, dated 15 February 1793, the Scottish author says that “it has been his intention to render it an useful performance, and if it is found such, his chief aim will be accomplished.” No author attribution has been located in the usual bibliographies. N.U.C. notes only one copy in the United States, at Yale University.

COMSTOCK, John Lee

Elements of Chemistry; in which the recent discoveries in the science are included and its doctrines familiarly explained. Illustrated by numerous engravings, and designed for the use of schools and academies, By J. L. Comstock, M.D. . . .
New York: Published by Robinson, Pratt, & Co. 1839.

Fortieth edition. 8vo. 420 pp. With 76 woodcuts in text. Good copy in contemporary tree calf, spine gilt-ruled, brown morocco label gilt.

FIRST PUBLISHED in 1831, this famous textbook educated generations of American chemists in the principles of the science. Smith cites several other editions. The book was immensely popular and passed through at least fifty-four editions, possibly more. Bolton, Edelstein, and Morgan list other editions. Not in Wellcome.

COMSTOCK, John Lee

A System of Natural Philosophy; in which the principles of mechanics, hydrostatics, hydraulics, pneumatics, acoustics, optics, astronomy, electricity, and magnetism, are familiarly explained, . . . designed for the use of schools and academies. By J. L. Comstock, M.D. . . .
Hartford: Published by D. F. Robinson & Co. 1830.

First edition. 8vo. 295, (1) pp. With 223 woodcut figures in text. Very good copy in contemporary tree calf, spine gilt-ruled. Old bookplate on front pastedown endpaper: “Essex Institute. Library of Francis Peabody. Presented by Mrs. Martha Peabody.” Signature in ink on first free endpaper: “Francis Peabody. Salem, Mass.” Peabody was a relation of the famous American educator, reformer, and abolitionist Elizabeth Palmer Peabody (1804–1894) of Salem, Massachusetts.

COMSTOCK (1789–1858), an American physician, wrote and illustrated textbooks on chemistry, mineralogy, natural history, and other subjects that passed through countless editions from 1830 to 1860 and were used in most American schools. The *System of Natural Philosophy*, translated into several languages, is reputed to have sold 900,000 copies. Although primarily on physics, the sections on hydrostatics, pneumatics, and electricity are of peripheral chemical interest. Comstock edited various editions of the *Conver-*

sations on Chemistry of Jane Marcet. His *Introduction to Mineralogy* became the handbook of early miners of the Far West. Despite the large number of copies of the *System* printed, the first edition is now rare, undoubtedly because most copies were “read to pieces” by students. Not in Ekelöf, Smith, Wheeler Gift, etc. (W. Bridgewater and S. Kurtz, *The Columbia Encyclopedia*, 1964, p. 466)

CONTARINI, Gasparo

De Elementis eorumque Mixtionibus. Lib. V. Editio quinta, in qua quid praestitum sit praefatio docebit.
Leyden: Ex Officina Justi Livii. 1633.

First Leyden edition. 12mo. 8 leaves, 264 pp. Woodcut title-vignette, and 7 geometrical figures in text. Very fine, crisp copy, in contemporary vellum, old ink titling on spine. Bound with: Spizelius, Theophilus, *De Re Literaria Sinensium Commentarius* (Leyden, 1660).

CONTARINI (1483–1542) served the Venetian Republic in several important offices before he was made a cardinal by Pope Paul III. He published several books, mainly theological, but the present work on the elements and their compounds was his most popular and important. The posthumously published first edition (Rome, 1545) was reprinted at Paris (1548, 1564) and at Venice (1589). The present is the fifth and final edition. Thorndike (V, 552–555), who discusses the book at length, states that Contarini “follows Aristotle and Galen rather than the Pythagoreans and atomists who would have the elements composed of atoms or triangles.” There are sections on alchemy, minerals, metals, salts, fire and combustion, mineral waters, etc. “The work treats mainly of the principles of Chemistry and Physics on an Aristotelian basis” (Duveen [p. 144], who describes the “second” [recte third] edition of 1564). Rare. This edition not in the usual bibliographies. (Thorndike, V, 552; Watt, I, 253v)

CONTI, Lodovico

Clara Fidelisque Admonitoria Disceptatio Practicae Manualis experimento veraciter comprobata. De duobus Artis, & Naturae miraculis: hoc est de Liquore Alchaest; nec non Lapide Philosophico, atque amborum materia, operandi ratione, Difficultate, Viribus, ac inter se Convenientia, & Discrimine, de Sale quoque Tartari Volatili, &c. In gratiam Hermeticae Artis Studiosorum conscripta. . . .
Frankfurt: Apud Hermannum à Sande. 1664.

First Frankfurt edition. 12mo. 11 leaves, 116 pp. With beautiful engraved title page and symbolic plate (in contemporary red and green colors). Fine, crisp copy, in original mottled calf, gilt.

CONTI (de Comitibus, fl. seventeenth century), an Italian alchemist of Macerata, first published this work at Venice in 1661 (Partington, II, 240). "In it he distinguishes the liquor Alchaest of Helmont from the philosophers' stone. In the preface to the reader he states that the Alchaest was real and not a mere fancy of Helmont, and that he has finally succeeded in working it out, but knows that the reader would not wish him to reveal it openly to the vulgar" (Thorndike). The miracles of art and nature referred to in the title are the liquor Alchaest and the philosopher's stone. At the end is a list of eight titles of chemical works the author was planning to write, but which seem not to have been published. Newton owned an imperfect copy, now at the University of Wisconsin (Neu, 994). French translations appeared: Paris, 1669 and 1678. Conti was highly regarded by Borrichius, who ranked him among the prominent chemists of his time (see *Conspectus Scriptorum Chemicorum*, 1697, p. 46). (Duveen, 142; Ferguson, I, 173; Ferguson Coll., 165; Harrison, 436; Krivatsy, 2702; Neu, 995; Thorndike, VII, 232, VIII, 354; Waller, 11104; Wellcome, II, 378)

CONTI, Lodovico

Metallorum ac Metallicorum Naturae Operum ex Orthophysicis fundamentis recens Elucidatio qua eorum omnium Principia, Causae, Proprietates, Generationes; Generationumque modi aperte ac fideliter enucleantur. Indeque Artis Chemicæ, Theoricæ, ac Practicæ veritas & ordo revelatur. Methodo breviori, clariori, diligentiori ac firmiori, quam ab alio quocunque, seu ex veteribus seu ex Recentioribus hucusque scriptore præstitum fuerit. Opus sane cunctis veritatis Sectatoribus non minus utile quam gratum. . . .
Cologne: Apud Joannem Busæum Bibliopolam, sub Monocerate. 1665.

First edition. 8vo. 286 pp., 1 leaf (blank). Title in red and black, with woodcut printer's device (unicorn). Divisional title to appendix (p. 261) and large woodcut of cross with alchemical symbols (p. 265). Very fine copy, in original half calf, marbled boards, dark-blue morocco label, gilt.

AN IMPORTANT treatise on metals and their properties, divided into four books. Conti describes the supposed composition of metals, according to the Paracelsian hypothesis of the *tria prima* (i.e., spagyric salt, sulphur, and mercury). The nature, properties, and analysis of metals are covered, with detailed discussions of gold, silver, copper, iron, etc. The *Appendix symbolicae crucis* (pp. 261–286) is on Rosicrucian alchemy, with an illustration of the cross. Newton owned a copy of this rare work. Not in Duveen, Edelstein, Krivatsy, Partington, Wellcome, etc. (Ferchl, 102; Ferguson, I, 173; Ferguson Coll., 165; Harrison, 438; Hoover, 231; Neu, 998; Sotheran, Cat. 800 [1926], 10511)

COOPER, Ambrose

The Complete Distiller: containing, I. The Method of performing the various Processes of Distillation, with Descriptions of the several Instruments: The whole Doctrine of Fermentation: The manner of drawing Spirits from Malt, Raisins, Molosses, Sugar, &c. and of rectifying them: With Instructions for imitating to the greatest Perfection both the Colour and Flavour of French Brandies. II. The manner of distilling all Kinds of Simple Waters from Plants, Flowers, &c. III. The Method of making all the compound Waters and rich Cordials so largely imported from France and Italy; as likewise all those now made in Great Britain. To which are added, Accurate Descriptions of the several Drugs, Plants, Flowers, Fruits, &c. used by Distillers, and Instructions for chusing the best of each Kind. The Whole delivered in the plainest manner, for the Use both of Distillers and Private Families. By A. Cooper, Distiller.
London: Printed for P. Vaillant in the Strand; and R. Griffiths in Pater-Noster-Row. 1757.

First edition. 8vo. 8 leaves, 266 pp., 7 leaves. With folding engraved plate (depicting 12 figures of distillation equipment). Fine copy in contemporary gilt-ruled calf, tan morocco label.

ONE OF the best eighteenth-century books on distillation, the scope of which is given in the title. The first edition was unknown to Forbes, who mentions only the second edition (London, 1760). In the preface, Cooper says that part of this work includes information translated from the *Traité raisonné de la distillation* (Paris, 1753), by M. Dejean (i.e., Antoine Hornot). The second edition, "with many additions," published in 1760, is the edition listed by Duveen (p. 144), Ferchl (p. 103), Forbes (p. 371), and Neu (no. 1002). (Blake, 98; Ferguson Coll., 166; Partington, II, 762; Smith, 121; Sotheran, Cat. 773 [1919], 2749; Watt, I, 255w; Wellcome, II, 387)

COOPER, Ambrose

The Complete Distiller . . . A new edition, enlarged.
London: Printed for Vernor and Hood, . . . and Cuthell and Martin. 1803.

12mo. xii, 277, (1) pp., 5 leaves (index). With folding engraved frontispiece (depicting 12 figures of distillation equipment). Very good copy, in original green half roan, gilt, marbled boards.

A CLOSE REPRINT of the second edition, this is probably the fourth edition, preceded by those of 1757, 1760, and 1797. A later edition appeared (London, 1810), which attests to the continued utility and popularity of the work. Rare. No reference to this edition has been located in available bibliographies.

COOPER, David

Dissertatio Medica Inauguralis, de Parca et Simplici Medicina. Quam, . . . ex . . . D. Antonii Schultingii, . . . pro gradu doctoratus, . . . eruditorum examini submittit David Cooper, A.L.M. Scoto-Britannus. Ad diem 5. Novembris 1729.

Leiden: Apud Samuelem Luchtmans. 1729.

First edition. 4to. 19, (1) pp. Woodcut vignette on title and large woodcut initial in text. Fine copy with wide margins, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

THE PHARMACEUTICAL chemical doctoral dissertation of David Cooper, a Scotsman, of whose life and work no biographical or bibliographical information has been located. The history of the preparation of medicines is traced from the ancients to the eighteenth century, with references to Hippocrates, Celsus, Francis Bacon, Thomas Sydenham, Jodocus Lommius, Friedrich Hoffmann, et al. On page 18 the author urges physicians to be well versed in chemical knowledge so that they can formulate medicines intelligently rather than empirically. Very rare.

COOPER, Thomas

The Introductory Lecture of Thomas Cooper, Esq. Professor of Chemistry at Carlisle College Pennsylvania. Published at the Request of the Trustees. With Notes and References.

Carlisle: Printed by Archibald Loudon. 1812.

First edition. 8vo. viii, 236 pp., 2 leaves (blank). Lightly embrowned; otherwise fine copy, uncut and unpressed, in original blue boards, rebacked in maroon morocco antique, spine gilt-lettered and dated. Bookplate: Franklin Institute Library.

BORN IN England, Cooper (1759–1839) trained at Oxford as a lawyer and physician, later practicing in Manchester, where he was part owner of a dyeworks. About 1790 he developed an improved process for preparing oxymuriatic acid (chlorine) by employing red lead (instead of manganese dioxide), common salt, and sulphuric acid. A close friend of Joseph Priestley, he emigrated to America in 1793, was naturalized, and practiced law and medicine for nine years. In 1804 he became a judge but was unpopular, and in 1811 he was impeached. He returned to chemistry and later in 1811 became professor of chemistry at Dickinson College, Carlisle. The present work, his first as professor, traces the history of chemistry from ancient to modern times, with references to the researches of Black, Cavendish, Lavoisier, Priestley, et al. He emphasizes the great value of chemistry to the arts and manufactures, and there is a section on systematic mineralogy. "Cooper's greatest service to science was undoubtedly the dissemination of information" (D.S.B., III, 400). Scarce. (Bolton, 101; Cole, 293; Edelstein, 565; Miles, 92; Smith, 121)

COOPER, Thomas

A Practical Treatise on Dyeing, and Callicoe Printing: exhibiting the processes in the French, German, English, and American practice of fixing colours on woollen, cotton, silk, and linen. By Thomas Cooper . . .

Philadelphia: Published by Thomas Dobson, at the Stone House, No. 41, South Second Street. William Fry, Printer. 1815.

First edition. 8vo. (in 4s). xv, (1), 506 pp., 1 leaf (books published by T. Dobson). With 1 engraved plate (mills for grinding indigo, facing p. 21). Few minor water stains; otherwise very good copy in original tree calf, maroon morocco label.

A MASSIVE COMPENDIUM of scientific knowledge on the use of various dyes, mordants, and fabrics. It was the best manual of chemistry applied to the technique of dyeing available in the United States at the time of publication. "Cooper was a partner in an English bleaching and printing establishment (between 1788 and 1794), which was one of the first to use chlorine for bleaching. This book, only the third book on dyeing published in the United States, contains a thorough theoretical as well as a practical discussion of its subject, and was quite influential at the time of the establishment of the dyeing industry in the United States" (Ron). Not in Cole, Duveen, Partington, Wellcome, etc. (Bolton, 377; D.S.B., III, 400; Edelstein, 2942; Rink, 1853; Ron, 252; Smith, 122)

COOPER, Thomas

Some Information concerning Gas Lights, by Thomas Cooper, Esq.

Philadelphia: Published by John Conrad & Co. J. Maxwell, printer. 1816.

First edition. 8vo. (in 4s). vii, (1), (9)–190, (2) pp. With 2 engraved plates (by C. Tiebout) and 4 large text woodcuts. Two early names on title page and light toning of paper (as usual); otherwise very good copy in gilt-ruled quarter morocco antique, marbled boards, maroon morocco label.

IN 1812 COOPER became professor of applied chemistry and mineralogy at the University of Pennsylvania. The present book discusses efforts in England to employ coal gas for lighting streets and houses. The recently published works of Accum, Clegg, Cooke, Henry, Murdock, and others are cited, and Cooper describes his own experiments on the subject. "No gas-light system has been yet adopted in America; and therefore I cannot give any result of my own experience on a large scale, although I have been in the habit, during four years past of exhibiting and burning the inflammable gas from coal and from wood, before my chymical students, as part of a lecture on the various methods of procuring the carburetted hydrogen gas; all of which

were shown, the lights they respectively afforded compared, and their uses explained" (preface). Cooper describes the products obtained by distilling coal or wood in a closed iron retort, as well as the uses of the ammoniacal liquor, naphtha, tars, and other substances. A "worthy and instructive publication" (E. F. Smith, *Chemistry in Old Philadelphia* [1919, p. 68]). By publishing this work, Cooper hoped to spur interest in what he perceived as the future method of lighting American streets, houses, and factories. It is a milestone book on early American chemical technology. (Edelstein, 569; Rink, 2907; Roller & Goodman, I, 249)

COOPER, William

A Catalogue of Chymicall Books. In Three Parts. In the First and Second Parts are contained such Chymical Books as have been written Originally, or Translated into English: With a large Account of their Titles, several Editions and Volumes. Likewise In the Third Part is contained a Collection of such things published in the Philosophical Transactions of the Royal Society (for Ten Years together) as pertain to Chymistry, or the Study of Nature by Art in the Animal, Vegetal, and Mineral Kingdoms. Collected by Will. Cooper, Bookseller, at the Pelican in Little-Britain, London.
London: Printed in the Year 1675.

First edition, first issue. 8vo. 4 leaves, 28 leaves (unpaginated). Collation: π^4 (title page, *Bibliopola Lectori*); A–D4, E1 (The Second Part); E2–E4, F–G4 (The Third Part). Final few leaves lightly embrowned; otherwise good copy in old marbled boards, rebaked in calf antique.

THE EXTREMELY rare, separately published first issue of the second and third parts of Cooper's *Catalogue*. The second part was expanded later (possibly 1675) and the three parts added to the remaining sheets of the 1673 *Philosophical Epitaph*, and also the same edition with a reset title page dated 1675. The second issue of the *Catalogue* has the sheets of the 1673 first issue of the first part (signatures P–R4), as well as the sheets of the present first issue of the second and third parts, plus twenty-six additional leaves (signed D*–D*26) following D4. The collation of the second issue of the *Catalogue* is: P–R4, A–D4, D*–D*26, E–G4 = 68 leaves (see Babson, No. 403). Full details are given by Stanton J. Linden (*W. Cooper's Catalogue of Chymicall Books, 1673–88*, 1987, pp. xxxviii–xli). Cooper died before November 1689, and his bookselling business was taken over by his widow. Most bibliographies describe only the second issue of the *Catalogue*, and Wing does not distinguish between them. (Bolton, 11; Duveen, 144; Ferguson Coll., 166; Hall, 54; Krivatsy, 2712; Watt, I, 256r; Wellcome, II, 389; Wing, C6061)

COOPER, William

The Philosophical Epitaph of W. C. Esquire . . . Also, A Brief of the Golden Calf . . . by Jo. Fr. Helvetius and, The Golden Ass well managed, . . . Or, A new Chymical Light . . . by Jo. Rod. Glauber. With Jehior. . . Or, the Day-dawning . . . of Wisdom . . . All Published by W. C. Esquire. With a Catalogue of Chymical Books.

London: Printed by T. R. and N. T. for William Cooper, at the Pelican in Little Britain. 1673.

First edition, first issue. 8vo. Symbolic engraved frontispiece, engraved title page, 4 leaves, 16 pp., 8 leaves, 41, (1) pp., 6 leaves, pp. 37–56; 9 leaves, 78 pp., 3 leaves + 12 leaves (Catalogue). With 4 divisional title pages and 5 engraved plates. Lacks 4 leaves (dedication to Elias Ashmole, etc.), which should follow the dedication to Robert Boyle (here present); otherwise very good copy in eighteenth-century half calf, marbled boards, 2 maroon labels, spine gilt-ruled and dated.

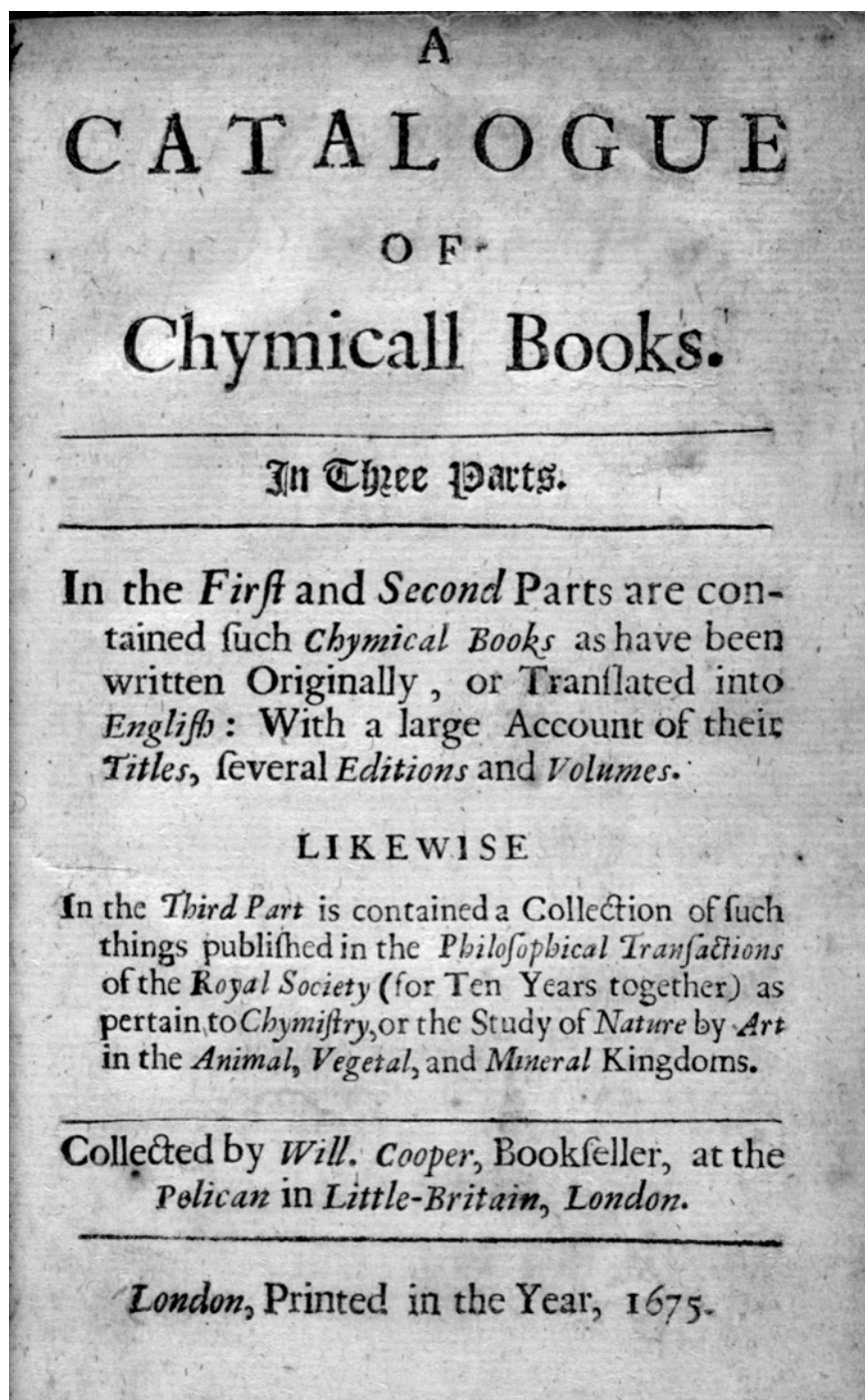
ONE OF the rarest collections of alchemical writings in English, important for containing the *Catalogue of Chymical Books*: the first in English on this subject. This copy is an apparently unrecorded first issue of the *Catalogue*, comprising only twelve leaves (correct signatures P–R⁴) and published without the separate title page. In 1675 Cooper reissued the *Philosophical Epitaph* (1673) together with the second issue of the *Catalogue*, with a formal title page dated 1675, and added second and third parts to it (see Duveen). Annotations in ink on chemical processes and theological texts by a seventeenth-century chemist display a profound knowledge of both subjects. The book is dedicated to Boyle, and some annotations are in a hand similar to his (but not guaranteed). In chapter XI, discussing fire and "Angelical fire," there is a note "see my manusc." Boyle's *Free Inquiry into the . . . Notion of Nature* (1685/6) has several references to this subject. (Bolton, 970; Cushing, C398; Duveen, 144; Edelstein, 576; Ferguson, I, 135 [not in Young Coll.]; Fulton, 272; Hall, 54; Krivatsy, 2713; Mellon, 130; Neu, 1003; Wellcome, II, 389; Wing, C6062)

COOPER, William

The Philosophical Epitaph of W. C. Esquire. . . . Also, A Brief of the Golden Calf . . . by Jo. Fr. Helvetius and, The Golden Ass well managed, . . . Or, A new Chymical Light . . . by Jo. Rod. Glauber. With Jehior. . . Or, the Day-dawning . . . of Wisdom . . . All Published by W. C. Esquire. With a Catalogue of Chymical Books.

London: Printed by T. R. and N. T. for William Cooper, at the Pelican in Little Britain. 1673, 1675.

First edition, second issue. 8vo. Symbolic engraved frontispiece, engraved title page, 10 leaves (8th and 9th leaves glued back to back), 16 pp., 8 leaves, 41, (1) pp., 6 leaves, pp. 37–56; 10



Cooper, William. Catalogue of Chymicall Books. London, 1675.

An EPITAPH made by W. C.
CLowDeD by threatning Disasters.
With Scutcheons annexed displaying *Minerva's* and
***Hermes* Birds, And *Apollo's* Bird of Paradise,**
In HierogLiphICK NVMbers and In FigVres.

Minerva's
Owl in an
Ivie Bush.
Creation,
Chaos,
Corruption.



Salt.

Hermes's
Goole or
Pullet roast-
ed in the
Sun.
Generation,
Mortification,
Virtuacion

Tyr'd of the World, at last
This Nest to rest me in the **Sound**
I'm naked, yet I feel no cold,
Feed that, that had fed me of o'd,
And quietly enjoy this Place,
With Friends about of my own race
Weep not then here, but banish fears,
Or let this dust dry up your tears (peace
My Soul's in Heaven with Saints in
Where Angels sing and never cease.



These grounds of Mans Mortality,
Resis here a while, till perfectly
Purify'd, purg'd, cleans'd, and at last
Reviv'd with Soul and Spirit by blast
Of Trumpet which being join'd shall
And be spiritual fixt, Divine, (shine,
Like Christ; and One for ever be
V. C.
Which being thus, is double you see.

Apollo's Bird
of Paradise.
Phoenix, Icarus
or lofty Eagle.



Sul-

W. C.
phur.
Regeneration,
Redemption,
Glorification.

No Man's happy before his Death.
MerCVry's Birth's best after's Death,
MerCVrI's Life vvas pVrg D by strIfe.
All's in Mercury that the wise men seek.
 If thou dissolv'st the Fixt, and mak'st it fly,
 And mak'st the flying fixt, live saf thereby.
 Dissolve, Congeal, and Fix, which being fixt will fix,
 And so being subly Ting'd, will Tinge, and Mix.
If it ind be made of Gold, 'Tis wor h a hundred fold.
The mind bloweth when it list th Receiv't they sh. it can.
Laurum Amice Eligis, Rus.

Cooper, William. Philosophical Epitaph of W. C. Esquire. London, 1673.

leaves, pp. 29, 37–38, 32–33, 40, 42, 36–55, 64, 57–78, 3 leaves (pagination erratic, text complete); followed by *A Catalogue of Chymicall Books. In Three Parts* (1675): P4 (title page, *Bibliopola Lectori*), P–R4, A–G4 (= 44 leaves). With 7 divisional title pages and 5 engraved plates. Inner margins of engraved and printed titles repaired (no loss); otherwise very good copy in original sheep, rebaked, joints reinforced, original gilt-ruled spine laid on, maroon morocco label. Bookplate: Harrison D. Horblit.

THE FIRST combined edition of this collection of alchemical writings in English, containing the dedications to Robert Boyle and Elias Ashmole. *A Catalogue of Chymicall Books* has a formal divisional title page dated 1675, and *Bibliopola Lectori* explains that Cooper had printed the first part (1673) in haste. An advertisement states that errors in the first part are corrected. Apart from the additional divisional title pages in the main work and the title to the catalogue and prefatory leaves, the first and second issues are apparently identical. Cooper's activities as a bookseller encompassed printing, publishing, editing, and writing. He was the first to sell books at auction in England and published the first English auction catalogue (*Catalogus Variorum & Insignium Librorum*, 1676), as well as many other catalogues. (Linden, *W. Cooper's Catalogue* (1987), p. xxxviii; Pollard & Ehrman, *Distribution of Books by Catalogue*, p. 154)

CORMACK, John Rose

A Treatise on the Chemical, Medicinal and Physiological Properties of Creosote, illustrated by experiments on the lower animals: with some considerations on the embalment of the Egyptians. Being the Harveian Prize Dissertation for 1836. . . .

Edinburgh: John Carfrae & Son, etc. 1836.

First edition. 8vo. x, 154 pp. Fine copy in original green pebbled cloth, rebaked, printed paper spine label. Presentation copy, inscribed in ink on title page: "Royal Physical Society from the Author."

A SUMMARY OF contemporary information published in British and foreign journals on the properties of creosote. Discovered about 1830 by Carl Reichenbach (1788–1869), the oily mixture named creosote was produced by the destructive distillation of wood tar in the absence of air. It contained aliphatic and aromatic hydrocarbons and several phenols and was valuable as a preservative for organic materials (e.g., meat and wood). Egyptian embalming methods, the antiseptic properties of peat, the medicinal uses of creosote, and related subjects are also discussed. Cormack (1815–1882), a physician, was a member of the Royal Medical and Royal Physical Societies of Edinburgh (see D.N.B.). (Bolton, 377; Waring, 388; Wellcome, II, 392)

CORNWALLIS, Caroline Frances

An Introduction to Practical Organic Chemistry. With references to the works of Davy, Brande, Liebig, etc.

London: William Pickering. 1843.

First edition. 8vo. 3 leaves, 90 pp. Engraved Aldine anchor device on title page. Fine, crisp copy, uncut, in original pebbled green cloth, with printed paper labels on spine and front cover.

"IT IS the object of the present . . . work to give a few of the great principles which a very interesting portion of modern science is grounded upon" (preface). Divided into two parts—on the nourishment of plants and animals—the book describes the practical applications of organic chemistry to daily life, with references to the discoveries of contemporary chemists. One of the "Small Books on Great Subjects" (No. IV), beautifully printed by William Pickering. A revised second edition appeared (London, 1854), also an American printing (Philadelphia, 1846) of the present edition. The author, Cornwallis (1786–1858), lived most of her life in Italy (see D.N.B.). Rare. Not in the usual chemical or medical bibliographies. (Bolton, 378)

CORRY, John

The Life of Joseph Priestley, LL.D., F.R.S. By John Corry, Member of the Philological Society in Manchester. Author of A Satirical View of London. . . .

Birmingham: Printed by Wilks, Grafton, & Co. 1804.

First edition, first issue. 12mo. (in 4s). Pp. 4, (9)–60. With stippled engraved frontispiece portrait of Priestley (by Wilks, Grafton & Co.). Fore-edges of title and preface leaf cropped (with loss of a few letters); otherwise good copy in half calf antique, marbled boards, red morocco label. Bound with a religious tract (lacking title leaf, 46 pp.), the preface of which is signed "R. N." (possibly the theologian Robert Nares, 1753–1829; see D.N.B.).

THE PREVIOUSLY unrecorded first issue of the first edition of the first biography of Priestley, published immediately after his death in February 1804. "This little work is enriched with anecdotes, communicated to the author, by persons who were long eye-witnesses to the dignified conduct of Dr. Priestley, as a public character, and to his domestic habits as a private individual" (preface). The author, John Corry (fl. 1825), a topographer and journalist in Dublin and London, published verses, stories, and memoirs (1782–1820), and histories of Bristol, Lancashire, Liverpool, and Macclesfield (1810–1825). Unaware that there were two distinct printings (with different pagination), Crook does not record the present first issue. Very rare. Not in the usual bibliographies.

CORRY, John

The Life of Joseph Priestley, LL.D., F.R.S., &c. &c. with critical observations on his works. By John Corry, Member of the Philological Society in Manchester. . . .

Birmingham: Printed by Wilks, Grafton, & Co. 1804.

First edition, second issue. 12mo. (in 4s). 112 pp. With stippled engraved frontispiece portrait of Priestley (by Wilks, Grafton & Co.). Fine copy in blind-ruled half calf antique, original marbled boards, maroon morocco label, spine dated.

THE SECOND issue of the first edition of the earliest biography of Priestley, in the format usually found. R. G. Neville discovered that a very rare first issue exists, containing only 60 pages versus the 112 pages of the second issue. The title page of the second issue has been reset, with the words "Author of a satirical view of London" omitted and the words "&c. &c. with critical observations of his works" added. Page-by-page comparison of each issue reveals numerous differences. The text of the second issue is completely new after page 52 of the first issue. Larger and more comprehensive, the present issue contains an index (pp. 5–7) not in the first. There are many differences in punctuation, catchwords, and textual content between the issues. The sheets of the first issue were used in the second up to page 52, but signatures E4–E8 (pp. 53–60) were rejected. In the present issue the type (pp. 53–112) has been reset to accommodate the additional text, making the book almost twice as long. The frontispiece portrait is identical in both issues. The appendix (pp. 95–112) contains passages from Priestley's writings. (Bolton, 234; Crook, B536; Edelstein, 1894; Partington, III, 238; Roller & Goodman, I, 253; Smith, 123; Sotheran, Cat. 832 [1932], 5644 ["Very Scarce"]; Watt, I, 259z)

CORRY, John

The Life of Joseph Priestley . . . with critical observations on his works. By John Corry. . . .

Birmingham: Printed by Wilks, Grafton, & Co. 1804.

First edition, second issue. 12mo. (in 4s). 112 pp. With stippled engraved frontispiece of Priestley. Fine copy, uncut, in original blue boards, contemporary ink lettering on spine.

ANOTHER COPY of the usual second issue of the first biography of Priestley. (Crook, B536)

CORTESE, Isabella

I Secreti della Signora Isabella Cortese, ne' quali si contengono cose minerali, medecinali, arteficiose, & Alchimiche, et molte de l'arte profumatoria, appartenenti a ogni gran Signora. Con altri bellissimo Secreti aggiunti. Di nuovo ristampati, & diligentemente ricorretti.

Venice: Appresso Iacomo Cornetti. 1584.

Fifth Venice edition? 8vo. 16 leaves, 207 (i.e., 206) pp. Woodcut printer's device on title page, historiated woodcut capitals. Italic letter. Woodcut figures of chemical furnaces, distillation apparatus, etc., on pages 28, 50, 57, and 186. Old stamp on title leaf, which is laid down, and with small repair to fore-edge. Few leaves slightly embrowned; otherwise good copy, in contemporary limp vellum, backed with richly gilt eighteenth-century calf spine.

DEDICATED to the archdeacon of Ragusa, this book of secrets was compiled by Signora Isabella Cortese, a lady about whom almost nothing is known. It is divided into four books, which cover pharmaceutical, medical, cosmetic, and other preparations. The sections on alchemy, calcination, sublimation, distillation, and other chemical processes are particularly interesting. Acids, alkalies, salts, aromatic oils and perfumes, dyes, soaps, bleaches, etc., are described. The author appears to have been competent in practical chemistry. The first edition was published in Venice in 1561, with further Venetian editions in 1565, 1574, 1575, 1584 (present ed.), 1588, 1594, 1595, 1614, 1625, 1642, 1655, and 1677. German translations appeared in 1592 and 1596 (two editions). This edition is not in the British Library, which has those of 1561, 1575, 1588, and 1595. Other editions are listed by Duveen, Edelstein, Ferguson Coll., Ferguson, *Books of Secrets*, Neu, Partington, Thorndike, et al. Very rare. (Durling, 1052; Ferchl, 105; Ferguson, I, 179 [not in Young Coll.]; Wellcome, I, 1620)

CORVINUS, Franz Heinrich

Analecta de Tartaro quae praeside Dn. Jacobo Reinboldo Spielmann . . . solemniter defendet die XXVI. Aprilis A. MDCCLXXX. Franciscus Henricus Corvinus Argentinensis. Argentorati: Typis Joh. Henrici Heitzii, Universitatis Typographi. (1780).

First edition. 4to. 1 leaf, 40 pp. Large woodcut headpiece and initial on page 1. Tip of title leaf and following leaf neatly repaired; otherwise fine copy with wide margins, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

THE DOCTORAL dissertation of Corvinus (dates unknown), of Strassburg, with J. R. Spielmann presiding. The author, who was possibly related to the famous chemist Johann

Friedrich Corvinus, discusses potassium hydrogen tartrate and its history, physical properties, and chemical reactions with other compounds. "Corvinus in a dissertation under Spielmann showed that [tartar] is separated free from sugar from evaporated must and is not produced by fermentation, as Scopoli maintained" (Partington). A useful monograph containing many references to earlier and contemporary chemists (e.g., Boerhaave, Macquer, Scheele, and Berthollet). Not in Blake, D.S.B., Watt, Wellcome, or the usual chemical bibliographies. (Bolton, 844; Ferchl, 511; Partington, II, 690, III, 528; Poggendorff, II, 971; Waring, 640)

CORVINUS, Johann Friedrich

Deux Memoires sur les Gas, et principalement sur le Gas méphitique dit Air fixe, traduits de deux Dissertations latines publiées par M. J. Fred. Corvinus, & soutenues sous la présidence de M. Spielmann, . . . Par M. P. R. Vicat, . . . Avec plusieurs autres pieces intéressantes & nouvelles sur les Gas & sur leur utilité en Médecine.

Lausanne: Chez Franç. Grasset et Compag. Et chez les principaux Libraires de l'Europe. 1782.

First edition in French. 12mo. xii, 283 pp., 1 folding engraved plate. Some marginal stains; otherwise a reasonable copy in contemporary mottled calf, spine gilt.

A TRANSLATION INTO French by P. R. Vicat of parts I and II of the *Historia aëris factitii* (Argentorati, 1776 and 1777). Both parts deal mainly with carbon dioxide and its preparation, chemical reactions, and medicinal properties. Pages 203–208 give a useful bibliography of previous writers on gases, particularly carbon dioxide, from the *Essais de Jean Rey* (1630) to the *Ricerche fisiche intorno alla salubrità del aria* (1775) of Landriani. The two memoirs of Corvinus are definitive studies on the early history of carbon dioxide. This work is missing from all the great early chemical libraries whose catalogues have been checked. (Bolton, *First Supplement*, 133)

CORVINUS, Johann Friedrich

Deux Memoires sur les Gas, et principalement sur le Gas méphitique dit Air fixe, traduits de deux Dissertations latines publiées par M. J. Fred. Corvinus, & soutenues sous la présidence de M. Spielmann . . . Par M. P. R. Vicat . . . Avec plusieurs autres pieces . . . sur les Gas & sur leur utilité en Médecine.

Lausanne: Chez Franç. Grasset et Compag. Et chez les principaux Libraires de l'Europe. 1782.

First edition in French. 12mo. xii, 283, (1) pp. With folding engraved frontispiece (chemical apparatus). Fine copy in early half calf, marbled boards, brown morocco label. Bound with:

Amburger, Johann Andreas August, *Les eaux de Geilnau* (Offenbach, 1819); and Levade, Louis, *Observations et réflexions sur . . . médecine* (Vevey, 1777).

A STUDENT OF Jacob Leinbold Spielmann, Corvinus (1722–1783) was professor of chemistry at the University of Strasbourg. This work on gases originally appeared as a dissertation in two parts, defended under the direction of Spielmann: *Dissertatio sistens historiam aeris factitii* (1776–1777; Ferguson, I, 179). Dedicated to Spielmann, the translator P. R. Vicat indicates that Spielmann is evidently the real author. Both parts deal mainly with the preparation, reactions, and medicinal properties of carbon dioxide. Included (pp. 203–208) is a bibliography of forty previous writers on gases, particularly carbon dioxide, from Jean Rey (1630) to Landriani (1775). Vicat has provided many footnotes and additions, as well as pieces on gases by Bergman, Crell, R. White, and others. The two memoirs by Corvinus are definitive studies on the early history of carbon dioxide. Not in Cole, Duveen, Edelstein, Smith, Wellcome, etc. (Bolton, *First Supplement*, 133)

CORVINUS, Johann Friedrich

Historia Aëris Factitii quam praeside Dn. Jacobo Reinboldo Spielmann . . . Solemniter defendet die IV. Decembr. Anno MDCCLXXVI. Job. Fridericus Corvinus Argentiniensis. H.L.Q.C.

Argentorati: Ex Officina Joh. Henrici Heitzii, Universitatis Typographi. (1776).

First edition. 4to. 1 leaf, 58 pp. Large ornamental woodcut and capital on page 1. Folding copperplate of chemical apparatus for generating and collecting gases (Weis sc.). Fine, crisp copy, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated. Bound with: Corvinus, J. F., *Historiae Aëris Factitii Pars Medica* (Argentorati, 1777).

AN IMPORTANT dissertation defended under the presidency of the famous professor of chemistry Jacob Reinbold Spielmann (1722–1783) at the University of Strasbourg. Corvinus (dates unknown) presents a history of factitious (i.e., chemically prepared) gases, with numerous references to the works of Van Helmont, Black, Cavendish, Priestley, Lavoisier, et al. On page 5 he lists the gases known at the time: carbon dioxide, nitrogen, hydrogen, oxygen, nitric oxide, hydrogen chloride, sulphur dioxide, and ammonia. Most of the work concerns the properties of carbon dioxide, prepared by various methods from different starting materials. It was later translated into French by P. R. Vicat and published with the second dissertation of 1777 as *Deux mémoires sur les gas, et principalement sur les gas méphitique dit air fixe* (Lausanne, 1782). Not in Blake, Bolton, D.S.B.,

Duveen, Edelstein, Ferguson Coll., Neu, Partington, Poggendorff, Smith, Waller, Wellcome, etc. Waring (p. 315) cites only the second dissertation (1777). Ferguson (I, 179) gives the title incorrectly, and the book is not in the Young Collection. (Ferchl, 105)

CORVINUS, Johann Friedrich

Historiae Aëris Factitii Pars Medica quam pro licentia gradum doctoris . . . die IV. Septembr. Anno MDCCLXXVII. Solemni eruditorum examini submittit Joh. Fridericus Corvinus Argentoratensis. H.L.Q.C.

Argentorati: Literis Joh. Henrici Heitzii Acad. Typogr. (1777).

First edition. 4to. 1 leaf, 30 pp. Large ornamental woodcut and capital on page 1. Fine, crisp copy. Bound with: Corvinus, J. F., *Historia Aëris Factitii* (Argentorati, 1776).

THE DOCTORAL dissertation of Corvinus on the biochemical and medical aspects of chemically prepared gases described in the *Historia aëris factitii* (1776). Although other gases are mentioned, the book is mainly on carbon dioxide, with references to the work of Priestley, Nooth, Magellan, et al., on the preparation of carbonated waters. The reaction of carbonic acid with solutions of various salts and chalybeate mineral waters is covered, the works of Hales, Macbride, Lavoisier, et al., being cited. Black's important researches on alkalis and the production of carbon dioxide by fermentation are also discussed. There is a reference to Captain James Cook (p. 23) and the supposed antiscorbutic properties of carbonated water. Not in Blake, D.S.B., Waller, Wellcome, or the usual early chemical bibliographies. (Ferchl, 105; Ferguson, I, 179 [not in Young Coll.]; Waring, 315)

COSSIGNY DE PALMA, Joseph François Charpentier

Observations sur l'Art de faire le Vin, par Mr. J. A. Chaptal, . . . Paris: Chez Gagnard, Lenormant, et Martinet. 1807.

First edition. 8vo. 2 leaves, 107 (recte 108) pp. Fine copy in mid-nineteenth-century quarter calf, gilt. Bound with 6 other works on the chemistry of winemaking.

A CRITICAL REVIEW of a number of statements made by J. A. C. Chaptal in his *L'art de faire, gouverner, et perfectionner le vin* (Paris, 1807, second edition). Despite the valid criticisms, Chaptal's book remains a classic but should be read in conjunction with the present work. Cossigny de Palma (1730–1809), an engineer and chemist, also published *Essai sur la fabrication d'indigo* (Isle de France, 1779), *Recherches physiques et chimiques sur la fabrication de la poudre à canon*

(Paris, 1807), and other works listed by Bolton, Ferchl, and Poggendorff, who do not mention the present title. Rare. Not in D.S.B., Vicaire, Waller, Watt, Wellcome, or the usual chemical bibliographies.

COSTA, Francisco Raimundo Xavier da

Apologia Critico-Chimica, e Pharmaceutica, so primeiro Tomo da Obra intitulada: Elementos de Chimica, e Pharmacia, que ha pouco deu á luz Manoel Joaquim Henriques de Paiva, Medico. . . .

Lisbon: Na Of. Patr. de Francisco Luiz Ameno. 1786.

First edition. 8vo. 4 leaves, 400 pp. Woodcut on title page, woodcut head- and tailpieces. Fine, crisp copy, in original speckled calf, gilt, maroon morocco label. Contemporary printed paper label on spine: Biblioteca do Prof. C. Sacadura.

A CRITICAL COMMENTARY on the first volume of the *Elementos de chimica, e pharmacia*, of M. J. H. de Paiva (1752–1819), intended to clarify the errors in that work. Divided into two parts, this rare Portuguese book is on the fundamentals of chemistry (pp. 1–219) and the preparation of chemicals used in pharmacy (pp. 220–379). There are many references to earlier and contemporary chemists. On page 104, Costa (dates unknown) cites the work of Lavoisier, confirming that water is not converted to earth on prolonged distillation. Not located in available bibliographies.

COTES, Roger

Hydrostatical and Pneumatical Lectures by Roger Cotes . . . Published with Notes by his Successor Robert Smith . . .

London: Printed for the Editor, and sold by S. Austen, at the Angel and Bible in St. Paul's Church-Yard; and the Booksellers at Cambridge. 1738.

First edition. 8vo. 8 leaves, 243, (1) pp., 5 leaves (index and advertisements). With 5 folding engraved plates. Leaves lightly toned; otherwise very good copy in original paneled calf, rebaked, maroon morocco label. An important association copy from the library of Joseph Priestley, with his corrections in ink (pp. 13, 16, 170, 184, and 240). Note on front pastedown: "This Book belonged to Dr. Priestley"; also penciled note "Bought of Judah Dobson, Phila., 1834," with initials L. C. G. (i.e., L. C. Garland), whose name in pencil is on the title.

A BRILLIANT MATHEMATICIAN, Cotes (1682–1716) became fellow of Trinity College, Cambridge (1705), and Plumian professor of astronomy (1706). His friend Isaac Newton gave him the task of editing the second edition of the *Principia* (1713), which he carried out admirably. "Cotes formed a school of physical sciences at Trinity College in collaboration with William Whiston. The two performed a series of experiments begun in May 1707, the details of

which can be found in a posthumous publication, *Hydrostatical and pneumatical lectures by Roger Cotes (1738)* (D.S.B.). Among the earliest given in England, this course comprised experiments on various aspects of the properties of liquids, gases, and related subjects. The first appearance in English of Newton's law of cooling is described in "A Scale of Degrees of Heat" (pp. 213–219). Of chemical interest are accounts of artificial airs (gases) produced by fermentation or dissolution, fire in vacuo, phosphorescence and luminescence, Hauksbee's experiments on electrical discharges in gases under reduced pressure, etc. The editor of these lectures was the celebrated mathematician Roger Smith (1689–1768; see D.N.B.). (D.S.B., III, 433)

COTES, Roger

Hydrostatical and Pneumatical Lectures by Roger Cotes . . . The Second Edition. By Robert Smith . . .

Cambridge: Printed by J. Bentham, Printer to the University, for W. Thurlbourn Bookseller in Cambridge, etc. 1747.

Second edition. 8vo. 9 leaves, 273 pp., 4 leaves (index), 1 leaf (advertisements). With 5 folding engraved plates of apparatus. From the library of the theologian and antiquary Thomas Zouch (1737–1815; see D.N.B.), with his engraved bookplate and signature in ink on title page.

A REPRINT OF the first edition (London, 1738), with the errata carefully corrected. The plates of the first and second editions are identical. A third edition appeared (London, 1775), as well as translations into French (Paris, 1742) and Dutch (Leyden, 1740). (Wallis, 360.211)

COTTEREAU, E.

Des Altérations et des Falsifications du Vin et des Moyens physiques et chimiques employés pour les reconnaître . . .
Paris: Chez l'Auteur. 1851.

First edition. 8vo. 2 leaves, 68 pp. Fine copy. Bound with: Cossigny de Palma, *Observations sur l'art de faire le vin* (Paris, 1807).

A RARE BOOK, privately printed by the author, who describes himself on the title as a chemist. Cottereau (dates unknown) discusses the physical and chemical tests employed in the analysis of genuine and adulterated wines. Unknown to the usual bibliographers.

COTTING, John Ruggles

An Introduction to Chemistry, with practical questions: designed for beginners in the science. From the latest and most approved authors. To which is added a dictionary of terms. . . .
Boston: Published by Charles Ewer. May 1822.

First edition. 12mo. xii, 420 pp. With folding table of metals (facing p. 233) and 5 engraved plates (2 folding). Good copy in original tree calf, joints cracked, spine gilt-ruled, black morocco label, gilt.

AN AMERICAN textbook published to "bring the principles of chemistry into as small a compass as possible, and . . . exhibit the various subjects treated of by the most eminent chemical writers of the present day" (Preface). The brief "Dictionary of terms" occupies pages 377–403. Cotting (1783–1867) lectured on natural and experimental philosophy, chemistry, and botany in Boston, Massachusetts. He also published *A synopsis of lectures on geology* (Taunton, Mass., 1835). Scarce. Not in D.S.B., Miles, Morgan, Wellcome, etc. (Bolton, 379; Duveen, *Supplement*, 414; Edelstein, 581; Smith, 123; Sondheimer, 339)

COULLON, Joseph

Recherches et Considérations Médicales sur l'Acide Hydrocyanique, son Radical, ses Composés et ses Antidotes; ou Tableau comparatif des Phénomènes Pathologiques et Thérapeutiques produits dans l'organisme animal, par les Plantes drupacées et pommacées icosandres; les Acides hydrocyanique et chlorocyanique, les Ethers et l'Alcool hydrocyaniques, le Cyanogène, les Cyanures et les Hydrocyanates. Mémoire couronné par la Société Libre d'Emulation pour les Sciences et Arts, de Liège, dans sa séance publique du 13 décembre 1816. Augmenté de plusieurs travaux ultérieurs . . .
Paris: Chez Crevot. 1819.

First edition. 8vo. viii, 283, (1) pp. Very good, crisp copy, in contemporary quarter calf gilt, marbled boards, maroon label gilt.

THE EARLIEST comprehensive monograph on the properties and physiological effects of hydrocyanic (prussic) acid and cyanides. Coullon (dates unknown), member of several scientific societies and physician on the Paris faculty, was one of "the first in France to observe the action of hydrocyanic acid on plants" (H. Lonsdale, *An Experimental Inquiry into the physiological action of Hydrocyanic Acid* [Edinburgh, 1838]). The chemical history of hydrocyanic acid is first covered, with references to many earlier and contemporary chemists (pp. 1–27). The action of this acid on plants and animals is then described, with illustrative experiments (pp. 28–223). Antidotes for poisoning by cyanides are discussed in detail (pp. 224–272). Coullon briefly mentions the less toxic action of cyanic acid (pp. 212–214) and describes the action of the very poisonous gas cyanogen on animals and plants (pp. 215–219). A very rare book on a subject that is still of great importance. Not in the usual early chemical and medical bibliographies. (Waring, 507)

COURTIN, Germain

Germani Courtin, Medici Parisiensis, adversus Paracelsi, de tribus principiis, auro potabili totaque pyrotechnia, portentosas opiniones, disputatio.

Paris: Ex Officina Petri L'Huillier, via Jacobaea, sub signo Olivae. 1579.

Sole edition. 4to. Collation: A–R4 (R4, blank lacking). Foliation erratic: 1 leaf, ff. (1), 3–9, 14–56, 52, 57–71 (complete). Roman and italic letter. Woodcut printer's device on title. Several ornamental woodcut capitals (2 colored). Fine copy with wide fore- and lower margins, in modern boards. Nineteenth-century stamps on title page: Prof. Dr. Pedro N. Arata, Buenos Aires, and Mario Pedro Arata.

AN ATTACK on the alchemical teachings of Paracelsus, by the famous Parisian physician Courtin (d. 1597), who published various lectures for the use of his students. Without mentioning this treatise, Hirsch (II, 94) describes him as a controversial figure who incurred the wrath of the authorities for dissecting corpses at home. There is no mention of this author in the standard literature on Paracelsus. A very rare and important alchemical book. Not in Cushing, Neu, Osler, Thorndike, Waller, Watt, Wellcome, or the usual chemical bibliographies. (British Library, *S.T.C. French Books, 1470–1600*, p. 124; Durling, 1073; Ferchl, 106; Ferguson Coll., 169; Manget, 1731, I, pt. 2, p. 122)

COUTINHO, Antonio Xavier Pereira

Guia do Vinicultor por Antonio Xavier Pereira Coutinho . . .
Porto: Livraria Internacional de Ernesto Chardron. 1889.

First edition. 8vo. 308 pp., 2 leaves (including errata). With 58 woodcut figures, some full page. Very good copy in original dark-blue quarter calf, marbled boards, spine gilt.

AN IMPORTANT book on the chemistry and technology of making all types of wine, giving a comprehensive account of Portuguese methods in the nineteenth century. Chapter IV is of particular interest for its discussion of the chemical treatments employed to preserve wines. The appendix (pp. 283–304) is entirely on the physical and chemical methods used to analyze wines, mentioning Balard, Gay-Lussac, Pasteur, Wurtz, et al. Scarce. Not in Duveen, Edelstein, Ferchl, Partington, Smith, Sondheimer, Waller, etc. (Bolton, *First Supplement*, 134)

COWLEY, Abraham

The Works of Mr Abraham Cowley. Consisting of Those which were formerly Printed: and Those which he Design'd for the Press, Now Published out of the Authors Original Copies.

London: Printed by J. M. for Henry Herringman, at the Sign of the Blew Anchor in the Lower Walk of the New Exchange. 1668.

First collected edition. Folio. 22 leaves, 41, (1), 80, (4), 70, 154, 23, (1), 148 pp. With fine portrait frontispiece of Cowley (W. Faithorne Sculp.). Minor marginal water stains; otherwise good copy in original calf, rebacked, unlettered spine.

AN INTIMATE friend of William Harvey, the eminent poet Cowley (1618–1667) had started to write poetry at an early age. In 1657 he received the M.D. degree at Oxford University but did not pursue the practice of medicine. A royalist, after Oliver Cromwell died in 1658, he went to Paris and remained there until the Restoration brought him back in Charles's train. Like many cultivated men of the period, Cowley took an active interest in the founding of the Royal Society. This collection of poetry and prose is of scientific (including chemical) interest. There are two poems praising William Harvey and an ode to the Royal Society. In *A Proposition for the Advancement of Experimental Philosophy*, based on the doctrines of Francis Bacon, Cowley advocates the establishment of a "philosophical college" in London. He describes the workings of the college in detail and recommends that the professors carry out research in chemistry, medicine, and other sciences, in addition to teaching their students. The preliminary matter includes a biography of Cowley by Thomas Sprat, first historian of the Royal Society. Very popular. Numerous editions of the collected works appeared, but the first edition is scarce. (Watt, I, 264z; Wing, C6649)

COXE, John Redman

Observations on Combustion & Acidification; with a New Theory of those Processes, founded on the conjunction of the Phlogistic and Antiphlogistic Doctrines. By John Redman Coxe, M.D., Professor of Chemistry in the University of Pennsylvania. . . .

Philadelphia: Published by the Author. R. & W. Carr, Printers. 1811.

First edition. Large 12mo. (in 6s). viii + 50 pp. Fine copy, with lower edges uncut, bound in maroon half morocco antique, marbled boards, spine gilt-lettered and dated.

COXE (1773–1864) was an eminent physician and professor of chemistry at the University of Pennsylvania. In this

rare publication, published by the author at his own expense, he attempted to reconcile the phlogistic and anti-phlogistic theories, although most chemists had abandoned the phlogistic theory by 1811. The book is based on the researches of Sir Humphrey [*sic*] Davy, to whom it is dedicated. Coxe cites Thomas Thomson's objections to Lavoisier's theory that oxygen is present in all acids and is the principle responsible for acidity, referring to hydrochloric acid (which contains no oxygen). With Thomson, Coxe agrees that it is hydrogen that is the principle responsible for acidity and contends that all acids contain hydrogen. On page 46 he maintains the "doctrine of phlogiston thus modified," thus demonstrating that he was one of the last chemists to teach the old system. He nevertheless applauds the many successes of the antiphlogistic system of Lavoisier and his followers. In *American Chemists and Chemical Engineers* (Washington, D.C., 1976, pp. 98–99), Wyndham Miles has written an interesting biography of Coxe and his many publications but omits the present very rare work. Not in Cushing, Duveen, Ferchl, Morgan, Partington, Poggenorff, Waller, Wellcome, etc. (Bolton, 380; Smith, 124)

COXE, Thomas

A Discourse wherein the Interest of the Patient in Reference to Physick and Physicians is soberly debated, Many Abuses of the Apothecaries in the Preparing their Medicines are detected, and Their Unfitness for Practice Discovered. Together with the Reasons and Advantages of Physicians preparing their own Medicines. . . .

London: Printed for Richard Chiswel at the Two Angels and Crown in Little-Britain. 1669.

First edition. 8vo. 10 leaves, 333, (1) pp., 1 leaf (errata). Fine copy complete with imprimatur leaf, in gilt-paneled calf antique, spine richly gilt and dated. From the library of the Chicago meatpacking Armour family, with engraved armorial bookplate of Jean S. Armour and A. Watson Armour III, grandson of Andrew Watson Armour (1829–1892).

PUBLISHED ANONYMOUSLY, this work attacked the practice of the apothecaries prescribing chemicals and drugs that they had made and, without adequate medical training, administering them to the public. It is one of the earliest salvos in the nearly two-century battle that was waged over the prerogatives of the physicians, apothecaries, and chemists. Born in Somersetshire, Coxe (1615–1685) was educated in arts at Cambridge (A.B. 1634–35; A.M. 1638), then traveled to Italy to study medicine at Padua (M.D., 1641). He was a physician in the Parliamentary Army, was elected to the Royal College of Physicians (1646), and became its president (1682). Coxe was an original fellow of the Royal Society (1660; F.R.S., 1662). "It was Dr. Coxe

who persuaded Sydenham to devote himself to medicine" (Munk, I, 247). One of the earliest to carry out experiments on blood transfusion, Coxe transferred blood from a mangy dog into a healthy dog (see *Philosophical Transactions of the Royal Society*, II [1667], 451; Thorndike, VII, 523). (Ferguson Coll., 170; Krivatsy, 2789; Neu, 1040; Wellcome, II, 402; Wing, C6727)

COZZI, Andrea

Sulle applicazioni della Forza Elettro-chimica della pila all'analisi dei sali metallici disciolti in liquidi organici Vegeto-animati. . . .

Florence: Peb V. Batelli e Figli. 1838.

Second edition? 8vo. 6 pp., 1 leaf (blank). Lightly foxed; otherwise very good copy, uncut, in marbled boards antique, maroon morocco label, gilt.

COZZI (1795–1856) was professor of chemistry and pharmacy at the hospital (Arcispedale) Santa Maria Nuova in Florence. The present work describes experiments on the electrolysis of metallic salts dissolved in organic solvents. According to the footnote on page 3, the first edition appeared in 1835. Ronalds lists editions of 1835 and 1842. Not in D.S.B., Ekelöf, Mottelay, Wheeler Gift, Wellcome, or the usual chemical bibliographies. (Bolton, 380; Ferchl, 107; Poggenorff, I, 491; Ronalds, 118)

CRAMER, Johann Andreas

Elementa Artis Docimasticae Duobis Tomis comprehensa, Quorum Prior Theoriam, Posterior Praxin, Ex vera Fossilium indole deductas, atque indubitata Experimentorum, summâ cum accuratione institutorum, fide firmatas, ordine naturali & doctrina apertissima exhibet. Pars Prima Theoretica. (Pars Altera Practica.)

Leyden: Conradum Wishoff & Georg. Jac. Wishoff. 1739.

First edition. 2 vols., 8vo., in 1. I: 5 leaves, 311 pp., 7 leaves (index); 5 folding copperplates (J.v.d.Spyk fecit). II: 6 leaves, 345 pp., 4 leaves (index to 2nd part); 1 folding copperplate (J.v.d.Spyk del & fecit). A superb copy, in fresh, spotless, and pristine condition, bound in contemporary speckled calf, spine richly gilt in compartments, with crimson gilt-lettered morocco label and marbled pastedown endpapers.

CRAMER (1710–1777) first studied law, then (from 1734) mining and chemistry. He composed the present work in Leiden, visited England in 1738 and 1739, then the Erzgebirge (Saxony), becoming in 1743 *Kammerrath* of mines and smelteries for Brunswick at Blankenburg, a post that he lost in 1773 by the actions of his enemies. There is a favorable notice of him in the *Allgemeine Deutsche Biographie*

(4, 549 [1876]), where he is called the greatest assayer of his time. Partington says of him: "He was the best assayer of his time and his books are very practical." Cramer, contrary to the usual practices of the period, recommended the use of small quantities of ores in assaying, using the blowpipe and melting the ore mixed with borax as the flux on charcoal. One of the greatest works on analytical chemistry of the eighteenth century, a second Latin edition (Leyden, 1744) appeared, and translations into German by Gellert (Stockholm, 1746) and J. F. A. Götting (Leipzig, 1794), into French by J.-F. de Villiers (Paris, 1755), and into English (London, 1741 and 1764) were made. Rare. Not in the collections of Duveen, Ferguson (Glasgow), Morgan, Smith, Sondheimer, Waller, etc. (Bolton, 381 [wrong date: 1730]; Ferchl, 107; Ferguson, I, 180 [not in Young Coll.]; Neu, 1041; Partington, II, 711; Poggendorff, I, 494; Watt, I, 267m; Wellcome, II, 404)

CRAMER, Johann Andreas

Elements of the Art of Assaying Metals. In Two Parts. The first containing the theory, the second the practice of the said art. The whole deduced from the true properties and nature of fossils; confirmed by the most accurate and unquestionable experiments, explained in a natural order, and with the utmost clearness. By John Andrew Cramer, M.D. Translated from the Latin. Illustrated with copper plates. To which are added, several notes and observations not in the original, particularly useful to the English reader. With an appendix, containing a list of the chief authors that have been published in English upon minerals and metals.

London: Printed for Tho. Woodward . . . , and C. Davis . . . Printers to the Royal Society. 1741.

First English edition. 8vo. 6 leaves, pp. 1–200, (201–208), 201–470, 4 leaves. 6 folding engraved plates (J. Mynde sc.). Fine copy in original speckled calf, gilt-ruled, maroon label.

THE ENGLISH translation by Cromwell Mortimer of Cramer's classic *Elementa Artis Docimasticae* (Leyden, 1739, 2 vols., 8vo.). The unsigned dedication to John Winthrop, Esq., F.R.S., is dated 3 May 1741. Part I (pp. 1–200) discusses the theory of assaying, and part II (pp. 201–449) the practical aspects. The appendix (pp. 450–456) is valuable for the extensive bibliography of works in English on metals and minerals. According to Rose, Cramer was "the first who reduced the art of assaying in metallurgy into a system." This edition is not mentioned in D.S.B., Duveen, Poggendorff, Waller, Watt, etc. (Blake, 102; Bolton, 381; Edelstein, 3814; Ferchl, 107; Ferguson, I, 180 [not in Young Coll.]; Hoover, 239 [2nd ed., but with reference to 1st ed.]; Morgan, 165; Neu, 1043; Partington, II, 711; Smith, 125; Sondheimer, 340; Wellcome, II, 404)

CRAMER, Johann Andreas

Elements of the Art of Assaying Metals. In Two Parts. Written originally in Latin, by John Andrew Cramer, M.D. with notes and observations not in the original, particularly useful to the English reader. By Cromwell Mortimer, M.D., Secretary to the Royal Society. To which is prefixed a list of the chief English authors who have written upon minerals and metals. The second edition, corrected.

London: Printed for L. Davis and C. Reymers, . . . Printers to the Royal Society. 1764.

Second English edition. 8vo. xxiv, 471, (1) pp. With 6 folding copperplates (J. Mynde sc.), identical to those of the first edition (1741). Fine copy in original unlettered speckled calf, spine gilt-ruled. Armorial bookplate on front pastedown, dated 1724: Honourable George Baillie, Esq., one of the Lords of the Treasury.

THE BEST English edition of this very influential work, in which the list of English authors has been enlarged and references to the *Philosophical Transactions of the Royal Society* have been brought to 1764. This edition, which is rarer than the first, is not in Blake, Bolton, Duveen, Edelstein, Ferchl, Morgan, Neu, Poggendorff, Waller, Watt, etc. (Ferguson, I, 180 [not in Young Coll.]; Ferguson Coll., 171; Hoover, 239; Partington, II, 711 [wrong date: 1746]; Smith, 125; Sondheimer, 341; Wellcome, II, 404)

CRAMER, Johann Andreas

Anfangsgründe der Probierkunst, in zweyen Theilen abgefasst, von welchen der erste die Theorie, der andere die Ausübung, in der natürlichen Ordnung und einer sehr verständlichen Lehrart darstellt, so wie sie aus der wahren natürlichen Beschaffenheit der Fossilien hergeleitet, und durch die glaubwürdigsten mit der grössten Sorgfalt angestellten Versuche bekräftiget worden sind. Nach der andern verbesserten Ausgabe, die sowohl in der Theorie, als in der Ausübung, vom Autore selbst sehr vermehret und bereichert worden. Mit nöthigen Kupfern, dem Bergwesen zum Besten aus dem Lateinischen ins Deutsche übersetzt von C. E. Gellert, . . .

Leipzig: in Verlag der Heinsiusischen Buchhändlung. 1766.

Second German edition. 8vo. Pp. 32 + 1–320, (1); 8 leaves; pp. (323)–682; 11 leaves (index). With 6 folding copperplates (Bernigeroth sc.). Plates I, II, and V dated 1746; others undated. Excellent copy in original half vellum, patterned boards, spine lettered in contemporary brown ink. Three fly-leaves at the end are covered with neat eighteenth-century German handwritten notes in ink. There is also an inserted folding leaf at the end with eighteenth-century chemical symbolism neatly written in ink.

THE FIRST German translation of Cramer's great textbook of analytical chemistry appeared at Stockholm in 1746. The translator, Christlieb Ehregott Gellert (1713–1795), professor of metallurgical chemistry at the famous Freiberg Bergakademie, again brought out this rare second edition, which contains additional material. Inspired by Cramer's work, Gellert published his *Anfangsgründe zur metallurgischen Chemie* (Leipzig, 1750), which, like Cramer's textbook, also became a classic. Gellert's translation of this work appeared in several German editions, and as late in the century as 1794, J. F. A. Göttling published yet another German translation, attesting to the continued esteem in which this work was held. Rare. This edition not in Blake, D.S.B., Duveen, Edelstein, Ferchl, Ferguson Coll., Neu, Partington, Poggendorff, Smith, Waller, Watt, Wellcome, etc. (Bolton, *First Supplement*, 135; Ferguson, I, 180 [not in Young Coll.]

CRAWFORD, Adair

Experiments and Observations on Animal Heat, and the Inflammation of Combustible Bodies; being an Attempt to Resolve these Phenomena into a General Law of Nature. . . . The Second Edition, with very large additions.
London: Printed for J. Johnson. 1788.

Second edition. 8vo. 8 leaves, 491, (1) pp. With 4 engraved plates (1 folding), by Woodman and Mutlow. Fine copy in speckled half calf antique, crimson label, gilt, original marbled boards.

THE FINAL and most valuable edition, dedicated to Richard Kirwan. Crawford (1748–1795), an Irish physician, was professor of chemistry at the Royal Military Academy, Woolwich. The first edition (London, 1779) of only 120 pages, based on the phlogiston theory, "was the earliest book published on research conducted largely in the Chemistry Department at Glasgow. . . . Crawford applied Irvine's theory . . . of 'Animal Heat'; and the two editions, 1779 and 1788, . . . achieved an international circulation" (Kent). A very important book, containing the first attempt to determine the specific heat of gases. It challenged the chemical theories of heat advanced by Black and Lavoisier. The challenge was taken up by Lavoisier and Laplace in the series of experiments on the specific heat of gases and heats of combustion, which they began in 1782. In the present edition Crawford "adapts his theories to the new antiphlogistic theory of oxygen. . . . His determination of the heat of combustion of hydrogen, by exploding a mixture of hydrogen and oxygen in a metal calorimeter, is very good, and more accurate than the result of Lavoisier and Laplace" (Partington). Not in Duveen, Edelstein, Smith, Waller, etc. (Blake, 102; Blocker, 91; Bolton, 382; D.S.B., *Supplement*, I, 95; Eales, 2040; Ferchl, 108; Ferguson, I, 181; Garrison-

Morton, 591 [1779 ed.]; Kent, *An Eighteenth Century Lectureship in Chemistry*, 1950, p. 145; Middleton, *A History of the Thermometer*, 1966, p. 111; Munk, II, 340 [1779 ed.]; Neu, 1045; Partington, III, 156; Poggendorff, I, 495; Sondheimer, 342; Watt, I, 268s; Wellcome, II, 405)

CREILING, Johann Conrad

Compendium Definitionum Physicarum. In Usum Studiosae Juventutis concinnatum. Auctore Joanne Cunrado Creilingio, Physicae & Mathematicae in Universitate Tubingensi Professore Ordinario. Editio Altera multo Auctior.
Tübingen: Typis Hiobi Franckii. Anno 1711.

Second edition. 8vo. 2 leaves, 345 pp., 9 leaves. Fine, crisp copy, in contemporary boards, gilt-lettered orange label on spine.

CREILING (1673–1752) was professor of mathematics and physics at Tübingen from 1701 to 1745. In the present work, which was intended for his students, the author covers physics, chemistry, botany, biology, astronomy, etc., in 590 paragraphs. The general introduction is followed by long sections that discuss minerals, plants, and animals. The section on minerals (pp. 127–191) gives succinct descriptions of minerals with chemical preparations made from them (e.g., salts, acids, alkalies, and metals), with many references to Boyle, Mayow, Lister, Guglielmini, et al. From the contents of this work, one can judge that Creiling was an intelligent and well-read man, but he believed in alchemy, and as he grew older, he became even more convinced of its validity. His most famous book defending alchemy is *Die Edelgeborne Jungfer Alchymia* (Tübingen, 1730), but he also wrote other books on the subject (see Ferguson, I, 182–183). Creiling was a firm friend of Roth-Scholtz, who spoke highly of him. No reference to the date of publication of the first edition of the present work has been found. Partington describes Creiling as a "credulous" author but does not mention this title. A very rare book, to which no bibliographical reference has been found.

CREILING, Johann Conrad

Dissertatio Academica De Aureo Vellere aut Possibilitate Transmutationis Metallorum hanc praeside Johanne Conrado Creilingio, . . . Defendent publice magisterii philosophici candidati, Johannes Jacobus Erbe, Tubingensis. Johannes Fridericus Reinmann, Tubingensis. Christianus Theophilus Gmelin, Tubingensis.
Tübingen: Litteris Roebelianis. 1737.

First edition. 4to. 88 pp. Very good, crisp copy, in modern blue boards. Bound with: Creiling, J. C., *Dissertatio Aureo Vellere, Sectio IV* (Tübingen, 1739).

AN IMPORTANT alchemical work on the golden fleece and the possibility of transmuting metals. It is divided into three sections, each of which is a doctoral dissertation by one of the three candidates named in the title. The first section (pp. 7–25) covers the history of the golden fleece and the principles of which metals were believed to be composed, with references to older as well as more recent alchemical writers (e.g., Basil Valentine, Paracelsus, Becher, Kunckel, and Boyle). Section II (pp. 26–55) discusses the salts of metals, cinnabar, metallic tinctures, and what are now known as oxidation reactions, with extensive references to Boyle, Becher, Helmont, et al. Section III (pp. 56–88) covers iron, sulphur, the vegetation of metals, Homberg's experiments, etc., with arguments in favor of transmutation, but with some doubts also expressed. This work was so esteemed in Germany that it was translated into German as *Abhandlung vom Goldenen Vliess oder Möglichkeit der Verwandlung der Metalle* (Tübingen, 1787), a rather late date for an alchemical book. Rare. Not in Blake, Edelstein, Ferguson Coll., Guaita, Hoover, Neu, Partington, Poggendorff, Rosenthal, Smith, Watt, etc. Caillet (2684), Duveen (148), and Wellcome (II, 406) have only the 1787 German translation. (Ferchl, 108; Ferguson, I, 183; Waller, 11106)

CREILING, Johann Conrad

Dissertatio De Aureo Vellere, Sectio IV. De Cautelis Quibusdam in Aurificio, Maxime Particulari, Utilibus. Hanc praeside Johanne Conrado Creilingio, . . . Defendent publice magisterii philosophici candidati Albertus Christoph. Baumann, Keramio-Neohusanus. Johannes Conradus Haas, Ar-Neohusanus. Bernhardus Fridericus Zügel, Herimontanus. . .
Tübingen: Litteris Roebelianis. 1739.

First edition. 4to. 42 pp., 1 leaf (Corollaria). Good, crisp copy, in modern blue boards. Bound with: Creiling, J. C., *Dissertatio Academica De Aureo Vellere* (Tübingen, 1737).

THE SEQUEL to *De Aureo Vellere* (Tübingen, 1737), comprising doctoral dissertations by the three candidates named in the title. Subjects discussed include precipitation of gold and silver from their salts, vitrification, reduction, purification of gold, false transmutation of iron into copper, frauds of some alchemists, and transmutation of mercury into silver. There are references to the writings of Geber, Suchten, Schott, Ercker, Paracelsus, Borrichius, Helvetius, Tachenius, Morhoff, Kunckel, Boyle, Becher, Stahl, et al. The German translation of this work was included in the *Abhandlungen vom Goldenen Vliess* (Tübingen, 1787). This sequel appears to be even rarer than the 1737 main work. Not in Blake, Bolton, Edelstein, Ferguson Coll., Guaita, Hoover, Neu, Partington, Poggendorff, Rosenthal, Smith, Waller, Watt, etc. Caillet (2684), Duveen (148), and Wellcome (II,

406) have only the 1787 German translation. (Ferchl, 108; Ferguson, I, 183)

CRELL, Lorenz Florenz Friedrich von

Chemisches Journal für die Freunde der Naturlehre, Arzneygelahrtheit, Haushaltungskunst und Manufacturen. Entworfen von D. Lorenz Crell. . .

Lemgo: im Verlage der Meyerschen Buchhändlung. 1778–1781.

First edition. 6 vols., 8vo. I (1778): 240 pp.; 1 folding plate. II (1779): 8 leaves, 250 pp., 1 leaf. III (1780): 6 leaves, 216 pp., 1 leaf. IV (1780): 2 leaves, 252 pp. V (1780): 8 leaves, 236 pp. VI (1781): 6 leaves, 228 pp. Very fine set in almost mint condition, in contemporary half sheep, speckled boards (vol. V in full sheep), spines richly gilt, red and blue morocco labels. Small red stamp on verso of titles: R. Gr. v. Veltheim.

A COMPLETE SET of the first edition of Crell's celebrated journal. Duveen describes these volumes as being "all of great interest in throwing light on the gradual acceptance of Lavoisier's new theories and the abandonment of the Phlogiston Theory in Germany." An active correspondent of the leading chemists in Germany and other countries, Crell's journals diffused a knowledge of the British, French, and Swedish discoveries in Germany. Crell began a new series of the *Chemisches Annalen* (Helmstädt & Leipzig, 1784–1803; Bolton, 1095), which appeared in forty volumes. He also published *Die neuesten Entdeckungen in der Chemie* (Leipzig, 1781–1784) in twelve volumes. Very scarce. Not in Blake, Cole, Ferguson Coll., Neu, Waller, Wellcome, etc. (Bolton, 1099; D.S.B., III, 465; Duveen, 150; Edelstein, 2707; Ferchl, 108; Ferguson, I, 184 [not in Young Coll.]; Partington, III, 598; Poggendorff, I, 496; Smith, 108; Thornton & Tully, 284; Watt, I, 269q)

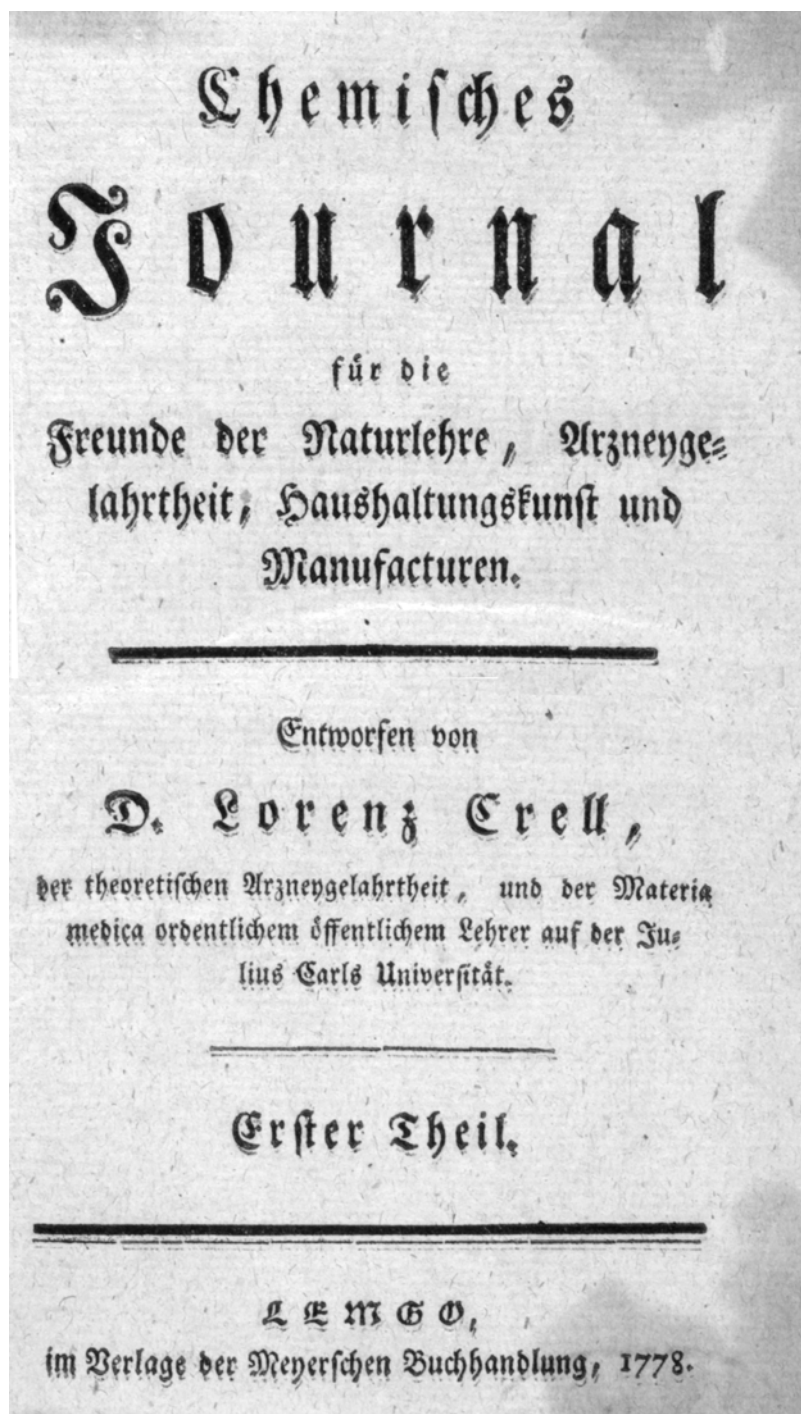
CRELL, Lorenz Florenz Friedrich von

Crell's Chemical Journal; giving an account of the latest discoveries in chemistry, with extracts from the various foreign transactions: translated from the German with occasional additions. . .

London: Printed for R. Baldwin, Pater-Noster Row. 1791, 1792, 1793.

First English edition. 3 vols., 8vo. I: vi, 310 pp. II: ii, 314 pp. III: viii, 392 pp. Fine crisp copy, lower edges uncut, in modern black buckram. From the libraries of the Birmingham and Midland Institute, and Professor Franz Sondheimer, with bookplates on front pastedown and free endpapers.

CRELL (1745–1816), a pupil of Joseph Black, was professor of chemistry and mineralogy in Brunswick, then professor of philosophy and medicine at Helmstädt, and finally professor of chemistry at Göttingen. Now remembered as



Crell. Chemisches Journal. Lemgo, 1778-1781.

the founder of chemical journalism, he edited several periodicals (see Partington). Crell first edited the *Chemisches Annalen für die Freunde der Naturlehre* (6 vols., 12mo., Lemgo, 1778–81), of which this is the English translation. A milestone in the history of chemistry, containing papers by Berthollet, Black, Fourcroy, Gmelin, Kirwan, Klaproth, Pearson, Priestley, Proust, Scheele, Vauquelin, Westrumb, Wiegleb, and many other important chemists; this English translation is very scarce. Not in Blake, D.S.B., Duveen, Ferchl, Ferguson, Neu, Poggendorff, Wellcome, etc. (Bolton, 1099; Edelstein, 2706; Ferguson Coll., 172; Partington, III, 598; Sondheimer, 344; Waller, 11101 [lacking vol. 3]; Watt, I, 269q)

CROHARÉ

Extrait du No. 30 de la Gazette de Santé. Lettre de M. Croharé, aux Auteurs de la Gazette de Santé, pour servir de réponse aux réflexions de M. Navier, insérées dans la feuille précédente.
N.p., n.d. (Paris, 1780?).

First separate edition. 8vo. 4 pp. Ornamental woodcut on drop title. Good copy. Bound with: Dubuisson, F. R.A., *Mémoire sur les Acides Natifs du Verjus, de l'Orange, et du Citron* (Paris, 1783), and 7 other chemical tracts.

PUBLISHED IN response to a memoir in the *Gazette de Santé* (No. 27, 21 and 28 June 1780), the pharmaceutical chemist Croharé takes issue with the observations of Pierre Toussaint Navier (1712–1779) on antidotes for treating persons poisoned by arsenic and its compounds. Croharé quotes passages from the *Contre-poisons de l'arsenic* (Paris, 1777, 2 vols.) by Navier. He refers to a process published 120 years earlier in the *Chymie de Lefebure*, and also to another process by Pierre Potier described more than 150 years before Navier wrote on antidotes for arsenic poisoning. Extremely rare.

ROLL, Oswald

Basilica Chymica, continens philosophicam propria laborum experientia confirmatam descriptionem & usum remediorum Chymicorum selectissimorum e Lumine Gratiae & Naturae desumptorum. In fine libri additus est eiusdem Autoris Tractatus novus de Signaturis rerum internis.

Frankfurt: Apud Claudium Marnium & heredes Joannis Aubrii. 1609.

First edition. 4to. 10 leaves, 283, (1) pp., 22 leaves, 80 pp., 8 leaves, 23, (1) pp. Fine engraved title page (with portraits of Hermes, Morienus, Geber, Lull, Roger Bacon, and Paracelsus); 2 full-page woodcuts (pp. 238 and 242) and woodcut chemical symbols (pp. 77–80). Many historiated woodcut initials, head- and tailpieces. Small pieces missing from top margin of engraved title page, and top margins of first few leaves damp

stained; otherwise near-fine copy in contemporary half calf, marbled boards, rebacked, original maroon morocco label.

ONE OF the great classics of early chemical literature, sometimes confused with the undated second edition (Frankfurt, 1611), which has the same engraved title page but slightly different collation. The engraved title of this edition has no wording in the bottom margin (cf. 1611 edition). Croll (ca. 1560–1609) studied in Marburg, Heidelberg, Strassburg, and Geneva and traveled in Italy, France, Germany, Hungary, Poland, and Bohemia. Physician to Prince Christian of Anhalt-Bernberg (to whom the book is dedicated), he was later councillor to Emperor Rudolph II. His principal work, the *Basilica Chymica* expounds Paracelsian doctrine in three parts: admonitory preface, practical section on chemistry, and treatise on signatures. The “standard work on iatrochemistry” (D.S.B.). Written in “truly scientific spirit” (Partington), many editions and translations appeared. Rare. (Bolton, 971; D.S.B., III, 471; Ferchl, 109; Ferguson, I, 186 [not in Young Coll.]; Ferguson Coll., 173; Partington, II, 175; Poggendorff, I, 498; Thordike, V, 649; Watt, I, 272a; Wellcome, I, 1672)

ROLL, Oswald

Basilica Chymica continens Philosophicam propria laborum experientia confirmatam descriptionem et usum Remediorum Chymicorum Selectissimorum e Lumine Gratiae et Naturae desumptorum. In fine libri additus est Autoris ejusdem Tractatus Novus de Signaturis Rerum Internis.

Frankfurt: Impensis Godefridi Tampachii. (1611).

Second edition. 4to. 8 leaves, 283, (1) pp., 20 leaves, 80 pp., 8 leaves, 20 pp. Fine engraved title page (with portraits of Hermes, Morienus, Geber, Lull, Roger Bacon, and Paracelsus); 2 full-page woodcuts (pp. 238 and 242) and woodcut chemical symbols (pp. 77–80). Numerous historiated woodcut initials, head- and tailpieces. Old ownership entry, dated August 1619, on verso of first flyleaf, and neat early marginal annotations. Very fine, crisp copy, in original blind-ruled vellum, spine ink-lettered, blind-stamped ornament on each cover, and with the initials I. E. F. D. and date 1613 on front cover. The Duveen copy.

THE UNDATED second quarto edition of this great work, with the same engraved title page as the first edition (1609), to which the words “Cum Gratia et Privilegio S. Caes. Maiest: Francofurti, Impensis Godefridi Tampachij” have been added in the bottom margin. That this is the second edition is confirmed by the statement of Johann Hartmann, who first edited this posthumous edition (folio 6, second line from bottom): “Iam itaque hac secunda Editione.” Printed at the expense of G. Tampach from a different setting of type, it is a close paginary version of the 1609 edition (which it resembles in appearance), but has slightly



Croll. Basilica Chymica. Frankfurt, 1611.

different collation, initials, and head- and tailpieces. Rare. Not in Ferchl, Ferguson Coll., Watt, etc. (D.S.B., III, 472; Duveen, 150 [this copy]; Ferguson, I, 185; Partington, II, 175; Rosenthal, 241; Waller, 11107; Wellcome, I, 1673)

CROLL, Oswald

Basilica Chymica continens Philosophicam propria laborum experientia confirmatam descriptionem et usum Remediorum Chymicorum Selectissimorum e Lumine Gratiae et Naturae desumptorum. In fine libri additus est Autoris ejusdem Tractatus Novus de Signaturis Rerum Internis.

Frankfurt: Impensis Godefridi Tampachii. (1622).

Third edition. 4to. 8 leaves, 283, (1) pp., 20 leaves, 80 pp., 8 leaves, 24 pp. Fine engraved title page (identical to that of 1611 edition), 2 full-page woodcuts (pp. 238 and 242), and woodcut chemical symbols (pp. 77–80). Many historiated woodcut initials, head- and tailpieces (different from those in 1611 edition). Very fine, crisp copy, in original overlapping vellum, contemporary ink lettering on spine. Engraved bookplate: Bibliotheca Clauseriana.

THE UNDATED third quarto (second Tampach) edition, which is a close paginary reprint of the first Tampach edition of 1611. The privilege of this edition begins with *Ferdinandus Secundus* and is dated Vienna, 5 March 1622, whereas the privilege of the 1611 edition begins with *Rudolphus Secundus* and is dated Prague, 2 May 1608 (exactly as in the first edition of 1609). The divisional title pages to the *Tractatus de signaturis* are different: the 1611 edition has a small woodcut, and the 1622 edition has a half-page woodcut. Several other points distinguish the two editions, which are otherwise very similar in appearance. It should be noted that a number of octavo editions were published, starting with that of Geneva, 1610 (Neu, 1050). Tampach also brought out an octavo edition (Frankfurt, 1620; Neu, 1051; Wellcome, I, 1674). “Traité fort rare” (Guaita). Not in the usual bibliographies. (Cailliet, 2702; D.S.B., III, 472 [wrong date: 1623]; Guaita, 198; Rosenthal, 245)

CROLL, Oswald

Basilica Chymica oder Alchymistisch Königlich Kleynod: Ein Philosophisch durch sein selbst eigne erfahrung confirmirte und bestätigte Beschreibung und gebrauch der aller fürtrefflichsten Chimischen Artzneyen so auss dem Liecht der Gnaden und Natur genommen in sich begreiffent. Beneben angehengtem seinem neuen Tractat von den innerlichen Signaturm oder zeichen der dinge.

Frankfurt: bey Gottfried Tampachen. (1629).

Second edition in German. 4to. 4 leaves, 248 pp., 8 leaves, 72 pp., 4 leaves. Finely engraved title page (mounted and colored

by an early hand) is a reengraved but closely similar version of that in the Latin editions (1609, 1611, 1622). Woodcuts (pp. 212 and 215) and chemical symbols (pp. 68–72). Text in black letter. Some occasional minor signs of wear; otherwise good copy, in contemporary manuscript vellum (worn).

THE GERMAN translation (probably by Johann Hartmann) of the celebrated *Basilica Chymica*, printed by Caspar Roetel for Gottfried Tampach. The first edition of the German translation appeared at Frankfurt in 1623, printed by Johann Friedrich Weissen for G. Tampach (Wellcome, I, 1677). The privilege is addressed to Ferdinandus Secundus and is dated Vienna, 5 March 1622, showing that this German translation was made from the Latin third quarto edition of 1622. The divisional title page (*Tractat von den innerlichen Signaturm*) is dated 1629. Very rare. Not in D.S.B., Watt, Wellcome, etc. (Duveen, 150; Neu, 1057; Partington, II, 175; Rosenthal, 249)

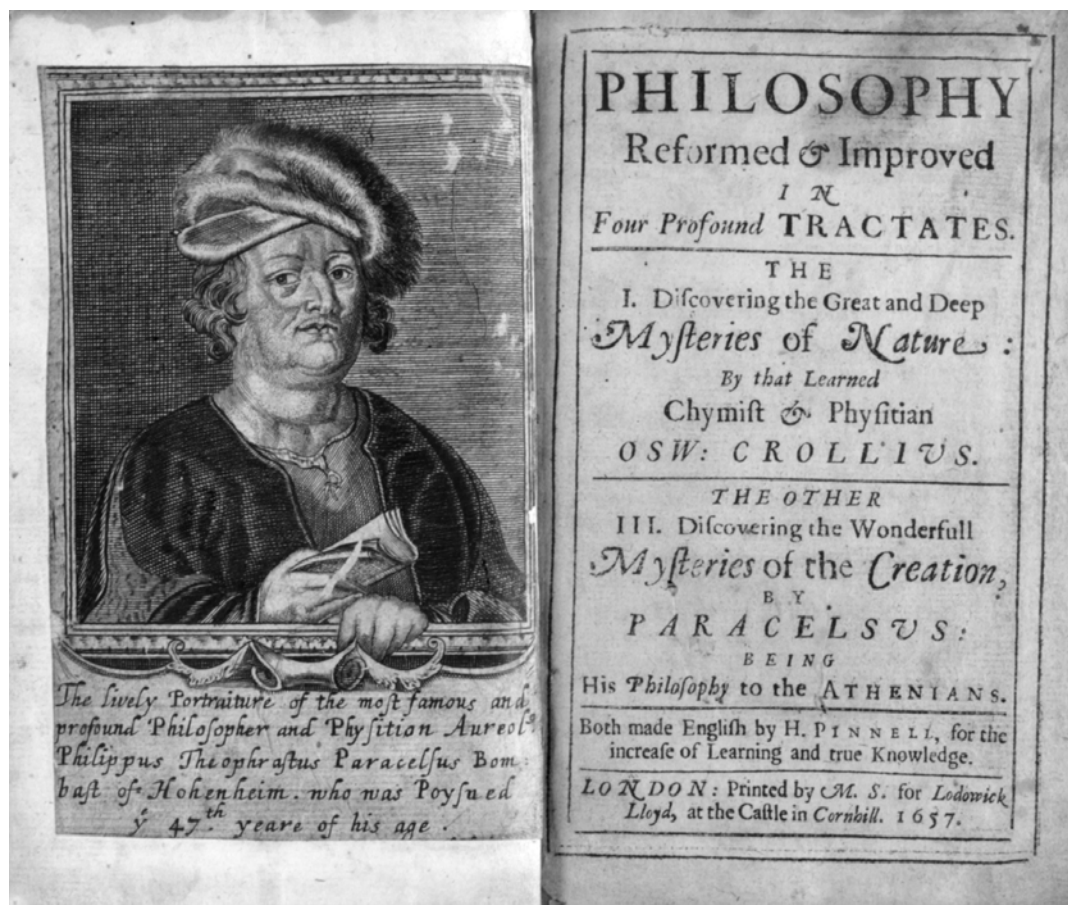
CROLL, Oswald

Philosophy Reformed & Improved in Four Profound Tractates. The I. Discovering the Great and Deep Mysteries of Nature: By that Learned Chymist & Physitian Osw. Crollius. The Other II. Discovering the Wonderfull Mysteries of the Creation, by Paracelsus: Being His Philosophy to the Athenians. Both made English by H. Pinnell, for the increase of Learning and true Knowledge.

London: M. S. for Lodowick Lloyd. 1657.

First edition. 8vo. 11 leaves, 226 pp., 1 leaf (divisional title page), 70 pp. With fine frontispiece copperplate portrait of Paracelsus (laid down). Very good copy in calf antique, with original calf sides laid on, spine gilt-ruled, with gilt-lettered morocco label.

THIS IS the only English translation, by Henry Pinnell, of the *Praefatio Admonitoria* in Croll's *Basilica Chymica* (Frankfurt, 1609). Produced during the politically troubled Cromwellian period, this is one of the earliest expositions in English of Paracelsian and Crollian chemistry and medicine. On page 26, Croll describes the Paracelsian nature of matter: “Thus in all things there is Fire, Aire, Earthy Water. Again there is Water, Caelestiall Earth. Likewise Terrene, Fiery, Airy Water. Lastly Airy Fire, Airy Water, Airy Earth. There are also four kinds of Mercury, and four sorts of Mettalls, a fourfold Snow, four sorts of Ametheists and precious stones; There are Foure of everything, one in the Firmament or Heavenly Element, another in the Aire, a third in the Water, a fourth in the Earth.” Such was the state of chemical theory before Boyle began his epic chemical investigations. Pages 63–70 of the final leaves comprise a primitive glossary by Pinnell, in which he elucidates the meanings of “some uncouth and unusuall words . . . for thy



Croll. *Philosophy Reformed*. London, 1657.

better understanding (who art not acquainted with such language).” A very rare book. Not in Bolton, Cushing, Ferchl, Morgan, Osler, Poggendorff, Waller, etc. (Duveen, 454; Ferguson, I, 187 [not in Young Coll.]; Ferguson Coll., 174; Neu, 1061; Partington, II, 175; Smith, 126; Watt, II, 730r; Wellcome, 409; Wing, C7023)

CROLL, Oswald

La Royale Chymie de Crollius. Traduite en françois par J. Marcel de Boulene.

Lyons: Par Pierre Drobet en Rue Merciere. 1627.

First edition, second issue. 8vo. 1 leaf, 223, (1) pp., 1 leaf, 210 pp. (last 2 misnumbered 537–8), 28 leaves, 119, (1) pp., 16 leaves (last blank). With finely engraved copperplate title page (containing portraits of Hermes, Geber, Lull, and Paracelsus, also alchemical apparatus and symbols); woodcuts (pp. 155 and 160), and chemical symbols (pp. 116–119). Divisional title pages to parts II and III. Fine copy in original limp vellum, old (not contemporary) ink-lettered paper label on spine.

THE FRENCH translation by J. Marcel de Boulene of the *Basilica Chymica*, the first issue of which appeared three

years earlier (Lyons: P. Drobet, 1624). The first leaf (sig. A1 verso) containing the privilege (dated 17 October 1623) is conjugate with signature A8, proving that this volume comprises the sheets of the 1624 first issue and is not a second edition, as it is sometimes represented to be (e.g., by Caillet). The engraved title page is on a separate sheet, the stub of which is between pages 16 and 17. The date of the title page has been changed to 1627 by engraving the 7 over the 4, but the faint outline of the 4 can still be seen. According to Caillet, the third part (i.e., “Traicté des signatures ou vraye et vive anatomie du grand et petit monde”), here present, is often lacking. Guaita states that the third part “est un résumé parfait de la philosophie hermétique” and adds that the first edition is “la plus recherchée.” There is a copy of the 1627 issue in the Bibliothèque Nationale, but neither issue is in the British Library, Library of Congress, Surgeon General’s Library, etc. Rare. (Caillet, 2703; Edelstein, 603; Ferguson, I, 187 [not in Young Coll.]; Ferguson Coll., 174 [1st issue]; Guaita, 199 [1st issue]; Partington, II, 175; Smith, 126 [1st issue]; Wellcome, I, 1678 [1st issue])

CROLL, Oswald, and HARTMANN, Johann

Basilica Chymica, & Praxis Chymiatricae or Royal and Practical Chymistry. In Three Treatises. Wherein All those excellent Medicines and Chymical Preparations are fully discovered, from whence all our modern Chymists have drawn their choicest remedies. Being A Translation of Oswald Crollius his Royal Chymistry, augmented and enlarged by John Hartman. To which is added his Treatise of Signatures of Internal things, or a true and lively Anatomy of the greater and lesser World. As also The Practice of Chymistry of John Hartman M.D. augmented and enlarged by his Son. All faithfully Englished by a Lover of Chymistry.

London: Printed for John Starkey at the Mitre in Fleet-Street near Temple-Bar, and Thomas Passinger at the Three Bibles on London-Bridge. 1670.

First English edition. Folio (in 4s). 4 leaves, 180 pp., 2 leaves (last blank); 8 leaves, 37, (1) pp., 4 leaves, 184 pp., 10 leaves (p. 177 misnumbered 183; p. 184 misnumbered 186). Divisional title to *Signatures* dated 1669. Woodcuts (pp. 135 and 137) and copperplate of *Chymicall Characters*. Blank margin of final leaf repaired; otherwise remarkably fine copy, in full morocco antique, spine gilt-lettered and dated. From the library of Dr. Archibald Gilpin (1906–1959; see *Munk's Roll*, V, 151); Sotheby auction, 30 May 1960.

THE ONLY English translation of the *Basilica Chymica* and of Hartmann's *Praxis Chymiatrica* (first: Leipzig, 1633). A valuable edition for studying the iatrochemical theories of these authors. In the preface the translator, Richard Russell, refers to his translation of the *Tyrocinium Chymicum* (London, 1669), by Jean Beguin. Not in D.S.B., Duveen, Neu, Waller, etc. (Bolton, 971; Cushing, C482; Edelstein, 602; Ferchl, 109; Ferguson, I, 187 [not in Young Coll.]; Ferguson Coll., 174; Honeyman, 782; Mellon, 126; Partington, II, 175; Smith, 126; Watt, I, 272a; Wellcome, II, 408; Wing, C7022)

CRONSIOE, Anders

Doctrinum Atomorum, . . . Publico examini subjiciunt praeses, Petrus Dabl, . . . et respondens Andreas Cronsioe, Malmogienses. Die XIII Junii A. MDCCCXII.
Londini Gothorum: Litteris Berlingianis. 1812.

First edition. 4to. 14 pp. Fine, uncut copy, with wide margins, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A DISSERTATION ON the atomic theory and chemical elements, by Cronsioe (dates unknown) of Malmo, a student of Dahl. Early theories of Democritus, Epicurus, Lucretius, and Gassendi are covered, but there is no mention of Dalton. Other topics discussed include the decomposition of cin-

abar by heat into mercury and sulphur, platinum and various metals, and vacua. A rare work, unrecorded by the usual bibliographers.

CRONSTEDT, Axel Frederic

Aminnelse-Tal öfver Framledne Directeuren och Kongl. Vetensk. Acad. Ledamot, Valborne Herr Henric Theoph. Scheffer . . . Den 17 September 1760. Af dess medlem Axel Fredr. Cronstedt, Bårg-Mästare.

Stockholm: Tryckt hos Directeuren Lars Salvius. 1760.

First edition. 8vo. 31, (1) pp. Large engraved title-vignette. Fine copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A EULOGY ON the Swedish assayer and mineralogical chemist Henrik Theophilus Scheffer (1710–1759), presented by Cronstedt to the Royal Academy of Sciences of Sweden. The chemical researches, discoveries, and publications of Scheffer are praised and evaluated, with especial reference to his important work on platinum and its alloys. Cronstedt relates how, in 1750, “a new metal happened to be discovered . . . and it was most fitting that the first investigation of such a rare substance should fall to this man who was worthy of it. . . . Scheffer . . . showed in a paper that it was a peculiar metal, different from all the others, almost infusible when alone, just as noble as gold, and less pliable” (Weeks, *Discovery of the Elements* [1960, pp. 416–417]). For a discussion of Scheffer's research on platinum, see D. McDonald and L. B. Hunt (*A History of Platinum and its Allied Metals*, 1982, pp. 35–37). Rare. (Edelstein, 3487; Weeks, 450)

CRONSTEDT, Axel Frederic

Försök till en Mineralogie eller Mineral Rikets Upställning. . . .

Stockholm: Tryckt hos Johan Arv. Carlbohm. 1781.

Second edition. 8vo. 25 leaves, 302 pp., 1 leaf (errata). Engraved title page with large vignette of a mining scene (J. Snack sc.). Fine copy, uncut and unpressed, in half calf antique, marbled boards, maroon morocco label, with original wrappers bound in.

THE POSTHUMOUS second, final, and most complete edition of this important work on mineralogical chemistry (first: Stockholm, 1758; Bolton, 383; D.S.B., III, 474; Partington, III, 172). Cronstedt was the founder of the chemical system of mineralogy and the originator of systematic blow-pipe analysis. “One of his greatest contributions to science was the treatise in which he reformed mineralogy and classified minerals not merely according to their external properties, such as form, hardness, and color, but also according



Cronstedt. Försök till en Mineralogie. Stockholm, 1781.

to their chemical composition" (Weeks, p. 165). "Here, for the first time, he established the correct distinctions between simple minerals and rock minerals consisting of a mixture of several minerals" (D.S.B.). He "divided minerals into four groups: earths, salts, bitumens, and metals" (Partington). Translations into German (1760), French (1771), and English (1770) appeared. Rare. Not in the usual bibliographies. (Ward & Carozzi, 550)

CRONSTEDT, Axel Frederic

Versuch einer neuen Mineralogie aus dem Schwedischen übersetzt.

Kopenhagen: Rorhenschen Buchhandlung. 1760.

First German edition. 8vo. 20 leaves, 264 pp. Fine, crisp copy, in the original marbled boards.

THE FIRST German translation, by G. Wiedeman, of *Försök til Mineralogie eller Mineral-Rikets upställning* (Stockholm, 1758), which was published anonymously by Cronstedt. ANOTHER GERMAN translation by A. G. Werner was published in Leipzig in 1780, but it was incomplete. Cronstedt divided minerals into four groups: earths, salts, bitumens, and metals. The physical and chemical properties of the four classes are described, and references are made to contemporary mineralogical chemists (e.g., Hjarne, Pott, Homberg, and Wallerius). Cronstedt discovered nickel in 1751, in the mineral kupfernickel, and he named the new metal "nickel" in 1754. Nickel and its minerals are discussed on pages 229–234 of this German translation. Cronstedt, one of the most famous and important Swedish chemists of the mid-eighteenth century, made extensive use of the blowpipe to analyze minerals. He describes the various wet chemical and blowpipe analyses used in the present book, which is one of the most important works to appear on the subject of this period. According to the *Dictionary of Scientific Biography*, "It must be pointed out that even if other investigators had previously used the blowpipe in their tests, nobody before Cronstedt had so methodically applied this tool to the examination of minerals. Thus, he is entitled to be considered the actual founder of systematic blowpipe analysis. . . . Berzelius declared him to be the founder of chemical mineralogy." This German edition is very rare and is not mentioned by Bolton, Duveen, Ferchl, Ferguson, Morgan, Neu, Poggendorff, Smith, Waller, Watt, Wellcome, etc. (U. Boklund, *Dictionary of Scientific Biography*, 3, 474 [1971]; Partington, III, 174)

CRONSTEDT, Axel Frederic

An Essay towards a System of Mineralogy: by Axel Fredric Cronstedt. Translated from the Original Swedish, with Notes, by Gustav von Engestrom. To which is added, a Treatise on the Pocket-Laboratory, containing An Easy Method, used by the Author, for Trying Mineral Bodies, written by the Translator. The Whole Revised and Corrected, with some Additional Notes, by Emanuel Mendes da Costa. London: Printed for Edward and Charles Dilly, in the Poultry. 1770.

First English edition, first issue. 8vo. 2 leaves, xxxvi, 68, *67–*68, 69–272, (2), 175–188, 289–329, (1) pp. With 2 folding engraved plates. Fine copy, in original gilt-ruled calf, red morocco label. Engraved armorial bookplate (eighteenth century): Sr. Lucius O'Brien Bart. The Irish politician Lucius Henry O'Brien (d. 1795) agitated to remove trade restrictions between England and Ireland (see D.N.B.).

THE ENGLISH translation of *Försök till en Mineralogie eller Mineral Rikets Upställning* (Stockholm, 1758). It is the first to contain von Engestrom's description of the use of the blowpipe in systematic chemical analysis, which he did not publish in German until four years later (Greifswald, 1774). The section by von Engestrom has a divisional title page: *Description and Use of a Mineralogical Pocket Laboratory; and especially the Use of the Blow-Pipe in Mineralogy*. This section, of which pages 275–288 are mispaginated as 175–188, follows page 272. It is illustrated by two plates depicting the parts of the blowpipe. A so-called second edition (i.e., issue) appeared (London, 1772; Cole, 308), containing a brief appendix by M. T. Brunnich. (D.S.B., III, 474; Edelstein, 606; Partington, III, 174; Smeaton, *Ambix*, XIII, 87; Ward & Carozzi, 553; Watt, I, 261b)

CRONSTEDT, Axel Frederic

An Essay towards a System of Mineralogy. By Axel Frederic Cronstedt, Mine-Master or Superintendent of Mines in Sweden. Translated from the original Swedish, with Annotations, and an additional Treatise on the Blow-Pipe. By Gustav von Engestrom . . . The Second Edition, greatly enlarged and improved . . . by John Hyacinth de Magellan . . . London: Printed for Charles Dilly, in the Poultry. 1788.

Second English (first Magellan) edition. 2 vols., 8vo. I: lv, (1), 432 pp. II: 1 leaf, pp. 433–1040. With 2 folding engraved plates (Jn. Lodge sc.) containing numerous figures. Few eighteenth-century marginal annotations; otherwise very good set, in original gilt-ruled calf, crimson morocco labels. Presentation copy from the editor, J. H. de Magellan, to an unknown recipient, with "Ex munere votivo Editoris" written neatly in bottom margin of first title page.

THE FINAL and most complete English edition of this monumental work, enlarged to over twice the size of the first edition (London, 1770). The editor, John Hyacinth de Magellan (1722–1790), F.R.S. (1774), was a scientist and descendant of the famous sixteenth-century Portuguese navigator. Besides changing the order of the sections, Magellan has included extensive notes. After the section on the blowpipe by von Engestrom (pp. 924–976), he has added a long appendix (pp. 977–1015) entitled “A Description of the Pocket-Laboratory for Assaying Minerals.” His observations are valuable additions and include the chief discoveries and improvements made in chemistry and mineralogy by T. O. Bergman, G. Fabbroni, R. Kirwan, W. Nicholson, et al. (Cole, 309; D.S.B., III, 474; Edelstein, 607; Hoover, 242; Partington, III, 174; Smith, 127; Ward & Carozzi, 555; Watt, II, 634j)

CRONSTEDT, Axel Frederic

Inträdes-Tal, om Medel til Mineralogiens vidare Förkofran. Hällit För Kongl. Svenska Vetenskaps Akademien, den 9. Feb. 1754. . . .

Stockholm: Tryckt hos Lars Salvius. 1754.

First edition. 8vo. 16 pp. Large copperplate engraving on title, woodcut head- and tailpieces. Fine, crisp copy, entirely uncut, with wide margins, in maroon half calf antique, marbled boards, spine gilt-lettered and dated.

THE FIRST complete report on the important metal nickel and its compounds. A milestone work in the history of chemistry and metallurgy. Cronstedt (1722–1765), a distinguished mineralogist and chemist, studied under Georg Brandt, the discoverer of cobalt. The chemically related metal nickel “was discovered by Cronstedt (1751), who proved that kupfernickel contains a peculiar metal, which in 1754 he called nickel” (Partington, III, 173). “His first report on his discovery appeared in the *Kungliga Vetenskaps Akademiens Handlingar* for 1751, but not until a paper in the *Handlingar* for 1754 did he give his new metal a name, calling it ‘nickel,’ after the material from which it was obtained” (D.S.B., III, 473). For further details of nickel and its compounds by Cronstedt, see Partington; also M. E. Weeks, *Discovery of the Elements*, 1960, pp. 161–165. Not in Blake, Bolton, Duveen, Ferguson, Ferguson Coll., Hoover, Neu, Partington, Smith, Waller, Watt, Wellcome, etc. (D.S.B., III, 473; Edelstein, 609; Ferchl, 110; Poggen-dorff, I, 499)

CRONSTEDT, Carl Johan

Tal, Hället För Kongl. Vetenskaps Akademien Af Praesidenten . . . Herr Grefve Carl Job. Cronstedt, . . . Praesidium. Den 1 Maji 1771.

Stockholm: Tryckt hos Direct. Lars Salvius. 1771.

First edition. 8vo. 12 pp. Large woodcut on title. Fine copy with wide margins, uncut and unpressed, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A SPEECH PRESENTED by Cronstedt on 1 May 1771 to the Swedish Royal Academy of Sciences. The author was related to the great chemist Axel Frederic Cronstedt (1722–1765), the “founder of chemical mineralogy [and] founder of systematic blowpipe analysis.” (D.S.B., III, 474)

CROOKES, William

Dyeing and Tissue-Printing. . . .

London: George Bell and Sons. 1882.

First edition. 8vo. x, 418 pp., 1 leaf (blank) + 2 leaves (advertisements) + 22 pp., 1 leaf (publisher's catalogue). Very good copy in original publisher's gilt-lettered green pebbled cloth.

AN IMPORTANT work in which “an attempt has been made to give the leading features of each department of dyeing . . . The uses of the various colouring matters, mordants, &c., are shown in practical examples” (preface). Scarce. Not in Duveen, Morgan, Partington, Sondheimer, Waller, etc. (Bolton, 383; D.S.B., III, 481; Edelstein, 2948; Lawrie, 134; Sotheran, Cat. 702 [1910], 7094)

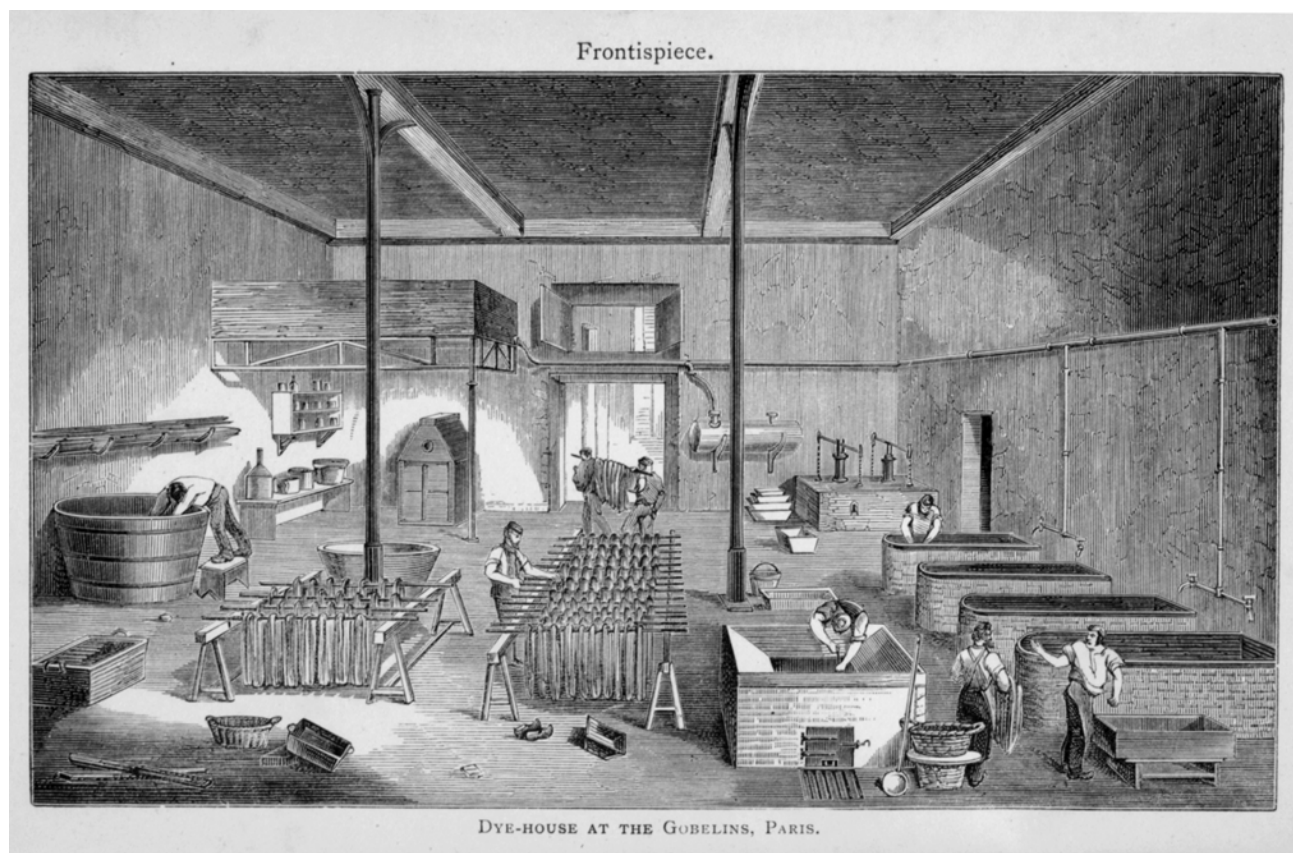
CROOKES, William

Genesis of the Elements. . . . A Lecture delivered at the Royal Institution, on Friday Evening, February 18, 1887.

London, 1887.

First edition. 4to. 1 leaf, 28 pp. With 3 large woodcuts (including 5 figures). Very fine copy, interleaved with blank pages, all edges gilt; bound in full decorated calf, with 5 raised bands, the binding dated 1902 (inside back cover). A presentation copy, with inscription in ink in Crookes's handwriting at the top of the printed wrapper: “C. A. Tonides, Esq. With the Author's kind regards.”

A PRECIOUS ASSOCIATION copy, being a revised version of Crookes's presidential address, published in *Reports of the British Association* (1886, pp. 558–576). It is a most important discussion of the formation and evolution of chemical elements from a primordial matter existing at the creation of the universe. The existence of isotopes is foreshadowed: “Probably our atomic weights merely represent a mean value around which the actual atomic weights of the atoms vary



Crookes. *Practical Handbook of . . . Calico-Printing*. London, 1874.

within certain narrow limits" (p. 22). This work is discussed extensively by W. H. Brock in his biography of Crookes in the *Dictionary of Scientific Biography*. For further details see D. M. Knight, *Classical Scientific Papers—Chemistry* (New York, 1968, pp. 334–352). Evidently rare, this booklet is not mentioned by the usual authorities. It was translated into French by Richard (Paris, 1887; Bolton, 383), also into Russian by A. G. Stoletof (Moscow, 1886), and into German by W. Preyer (Braunschweig, 1895, 2nd ed.; Bolton, *First Supplement*, 136). (D.S.B., III, 478)

CROOKES, William

On the Spectra of Argon.
January 31, 1895.

First edition. 4to. In: *Philosophical Transactions of the Royal Society* (1895), pp. 243–251. With 1 engraved plate. Fine copy in modern brown buckram, spine gilt-lettered. Bound with: 3 other papers on argon, by Lord Rayleigh and William Ramsay, Karol Stanislaw Olszewski, and William Ramsay and Sydney Young.

A CLASSIC PAPER that first describes the spectra obtained by passing an electric discharge through argon at very low pressures. Several specimens of argon (some containing traces of nitrogen) were investigated. Crookes distinguished between the spectral lines attributable to argon and those of nitrogen and verified that the argon isolated by Lord Rayleigh and William Ramsay was truly a new chemically inert element.

CROOKES, William

A Practical Handbook of Dyeing and Calico-Printing. . . .
London: Longmans, Green, and Co. 1874.

First edition. 8vo. xvi, 730 pp., 1 leaf + 48 pp. (advertisements). With frontispiece, 10 engraved plates, 38 text woodcuts, and 47 actual specimens of dyed and printed fabrics. An excellent copy in original gilt-lettered maroon cloth.

THE DEFINITIVE first major practical manual on dyeing and printing since the introduction of synthetic aniline dyes in the 1850s and 1860s. Before the 1850s, only a dozen or so types of vegetable dyes were available, and these are fully

discussed, as are the newly discovered synthetic dyes. There is a valuable bibliography (pp. 702–715). “One of the best text-books on the subject” (Zeitlinger [Sotheran]). A milestone in the literature of dyeing and printing. Sir William Crookes (1832–1919), a pupil and later assistant of Hofmann at the Royal College of Chemistry, London, was a distinguished scientist (F.R.S., 1863) who became president of the Royal Society (1913–1915). He discovered thallium (1861), experimented on the properties of highly rarefied gases and on rare earth elements, separated uranium-X from uranium (1900), and made many important discoveries in chemistry and physics. He was interested in several branches of applied chemistry besides dyeing, including the manufacture of glass containing rare earth elements for protecting the eyes from ultraviolet radiation. A very scarce book, which, surprisingly, is not in the extensive Edelstein Collection on dyeing, nor is it listed by Partington, Smith, Waller, etc. (Bolton, 383; D.S.B., III, 481; Duveen, 644; Lawrie, 135; Morgan, 168; Sondheimer, 350; Sotheran, Cat. 666 [1906], 904; Thornton & Tully, 224)

CUDWORTH, Ralph

The True Intellectual System of the Universe: The First Part; Wherein, All the Reason and Philosophy of Atheism is Confuted; and Its Impossibility Demonstrated. By R. Cudworth, D.D.

London: Richard Royston. 1678.

First edition. Folio. 10 leaves, 899 pp., 42 leaves. With beautiful copperplate frontispiece (engraved by R. White after the painting by Jan Batista Caespers). Title printed in red and black.

A magnificent copy in pristine condition, in contemporary paneled speckled calf. Bound with: Cudworth, R., *A Discourse Concerning the True Notion of the Lord's Supper*. Third Edition. London: R. Royston, 1676 (Wing C.7468). From the library of the great diarist John Evelyn (1620–1706), with the library bookplate and the armorial bookplate of Sir Frederick Evelyn inside the front cover. The front free endpaper carries the ornate initials “R. B.” in ink, presumably those of Sir Richard Browne (1605–1683), British ambassador in Paris (1641–1660) while Charles I and Charles II were in exile. Browne was John Evelyn's father-in-law and bequeathed him his library.

CUDWORTH (1617–1688), noted theologian and regius professor of Hebrew (Clare Hall, Cambridge, 1645–1688), originated a theory of a “plastic nature” to combat doctrines of chance and constant divine interference. The present is his chief work. “Cudworth's *True Intellectual System* is largely concerned with the problem of reconciling atomism with the belief that man has an immortal soul, and that his actions are not governed by necessity” (D. M. Knight, *Natural Science Books in English, 1600–1900* (London, 1972, pp.

36–38]). Cudworth's book represents an attempt to synthesize Platonism and atomism, and, according to Knight, this work had an influence on Newton's concepts of gravitation. There are many topics of interest to the chemical historian. A choice association copy of a very scarce work. (Watt, I, 275n; Wellcome, II, 412; Wing C7471)

CUFFE, Robert

The Woodhall or Iodine Spa, Lincolnshire. . . .

London: Published by H. K. Lewis. 1868.

Second edition. 8vo. 27, (1) pp. Woodcut frontispiece of Woodhall Spa. Very fine copy, in quarter calf antique, marbled boards, maroon morocco label. “With the Author's Compliments” in ink at top of title page.

A DETAILED ACCOUNT of the Woodhall Bromo-iodine Spa, located midway between Boston and Lincoln, “one of the most valuable and remarkable spas to be found, not merely in Great Britain, but in Europe” (*The Lancet*, Feb. 22, 1868). Analysis of the water proved it “to contain a larger amount of Iodine and Bromine than any mineral spring that has ever yet been discovered” (p. 9). One gallon of the water was shown to contain 2.73 grains of sodium iodide and 5.15 grains of sodium bromide. The chlorides of sodium, potassium, calcium, and magnesium as well as bicarbonate and sulphate were also present. In the preface (dated May 1868) Cuffe, a physician, claims that these waters were used “with wonderful success, especially in cases of Rheumatism, Sciatica, Epilepsy, and Congestive Disease of the Brain.” William Addison (*English Spas*, London, 1951, p. 122) gives further information on the Woodhall Spa. The second edition was unknown to Waring (p. 804), who states that the first edition appeared in 1867 and the third in 1868. Rare. Not in Duveen or the usual bibliographies.

CULLEN, William

Lectures on the Materia Medica, as delivered by William Cullen, M.D. Professor of Medicine in the University of Edinburgh: and now printed from a correct copy, which has been compared with others by the editors.

London: Printed for T. Lowndes, in Fleet-Street. 1772.

First edition, first issue. 4to. 4 leaves (i.e. v, [1] pp., 1 leaf unpaginated), 512 pp. Fine, crisp copy, with wide margins, in contemporary calf, gilt-lettered crimson morocco label, rebaked and gilt.

THE VERY rare first issue of the first edition of Cullen's lectures on the materia medica. In the second issue (1773) more leaves were added to the preliminaries (i.e., pp. v, 1 leaf, pp. vii–viii), and nineteen pages were added at the

end (see Wellcome, II, 412). This edition was not authorized by Cullen, who was annoyed when he saw it, as the first issue contains errors that he would have corrected if he had seen the manuscript before it was sent to the printer. The second issue was published with Cullen's permission in 1773, according to Allibone. The title page of this copy (attached to a stub) is dated 1772 and is a variant printing of the title page of the 1773 second issue. Boerhaave and Cullen suffered similar fates as far as the publication of their lectures were concerned. Cullen later published an enlarged and corrected edition (2 vols., 4to., Edinburgh, 1789). He is considered the "Father of the Modern Science of Therapeutics" and was the first to realize the cardiac action of digitalis. Cullen (1710–1790) was the leading teacher of his time, and this work on the materia medica is a classic of the subject. It was often reprinted (e.g., Dublin, 1773, and Philadelphia, 1775). Partington states that the book is based on lectures begun in 1761, but he gives the wrong date of publication (1771). Not in Bolton, D.S.B., Duveen, Edelstein, Ferguson, Ferguson Coll., Garrison-Morton, Neu, Osler, Poggendorff, Smith, Sondheimer, Waller, etc. (Blake, 105; Ferchl, 111; Partington, III, 129; Watt, I, 275u; Wellcome, II, 412)

CULLEN, William

A Treatise of the Materia Medica, by William Cullen, M.D.
... In two volumes. . . .

Edinburgh: Printed for Charles Elliot, and for C. Elliot & T. Kay, opposite Somerset Place, Strand, London. 1789.

First edition. 2 vols., 4to. I: xxiii, (1), 432 pp. II: 2 leaves, 610 pp., 1 leaf (bookseller's catalogue). Fine, wide-margined copy, in near-contemporary gilt-ruled diapered calf, rebacked in morocco, gilt-lettered maroon morocco labels, spines dated. The binding is in the style of Charles Lewis (1786–1836) and is possibly by him (see D.N.B.). Small stamp of the Medical Society of London on recto of title pages and withdrawal stamp of the Wellcome Library on verso.

ALTHOUGH SOMETIMES designated the last and best edition, this is the first edition by Cullen himself of his lectures on materia medica. A classic work, which was first published (London, 1772) without Cullen's authorization and reissued (London, 1773) with Cullen's permission. In the preface to the present edition Cullen states that he found it impossible to correct the mistakes of former issues and to give the necessary supplements: "I have long abandoned that idea, and judged it more proper to give an almost entirely new work." Editions quickly appeared at Dublin (1789) and Philadelphia (1789), and translations into French, German, Italian, and Spanish were made. Cullen was professor of chemistry and medicine at both Glasgow

and Edinburgh and was one of the first to give his lectures in English rather than Latin. He "rescued therapeutics from the domain of a blind empiricism, and placed it on something like a scientific basis" (Waring). Not in Bolton, Cushing, D.S.B., Duveen, Edelstein, Ferguson, Ferguson Coll., Morgan, Osler, Smith, Waller, etc. (Blake, 105; Ferchl, 111; Garrison-Morton, 1838; Neu, 1074; Partington, III, 129; Reynolds, 1086; Sondheimer, 356; Thornton, 126; Waring, 5; Wellcome, II, 413)

CULPEPER, Nicholas

Culpeper's Last Legacy: Left and bequeathed to his dearest Wife, for the publicke good, Being The Choicest and most profitable of those Secrets which while he lived were lockt up in his Breast, and resolved never to be publisht till after his Death. Containing Sundry admirable Experiences in severall Sciences, more especially, in Chyrurgery, and Physick, Viz. Compounding of Medicines, Making of Waters, Syrrups, Oyles, Electuaries, Conserves, Salts, Pils, Purges and Trochischs. With two particular Treatises; the one of Feavers; the other of Pestilence; as also other rare and choice Aphorisms, fitted to the understanding of the meanest Capacities. Never publisht before in any of his other Works. By Nicholas Culpeper; late Student in Astrology and Physick.

(London:) Printed for N. Brooke at the Angell in Cornhill. 1655.

First edition. 8vo. 6 leaves (including fine engraved frontispiece portrait of Culpeper), 48 pp., 2 leaves (divisional titles: *Febrilia* and *Table of Feavers*), 73 pp. (p. 59, divisional title: *Pestilence*), 3 leaves (advertisements and index). Paper somewhat browned throughout, some edges repaired, neat manuscript notes on 2 flyleaves, including signatures of John Lax (dated 1706) and Mary Brown; otherwise a good copy in quarter calf antique, marbled boards, maroon morocco label gilt.

CULPEPER'S FINAL work, containing a brief biography (2 pp.) by his wife, A. Culpeper, who states: "I do hereby testify that . . . what is here printed is truly . . . his owne, . . . delivered to my trust . . . upon his death-bed." Pages 21–57 of the second part comprise two hundred Physical Aphorisms. Of considerable pharmaceutical chemical interest. Brooke's bookseller's list includes Ashmole's *Theatrum Chemicum Britannicum* (1652) and Nicols's *Cabinet of Jewels* (1653). Very rare. Wing lists eight editions published between 1655 and 1683. Not in the usual early chemical bibliographies. Not in Osler, Reynolds, Waller, Wellcome, etc. Wellcome (II, 416–417) lists the *second* edition (Wing, C7518), wrongly dating it 1655 (for 1657). (Wing, C7517)

CULPEPER, Nicholas

Culpeper's School of Physick. Or the Experimental Practice of the whole Art. Wherein are contained all inward Diseases from the Head to the Foot, with their proper and effectuall Cures, such Diet set down as ought to be observed in Sickness or in Health. With other safe wayes for preserving of Life, in excellent Aphorismes, and approved Medicines, so plainly and easily treated of, that the Free-born Student rightly understanding this Method, may judge of the Practice of Physick, so far as it concernes himself, or the Cure of others, &c. A Work never before Publisht, very necessary for all that desire to be rightly informed in Physick, Chyrurgery, Chymistry, &c. . . . By Nich. Culpeper, late Student in Physick and Astrology. *The Narrative of the Authors Life is prefixed, with his Nativity Calculated, together with the Testimony of his late Wife, Mrs. Alice Culpeper, and others. . . .*

London: Printed for N. Brook, at the Angel in Cornhill. 1659.

First edition. 8vo. 29 leaves, 461, (19) pp. Page 461 mis-numbered 361. Fine copy, in goatskin antique, covers with double gilt fillets and corner fleurons, spine gilt.

CULPEPER (1616–1654) “studied at Cambridge and acquired an extensive medical background by reading and serving apprenticeships under two apothecaries. He began active practice in 1640 as a physician-astrologer . . . [and] achieved great fame and developed quite a large practice” (*Heirs of Hippocrates*, p. 186). Of considerable iatrochemical interest, this work contains fifteen treatises continuously paginated, most with divisional title pages, including “English Apothecary,” “Golden Century of Chymicall Aphorisms,” “Treasury of Life,” “The Expert Lapidary or Secret Vertues of Stones,” “Doctor Diets Directory,” and “Chymical Institutions.” Unchanged second and third editions appeared in 1678 and 1696. Very rare. (Cushing, C632; Krivatsy, 2994 [imperf.]; Watt, I, 276d; Wellcome, II, 417; Wing C7544)

CULPEPER, Nicholas

Pharmacopoeia Londinensis: or the London Dispensatory further adorned by the Studies and Collections of the Fellows, now living of the said Colledg. In this Sixt Edition you may find, 1. Three hundred useful Additions. 2. All the Notes that were in the Margent are brought into the Book between two such Crochets as these [. . .]. 3. On the top of the pages of this Impression is printed, The Sixt Edition, Much Enlarged. 4. The Vertues, Qualities, and Properties of every Simple. 5. The Vertues and Use of the Compounds. 6. Cautions in giving al Medicines that are dangerous. 7. All the Medicines that were in the Old Latin Dispensatory, and are left out in the New Latin one, are printed in this Sixt Impression in English, with their Vertues. 8. A Key to Galen's Method of Physick, containing thirty three Chapters. 9. In every Page Two Columns. 10. In this Impression, the Latin name of every one of the Compounds is printed, and in what page of the New Folio Latin Book they are to be found. By Nich. Culpeper, Gent. Student in Physick and Astrology.

London: Printed by Peter Cole, Printer and Book-seller, at the Sign of the Printing-press in Cornhill, near the Royal Exchange. 1659.

“Sixth” edition. 8vo. 13 leaves, pp. 1–107, (1) blank, 191–341, (1), 2 leaves, pp. 343–377, 16 leaves. Lacks initial blank leaf. Title within decorative woodcut border, text in double columns throughout, some double printing on 4 leaves. Fine copy in contemporary blind-ruled unlettered calf, top and bottom of spine neatly repaired.

THE “KEY TO Galen’s Method of Physick” (pp. 343–377) has a separate title page dated 1658. The work is complete despite the odd pagination, which is normal for this book. Culpeper (1616–1654), astrologer and physician, was a very popular writer and a “thorn in the side” of the College of Physicians. His unauthorized translation of their *Pharmacopoeia* was deeply resented. He fought for parliament in the civil war, and many of his manuscripts were published posthumously. This so-called sixth edition is a reissue of the Peter Cole, 1654, sixth edition (i.e., Wing C7527), as the “To the Reader” is dated 30 December 1653. Not in Duveen, Edelstein, Ferguson, Smith, Waller, etc. (Cushing, C619; Neu, 1080; Wellcome, II, 414; Wing, C7530)

CULPEPER, Nicholas

Pharmacopoeia Londinensis; or the London Dispensatory further Adorned by the Studies and Collections of the Fellows now living, of the said College. In this Impression you may find, 1. Three hundred useful Additions. 2. All the Notes that were in the Margent are brought into the Book between two such Crochets as these [. . .]. 3. The Virtues, Qualities, and Properties of every Simple. 4. The Virtues and Use of the Compounds. 5. Cautions in giving all Medicines that are dangerous. 6. All the Medicines that were in the Old Latin Dispensatory, and are left out in the New Latin One, are Printed in this Impression in English, with their Virtues. 7. A Key to Galen and Hippocrates, their Method of Physick, containing Thirty three Chapters. 8. In this Impression, the Latin name of every one of the Compounds is Printed, and in what Page of the new Folio Latin Book they are to be found. By Nich. Culpeper Gent. Student in Physick and Astrology. London: Printed for Hannah Sawbridge, and are to be Sold by Tho. Malthus at the Sun in the Poultry. 1683.

8vo. 12 leaves, 305, (1) pp., 19 leaves. Good copy in original blind-ruled sheep over oak boards, rebacked to match, dark-green morocco label gilt. Old signatures in ink on inner front cover (C. Walker) and flyleaf (Richard Ellis).

A TRANSLATION OF the *Pharmacopoeia* of the College of Physicians, for which Culpeper suffered a great deal of vilification by fellows of the college. The first edition appeared in 1653, and Wing lists fourteen editions to 1695. The preparations of many chemicals are described (e.g., acids, alkalies, and salts), as well as several recognizable organic compounds. Pages 267–305 (misnumbered 269) comprise the “Key to Galen and Hippocrates.” Not in the usual early chemical bibliographies. (Cushing, C624; Wellcome, II, 414; Wing, C7536)

CULPEPER, Nicholas

A Physical Directory; Or a Translation of the Dispensatory Made by the Colledg of Physitians of London, And by them imposed upon all the Apothecaries of England to make up their Medicines by. And in this Third Edition is added A Key to Galen's Method of Physick. Wherein is Three Sections. 1. The first Section shewing the temperature of Medicines . . . 2. The second Section (in nine Chapters) treat of the Appropriation of Medicins to the several parts of the Body . . . 3. The third Section (in 24 Chapters) sheweth the Properties or Operations of Medicines . . . By Nich. Culpeper, Gent. Student in Physick and Astrologie. . . .

London: Printed by Peter Cole, at the sign of the Printing-Press in Cornhill, near the Royal Exchange. 1651.

Third edition. Folio. 6 leaves, 138, (4), 139–184, (18) pp. With frontispiece portrait of Culpeper (Cross sculpsit). Few minor water stains; otherwise very good copy, in original calf, rebacked, maroon morocco label.

THE THIRD and best edition (first: London, 1649) of Culpeper's first book and the first edition to contain the “Key to Galen's Method of Physick.” It also contains a new preface addressed to the College of Physicians: “Colledg, Colledg, thou art Diseased, and I will tell thee the Caus, Diagnosticks, and Prognosticks of thy Diseas. The Caus is Mammon . . .” This work is the English translation of the *Pharmacopoeia Londinensis* (1618) and a precursor of Culpeper's famous herbal. The translation was made so that the public could have a pharmacopoeia that they could read and understand and thus escape the exorbitant prices that physicians and apothecaries charged. Naturally, Culpeper was condemned by the College of Physicians, but his work was immediately very successful. Important in the history of pharmaceutical chemistry, the book contains details of the preparation of acids, bases, salts, “chymical oyls,” etc. (Cushing, C631; Krivatsy, 2981; Matthews, *History of Pharmacy in Britain*, 1962, pp. 85–86; Neu, 1078; Osler, 2401; Watt, I, 276a; Wellcome, II, 414; Wing, C7542)

CURAUDAU, Françoise René

Considérations générales sur les propriétés du gaz muriatique oxigéné, suivies d'expériences qui prouvent que ce gaz ne contient pas d'oxigène, . . . (Ce mémoire a été lu à l'Institut, dans la séance du 5 mars 1810). . . .

Paris: De l'Imprimerie de D. Colas. 1810.

First edition. 8vo. 1 leaf, 50 pp. Fine copy in modern boards, with printed lettering on spine. Bookplate: F. Sondheimer.

ONE OF the earliest works conclusively proving the elementary nature of chlorine. At that time, many chemists believed that chlorine contained oxygen, because it gives an oxidizing solution when dissolved in water. The compound actually formed is hypochlorous acid (HOCl), which slowly decomposes to oxygen and hydrochloric acid. Curaudau discusses the experiments on chlorine carried out by Berthollet, Fourcroy, Gay-Lussac, Thenard, et al., and on pages 16–28 he describes four experiments that confirm his views. On pages 29–50 is reprinted the report by Curaudau to the Institut National proving that chlorine is an element, signed by Guyton-Morveau, Vauquelin, Deyeux, Chaptal, and Cuvier. Ferchl and Poggendorff give long lists of publications by Curaudau but do not mention this rare and historically important work. It is also not mentioned by Partington and Higgins (*History of Bleaching*, 1924). Not

in Bolton, D.S.B., Duveen, Edelstein, Ferguson, Ferguson Coll., Smith, Waller, Waring, Watt, Weeks, Wellcome, etc. (Sondheimer, 362)

CURAUDAU, François René

Traité du Blanchissage à la Vapeur; suivi d'un nouveau procédé pour le Blanchiment des Toiles, Fils et Cotons écrus, dont on peut faire l'application au rouissage du Chanvre et du Lin . . .

Paris: Chez l'Auteur. 1806.

First edition. 12mo. 136 pp. With 3 folding copperplates (Sellier sc.) depicting plans and elevations of furnaces and vats. Good, crisp copy in original green boards. Bound with: Cadet de Vaux, A. A., *Instruction populaire sur le blanchissage domestique à la vapeur* (Paris, 1805).

CURAUDAU (1765–1813), an apothecary first at Vendôme then at Paris, was a good chemist who published several significant papers that are mentioned by Partington (IV, pp. 51, 95, 253). The present work describes processes for the laundering and whitening of different types of cloth, using steam and an alkali (e.g., soda and potash). In the *Discours préliminaire*, the author acknowledges his indebtedness to the recent researches of Chaptal on bleaching and adds that he had worked with Cadet de Vaux in their joint experiments on bleaching. A testimonial by Pastoret and Desportes on Curaudau's process is reprinted (pp. 85–94), as are details on his new process as they were presented to the National Institute on 7 April 1806 (pp. 95–111). Pages 120–132 proudly proclaim Curaudau's prize he was awarded for the bleaching apparatus of his invention. The prize was given as the result of the judgment of the great chemists Berthollet and Guyton de Morveau. Very scarce. Not in D.S.B., Duveen, Partington, Smith, Sondheimer, Wellcome, etc. (Bolton, 384; Edelstein, 2951; Ferchl, 111; Poggendorff, I, 504)

CURRY, John

Elements of Bleaching. By John Curry, Student in the College of Edinburgh.

Dublin: Printed by W. G. Jones, 1779.

First edition. 8vo. 7 leaves, 175 pp. Very good copy, printed on heavy paper with wide margins, in contemporary calf, spine gilt. Eighteenth-century signature in ink ("Thos. Sinclair") in bottom margin of title and on page 94.

NO BIOGRAPHICAL reference to Curry, the author of this excellent work, has been found. Every aspect of the subject is covered, with detailed descriptions of the physical and chemical properties of acids, alkalies, and salts. The theories of Becher, Stahl, Newton, and Musschenbroek on the

formation of crystals are discussed. Hard and soft waters and their effects on the bleaching of fabrics are covered. Of particular interest are the author's observations on Dr. Joseph Black's experiments on the reaction of fixed air (carbon dioxide) with various alkalies derived from lime, magnesia, potash, etc. These experiments are used to evaluate the strengths of alkalies employed in bleaching. A very rare book, which is a milestone in the literature of bleaching technology. Not mentioned in the usual bibliographies.

CUTBUSH, James

The Philosophy of Experimental Chemistry. In two volumes. By James Cutbush, Professor of Chemistry, Mineralogy, and Natural Philosophy in St. John's College, Philadelphia, President of the Columbian Chemical Society, &c. &c. Vol. I. (II.) Philadelphia: Published by Isaac Peirce, No. 3, South Fourth Street. Merritt, Printer, Watkin's-alley. 1813.

First edition. 2 vols., 12mo. I: 4 leaves, 356 pp. II: 4 leaves, 13–338 pp. (pagination erratic, but collation complete). With engraved frontispiece to each volume (B. Tanner sc.). Some occasional foxing, characteristic of American paper of this period; otherwise a very good copy in contemporary tree calf, spines gilt ruled, maroon morocco gilt-lettered labels.

CUTBUSH (1788–1823) "was one of the most active American chemists of the early nineteenth century. He wrote at least eight books and pamphlets, 14 journal articles, and 28 newspaper articles. It is largely through these works that we know of him—his personal life is a mystery. . . . In 1812 James was elected professor of chemistry, mineralogy, and natural philosophy at St. John's College, a transient Lutheran institution of Philadelphia. He taught there probably no more than 2 or 3 years, but during this time wrote for his students a two-volume text, 'The Philosophy of Experimental Chemistry,' which appeared in 1813" (Wyndham D. Miles, *American Chemists and Chemical Engineers* [Washington, D.C., 1976, pp. 105–106]). Cutbush was president of the Columbian Chemical Society (1812–1814). The aim of the book "was to present the facts of chemistry 'in experiment, rationale and remark.' . . . [It] shows the splendid growth of chemistry in America, and exhibits the zeal with which the science was propagated" (Edgar F. Smith, *Old Chemistries* [New York, 1927, pp. 47–50]). Very scarce. Not in Cushing, D.S.B., Duveen, Ferguson, Ferguson Coll., Morgan, Osler, Partington, Waller, Watt, Wellcome, etc. (Bolton, 385; Edelstein, 641; Ferchl, 111; Poggendorff, I, 506; Smith, 129)

CUTBUSH, James

A System of Pyrotechny, comprehending the theory and practice, with the application of chemistry; designed for exhibition and for war. In four parts: containing an account of the substances used in fire-works; the instruments, utensils, and manipulations; fire-works for exhibition; and military pyrotechny. Adapted to the military and naval officer, the man of science, and artificer. By James Cutbush, A.S.U.S.A. . . . Philadelphia: Published by Clara F. Cutbush. 1825.

First edition. 8vo. xlv, 612 pp. With 1 engraved plate of rockets (facing p. 611). Fine copy in quarter calf antique, spine gilt-ruled, maroon morocco gilt-lettered label.

A REMARKABLY FINE copy of a work that is almost never found in good condition owing to the quality of the paper used. It is the first American book on military rockets, and

Cutbush is famous in the annals of the military and naval history of America. In addition to military rockets, descriptions of all types of fireworks, explosives, and accompanying equipment are given. "The real magnum opus of Cutbush resulted in *A System of Pyrotechny* (1825), which voluminous publication did not appear until after his decease, and then largely through the efforts of his wife and former students in the Cadet Corps" (E. F. Smith, *James Cutbush* [1919, p. 82]). "The *System* . . . encompassed all that was known about the subject in America during the first decades of the nineteenth century" (*Dictionary of American Biography*). A desirable copy of a rare book. Not in Duveen, Edelstein, Ferchl, Partington, Poggendorff, Waller, Wellcome, etc. (Bolton, 385; Brock, 157; Morgan, 176; Smith, 129)

DAHL, Christoph

Justis Parentalibus Viro Celeberrimo Torberno Bergman, Chemiae Profess. Reg. et Ord. R. O. Vasaei Equit. &c. &c. Privatim habitis Upsaliae D. XV. Jun. MDCCLXXXV.

Elegos adjecit natio Vestrogothica.

Uppsala: Typis Direct. Joh. Edman, Reg. Acad. Typogr. (1785).

First edition. 4to. 4 pp. Woodcut funerary vignette on page 3. Fine copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

THE FUNERAL poem on Torbern Olof Bergman (1735–1784), the greatest Swedish chemist of the period. The anonymous author was the Swedish classicist Christoph Dahl (1758–1809), whose handwritten name (or possibly signature) is added at the end. This poem was reprinted (with slight textual differences) on the final two pages of the *Aminnelse-Tal, öfver . . . Torb. Bergman* (Uppsala, 1785), a eulogy on Bergman by Pehr Fab. Aurivillius (1756–1829), professor at the University of Uppsala. Not traced in the usual bibliographies and extremely rare.

DALE, Samuel

Pharmacologia, seu Manuductio ad Materiam Medicam, in qua Medicamenta Officinalia Simplicia, hoc est Mineralia, Vegetabilia, Animalia earumque partes in Medicina Officinis usitata, in Methodum naturalem digesta succincte & accurate describuntur, cum Notis generum Characteristicis, Specierum Synonymis, differentiis & viribus. Opus omnibus Medicis, Philosophis, Pharmacopoeis, Chirurgis, & Pharmacopolis utilissimum. . . .

London: Sumptibus Sam. Smith & Benj. Walford, Societatis Regiae Typographorum, ad insignia Principis in Coemeterio D. Pauli. 1693.

First edition. 12mo. 30 leaves, 656 pp., 2 leaves. With the license leaf dated 5 September 1692. Fine copy, in blind-stamped paneled calf antique, maroon label.

ORIGINALLY AN apothecary at Braintree, Essex, Dale (1659–1739) later became a licentiate of the Royal College of Physicians and practiced medicine at Bocking. He was a friend of the celebrated naturalists John Ray (1627–1705) and Mark Catesby (1683–1749). The *Pharmacologia* is the “first systematic work of importance on pharmacology” (D.N.B.). Of great chemical interest, it is Dale’s principal work. A supplement appeared in 1705, and updated editions were published in 1707, 1710, 1713, 1737, 1739, and 1751. The *Catalogus Pharmacorum* (11 pp.) lists a wide range of chemicals and drugs available in the apothecaries’ shops of the period. Ferguson (I, 196) describes Dale as “a diligent naturalist, botanist, and pharmacologist. . . . The *Phar-*

macologia is still quoted as an authority on the introduction of certain substances as drugs.” Only the 1739 edition is in the Young Collection. (Ferchl, 113; Ferguson, I, 196; Krivatsy, 3047; Parkinson & Lumb, 629; Watt, I, 280w; Wellcome, II, 426; Wing, D126)

DALENCÉ, Joachim

*Traitez des Baromètres, Thermomètres, et Notiomètres, ou Hygromètres. Par Mr. D***.*

Amsterdam: Chez Henry Wetstein. 1688.

First edition. 12mo. 6 leaves, 139, (5) pp. Engraved title page (Schoonebeek fecit), and 35 copperplates. Very good copy, in contemporary calf, rebaked with original gilt spine laid down, black morocco labels. Armorial bookplate (eighteenth century) of James Fisher, C.C.C. Oxon., and nineteenth-century stamps of British Museum on versos of plates.

THE FIRST book devoted exclusively to a description of various types of barometers, hygrometers, and thermometers. Born in Paris, Dalencé (or d’Alencé, ca. 1640–1707), who studied physics and astronomy, formed a friendship with Henry Oldenburg during a trip to England in 1668 and in 1675 served as an intermediary between Oldenburg and Huygens. In 1685 he moved to Holland, where he published a book on magnets (*Traité de l’aiman*, Amsterdam, 1687), which was followed by the present work. “His detailed description of the principal meteorological instruments of the period is enriched with several new ideas, such as the calibration of the thermometric scale on the basis of two points of change of state: the point at which water freezes and . . . that at which butter melts” (D.S.B.). The luminescence that occurs above the mercury in a barometer when it is shaken is described and contrasted with the glow of phosphorus when exposed to the air. Immensely popular, editions appeared at Liège (1691) and Amsterdam (1708, 1724), as well as translations into German (1688, 1695) and Dutch (1730, 1738). (D.S.B., III, 534; Krivatsy, 193; Middleton, *A History of the Barometer*, 1964, p. 110; Middleton, *A History of the Thermometer*, 1966, p. 56; Neu, 73; Partington, II, 565; Wellcome, II, 28; Wolf, I, 89)

DALENCÉ, Joachim

Verhandelingen over de Barometers, Thermometers, en Notiometers of Hygrometers. Door den Heer D. . . . Vit het Fransch Vertaalt.

The Hague: By Jacobus de Jongh. 1730.

First edition in Dutch. 12mo. 6 leaves, 138 pp., 3 leaves. Title page in red and black, with small woodcut ornament. Engraved title page (Schoonebeek fecit), and 35 copperplates. Fine copy, in original vellum.

THE RARE first translation into Dutch of the original French edition (Amsterdam, 1688). Apart from the change of wording of the engraved title page from French into Dutch, the plates are identical to those of the 1688 edition in French. Not in D.S.B. or the usual bibliographies.

DALTON, John

Atomic Symbols. By John Dalton D.C.L.; F.R.S.; &c. &c. explanatory of a Lecture given by him to the Members of the Manchester Mechanics' Institution, 19th October 1835. (Manchester:) Lithd. for the Directors by T. Physick King St. (1835).

First edition. 4to. Broadside, 28.9 x 22.2 cm., conjugate with a blank leaf of the same size. Minor creases where folded; otherwise fine copy in modern plain boards, cloth spine.

THE LITHOGRAPHED table of atomic symbols and the structure of various chemical compounds, which was distributed by Dalton during his last public lecture to the Manchester Mechanics' Institution in 1835. A year and a half later he suffered two paralytic strokes that left him a semi-invalid for the rest of his life. "Following the invitation of the Directors . . . Dalton gave a course of five lectures on meteorology beginning in March 1835. Later in the year, Dalton gave a lecture at the Institution on the Atomic Theory: To the audience was distributed a lithographed sheet of atomic symbols . . . the lecture-room was crowded in every part and the greatest anxiety was manifested by the audience not to lose a single word which fell from the lips of the speaker. . . . It was his last public lecture" (Smyth). Later versions of the table, set in different type, are included in the biographies of Dalton by Henry (1854), Lonsdale (1874), and Roscoe (1895). Each of the three reprints is separately redrawn, but none includes the information about the lithographer, T. Physick, who is listed in the Manchester Directory for 1832 as a lithographic printer. The present (possibly unique) copy is described in the second edition of Smyth's bibliography of Dalton. (Smyth, 362.4)

DALTON, John

Extraordinary Facts relating to the Vision of Colours: with Observations. By Mr. John Dalton.

Read Oct. 31st, 1794.

First edition. 4to. Extract from: *Memoirs of the Literary and Philosophical Society of Manchester*, vol. 5, part 1, pp. 28–45 (London, 1798). Fine copy, uncut with wide margins, in half calf antique, marbled boards, maroon morocco label, spine dated.

THE FIRST paper read by Dalton to the Manchester Society, and the first description of his red-green color blindness. "In it he gave the first detailed description of the peculiarity now known as 'colour blindness,' discovered in himself through the attention paid by him in 1792, in the course of his botanical studies, to the hues of flowers. The defect was shared by his brother, and was studied on the continent under the name of Daltonism" (D.N.B.). An earlier but briefer account of color blindness had been published by Huddart in the *Philosophical Transactions of the Royal Society*, vol. 67, p. 260 (1777). (Partington, III, 759; Poggendorff, I, 512; Smyth, 25; Sotheran, Cat. 828 [1931], 3156 ["Rare"]; Waller, 11324)

DALTON, John

Manchester, May 12, 1808. In the Press (And will be ready for publication in June, price Seven Shillings in boards) Part I. of a New System of Chemical Philosophy. By John Dalton. . . . Manchester: S. Russell, Printer. (1808).

Sole edition. 4to. Broadside, 25.4 x 20.3 cm. Printed on 1 side only. Fine, crisp copy, bound with a letter by John Dalton addressed to Dr. John Bostock (1773–1846), of Liverpool, dated 11 June 1808; in modern tan calf, gilt, by Sangorski and Sutcliffe, London.

AN APPARENTLY unique copy of the prospectus announcing the publication of part I of Dalton's immortal *New System of Chemical Philosophy* (Manchester, 1808). This copy, and an accompanying letter, were sent on 11 June 1808 to Dr. Bostock by Dalton, who asked Bostock if he wished to purchase a copy of his forthcoming book. Bostock (F.R.S., 1818), whose first complete description of hay fever (1819) is classic, was a famous physician, founder of the Liverpool Institution, and president of the Geological Society. The prospectus and letter (also another letter by Dalton, dated 21 June 1808) remained in the Bostock family archives until about 1958, when they were bought by a London dealer, and then became part of this collection. The prospectus is described by Roy G. Neville (*Ambix*, 8, 1960, pp. 42–45; with plate) and is mentioned by Thornton & Tully (pp. 171–172) and by Partington (III, 799). As the result of receiving this prospectus, Bostock immediately placed an order for four copies of Dalton's book. (Smyth, No. 390)

DALTON, John

Meteorological Observations and Essays. By John Dalton . . . London: Printed for W. Richardson, under the Royal Exchange; J. Phillips, George-Yard; and W. Pennington, Kendal. 1793.

First edition, first issue. 8vo. (in 4s). xvi, 208 pp. Tables and woodcut figures in text. Small defect to fore-edges of first 3 and final 3 leaves; otherwise fine copy, in green half morocco antique, cloth boards, spine gilt-lettered.

BORN AT Eaglesfield, Cumberland, Dalton (1766–1844) formulated his atomic theory to explain chemical reactions, based on the concept that the atoms of each element possess a different weight. A Quaker, he was educated by the Quaker Elihu Robinson, who instilled in him a lifelong interest in weather observation and scientific experiment. From early childhood, Dalton kept a daily record of the weather throughout his life. In this (his first) book, he enunciated the first statement of Dalton's law of partial pressures. The foundation of the work was his pioneering daily record of temperature, pressure, wind, humidity, and rainfall over a five-year period. In these *Essays* he began to develop his atomic theory, which revolutionized chemistry. Only 149 names are given in the list of subscribers, and it is likely that very few more copies were printed for regular sale by booksellers. Two issues appeared in 1793—one, as here, with “Price Four Shillings” on the title page. The other title page has the price “Five Shillings,” has T. Ostell in the imprint, and is not dated. The only difference between the two issues lies in the title page. “A clear inference may therefore be drawn that Richardson's issue was the earlier one. The curious fact of two issues existing . . . probably points to the slow sale of a new and unknown writer” (Zeitlinger). (Bolton, *First Supplement*, 138; D.S.B., III, 540, 547; Duveen, 644; Edelstein, 648; Norman, 574; Partington, III, 761; Poggendorff, I, 512; Roller & Goodman, I, 273; Smyth, 1; Sotheran, Cat. 702 [1910], 7148 [“Very Rare”]; Watt, I, 282p)

DALTON, John

Meteorological Observations and Essays. By John Dalton, D.C.L., F.R.S. . . .

Manchester: Printed by Harrison and Crosfield, for Baldwin and Cradock, London. 1834.

Second edition. 8vo. xx, 244 pp., 2 leaves (list of books and publications by Dalton). Tables and woodcut figures in text. Fine copy, uncut, in early-twentieth-century half calf, marbled boards, spine gilt-lettered and dated. Author's presentation copy, inscribed in ink on first flyleaf: “John Ross Coulthart from John Dalton, D.C.L.”

THE SECOND and final edition of Dalton's first book, being a verbatim reprint of the first edition of 1793. At the end (pp. 197–244) Dalton has added a long appendix containing “some observations on clouds, on thunder, and on meteors, particularly the aurora borealis, of the appearances of

which I have collected a list for the last forty years, in addition to those I had previously obtained when resident in Kendal” (Preface, p. xv). Dalton dedicated this edition to his friend Thomas Hoyle, whom he thanks for the facilities afforded to him for forty years at Manchester for the “prosecution of his meteorological observations.” The last three pages list titles and dates of books and articles published by Dalton. In 1832 the University of Oxford conferred on him the honorary degree of D.C.L. (doctor of civil law), which he has included in the presentation inscription in this copy. (Edelstein, 651; Partington, III, 761; Roller & Goodman, I, 273; Smith, 130; Smyth, 3; Sotheran, Cat. 702 [1910], 7152 [“Scarce”]; Wellcome, II, 428)

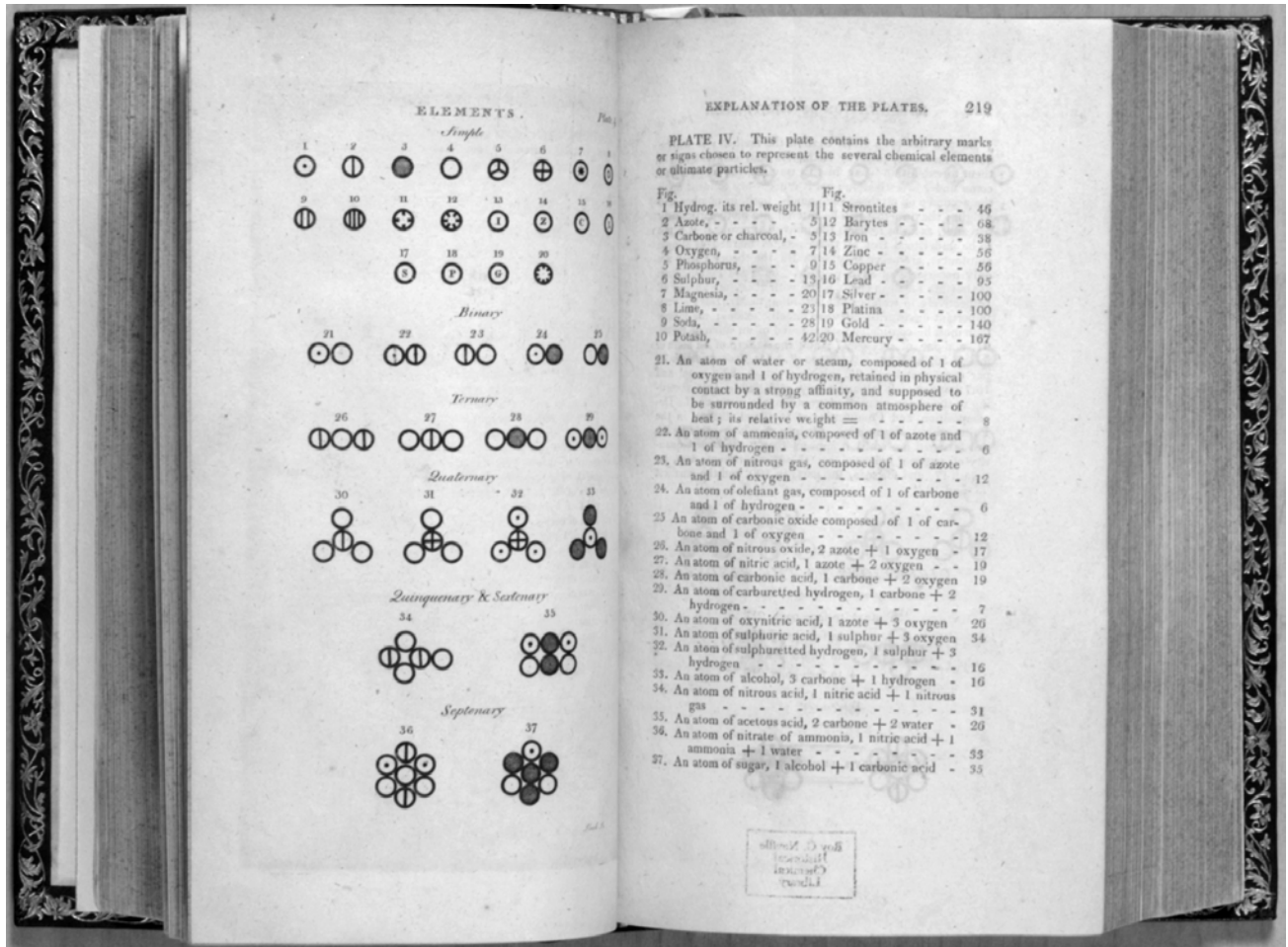
DALTON, John

A New System of Chemical Philosophy. By John Dalton.

Manchester: (Part I.) Printed by S. Russell . . . for R. Bickerstaff, Strand, London, 1808; (Part II.) by Russell & Allen . . . for R. Bickerstaff, Strand, London, 1810; (Part First of Vol. II) Printed by the Executors of S. Russell, for George Wilson, Essex Street, Strand, London, 1827.

First edition. 3 vols., 8vo., in 1. I (1808): viii, 220 pp.; 4 engraved plates. II (1810); (viii), 221–560 pp., 4 engraved plates. III (1827): xii, 357, (3) pp. Superb copy in pristine condition, in maroon morocco antique, covers with center gilt ornament and double gilt fillet, inner gilt dentelles, spine gilt in compartments and dated.

A MILESTONE WORK in the history of chemistry, in which Dalton announced his revolutionary atomic theory and his laws of definite and multiple proportions. These fundamental laws greatly assisted the establishment of the composition and formulae of numerous inorganic and organic compounds then known and laid one of the firmest foundations ever for the advance of chemistry in the nineteenth century. An “epoch-making work” (Bolton). The book is very rare when complete with the three parts and the required half title (as here) to volume II, part 1. Plate 4 (1, pt. 1) and plates 5 and 6 (1, pt. 2) illustrate Dalton's symbols for atoms of various elements and their compounds. Although the second part of volume II never appeared, Dalton had it in mind to write it as he states: “My present design is to add a second part to this volume, and with that to finish the work” (Preface [II, pt. 1]). (Bolton, 386, *First Supplement*, 138; Cole, 320; Dibner, 44; D.S.B., III, 547; Duveen, 156; Edelstein, 653; Horblit, 22; Partington, III, 799; Poggendorff, I, 512; P.M.M., 261; Smith, 130; Smyth, No. 9; Sparrow, 47; Wellcome, II, 428)



Dalton. New System of Chemical Philosophy. London, 1808-1827.

DALTON, John

A New System of Chemical Philosophy. Part I. By John Dalton. . . .

London: John Weale, Architectural Library, High Holborn. 1842.

Second edition. 8vo. (in 4s). vi, ii, (2, preface), 220 pp.; 4 engraved plates. Fine copy in original ribbed cloth, rebacked. With bookplates of Manchester Literary and Philosophical Society, Owens College, H. E. Roscoe, and Franz Sondheimer. Also pencil signature: "Dr. Roscoe" on front free endpaper.

ESSENTIALLY A reprint of the original 1808 edition, which was by then out of print. The only one of the three parts to be reprinted in Dalton's lifetime, containing a preface stating that he was "induced by friends to publish a second Edition, without making any material alteration in it." An important association copy, which was undoubtedly given by Dalton himself to the Manchester Literary and Philosophical Society when first published. The society later presented it to Owens College (founded 1851), Manchester (see bookplate). Later still the famous chemist Sir Henry Enfield Roscoe (1833–1915) acquired it. Finally, Professor Franz Sondheimer (1926–1981) added the book to his library. "Thanks to the creation of Owens College, and the brilliant thirty-year reign of H. E. Roscoe, later Victorian Manchester became the center of Britain's first fully professional school of chemistry" (Arnold Thackray, *John Dalton* [Cambridge, Mass., 1972, p. 32]). Owens College was founded by John Owens (1790–1846) and, largely owing to the influence of Roscoe, later became the University of Manchester (see H. E. Roscoe, *The Life of Sir H. E. Roscoe* [London, 1906, pp. 175–186]). Very scarce. Not in Duveen, Edelstein, Smith, Wellcome, etc. (D.S.B., III, 547; Partington, III, 761; Poggendorff, I, 512; Smyth, No. 11; Sondheimer, 385)

DAMBOURNEY, Louis Auguste

Recueil de Procédés et d'Expériences sur les Teintures Solides que nos Végétaux indigènes communiquent aux Laines & aux Lainages. . . . Imprimé par ordre du gouvernement. . . .

Paris: De l'Imprimerie de Ph.-D. Pierres, Premier Imprimeur Ordinaire du Roi. 1786.

First edition, first issue. 4to. 2 leaves, 407, (1) pp. A magnificent copy in mint condition, on large paper, with signatures indicating 4to. format. Contemporary speckled calf, spine ruled in gilt, gilt-lettered blue morocco label.

DAMBOURNEY, or d'Ambourney (1722–1795), chemist, botanist, and director of the botanical garden at Rouen, developed the use of vegetable dyes for wool. He extracted

a blue dye comparable to indigo from woad, and from the berries of the black alder (*Rhamnus frangula*) he extracted a beautiful green dye. His researches on all kinds of plants from Normandy resulted in his being able to produce more than nine hundred vegetable colors and shades, which were resistant to the action of soap and vinegar. This classic work on the chemistry and technology of vegetable dyes was printed in two formats: the first issue (as here) in quarto, and the second issue in octavo. In this copy each quire has signatures in 4to. The 8vo. second issue is typographically identical but has signatures in 8vo. The 8vo. format was issued two years later with the *Supplément* (Paris, 1788, 8vo.). Not in Blake, Bolton, D.S.B., Duveen, Ferguson, Ferguson Coll., Morgan, Neu, Partington, Sondheimer, Waller, etc. (Edelstein, 2960; Ferchl, 113; Lawrie, 139; Poggendorff, I, 514; Smith, 130; Sotheran, Cat. 666 [1906], no. 938 ["Rare"]; Watt, I, 283d; Wellcome, II, 38)

DAMBOURNEY, Louis Auguste

Recueil de Procédés et d'Expériences sur les Teintures Solides que nos Végétaux indigènes communiquent aux Laines & aux Lainages. . . . Imprimé par ordre du gouvernement. . . .

Paris: De l'Imprimerie de Ph.-D. Pierres, Premier Imprimeur Ordinaire du Roi. 1786.

First edition, second issue. 8vo. 2 leaves, 407, (1) pp. Fine crisp copy, unpressed and uncut, in the original blue wrappers. Bound in brown half calf antique, marbled boards, gilt-lettered maroon morocco label, spine dated at foot. Bound with: Dambourney, L. A., *Supplément au Recueil des Procédés. . . .* (Paris, 1788).

MADE UP of the same sheets as the first issue and thus typographically identical to it, except that this version has signature letters in 8vo. format as it was issued with the *Supplément* (Paris, 1788). For bibliographical references, see description of the first issue. Another edition appeared eight years later (Rouen, 1794).

DAMBOURNEY, Louis Auguste

Supplément au Recueil de Procédés et d'Expériences sur les Teintures Solides que nos Végétaux indigènes communiquent aux Laines & aux Lainages. . . . Imprimé et publié par ordre du gouvernement, en l'année M.DCC.LXXXVI. . . .

Paris: De l'Imprimerie de Ph.-D. Pierres, Premier Imprimeur Ordinaire du Roi. 1788.

First edition. 8vo. 152 pp. Fine crisp copy, unpressed and uncut, in the original blue wrappers. Bound in brown half calf antique, marbled boards, gilt-lettered maroon morocco label, spine dated at foot. Bound with: Dambourney, L. A., *Recueil de Procédés* (Paris, 1786, 8vo.).

AS WAS the case for the main work (1786), this supplement was printed by order of the French government. Dambourney describes (pp. 5–25) the mordants he employed to attach vegetable dyes to woolen fibers and thus make the coloring matters fast. He treated the wool with salts of tin, bismuth, and manganese. The main part of the text (pp. 26–143) comprises an alphabetical dictionary of the plants the author used in his numerous experiments to extract their colors. An important early work describing the chemical processes used by the dyers at the famous Gobelins factory. Very rare. Not in the great collection of works on dyeing formed by Dr. Sidney M. Edelstein and not in L. G. Lawrie, *A Bibliography of Dyeing* (London, 1949). Not in Blake, Bolton, D.S.B., Duveen, Ferguson, Morgan, Neu, Partington, Poggendorff, Smith, Sondheimer, Waller, Wellcome, etc. (Ferchl, 113; Watt, I, 283d)

DANA, James Freeman

An Epitome of Chymical Philosophy; being an extended sylabus of the lectures on that subject, delivered at Dartmouth College; and intended as a text-book for students. By James Freeman Dana. "Sparsas colligere frondes." Concord, N.H.: Printed by Isaac Hill. 1825.

First edition. 8vo. (in 4s). 231 + (1) pp. Errata on final page. Very good copy in modern quarter calf, boards, with gilt-lettered green label. From the library of Professor Franz Sondheimer (1926–1981), with his bookplate on the front pastedown endpaper.

DANA (1793–1827) was born in Amherst, New Hampshire, and studied at Harvard University. Selected by the Corporation of Harvard in 1815 to go to England and purchase new equipment for the chemistry department, he took lessons in London from Friedrich Accum, the best teacher of experimental chemistry in Europe. After his return he was appointed assistant to the professor of chemistry. In 1817 he received the M.D. degree and began to practice in Cambridge, Massachusetts. In the fall he was appointed lecturer on chemistry to medical students at Dartmouth College. In 1820 he moved to Hanover, New Hampshire, where he remained until 1826 as professor of chemistry and mineralogy at Dartmouth. The present book is a summary of his lectures on general chemistry. Part I is on principles and inorganic chemistry, and part II (beginning on p. 173) is on organic and biochemistry. This title was a favorite of Edgar Fahs Smith, and in his *Old Chemistries* (1927, pp. 71–73) he says that Dana's work "possessed decided merit, and in the immediate years of its appearance exercised great influence in New England communities. . . . It is an attractive text, well written and with a concise manner of presentation." In 1826 Dana was appointed pro-

fessor of chemistry in the College of Physicians and Surgeons in New York, but he died in 1827 at the early age of thirty-four. Miles (*American Chemists and Chemical Engineers*, 1976, p. 109) states that this work was used at Columbia, Princeton, and other great universities. A scarce book. Not in Duveen, Ferchl, Morgan, Partington, Poggendorff, Waller, Wellcome, etc. (Bolton, 387; Cushing, 59; Smith, 131)

DANA, Samuel Luther

A Muck Manual, for Farmers. By Samuel L. Dana. . . . Lowell: Daniel Bixby. 1842.

First edition. 8vo. 242 pp., 1 leaf. Fine copy in original cloth, with the original printed paper label on spine.

THE FIRST American book on agricultural chemistry and a classic in its field. Dana (1795–1868), the first professional American industrial chemist, devised a new system for bleaching cloth and printing calicoes while working at the Merrimack Manufacturing Company in Lowell, Massachusetts. He concluded that sodium phosphate was important in printing calicoes. During 1835–37 he also carried out research on the use of cow dung in calico dyeing, and, as recreation during his leisure hours, he investigated the nature and action of manures on soil. His work on phosphates and manures led him to conclude that chemistry could be applied to agriculture, which at that time was a novelty in America. Dana's *Muck Manual* was "for several decades the *vade mecum* of farmers in New England and New York" (C. A. Browne, *A Source Book of Agricultural Chemistry* [1944, p. 256], who knew only the fifth edition [New York, 1855]). This milestone work is discussed by E. F. Smith (*Old Chemistries*, 1927, pp. 87–89). A very scarce book, particularly when in fine condition. Not in Bolton, D.S.B., Duveen, Miles, Morgan, Partington, Poggendorff, Smith, Waller, Wellcome, etc. (Edelstein, 3817; Ferchl, 114)

DANDOLO, Vincenzo

Fondamenti della Scienza Chimico-Fisica applicati alla formazione de' corpi ed ai fenomeni della natura esposti in due Dizionari che comprendono il Linguaggio Nuovo e Vecchio, Vecchio e Nuovo de' Fisico-Chimici. Con tavole apposite indicanti l'ordine d'un utile lettura; Opera di Vincenzo Dandolo Veneto.

Venice: Dalla Tipografia Pepoliana Presso Antonio Curti q. Giacomo. 1795.

First edition. 8vo. xxiii, (1), 528, 72 pp. An excellent unsophisticated, uncut copy, in the original half marbled boards, paper label. From the library of Professor Franz Sondheimer, with his bookplate on the front pastedown endpaper.

COUNT DANDOLO (1758–1819), born in Venice, was a wealthy proprietor who took an active part in the events that led to the fall of the Venetian Republic in 1797. He lived much of his life in Paris, was governor of Dalmatia for five years under Napoleon, and later retired to his estate at Varese near Como. An early convert to the views expressed by Lavoisier in the *Traité* (1789), Dandolo published an Italian translation, *Trattato elementare di chimica* (Venice, 1792). The fourth volume of the translation comprised a *Dizionario Vecchio e Nuovo . . . di nomenclatura chimica*. The present work “is obviously derived from his *Dizionario Vecchio*. . . . Although he makes no reference to Lavoisier, the new French nomenclature and the new system of chemistry in the *Fondamenti*, the internal arrangement of its two parts is the same as in the *Dizionario*, they are only printed in the reversed order. Many of the annotations have been taken over literally from the earlier version into the new one; many more notes have been added, however, particularly in the first part of the *Fondamenti*” (Duveen & Klickstein, *Bibliography of Lavoisier* [London, 1954, p. 152]). A classic work that introduced the new French nomenclature into Italy. Several editions followed. Very scarce. Not in D.S.B., Duveen, Edelstein, Ferguson Coll., Neu, Partington, Waller, Wellcome, etc. (*Ambix*, XI, 157 [1963]; Blake, 108; Bolton, 387; Ferchl, 114; Ferguson, I, 197 [not in Young Coll.]; Poggendorff, I, 518; Smith, 131)

DANDOLO, Vincenzo

Fondamenti della Scienza Fisico-Chimica applicati alla formazione de' corpi ed ai fenomeni della natura opera di Vincenzo Dandolo . . . Sesta edizione accresciuta di nuovi articoli, di nuove scoperte e di nuove importanti verità. . . . Venice: Presso Giustino Pasquali q. Mario. 1802.

Sixth edition. 2 vols., 8vo. I: 350 pp. II: 2 leaves, 348 pp., 1 leaf (errata). Very good copy in the original mottled half calf, marbled boards, spines gilt-ruled (worn), red and blue gilt-lettered labels.

THE GREATLY enlarged sixth and possibly last edition of this important work, containing articles discussing the newest discoveries in chemistry. The first edition appeared at Venice in 1795, and further editions were published at Venice (1796), Naples (1800), and Milan (1802). The present sixth edition is unrecorded by Duveen and Klickstein and other available bibliographies.

DANIEL, Gabriel

Voyage du Monde de Descartes.

Paris: Chez la Veuve de Simon Bénard. 1691.

Second edition. 12mo. 8 leaves, 308 pp. With 18 large woodcut diagrams in text. Fine copy in contemporary vellum, maroon and black labels. Neat inscription in ink on front pastedown endpaper: Hartwell Library. Repaired July 1849.

IN THIS “Voyage through the world of Descartes,” Daniel (1649–1728), a celebrated Jesuit historian, takes a strongly anti-Cartesian position and attacks almost the whole of his physical and philosophical system. The first edition, in smaller 12mo. format by the same publisher, appeared the previous year (Paris, 1690; Wellcome, II, 429). “The ideas of Descartes, which are not usually mentioned by historians of chemistry, are particularly important in understanding the views of Boyle, Mayow, and Lemery, to mention only three chemists whose opinions, usually presented as novel and peculiar to themselves, are more or less largely founded on the Cartesian philosophy” (Partington [II, 431], who does not mention this important and interesting early attack on Descartes). There is a reference to chemists and the philosopher’s stone on page 137. In order to find Descartes, Daniel travels to the moon, and there are several chapters on his peregrinations there. The book was often republished and translated far into the eighteenth century, reaching a larger audience than the original works of Descartes. Not in the usual bibliographic sources. (Sotheran, Cat. 789 [1924], 4762)

DANIEL, Gabriel

A Voyage to The World of Cartesius. Written Originally in French. Translated into English by T. Taylor, M.A. of Magdalen Colledge in Oxford. The Second Edition.

London: Printed for Thomas Bennet, at the Half Moon in St. Paul’s Church-Yard. 1694.

First edition, second issue. 8vo. 8 leaves, 298 pp., 4 leaves (index, last leaf blank). Very good, crisp copy, in original paneled calf, rebaked, original spine laid on, maroon morocco label.

THE FIRST English translation, by Thomas Taylor, of the *Voyage du Monde de Descartes* (Paris, 1690). Although stated to be the second edition, this is a reissue of the sheets of the first, with a reset title page. It is otherwise identical to the first issue (London: T. Bennet, 1692). Taylor, the translator, also published *The History of the Jews, from Jesus Christ to the present time; translated from the French of J. Basnagius* (London, 1708; Watt, II, 897w). (R. Dugas, *Mechanics in the 17th Century*, pp. 271–278; Mish, *Imaginary Voyages*, p. 80; Sotheran, Cat. 789 [1924], 4763; Wing, D202)

DANIELL, John Frederic

An Introduction to the Study of Chemical Philosophy: being a preparatory view of the forces which concur to the production of chemical phenomena. . . .

London: John W. Parker. 1839.

First edition. 8vo. xvi, 565, (1) pp. + (2), 4 pp. (advertisements). Woodcut text figures. Fine copy, uncut, in gilt-ruled half calf antique, pebbled cloth, red morocco label. Bookplate: Theodore Berdell.

DEDICATED to his friend Michael Faraday, this book was written to “present to students of chemistry an elementary view of the discoveries of Dr. Faraday in Electrical Science” (preface). “The most original book on the subject published at that period” (D.N.B.). Partington discusses the contents of this important work. The invention of the famous “Daniell Cell” is described on pages 438–444. Daniell (1790–1845) “heard Brande’s lectures on chemistry and then took up research. He became F.R.S. in 1813, was Copley Medallist in 1838, and in 1831 he was appointed professor of chemistry in King’s College, London” (Partington). Scarce. Not in Duveen, Edelstein, Morgan, Smith, Waller, etc. (Bolton, 388; D.S.B., III, 557; Ferchl, 114; Partington, IV, 128; Poggendorff, I, 519; Sondheimer, 393; Sotheran, Cat. 702 [1910], 7161; Wellcome, II, 430; Wheeler Gift, 955)

DANIELL, John Frederic

An Introduction to the Study of Chemical Philosophy: being a preparatory view of the forces which concur to the production of chemical phenomena. . . .

London: John W. Parker. 1843.

Second edition. 8vo. xvi, 764, iii, (1) pp. + 15, (1) pp. (advertisements). Numerous woodcut figures in text. Fine copy, uncut, in gilt-ruled half calf antique, pebbled cloth, red morocco label.

THE COMPLETELY revised, updated, and enlarged final edition of this excellent work, containing two hundred pages more than the first edition of 1839. Additional material includes discussions of Ohm’s law, electrolysis of salts and organic compounds, photography, electrotyping, electromagnetic engines, and the telegraph. The last three pages comprise a prospectus of the lectures on chemistry given jointly by Daniell and W. A. Miller at King’s College, London. Not in Bolton, Edelstein, Waller, etc. (D.S.B., III, 557; Duveen, 157; Ferchl, 114; Morgan, 197; Partington, IV, 128; Poggendorff, I, 519; Smith, 131; Sondheimer, 394; Sotheran, Cat. 666 [1906], 948 [“Scarce”]; Wellcome, II, 430; Wheeler Gift, 955a)

DAQUIN, Joseph

Analyse des Eaux Thermales d’Aix en Savoie, dans laquelle on expose les diverses manières d’user de ces Eaux, la méthode & le régime de vivre qu’il convient de suivre pendant leur usage, & les différentes Maladies pour lesquelles elles sont employées; avec plusieurs Observations qui y sont relatives, pour en constater les propriétés.

Par M. Joseph Daquin, Chambéry: De l’Imprimerie de M. F. Gorrin, Imprimeur du Roi. (1773)

First edition. 8vo. 4 leaves (including half title), xi, (1), 184 pp. (N.B.: Colophon is dated 11 July 1772; half title is dated 1773.) Fine, crisp copy, in contemporary half calf, boards, gilt-lettered crimson label, spine gilt-ruled. Bound with: Renaudin, Philibert, *Réflexions sur l’air atmosphérique* (Lyon, 1797), and 3 other works.

DAQUIN (1732–1815), who was born and died at Chambéry, was an eminent physician who believed in curing patients by “natural” means. He practiced medicine at the Royal University at Turin as well as at Chambéry, where he was perpetual secretary of the Société d’Agriculture. His principal work is this detailed study of the chemistry and medicinal uses of the hot mineral waters of Aix. Pages 16–36 describe analytical methods used to determine the chemical composition of these waters, and the remainder of the book is devoted to their medicinal applications. An enlarged second edition appeared (Chambéry, 1808), on which see Duveen (pp. 157 and 644). Ferchl, Bolton, and Poggendorff give the wrong date for this first edition (i.e., 1770, 1771, and 1771, respectively). Rare. Not in Caillet, Duveen, Edelstein, Ferguson, Ferguson Coll., Neu, Osler, Partington, Smith, Waller, Watt, etc. Wellcome (II, 431) lists only the second edition (1808). (Blake, 108; Bolton, 388; Ferchl, 114; Poggendorff, I, 521)

D’ARCET, Jean

Memoire sur l’Action d’un Feu Egal, Violent, et continué pendant plusieurs jours sur un grand nombre de Terres, de Pierres & de Chaux Métalliques essayées pour la plupart telles qu’elles sortent du sein de la Terre. Lu à l’Académie Royale des Sciences les 16 & 28 mai 1766.

Paris: Chez P. G. Cavelier. 1766.

First edition. 8vo. 122 pp. Very fine, crisp copy, in original marbled calf gilt, maroon label gilt. Bound with: D’Arcet, J., *Second Mémoire* (Paris, 1771); and La Faye, *Recherches sur . . . chaux* (Paris, 1777).

WITH HIS patron, the Comte de Lauraguais, a pupil of the elder Rouelle, D’Arcet (or Darcet, 1725–1801) investigated the effects of strong heat on a wide variety of minerals. The results, contained in the present work, threw new light on the classification of minerals and extended the researches

of J. H. Pott. They also laid the foundation for the manufacture of true porcelain in France. D'Arcet later became director of the famous Sèvres porcelain works. A milestone work in the chemistry of porcelain and glass manufacture. Not in Blake, Ferguson Coll., Hoover, Morgan, Waller, etc. (Bolton, 388; D.S.B., III, 561; Duncan, 319; Duveen, 157; Edelstein, 669; Ferguson, I, 40; Neu, 1092; Partington, III, 104; Poggendorff, I, 521; Smith, 132; Sondheimer, 39; Watt, I, 39k; Wellcome, II, 53)

D'ARCET, Jean

Second Mémoire sur l'Action d'un Feu Égal, Violent, et continué pendant plusieurs jours, sur un grand nombre de Terres, de Pierres & de Chaux Métalliques, essayées pour la plupart telles qu'elles sortent du sein de la Terre. Lu à l'Académie Royale des Sciences les 7 & 11 mai 1768.
Paris: Chez P. G. Cavalier. 1771.

First edition. 8vo. vi, 170 pp. Very fine, crisp copy, in original marbled calf gilt, maroon label gilt. Bound with: D'Arcet, J., *Mémoire sur l'Action . . .* (Paris, 1766); and La Faye, *Recherches sur . . . chaux* (Paris, 1777).

IN THE *Second mémoire* D'Arcet reports the results of further experiments he carried out on the action of strong heat on various minerals. His very important experiments on heating diamonds in air and in a closed crucible are described (pp. 105–120). “He found at first that a diamond disappeared when strongly heated even in a closed crucible. The Academy asked for a repetition of the experiment, when it was found that the diamond remained when strongly heated in a perfectly closed crucible” (Partington). It has been presumed that these experiments led Lavoisier to his studies on combustion, but this is disputed by Guerlac (*Lavoisier—The Crucial Year*, pp. 78 ff.). The *Second mémoire* is rarer than the first of 1766. Not in Blake, Bolton, Duveen, Edelstein, Ferguson Coll., Hoover, Morgan, Neu, Partington, Sondheimer, Waller, Wellcome, etc. (D.S.B., III, 561; Duncan, 319; Ferchl, 12; Ferguson, I, 40; Poggendorff, I, 521; Smith, 132; Watt, I, 39k)

D'ARCET, Jean, LELIEVRE, Claude, and PELLETIER, Bertrand

Rapport sur la fabrication des Savons, sur leurs différentes espèces, suivant la nature des huiles et des alkalis qu'on emploie pour les fabriquer; et sur les moyens d'en préparer par-tout, avec les diverses matières huileuses et alkales, que la nature présente, suivant les localités. Par les Cns. Darcet, Lelievre et Pelletier. Imprimé par ordre du Comité de Salut Public.

(Colophon: Paris: De l'Imprimerie de R. Vatar et Ass.) (1795).

First edition. 4to. 57, (3) pp. Caption title. Fine copy with wide margins (some lower edges uncut), in modern quarter cloth gilt, marbled boards.

THE MOST important scientific account of soapmaking before Chevreul. “Towards the end of the eighteenth century, scientists turned their attention to the study of the reaction by which soap is produced. . . . There was no English work on soap making. Indeed the only comprehensive account then extant appears to have been the *Rapport, sur la fabrication des Savons*, which was produced in the heat of the French Revolution, by Citoyens D'Arcet, Lelievre, and Pelletier” (A. Clow and N. L. Clow, *The Chemical Revolution* [London, 1952, pp. 125–126]). Very scarce. Not in Blake, Bolton, Duveen, Edelstein, Ferchl, Ferguson, Neu, Partington, Poggendorff, Waller, Watt, Wellcome, etc. (D.S.B., III, 561; Smith, 132)

D'ARCET, Jean, and ROUELLE, Hilaire Marin

Proces-Verbal des Expériences faites dans le Laboratoire de M. Rouelle, sur plusieurs Diamans & Pierres précieuses, par Messieurs Darcet & Rouelle. Extrait du Journal d'Observations sur la Physique, sur l'Histoire Naturelle & sur les Arts & Métiers, de M. l'Abbé Rozier. Volume de janvier 1772.

N.p. (Paris:) 1772.

First separate edition. 8vo. 30p pp. With engraved plate (2 figures of diamonds). Very good copy in contemporary quarter calf, speckled boards, with morocco label (“Mélanges”). Bound with: Dubuisson, F. R. A., *Mémoire sur les Acides Natifs du Verjus, de l'Orange, et du Citron* (Paris, 1783), and 7 other chemical tracts (1731–1798).

AN IMPORTANT work in which, on 16 August 1771, D'Arcet and Rouelle heated four valuable diamonds in a muffle furnace, gradually increasing the temperature to red heat over a period of about five hours. The diamonds were first carefully weighed and then heated in the furnace either uncovered with free access to air or covered in a crucible. It was observed that three diamonds exposed to the air at red heat lost significant weight (i.e., being crystallized carbon, they burned away). The diamond in the closely covered crucible, and not exposed to the air, remained essentially unchanged in appearance and weight. The experiments were conducted in the presence of many chemists, including Demachy, Lavoisier, and Macquer. Then only twenty-nine years of age, Lavoisier was led by these experiments to conclude that there is something in the air (later discovered to be oxygen) that combines with combustible substances such as diamond (i.e., carbon). The present work appeared before Lavoisier's paper on the combustion of diamonds in the *Observations sur la Physique* (May 1772). Very rare. (Duveen & Klickstein, 22; Guerlac, *Lavoisier—The Crucial Year*, 82; Partington, III, 104)

D'ARCET, Jean Pierre Joseph

Mémoire sur l'Art de Dorer le Bronze. Ouvrage qui a remporté le prix fondé par M. Ravrio et proposé par l'Académie Royale des Sciences.

Paris: De l'Imprimerie de Mme. Veuve Agasse. 1818.

First edition. 8vo. xl, 192 pp. With 2 folding tables (following p. 172) and 6 folding copperplates (Deseve sculpt.). Very good copy, in contemporary quarter calf gilt, marbled boards.

THE DEFINITIVE work on the chemistry and technology of gilding bronze objects, which was awarded the Ravrio prize of the French Royal Academy of Sciences. An amalgam of gold and mercury was applied to the specially prepared surfaces of articles made of bronze (e.g., clocks, candelabra, and furniture), which were then heated to distill off the mercury. Various furnaces are described that allowed workers using this process to be less exposed to poisoning by mercury vapor (pp. 128–170). D'Arcet (1777–1844), son of the well-known chemist Jean D'Arcet (1725–1801), published a number of works on applied chemistry and metallurgy. Partington (III, 104–105) discusses D'Arcet but does not mention the present title, which appears to be scarce. Not in D.S.B., Duveen, Edelstein, Ferguson, Ferguson Coll., Hoover, Morgan, Smith, Sondheimer, Waller, Watt, Wellcome, etc. (Bolton, 388 [who confuses D'Arcet with the author's father]; Ferchl, 114; Poggendorff, I, 521)

D'ARCET, Jean Pierre Joseph, and THENARD, Louis Jacques

De l'Emploi des Corps Gras comme Hydrofuge, dans la peinture sur pierre et sur plâtre, dans l'assainissement des lieux bas et humides, dans les citernes et réservoirs destiné à contenir les liquides; pour la conservation des statues et bas-reliefs exposés aux injures de l'air; et description du fourneau du doreur.

Paris: Au Bureau du Recueil Industriel, . . . et chez Bachelier. 1828.

First edition. 8vo. 23, (1) pp. With half title and folding copperplate (gilder's stove, engraved by Adam after a drawing by De Moléon). Fine, crisp copy, in contemporary quarter calf, marbled boards, spine gilt. Bound with: works by Payen, Polonceau, and Schwickardi on bitumens and their uses.

AN IMPORTANT work on waterproofing various materials, coauthored with the great chemist Thenard. A notice on page 5 states that this is extracted from the *Recueil industriel, manufacturier . . . et des Beaux-Arts*, published by De Moléon. The authors discuss various types of waxes for sealing and waterproofing building materials, art works, plaster statues to make them resemble marble, etc. An improved oven for

carrying out gilding operations is described on pages 21–23. Rare. Not in Bolton, Duveen, Edelstein, Ferguson, Ferguson Coll., Morgan, Partington, Smith, Sondheimer, Waller, Watt, Wellcome, etc. (Ferchl, 114; Poggendorff, I, 521)

DAUBENY, Charles Giles Bridle

A Description of Active and Extinct Volcanos, of Earthquakes, and of Thermal Springs; with remarks on the causes of these phaenomena, the character of their respective products, and their influence on the past and present condition of the globe. By Charles Daubeny, F.R.S. . . . Second edition, greatly enlarged.

London: Richard and John E. Taylor. 1848.

Second edition. 8vo. xxiii, (1), 743, (1) pp. With 4 engraved plates, 11 engraved maps on 8 leaves, and numerous fine woodcut text illustrations. Fine copy in contemporary gilt-ruled half calf, marbled boards, brown morocco label gilt. Library bookplate on front pastedown endpaper (Lindsay Institute, Lanark) and small stamp on title and few pages. Presentation copy to the mathematician and scientific mechanician Charles Babbage (1792–1871), inscribed in ink at top of title: "C. Babbage Esq. F.R.S. from the author."

ORIGINALLY PUBLISHED in 1826, the second and final edition is more than half as large again as the first. In "his masterly *Description of . . . Volcanos . . .* he developed a chemical theory of volcanic action, which stated that such action results from penetration of water to the free alkali and alkaline earth metals supposed to exist beneath the earth's crust. A similar theory had been entertained by Humphry Davy and Joseph Louis Gay-Lussac, but Daubeny was the first to develop it in detail and support it with massive factual evidence. In its dependence on chemical ideas the *Description* is typical of all of Daubeny's work" (D.S.B.). The book is dedicated to John Kidd and William Buckland. An important early work on geochemistry. Hoover, Partington, Wellcome, and Woodward (*History of Geology*, 1911, p. 62) mention the first edition (1826) but not the second, which is very scarce. (D.S.B., III, 586; Poggendorff, I, 525)

DAUBENY, Charles Giles Bridle

An Introduction to the Atomic Theory, comprising a sketch of the opinions entertained by the most distinguished ancient and modern philosophers with respect to the constitution of matter. By Charles Daubeny, M.D., F.R.S. . . .

Oxford: S. Collingwood, for John Murray. 1831.

First edition. 8vo. xv, (1), 147, (1) pp. Very good copy, uncut, in original cloth-backed boards, handwritten paper label on spine.

THE FIRST history of the atomic theory from the ancients through Berthollet and Dalton. The book is dedicated "To John Dalton, F.R.S. . . . the author of a theory . . . which stands foremost among the discoveries of the present age." The appendix contains a letter from Dalton on atomic weights (pp. 134–137), one from Dr. William Prout (pp. 129–133) explaining his views where he feels they have been misrepresented in the text, and the tables of atomic weights of Turner and Berzelius (pp. 138–147). A supplement appeared in 1840, and a second edition of the whole work appeared in 1850. Daubeny (1795–1867) succeeded John Kidd as professor of chemistry at Oxford in 1822 and in 1834 also became professor of botany. Knight describes this as the "standard English work on chemical atomism in the generation after Dalton." Not in Edelstein, Ferchl, Ferguson, Ferguson Coll., Waller, Wellcome, etc. (Bolton, 103; Cushing, D61; D.S.B., III, 586; Duveen, 158; Knight, 138; Morgan, 203; Osler, 2417; Partington, IV, 727; Poggendorff, I, 525; Smith, 133; Sondheimer, 402)

DAUBENY, Charles Giles Bridle

An Introduction to the Atomic Theory, by Charles Daubeny, M.D., F.R.S., &c. . . . Second edition, greatly enlarged. Oxford: At the University Press. 1850.

Second edition. 8vo. xxiii, (1), 502 pp., 1 leaf (advertisements). With errata slip. Woodcuts in text. Fine copy, uncut, in original pebbled cloth (repaired), original printed paper label on spine. From the library of Sir William Crookes (1832–1919), with his signature in ink on first free endpaper and armorial bookplate on front pastedown endpaper.

THE FINAL and most complete edition, incorporating material from the first edition (Oxford, 1831) and the *Supplement* (Oxford, 1840), with additional information to the time of publication. It is dedicated "To the memory of John Dalton, F.R.S., the framer of a theory with respect to the mode of combination between bodies, which stands foremost among the discoveries of the present age, for the universality of its applications, and the importance of its practical results; holding the same kind of relation to the science of chemistry, which the Newtonian system does to that of mechanics." An important and desirable copy, having belonged to the great scientist Sir William Crookes, F.R.S. (on whom see D.N.B., D.S.B., etc.). Crookes discovered thallium, made many important discoveries in radioactivity, and contributed to the modern development of the atomic theory. Not in Cushing, Duveen, Edelstein, Ferguson, Osler, Smith, Waller, Wellcome, etc. (Bolton, *First Supplement*, 27; D.S.B., III, 586; Knight, 138, 142; Morgan, 204; Partington, IV, 727; Poggendorff, I, 525 [wrong

date: 1840]; Sondheimer, 403; Sotheran, Cat. 800 [1926], 10578; *ibid.*, Cat. 879 [1947], 2559)

DAVISSON, William

Commentariorum in sublimis Philosophi & incomparabilis Viri Petri Severini Dani Ideam Medicinæ Philosophicæ, propediem proditurorum Prodromus. In quo Platonicae doctrinae explicantur fundamenta, super quæ Hippocrates, Paracelsus & Severinus: nec non ex antithesi, Aristoteles & Galenus sua stabilivere Dogmata. Sub finem Authoris doctrina, febrium exemplo, in praxim reducitur. Hisce selectiorum Chemicorum remediorum, omnibus à Capite ad Calcem affectibus appropriatorum, 40 annorum usu probatorum, sine fuco & jactantia descriptorum, manipulus adjicitur. . . .
The Hague: Ex Typographia Adriani Vlacq. 1660.

First edition. 4to. 6 leaves, 708 pp., 2 leaves (errata). Title printed in red and black. Folding printed table (facing p. 10), folding copperplate (facing p. 82), 2 full-page copperplates in text (pp. 105, 646), and 1 large engraved vignette on divisional title (p. 539). Fine copy in half calf antique, marbled boards, spine gilt-lettered. Bound with: Severinus Danus, Petrus, *Idea medicinæ philosophicæ* (The Hague, 1660). Withdrawal stamps of the Wellcome Library on verso of title leaf.

"DAVISSON'S MOST ambitious work is his commentary (1660) on the *Idea medicinæ philosophicæ* of the noted sixteenth-century Paracelsian Peter Severinus. This work marks Davisson as a devoted Paracelsian theorist, but by the time of its appearance it was somewhat outdated, since iatrochemical theory had come to be dominated by the work of J. B. van Helmont" (D.S.B.). In 1651 Davisson left Paris to become physician to John Casimir, king of Poland, to whom the book is dedicated. "Throughout this last epoch of his life Davidson was forced to abandon his favourite operations in chemistry for the practice of medicine. It was in . . . this Polish period that he produced . . . his massive commentary on Severinus" (J. Read, *Ambix*, IX [1961], 79). Another edition appeared in 1663. Rare, as are all of Davisson's works. Not in Bolton, Caillet, Cushing, Ferchl, Poggendorff, Waller, etc. (D.S.B., III, 596; Duveen, 159; Ferguson, I, 201 [not in Young Coll.]; Ferguson Coll., 182; Neu, 1094; Partington, III, 7; Thorndike, VIII, 125; Watt, I, 289j; Wellcome, II, 436)

DAVISSON, William

Les Elemens de la Philosophie de l'Art du Feu ou Chemie. Contenant les plus belles observations qui se rencontrent dans la resolution, preparation, & exhibition des Vegetaux, Animaux, & Mineraux, & les remedes contre toutes les maladies du corps humain, comme aussi la Metallique, appliquée à la Theorie, par une verité fondée sur une necessité Geometrique, & démontrée à la maniere d'Euclide. Oeuvre nouveau, & tres-necessaire à tous ceux qui se proposent ietter de bons fondemens pour apprendre la Philosophie, Medecine, Chirurgie, & Pharmacie. Traduit du Latin du sieur Davissone, . . . par Jean Hellot, . . .

Paris: Chez François Piot. 1651.

First edition, first issue, in French. 8vo. 8 leaves, 677, (1), 6 pp., 4 leaves. Large folding printed table, and 5 copperplates (Matheus fec.) on 3 folding leaves. Occasional minor water stains; otherwise fine copy in contemporary calf, rebounded, maroon morocco label gilt.

DAVISSON, or Davidson (1593–ca. 1669), a Scotsman who lived most of his life in Paris, was the first professor of chemistry at the Jardin du Roi. His *Philosophia pyrotechnica* (Paris, 1633–35) is here first translated into French by Jean Hellot (d. 1681). “The *Philosophia* . . . continued the teaching tradition set up by Beguin. . . . The French version . . . differs . . . from the . . . Latin one . . . the theory has been pruned, the practical matter has been amplified and brought up to date, the whole work has been rearranged” (J. Read, *Ambix*, IX [1961], 71–83). The author’s *Oblatio salis* (1641) is incorporated into the French translation. The first work to stress the study of crystals, it marks the beginning of chemical crystallography, with two of the plates depicting crystals. Very important. On Davisson, see Read (*Humour and Humanism in Chemistry*, pp. 88–92). Complete with five plates (not six, cf. Duveen), as the plate (“Emblemata totius operis”) of the *Philosophia* (1635) was omitted from the French translation (see Read, *Ambix*). Rare. (Bolton, 389; Caillet, 426; D.S.B., III, 596; Duveen, 159; Ferchl, 115; Neu, 1097; Partington, III, 5; Waller, 11111)

DAVY, Edmund William

On a Simple Electro-Chemical Method of Ascertaining the Presence of different Metals; applied to detect minute quantities of Metallic Poisons. . . . Read November 25, 1830.

London: Printed by Richard Taylor. 1831.

First edition (author’s offprint). Royal 4to. 1 leaf, pp. 147–164. Inscribed in ink by Davy on title page: “With the Author’s resp(ects).” Name of recipient cropped. Very good copy, with wide margins, in maroon quarter cloth gilt, marbled boards.

AN OFFPRINT, from the *Philosophical Transactions of the Royal Society* (vol. 121, 1831), in which Davy describes his newly discovered analytical method for detecting traces of poisonous metals in food and drink. “He described an electrolytic method (deposition on platinum foil by a zinc-platinum couple) for the detection of arsenic, mercury, lead, and copper in poisoning” (Partington). “In electrolytic decomposition, the author recognizes that the metals are attracted by negatively electrified metallic surfaces and repelled by positively electrified surfaces with forces sufficiently energetic to overcome chemical affinity” (Wheeler Gift). Rare. Not in Ekelöf, Mottelay, Ronalds, etc. (Partington, IV, 74; Wheeler Gift, 2660)

DAVY, Edmund William

On some Combinations of Platina.

(From the *Philosophical Magazine* for September 1812).

First edition (author’s offprint). 8vo. 27, (1) pp. Very good copy, uncut, in original blue wrappers. Presentation inscription in ink on first page: “Sir John Sebright Bart. M.P. From the Author.” Contained in a cloth drop box, spine gilt-lettered.

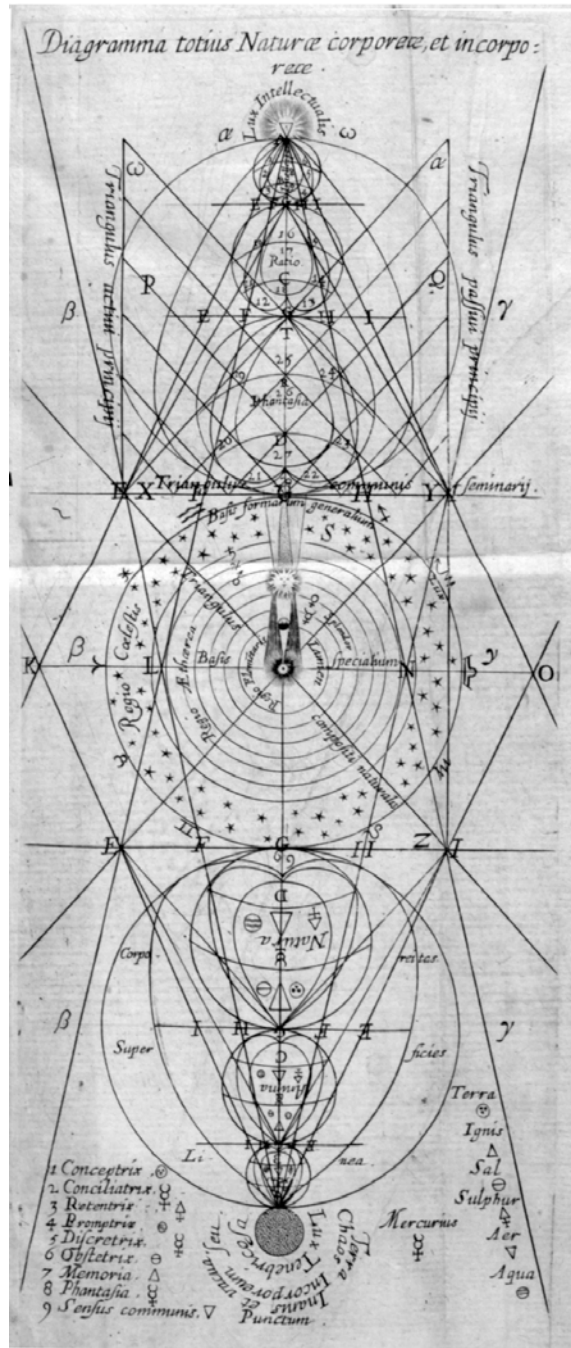
AN IMPORTANT historical paper describing the preparation of some of the earliest known compounds of the chemically inert metal platinum (e.g., oxide, sulphide, and phosphide). Edmund Davy (1785–1857), a younger cousin of Sir Humphry Davy, was the latter’s assistant at the Royal Institution (1804–1813). In 1813 he became professor and secretary at the Royal Cork Institution and in 1826 was professor of chemistry of the Royal Dublin Society. He was elected F.R.S. and published papers on metallurgy, electrochemistry, and agricultural chemistry. John Saunders Sebright (1767–1846), to whom Davy gave this offprint, was a noted agriculturist and politician (see D.N.B.). Partington discusses Davy’s extensive researches. Rare. (D. McDonald and L. B. Hunt, *A History of Platinum*, 1982, pp. 220–221; Partington, IV, 74)

DAVY, Sir Humphry

An Account of Some Galvanic Combinations, formed by the Arrangement of Single Metallic Plates and Fluids, analogous to the New Galvanic Apparatus of Mr. Volta. . . .

London: Printed by W. Bulmer and Co. Cleveland-Row, St. James’s. 1801.

First separate edition (offprint from *Philosophical Transactions of the Royal Society*). 4to. 8 pp. Very good copy, unbound with wide margins, preserved in a fine cloth-covered folder with gilt-lettered crimson morocco label. Presentation copy to Peter Mark Roget (1779–1869), English physician and scholar, author of the well-known *Thesaurus* (1852), a Bridgewater



Davison. Les Elemens de la Philosophie. Paris, 1651.

treatise (1834), and a treatise on electricity and magnetism (1832), and a contributor to Davy's *Researches* (1800). Inscribed in ink by Davy on title page: "For Dr. Roget from the Author."

DAVY WAS quick to enter into the new field of electrochemistry, of which he was one of the founders, and in this, his first paper in the *Philosophical Transactions* (1801, pp. 397–402), he showed how a voltaic battery could be constructed from a single metallic species. Offprints by Davy are extremely rare, usually having been printed in only twenty or thirty copies for distribution to his friends. Not in Ekelöf, Gartrell, etc. (Fullmer, 32; Partington, IV, 40; Poggendorff, I, 528–529; Wheeler Gift, 2500)

DAVY, Sir Humphry

The Collected Works of Sir Humphry Davy, Bart. LL.D., F.R.S. . . . Edited by his brother, John Davy, M.D., F.R.S. . . . London: Smith, Elder and Co. 1839–1840.

First edition. 9 vols., 8vo. With engraved frontispiece bust of Davy in volume I and 43 plates (some folding). Fine set in nineteenth-century quarter calf, spines gilt, red morocco labels, cloth boards (vol. III in full calf). From the library of the Conservative Club, London, with their gilt crest on the front cover of each volume.

THE DEFINITIVE edition, containing almost all of Davy's published works, including a number of papers and lecture texts that appear here for the first time. Volume I contains *Memoirs of the life of . . . Davy*, by John Davy. Complete sets of the nine volumes are very scarce. Poggendorff and Ferchl erroneously state that there are ten volumes. (Blocker, 102; Bolton, 391–392; Duveen, 161; Edelstein, 708; Ferchl, 116; Fullmer, 17; Knight, 137; Morgan, 207; Partington, IV, 36; Poggendorff, I, 530; Smith, 139; Sondheimer, 416; Sotherran, Cat. 666 [1906], 964 ["Scarce"]; Thornton & Tully, 216; Wellcome, II, 437)

DAVY, Sir Humphry

Consolations in Travel, or the last Days of a Philosopher. . . . London: John Murray. 1830.

First edition. 8vo. 6 leaves, 281, (1) pp. Fine copy, uncut, in original boards.

DAVY'S LAST work, published posthumously, edited by his brother, Dr. John Davy, who states in the preface that the book "was concluded at the very moment of the invasion of the author's last illness." Written immediately after he had finished *Salmonia*, it comprises six dialogues. Of chemical interest is "Dialogue the Fifth. The Chemical Philosopher," in which one of the characters—the Unknown—is Davy. The first edition is scarce. Not in the usual chemical bibli-

ographies. (D.S.B., III, 604; Fullmer, 98; Partington, IV, 36; Poggendorff, I, 528; Sondheimer, 414; Waller, 10791; Wellcome, II, 437)

DAVY, Sir Humphry

Consolations in Travel; or the last Days of a Philosopher. . . . London: John Murray. 1838.

Fourth edition. 8vo. 6 leaves, 264 pp. Fine copy in contemporary maroon half morocco, marbled boards, spine gilt.

AN UNCHANGED reprint of the first edition of 1830, which was "not seen" by Fullmer. Not mentioned by the usual authorities. (Fullmer, 98)

DAVY, Sir Humphry

A Discourse, Introductory to a Course of Lectures on Chemistry, delivered in the Theatre of the Royal Institution on the 21st of January, 1802.

London: Sold at the House of the Royal Institution, Albemarle Street; by J. Johnson, St. Paul's Church-Yard; and Messrs. Cadell and Davies, Strand. 1802.

First edition. Sm. 4to. 26 pp. Extremely fine copy in mint condition, in mottled half calf antique, marbled boards, maroon morocco label, gilt, spine dated.

INTENDED BY Davy for the general instruction of his audience, to give them some background information in order to render his chemical lectures more intelligible. "I am induced to publish the following discourse in consequence of the request of a part of the audience . . . It was not originally intended for the press" (advertisement, dated 26 April 1802). Topics discussed include mineralogy, medicine, agriculture, bleaching and dyeing, metallurgy, porcelain and glassmaking, and tanning. Davy points out the universal utility of chemical processes in all aspects of human life. Certainly the rarest of Davy's works, which remained unknown to his bibliographer, June Z. Fullmer. Not in D.S.B., Thornton & Tully, Waller, Wellcome, or the usual chemical bibliographies. (Duveen, 160 [with erroneous Bolton reference]; Edelstein, 694; Partington, IV, 35; Watt, I, 289m)

DAVY, Sir Humphry

Elements of Agricultural Chemistry, in a Course of Lectures for the Board of Agriculture. . . .

London: Longman, Hurst, Rees, Orme, and Brown. 1813.

First edition. 4to. viii, 323, (1), lxiii, (5) pp. With 10 copperplates (1 folding, by Lowry). Frontispiece and title foxed (as usual); otherwise fine copy with wide margins, in contemporary gilt-ruled half calf, marbled boards, rebaked with original spine laid on, dark-green morocco label, gilt.

AN IMPORTANT book that introduced the era of scientific farming and the use of “chemically balanced” fertilizers. The “first serious attempt to apply chemistry to agriculture [which] remained a standard work until displaced by Justus von Liebig’s publications a generation later” (D.S.B.). Davy, the first to use the term *agricultural chemistry*, was also the first to point out that agricultural chemistry is concerned with only a limited number of elements. The most complete list of elements that had yet appeared is given (pp. 39–44), including chlorine, which Davy had proven an element. Davy here recognizes the importance of soil analysis and the measurement of its physical properties. It was well received, and several English and American editions appeared, as well as translations in foreign languages. The appendix is a report on experiments carried out by George Sinclair (gardener to the Duke of Bedford at Woburn Abbey), to discover the relative nutritive value of different grasses and other plants as food for livestock. Browne and Partington discuss the book in detail. (Bolton, 390; Browne, *A Source Book of Agricultural Chemistry*, 1944, pp. 204–211; Cushing, D75; D.S.B., III, 201; Duveen, 644–645; Edelstein, 696; Ferchl, 116; Fullmer, 70; Knight, 114; Partington, IV, 35, 39; Poggendorff, I, 528; Smith, 139; Thornton & Tully, 216; Watt, I, 289n; Wellcome, II, 436)

DAVY, Sir Humphry

Elements of Agricultural Chemistry, in a Course of Lectures for the Board of Agriculture. . . .

London: Longman, Hurst, Bees, Orme, and Brown, Paternoster-Row; and A. Constable and Co. Edinburgh. 1814.

Second edition. 8vo. 6 leaves, 479, (1) pp., 4 leaves. With 10 folding copperplates by Lowry. Very good copy, uncut and unpressed, in original boards, rebacked, printed paper label.

THE FIRST edition in 8vo. format, being an unchanged reprint of the 4to. edition (1813), with the errata corrected. Scarce, this edition was not seen by June Z. Fullmer, bibliographer of Davy. Not in the usual chemical bibliographies. (Blocker, 102; Bolton, 390; Fullmer, 71; Knight, 114; Watt, I, 289n; Wellcome, II, 436)

DAVY, Sir Humphry

Elements of Agricultural Chemistry, in a Course of Lectures for the Board of Agriculture. . . . With an Appendix, containing a series of experiments to test the value of the grasses cultivated in Great Britain. Second American Edition. To which is added practical remarks on some of the manures mentioned in the lectures.

Hartford: Hudson and Co. Printers. 1819.

Fourth American edition. 8vo. viii, 304 pp. Some leaves lightly embrowned (as usual); otherwise a fine copy, uncut, in original boards, original printed paper label. Early-nineteenth-century signature in ink of “Jas. W. Graham, Bird Hill, Jefferson County” on front pastedown endpaper, also signature (“James W. Graham”) on title page.

REPRINTED FROM the English text, the anonymous editor has added an appendix on various fertilizers mentioned in the main work. These remarks (pp. 280–299) are signed “Pocklington, Yorkshire, 20 Oct. 1816.” Although denoted the “Second American Edition” on the title, it was preceded by those of Philadelphia, 1815 (two editions), and New York, 1815 (see Fullmer, pp. 70–71). Fullmer states that she had “not seen” the present scarce edition. Not in the usual bibliographies. (Fullmer, 71)

DAVY, Sir Humphry

Elements of Agricultural Chemistry, in a Course of Lectures for the Board of Agriculture. . . . To which is added, a Treatise on Soils and Manures, as founded on actual experience, and as combined with the leading principles of Agriculture: in which the Theory and Doctrines of Sir Humphry Davy, and other Agricultural Chemists, are rendered familiar to the experienced Farmer. By a Practical Agriculturist.

Philadelphia: B. Warner, M. Carey & Son, and Bennett & Walton; and in Baltimore, by F. Lucas, Jr., Joseph Cushing, and Edward J. Coale. 1821.

Second Philadelphia edition. 8vo. 304 + 92 pp; 8 engraved plates (1 folding). Brownd throughout (owing to poor quality of the paper); otherwise a good copy in contemporary full tree calf, spine gilt-ruled. Early-nineteenth-century bookplate on front pastedown endpaper: Philomathian Society.

THE FIRST edition from Philadelphia appeared in 1815. Other American editions were Boston, 1815 (Fullmer, 71); New York, 1815 (Bolton, 390; Fullmer, 71); and Hartford, 1819 (Fullmer, 71). The identity of the “Practical Agriculturist,” the author of the *Treatise on Soils and Manures* (92 pp.), appended to this edition, has not been established. The *Treatise* has a separate title page, signatures, and pagination. Scarce. Not in Browne, Cushing, Duveen, Ferchl, Morgan, Osler, Partington, Poggendorff, Reynolds, Waller, Watt, Wellcome, etc. (Bolton, 390; Fullmer, 70; Smith, 140)

DAVY, Sir Humphry

Elements of Agricultural Chemistry, in a Course of Lectures for the Board of Agriculture. . . . To which is added, a treatise on soils and manures, as founded on actual experience, and as combined with the leading principles of agriculture: in which the theory and doctrines of Sir Humphry Davy, and other agricultural chemists, are rendered familiar to the experienced farmer by a practical agriculturist.

Philadelphia: Published by B. Warner, M. Carey & Son, and Bennett & Walton; and in Baltimore, by F. Lucas Jr., Joseph Cushing, and Edward J. Coale. 1824.

Third Philadelphia edition. 8vo. 304 + 92 pp.; 8 engraved plates (1 folding). Browned throughout (owing to poor quality paper); otherwise good copy in contemporary gilt-ruled tree calf, brown morocco label, gilt. Early-nineteenth-century bookplate on front pastedown endpaper: Philomathian Society.

THE FIRST two editions from Philadelphia appeared in 1815. The identity of the "Practical Agriculturist," author of the *Treatise on Soils and Manures* (92 pp., with divisional title page), appended to this edition, has not been established. Very scarce. Unknown to Fullmer, who lists the undated (1815) edition only. (Bolton, 390; Smith, 140)

DAVY, Sir Humphry

Elements of Agricultural Chemistry. . . . A new edition, with instructions for the analysis of soils, and copious notes, embracing the recent discoveries in agricultural chemistry, by Liebig, Boussingault, and others. By John Shier, A.M., LL.D. London: Published by John J. Griffin and Company, and Richard Griffin and Company, Glasgow. 1846.

Second Shier edition. 8vo. 1 leaf, ix, (1), 293, (1) pp., 2 leaves (advertisements). Numerous woodcuts in text. Fine, crisp copy, uncut, in original publisher's blind-stamped green pebbled cloth, spine gilt-lettered.

THE FINAL version of Davy's *Agricultural Chemistry*, updated by John Shier, lecturer on agriculture at Aberdeen University and chemist to the colony of British Guiana. The first edition edited by Shier appeared in 1844, and the third in 1855. (Bolton, 390; Fullmer, 73; Waller, 11112; Wellcome, II, 436)

DAVY, Sir Humphry

Éléments de Chimie Agricole, en un Cours de Leçons, pour le Comité d'Agriculture. . . . Traduit de l'Anglais, avec un traité sur l'art de faire le vin et de distiller les eaux-de-vie, par A. Bulos. . . .

Paris: Ladrance. 1819.

First French edition. 2 vols., 8vo. I: 7, (1), 342 pp. II: 2 leaves, 431, (1) pp. With 8 engraved plates (7 folding, by Ch. Ransonnette Fils). Splendid copy in mint condition, uncut and unpressed, in quarter calf antique, marbled boards, maroon and green morocco labels, gilt, original blue wrappers bound in.

THE FIRST translation into French, by A. Bulos, of this important book. The translator has added a "supplement upon the art of making wine and distilling brandy . . . with . . . chemical-technological matter not included in the original work [which] indicates a growing desire at this period to extend the field of agricultural chemistry beyond the confines of a purely agronomic science, so as to include other miscellaneous applications of chemistry to farm operations" (Browne). Very scarce, and not seen by Fullmer. Not in Wellcome or the usual chemical bibliographies. (Bolton, 390; Browne, *A Source Book of Agricultural Chemistry*, 1944, p. 210; Fullmer, 71)

DAVY, Sir Humphry

Éléments de Chimie appliqués à l'Agriculture, suivis d'un Traité sur la Chimie des Terres, . . . Traduits littéralement de l'anglais, et augmentés de Notes et d'Observations pratiques, par M. Marchais de Migneaux, . . .

Paris: Audin, . . . Crevot. 1820.

First Marchais de Migneaux edition. 12mo. x, (2), 537, (3) pp. With 6 folding lithographed plates (by Lacroix). Mint copy, partially uncut, in contemporary green quarter calf, marbled boards, spine richly gilt.

A TRANSLATION OF Davy's *Agricultural Chemistry* (London, 1813), which is completely different from the French translations of A. Bulos (Paris, 1819, 2 vols.) and A. D. Vergaud (Paris, 1838) recorded by Bolton (p. 390). When representative paragraphs of the original English and this French version are compared, the translation is very accurate. At the end (pp. 479–508) is a translation of Davy's two famous papers read to the Royal Society, published in the *Philosophical Transactions of the Royal Society* (1807 and 1808), on the electrolytic decomposition of the alkalis and alkaline earths and the isolation of metallic sodium, potassium, magnesium, calcium, strontium, and barium. Very rare, not seen by Fullmer. Not in Browne, D.S.B., Wellcome, or the usual bibliographies. (Fullmer, 71; Smith, 139)

DAVY, Sir Humphry

L'Art de Préparer les Terres, et d'Appliquer les Engrais, traduit de l'anglais de Sir Humphry Davy; par A. Bulos. Paris: Urbain Canel, . . . Audin. 1825.

First edition. 12mo. 2 leaves, 499, (1) pp. Mint copy in contemporary quarter calf, marbled boards, spine richly gilt.

AN ENTIRELY different translation of Davy's *Agricultural Chemistry*, by A. Bulos. It is a condensed version of *Éléments de Chimie Agricole* (Paris, 1819, 2 vols., translated by Bulos), which contains a long section on winemaking. There is nothing on winemaking in the present edition, and it does not contain the *Recherches électriques sur la décomposition des terres*, which occurs in the translation of Marchais de Migneaux. No plates were published with this edition. Fullmer states that she had not seen the present work. Very rare. Not in the usual bibliographies. (Fullmer, 71)

DAVY, Sir Humphry

Elementos de Quimica aplicada a la Agricultura, en un Curso de Lecciones, en el Instituto de Agricultura, por Humphry Davy. Traducidos des Yngles por Felix Varela. Nueva-York: en la Imprenta de Juan Gray y Ca. 1826.

First edition in Spanish. 8vo (in 4s). iv, 286 pp., 1 leaf (errata). With 8 engraved plates (1 folding) and 2 printed tables on 1 leaf (between pp. 84–85). Some light foxing (as usual with American paper of this period); otherwise good copy in original tree calf (portions missing from spine and back cover), covers gilt-ruled, red morocco label, rebacked with spine laid on.

THE FIRST Spanish translation of *The Elements of Agricultural Chemistry* (London, 1813). Felix Varela, the translator, who lived in the "Southern District of New York" (see title verso), submitted this work for publication on 13 November 1826. It was printed for readers in Central and South America, and Varela has added occasional footnotes to the text, which are appropriately noted. Undoubtedly printed in a small number of copies, this translation was unknown to June Z. Fullmer, Davy's bibliographer. No other copies of this extremely rare book have been traced.

DAVY, Sir Humphry

Elementi di Filosofia Chimica del Sig. Cav. Humphry Davy. . . . Tradotti dall'Inglese in Francese dal Sig. G.B. Van-Mons e in Italiano dal Sig. Dott. G. con Note de' Sigg. Prof. L.V. Brugnatelli e P. Configliachi. Volume I. (II.)

Naples: Presso Domenico Sangiacomo Stampatore del Real Collegio Militare. Si vende del Gabinetto Letter. al Largo del Gesù nuovo. Con licenza dei Superiori. 1816.

First (only) Naples edition. 2 vols., sm. 4to., in 1. I: 5 leaves, pp. 3–52 (Introduzione); pp. 1–188, 1 leaf (Tavola); 4 folding engraved plates (containing sets of figures, as in the English edition of 1812). II: 1 leaf, pp. 3–247, (1). Collation complete. Occasional minor foxing on a few leaves; otherwise a very good copy in original gilt-ruled half calf, marbled boards, maroon morocco label, gilt.

AN ITALIAN translation (by a certain doctor "G") of Van Mons' 1813 French translation of *Elements of Chemical Philosophy* (London, 1812). Comparison of the text with that of the 1812 English original reveals that the Italian version is complete in two volumes (not three, as stated by Bolton and Fullmer). In 1814 two Italian translations appeared from Milan, both entitled *Elementi di Filosofia Chimica*. One translation was by G. Moretti and G. Primo, and the other was by "Sig. Dott. G.," with notes by L. V. Brugnatelli and P. Configliachi. No priority of publication of these 1814 editions has been established. The present (Naples, 1816) volume may be the second edition of the Dr. "G" translation, or it may be the second issue of the Milan 1814 edition with a reset title page. There are no dated watermarks in the paper of this Naples edition. The three Italian editions are very rare, and June Z. Fullmer marks them "not seen" in her bibliography of Davy. Not in the usual chemical bibliographies. (Bolton, *First Supplement*, 140; Fullmer, 68)

DAVY, Sir Humphry

Elements of Chemical Philosophy. . . . Part I. Vol. I. London: Printed for J. Johnson and Co. 1812.

First edition (all published). 8vo. xiv, (2), 511 pp., 1 leaf (advertisement of *Researches . . . concerning nitrous oxide*, 1800). With 12 copperplates (Lowry sculpt.). Complete with errata leaf, and the rare Appendix (pp. 507–514, mispaginated [3], 507–511), which is missing in most copies. An exceptionally fine copy, in contemporary marbled boards, modern calf back, original crimson label, gilt. Neat signature in ink ("J. Bywater, Liverpool") in an early hand on title page.

A CLASSIC BOOK, published when Davy was in his prime and carrying out his best work. Dedicated to his wife, the manuscript of the dedication is in the John Fulton collection in the History of Medicine Library, Yale University. Described by Zeitlinger (Sotheran) as "one of the earliest connected treatises on physical chemistry," it goes much further and covers a great deal of inorganic chemistry, including the isolation (by Davy) of the alkali and alkaline earth metals. The book is to some extent speculative, and Davy develops his electrochemical theory herein. Translated into French (1813), German (1814), and Italian (1814:

two different translations); an American edition also appeared (Philadelphia and New York, 1812). Not in Morgan, Smith, Waller, etc. (Bolton, 390; D.S.B., III, 603; Duveen, 160; Edelstein, 698; Ferchl, 116; Fullmer, 67; Honeyman, 834; Partington, IV, 35; Poggendorff, I, 528; Sondheimer, 409; Sotheran, Cat. 666 [1906], 974; Thornton & Tully, 216; Watt, I, 289n; Wellcome, II, 436)

DAVY, Sir Humphry

Fragmentary Remains, Literary and Scientific, of Sir Humphry Davy, Bart. . . . With a sketch of his life and selections from his correspondence. Edited by his brother, John Davy, M.D., F.R.S.

London: John Churchill. 1858.

First edition. 8vo. viii, 330 pp. An exceptionally fine copy in pristine condition, bound in contemporary full calf, spine gilt-ruled, crimson morocco label, gilt, by Hodgson, Liverpool. With unidentified engraved ducal bookplate on front pastedown endpaper.

PUBLISHED AS “a loving regard for the memory of one to whom I owe so much, coupled with the belief that these Remains tend further to develop his genuine character” (preface). Most of the materials came into John Davy’s possession after the death of Lady Davy in May 1855. The book forms a necessary supplement to the *Memoirs* published in 1839–40. Scarce. (Blocker, 102; Bolton, 192; D.S.B., III, 604; Edelstein, 709; Ferchl, 116; Fullmer, 17; Morgan, 210; Partington, IV, 34; Smith, 140; Sondheimer, 417; Sotheran, Cat. 666 [1906], 976)

DAVY, Sir Humphry

Humphry Davy Poet and Philosopher. By T. E. Thorpe, LL.D., F.R.S.

New York: Macmillan & Co. 1896.

First edition. 8vo. 240 pp. With mezzotint frontispiece portrait (Davy at 45, from a painting by Jackson), and several illustrations in text. Very good copy in original publisher’s gilt-lettered green cloth.

A USEFUL WORK containing information not included in the biographies by J. A. Paris and John Davy. One of the volumes in the Century Science series, edited by Sir Henry E. Roscoe. Not in Duveen, Edelstein, Ferchl, Morgan, Waller, etc. (Bolton, *First Supplement*, 49; Fullmer, 17; Partington, IV, 34 [1901 edition only]; Smith, 482; Sondheimer, 420; Thornton & Tully, 216)

DAVY, Sir Humphry

The Life of Sir Humphry Davy, Bart., LL.D. . . . By John Ayrton Paris, . . .

London: Henry Colburn and Richard Bentley, New Burlington Street. 1831.

First quarto edition. xv, (1), 547, (1) pp. Engraved portrait frontispiece of Davy (by W. H. Worthington after a painting by Sir Thomas Lawrence), folding plate (facsimile of Davy’s handwriting, engraved by J. Swaine), and several text woodcuts. Extra-illustrated with engravings of Davy, Davies Gilbert, and William Hyde Wollaston (at pp. 370, 448, and 510), each with a leaf of biography (from another work). Fine copy, uncut with wide margins, in contemporary cloth, rebacked, with original spine laid down.

THE FIRST printing of this major biography in quarto format, published the same year as the octavo edition in two volumes, which contains exactly the same text. There is no evidence of the priority of the rarer quarto printing over the two-volume edition in octavo, though the illustrations (which are identical in both printings) seem better fitted to the quarto edition. It is the first full-scale biography of Davy, written by the physician and scientist J. A. Paris (1785–1856), who knew him intimately. The book ends with “A sketch of the history of chemical science, with a view to exhibit the revolutions produced in its doctrines by the discoveries of Sir Humphry Davy” (pp. 519–544), including a list of Davy’s publications. (Blocker, 302; Bolton, 192; D.S.B., III, 604; Duveen, 161; Edelstein, 710; Ferchl, 394; Waller, 16719)

DAVY, Sir Humphry

The Life of Sir Humphry Davy, Bart., LL.D. Late President of the Royal Society, Foreign Associate of the Royal Institute of France, &c. . . . By John Ayrton Paris, . . .

London: Henry Colburn and Richard Bentley. 1831.

First edition. 2 vols., 8vo. I: xvi, 416 pp. With engraved frontispiece portrait of Davy (by W. H. Worthington after a painting by Sir Thomas Lawrence). II: viii, 463, (1) pp. With folding plate (facsimile of Davy’s handwriting, engraved by J. Swaine) and several woodcuts in text. An exceptionally fine, crisp copy, in original gilt-ruled morocco, spines gilt, black morocco labels.

THIS FIRST full-size biography of Davy was written by the physician and scientist J. A. Paris (1785–1856), one of the chief authorities on Davy’s life and work. The book ends with “A sketch of the history of chemical science, with a view to exhibit the revolutions produced in its doctrines by the discoveries of Sir Humphry Davy” (II, 415–456), including a list of Davy’s publications. A one-volume edition in quarto format appeared the same year as this octavo edition (see Blocker, 302; Bolton, 192; Duveen, 161; Edelstein,

710; Thornton & Tully, 216; Waller, 16719). The quarto edition was probably published at the same time as, or a short while after, the present octavo edition. (D.S.B., III, 604; Fullmer, 17; Morgan, 213; Osler, 7687; Partington, IV, 34; Smith, 374; Sondheimer, 419)

DAVY, Sir Humphry

Memoirs of the Life of Sir Humphry Davy, Bart., LL.D., F.R.S. . . . By his brother, John Davy, M.D., F.R.S. . . .
London: Printed for Longman, Rees, Orme, Brown, Green, & Longman. 1836.

First edition. 2 vols., 8vo. I: xii, 507, (1) pp. With fine frontispiece mezzotint portrait of Davy at age 23 (by C. Turner after a painting by H. Howard). II: vii, (1), 419, (1) pp. An excellent copy in contemporary gilt-ruled calf, spines richly gilt in compartments, red and green morocco labels, gilt.

JOHN DAVY (1790–1868), twelve years younger than his brother Humphry, was an eminent physiologist and anatomist. A constant supporter of his brother in the scientific controversies of the day, he includes many previously unpublished letters in this authoritative biography and draws freely upon Humphry's private diary. In addition, some scientific papers not published previously are included. "This work was written in Malta, and was completed in the summer of 1832" (advertisement). In his preface, John Davy takes John Ayrton Paris to task for his biography of Sir Humphry Davy (London, 1831), as it contains material that is "objectionable, many things were incorrect, and that the general tone and tendency of it were to lower the character of my brother in public estimation; not, indeed, as a man of science, and an original inquirer, but as a man and a philosopher." Not in Cushing, Duveen, Morgan, Poggendorff, Waller, etc. (Blocker, 102; Bolton, 192; D.S.B., III, 604; Edelstein, 711; Ferchl, 116; Fullmer, 17; Osler, 1316; Partington, IV, 34; Smith, 141; Sondheimer, 421; Sotheran, Cat. 702 [1910], 7205 ["Scarce"]; Thornton & Tully, 216; Wellcome, II, 437)

DAVY, Sir Humphry

Memoirs of the Life of Sir Humphry Davy, Bart., LL.D., F.R.S. . . . By his Brother, John Davy, M.D., F.R.S. . . .
London: Printed for Longman, Rees, Orme, Brown, Green, & Longman. 1836.

First edition. 2 vols., 8vo. I: xii, 507, (1) pp. With fine frontispiece mezzotint portrait of Davy at age 23 (by C. Turner after a painting by H. Howard). II: vii, (1), 419, (1) pp. Engraved frontispiece portrait of Davy (by Thomson after a painting by Lonsdale). An exceptionally fine copy, title edges gilt, fore- and lower edges uncut, in three-quarter blue levant morocco, cloth sides with large gilt armorial crest and motto

of Davy, by Bayntun of Bath. Extra-illustrated with 48 contemporary engraved plates (10 in color). An autographed letter by Davy is inserted in volume I (3 pp., 4to.), dated Woburn, 20 June 1810. A small tear in the letter repaired, affecting 3 words of text.

A UNIQUE AND remarkable copy, containing twenty-three engraved portraits of Davy's contemporaries and twenty-five engraved views of the places in Cornwall where he lived and worked. Ten of the plates of Cornish views are colored by a contemporary hand. The letter in Davy's handwriting is a testimonial to the work of Richard Pearse, the son of Richard Oxnam of Penzance, who had been working as a pupil under Davy.

DAVY, Sir Humphry

On a Combination of Oxymuriatic Gas and Oxygene Gas. . . .
London: Printed by W. Bulmer and Co. Cleveland-Row, St. James's. 1811.

First separate edition (offprint from *The Philosophical Transactions of the Royal Society*). 4to. 1 leaf, 8 pp. Good copy, uncut with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated, with original blue wrappers bound in. Presentation copy, inscribed in ink by Davy on title page: "Sir J. Hale Bart. M.P. from the Author."

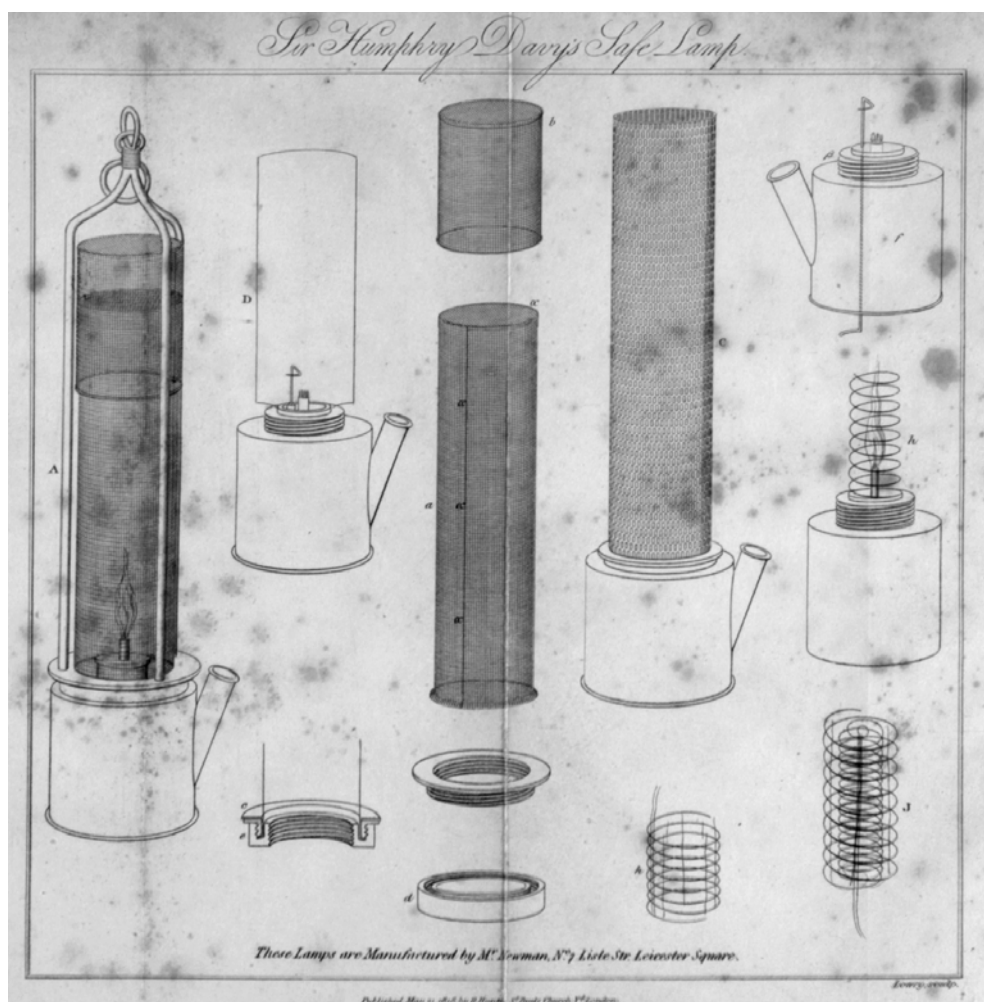
AN IMPORTANT paper in which Davy describes the preparation and physical and chemical properties of a new gas, named by him "euchlorine," which was produced by the reaction of potassium chlorate with hydrochloric acid. Euchlorine, a yellow gas that is in fact a mixture of chlorine dioxide (ClO_2) and chlorine (Cl_2), is unstable and explodes on heating to give chlorine and oxygen. Davy shows that (on explosion of euchlorine) the chlorine and oxygen are "conformable to the laws of combination of gaseous fluids, so ably illustrated by M. Gay-Lussac, and to the theory of definite proportions." This paper was later published as *Alembic Club Reprint, No. 9*. Very rare, one of only about twenty or thirty copies published prior to its appearance in the *Philosophical Transactions* (1811, pp. 155–162), with the cautionary statement by W. H. Wollaston on verso of title page. (Bolton, *First Supplement*, 140; Edelstein, 702; Fullmer, 64; Partington, IV, 56–57; Poggendorff, I, 529; Watt, I, 289p)

DAVY, Sir Humphry

On the Safety Lamp for Coal Miners; with some Researches on Flame. . . .

London: Printed for R. Hunter. 1818.

First edition. 8vo. viii, 148 pp. With folding engraved frontispiece (by Lowry) depicting the "Safe Lamp" and its component



Davy, Humphry. On the Safety Lamp for Coal Miners. London, 1818.

parts. Minor foxing of frontispiece (as usual); otherwise fine copy with wide margins, uncut, in gilt-ruled speckled tan half calf antique, marbled boards, maroon label, spine dated.

THE FIRST full account of the wire-gauze safety lamp invented by Davy, including a summary of the researches made by him since 1815 on the inflammability and explosive properties of firedamp (methane, CH₄) found in coal mines. Davy's invention was the result of a series of brilliant investigations, assisted by Faraday, on the nature of flame and its propagation through fine-meshed wire screens. Davy was the first to demonstrate, and explain why, a cylinder of fine-mesh wire gauze surrounding the flame of the lamp afforded protection from explosion. After his safety lamp came into common use, explosions in coal mines were far less frequent, resulting in the greatly increased production of coal and the saving of the lives of thousands of miners. "One of the earliest and most dramatic illustrations of the aid that science could offer to the rapidly developing industries of England" (Professor L. Pierce Williams [quoted in Hoover]). A classic work and a milestone of applied chemistry. Not in D.S.B., Morgan, Smith, Wellcome, etc. (Blocker, 102; Bolton, 391; Duveen, 645; Edelstein, 3822; Ferchl, 116; Fullmer, 85; Honeyman, 836; Hoover, 255; Knight, 120; Osler, 1313; Partington, IV, 36, 62–70; Poggendorff, I, 528; Sondheimer, 412; Sotheran, Cat. 702 [1910], 7203 ["Scarce"]; Thornton & Tully, 216; Waller, 19554)

DAVY, Sir Humphry

On the Safety Lamp for preventing Explosions in Mines, Houses lighted by Gas, Spirit Warehouses, or Magazines in Ships, &c. With some Researches on Flame. . . .

London: Printed for R. Hunter. 1825.

First edition, second issue. 8vo. viii, 152, (2) pp. With folding engraved plate (by Lowry), identical to that of the first issue. Fine, crisp copy, uncut, with wide margins, in gilt-ruled half calf antique, marbled boards, maroon morocco label, gilt.

THE SHEETS of the first issue (1818) are here reissued with a reset title page. "This work was published in 1818, but a part of the edition having remained unsold, . . . I have thought it might assist the cause of humanity, to advertise the book a second time. I have added to it . . . additional paragraphs which contain some new facts and some practical results, connected with the use of the Safety Lamp; most of the last occurred to me during journeys that I have made, for the purpose of introducing this invention into the principal mines of Europe, in which inflammable air is found" (Advertisement, dated 20 March 1825). The appendix (pp. 147–153), which has been reprinted and enlarged, refers to the researches of Gay-Lussac and Humboldt (on explo-

sions of mixtures of hydrogen and oxygen), of Dobereiner (on combustion of finely divided metals in air), on the use of the safety lamp in the manufacture of coal gas, etc. Very scarce. Not in D.S.B., Thornton & Tully, Waller, Wellcome, or the usual bibliographies. (Blocker, 102; Bolton, 391; Fullmer, 85; Partington, IV, 36; Sotheran, Cat. 666 [1906], 977)

DAVY, Sir Humphry

On Some New Phenomena of Chemical Changes produced by Electricity, particularly the Decomposition of the Fixed Alkalies, and the Exhibition of the New Substances which constitute their Bases; and on the General Nature of Alkaline Bodies. . . .

London: Printed by W. Bulmer and Co. Cleveland-Row, St. James's. 1808.

First separate edition (offprint from *Philosophical Transactions of the Royal Society*). 4to. 1 leaf, 44 pp. Pristine copy, unbound with wide margins, preserved in a fine cloth-covered folder with gilt-lettered crimson morocco label. Presentation copy to Peter Mark Roget (1779–1869), author of the celebrated *Thesaurus* (1852) and other works. Inscribed in ink by Davy on title page: "For Dr. Roget from the Author."

ONE OF the great classic researches in chemistry, in which Davy announced in this, his second Bakerian lecture, the isolation of metallic potassium and sodium by the electrolytic decomposition of their fused oxides. A printed statement by W. H. Wollaston on the verso of the title page indicates that offprints were published prior to the part of the *Philosophical Transactions* (1808, pp. 333–370) in which they appeared. A momentous work, the publication of which created an extraordinary sensation: that potash and soda contained hitherto unexpected metals. Usually about twenty or thirty offprints were printed for Davy to distribute to his friends, and this copy has a most distinguished provenance. Davy's paper was later published as an *Alembic Club Reprint* and as an *Ostwald Klassiker*. (Cushing, D74; D.S.B., III, 601–602; Ekelöf, 54; Fullmer, 50; Partington, IV, 45–47; Poggendorff, I, 529; Smith, 140; Watt, I, 289o; Wheeler Gift, 2515)

DAVY, Sir Humphry

Outlines of a Course of Lectures on Chemical Philosophy; . . .

London: From the Press of the Royal Institution of Great Britain. 1804.

First edition. Sm. 4to. 2 leaves, 54 pp., 1 leaf (blank). Very good copy, in nineteenth-century pebbled cloth, spine gilt-lettered. Bound with: Sadler, John, *An explanation of terms used in chemistry* (London, 1804).

THE SYLLABUS for one of the earliest courses of lectures delivered by Davy as professor of chemistry at the Royal Institution when he was only twenty-six years old. The advertisement is dated 12 January 1804. Divided into two parts, the course comprises I) "Chemistry, in its connexion with natural operations" (pp. 3–24); and II) "Chemistry, in its connexion with artificial operations" (pp. 25–54). Partington states that the booklet by Sadler, who was a laboratory assistant under Davy, was issued with this work. One of the rarest of Davy's publications. Not in Cushing, D.S.B., Ferchl, Poggendorff, Waller, Watt, Wellcome, or the usual chemical bibliographies. (Bolton, 391; Edelstein, 703; Fullmer, 46; Partington, IV, 35; Sondheimer, 406; Sotheran, Cat. 832 [1932], 5163)

DAVY, Sir Humphry

Outlines of a Course of Lectures on the Chemistry of Agriculture. To be delivered before the Board of Agriculture, 1803. London: Printed by B. McMillan, Bow-Street, Covent-Garden, Printer to His Royal Highness The Prince of Wales. 1803.

First edition. 4to. (in 2s). 1 leaf, 14 pp. Mint copy in green quarter morocco antique, marbled boards, spine gilt-lettered.

IN 1802 DAVY was invited to give lectures to the Board of Agriculture. "The following Pages contain the Outlines of a Course of Lectures on the Connexion of Chemistry with Agriculture, and the Phaenomena of Vegetation . . . The First Lecture will be given on Tuesday, May 10, at Twelve at Noon, and the other Lectures on Fridays and Tuesdays, at the same Hour" (advertisement, dated 6 May 1803). In this, Davy's earliest work on agricultural chemistry, he summarizes the contents of his first six lectures, outlining the relationship of the chemical composition of soils and the best conditions for the growth of plants. Davy continued to give lectures to the Board of Agriculture until 1812. He then gathered the information together and published it in greatly expanded form in his celebrated *Elements of Agricultural Chemistry* (London, 1813), the preface of which is dated 21 March 1813. Writing in 1969, Davy's bibliographer, June Z. Fullmer, states: "Only one copy, that in the collection of the late John Fulton of Yale, has come to light. Doubtless other copies exist, for John Paris, Davy's early and 'official' biographer, had access to one." Of this extremely rare work, the present copy is only the second to have come to light. (Fullmer, 9, 43)

DAVY, Sir Humphry

Researches, Chemical and Philosophical: chiefly concerning Nitrous Oxide, or Dephlogisticated Nitrous Air, and its Respiration. . . .

London: Printed for J. Johnson. 1800.

First edition. 8vo. xvi, (2), 580 pp., 1 leaf (errata, verso blank). With engraved plate (Lowry sculpt.), and signature Kk7 uncanceled. Very fine, crisp copy on bluish paper, in original tree calf, rebacked, green morocco label. From the library of Francis Sibson (1814–1876), professor at St. Mary's Hospital, London, and distinguished physician.

"ONE OF the most remarkable books in the history of science" (Fulton). The first important work by Davy (1778–1829), published when he was only twenty-two years old. Director of the Medical Pneumatic Institution at twenty-one, he devised methods for producing nitrous oxide (N₂O, "laughing gas") by heating ammonium nitrate, also by passing nitric oxide (NO) through sodium sulphite solution. The plate shows his inhalation apparatus. Davy states (p. 556): "As nitrous oxide . . . appears capable of destroying physical pain, it may probably be used with advantage during surgical operations." His suggestion was not adopted until 1844. This copy has an important provenance, as Francis Sibson "published a number of papers (1835–48) on the physiology and pathology of respiration which attracted attention" (*Munk's Roll*, IV, 72). A very early issue without the advertisement on verso of errata leaf and without the half title found in later issues. Rare. (Blake, 110; Blocker, 102; Bolton, 391; Cartwright, *English Pioneers of Anaesthesia*, 1952, p. 114; Cushing, D78; Dibner, *Heralds of Science*, 128; D.S.B., III, 600; Duveen, 160; Edelstein, 704; Ferchl, 116; Fullmer, 29; Fulton, *Surgical Anesthesia*, I, 9; Garrison-Morton, 5646; Honeyman, 830; Knight, 129; Osler, 1382; Partington, IV, 35; Poggendorff, I, 528; Reynolds, 1204; Robinson, *Victory over Pain*, 1946, p. 53; Smith, 140; Sondheimer, 405; Thornton & Tully, 215; Waller, 11113; Waring, 580; Watt, I, 289m; Wellcome, II, 436)

DAVY, Sir Humphry

Salmonia: or Days of Fly Fishing. In a Series of Conversations. With some Account of the Habits of Fishes belonging to the Genus Salmo. By an Angler. . . .

London: John Murray. 1828.

First edition. 8vo. viii, 273, (1) pp. With 3 engraved plates of flies and numerous fine woodcuts of fish in text. An excellent copy in contemporary gilt-ruled polished calf, spine gilt, blue morocco label. From the Radcliffe Library, Oxford, with armorial bookplate and release stamp.

DEDICATED TO the physician and mineralogist William Babington, F.R.S. (1756–1833), Davy's friend of more than a quarter of a century. This charming work was written during a period of ill health and summarizes his lifelong passion for fishing. It is presented in dialogue form between Halieus (an accomplished fly fisher), Ornither (a less accomplished angler), Poietes (an amateur at fishing), and Physicus (a novice at fishing). Descriptions are limited to different varieties of salmon, which are illustrated from Davy's own drawings. "*Salmonia* ranks high in the scale of Angling literature" (Westwood and Satchell). From Davy's "last journeys came *Salmonia* and *Consolations in Travel*, dialogues in which Davy sought to communicate his world views" (D.S.B.). Scarce, not seen by Fullmer. (D.S.B., III, 604; Edelstein, 3823; Fullmer, 97; Partington, V, 36; Poggenдорff, I, 528; Thornton & Tully, 216; Westwood & Satchell, 77)

DAVY, Sir Humphry

Six Discourses delivered before the Royal Society at their Anniversary Meetings, on the Award of the Royal and Copley Medals; preceded by an Address to the Society, on the Progress and Prospects of Science; by Sir Humphry Davy . . . London: John Murray, Albemarle-Street. 1827.

First edition. 4to. xi, (1), 15, (1), 17, (1), 21, (1), 21, (1), 19, (1), 19, (1), 30 pp. Fine, wide-margined copy, in dark-blue buckram, spine gilt-lettered and dated. Withdrawal stamp of the University of London Library on verso of title.

DAVY'S *Discourses* from 1820–26, during his term as president of the Royal Society. A valuable work, it includes the awarding of the Royal and Copley medals to many of the fellows for their important contributions: e.g., J. F. W. Herschel, Edward Sabine, John Pond, Peter Barlow, Arago, and John Dalton. Some of these great scientists Davy had known personally. John Davy (*Phil. Mag.*, 28 [1864], 480–484) said that Davy "received 500 guineas for the copy-right of the book from Murray, and that only 850 copies were printed" (Fullmer). Two states of pagination are known. One (as here) has each section separately paginated. The other state has continuous pagination. No page number appears under the word *page* in the table of contents in this copy. Those copies with continuous pagination have page numbers entered in the contents. Otherwise the two states are identical. Fullmer does not mention any copy in which the sections are separately paginated. (Bolton, 391; Cole, 350; Edelstein, 705; Fullmer, 95; Knight, 137; Osler, 1314; Partington, IV, 36; Poggenдорff, I, 528; Roller & Goodman, I, 298; Wellcome, II, 437; Wheeler Gift, 829)

DAVY, Sir Humphry

Six Discourses delivered before the Royal Society at their Anniversary Meetings, on the Award of the Royal and Copley Medals . . .

London: John Murray, Albemarle-Street. 1827.

First edition. 4to. xi, (1), 148 pp. Occasional minor foxing; otherwise very good, uncut, wide-margined copy on thick paper; in quarter calf antique, marbled boards, red leather label, blind-stamped spine with floral devices in compartments, dated at foot. Bound in an unsigned manuscript leaf written on both sides, in Davy's hand. An important association copy.

A COPY OF the *Discourses* with continuous pagination, this state being otherwise identical page for page to the state having each section separately paginated. The manuscript by Davy is a description of the brief tenure of his friend William Hyde Wollaston, Davy's predecessor as president of the Royal Society. The manuscript transcribes some of Wollaston's remarks upon presenting the Copley medal to Hans Christian Oersted in 1820 for his achievements in electromagnetism.

DAVY, Sir Humphry

A Syllabus of a Course of Lectures on Chemistry, delivered at the Royal Institution of Great Britain.

London: From the Press of the Royal Institution of Great Britain. 1802.

First edition. 8vo. 3 leaves, 91, (1) pp. Fine copy, uncut, in speckled half calf antique, marbled boards, red morocco label, gilt, spine dated, with original printed wrappers bound in.

A SYLLABUS OF the very popular lectures at the Royal Institution, delivered by Davy on Thursdays and Saturdays at 2 p.m. and on Tuesdays at 8 p.m. The lectures comprised I) "The chemistry of ponderable substances"; II) "The chemistry of imponderable substances"; and III) "The chemistry of the arts" (e.g., agriculture, bleaching and dyeing, food and drink, glass and porcelain, heat and light, metallurgy, and tanning). The advertisement is dated 5 January 1802. "Of special importance in connection with the classification of the elements" (Duveen). "Davy's lectures interested cultural and influential auditors, including women, and aroused an appreciation of science and its utility in agriculture and commerce. . . . The tradition which he established has continued, through Faraday, to the present day" (Partington). (Bolton, 391; Cushing, D79; Duveen, 160; Edelstein, 707; Ferchl, 116; Fullmer, 34; Partington, IV, 35; Poggenдорff, I, 528; Smith, 140; Sotheran, Cat. 832 [1932], 5168 ["Scarce"]; Thornton & Tully, 216; Watt, I, 289m; Wellcome, II, 436)

DAVY, Sir Humphry

The Wonders of Science; or, young Humphry Davy (the Cornish apothecary's boy, who taught himself natural philosophy, and eventually became President of the Royal Society). The Life of a Wonderful Boy written for Boys. By Henry Mayhew, . . .
London: David Bogue. 1855.

First edition. 8vo. xvi, 424 pp., 8 leaves (advertisements with woodcut illustrations). Woodcut frontispiece, 7 full-page woodcut plates (facing pp. 21, 60, 137, 269, 295, 302, 343), and many large and small woodcuts in text. A remarkably fresh, crisp, uncut copy, in original publisher's blind-stamped blue cloth, spine richly gilt (depicting Davy's safety lamp and other apparatus).

AN INSTRUCTIVE study on the boyhood of Davy, dedicated to Michael Faraday, written to inspire boys of the mid-nineteenth century. The plates are by Sir John Gilbert (1817–1897; see D.N.B.). The author, Henry Mayhew (1812–1887), an originator of *Punch* (1841), started philanthropic journalism on the subject of the London poor (see D.N.B.). An American edition (New York, 1856; Smith, 320) and another English edition (London, 1862; Partington, IV, 34) appeared. Very few copies have survived, especially in such fine condition. Not in the usual bibliographies. (Edelstein, 713; Fullmer, 17)

DAVY, John

Lectures on the study of chemistry, in connexion with the atmosphere, the earth, and the ocean: and discourses on agriculture; with introductions on the present state of the West Indies, and on the agricultural societies of Barbadoes.
London: Longman, Brown, Green, and Longmans. 1849.

First edition. 8vo. Pp. xxv, (2), 291, (1). Fine, crisp copy, in the original publisher's blind-stamped pebbled brown cloth, spine gilt-lettered.

DEDICATED "To the Managers of the 'Reid School of Practical Chemistry' of Barbadoes," this work is by the brother of Sir Humphry Davy (1778–1829). John Davy (1790–1868), chemist, anatomist, and physiologist, received his M.D. from Edinburgh in 1814, and was elected F.R.S. in 1834. He became an army surgeon and inspector-general of army hospitals. Davy was very interested in conditions in other lands, and published works on science and travel, including *An Account of the Interior of Ceylon* (1821) and *Physiological Researches* (1863). The present work is divided into two distinct sections. Pages 1–128 comprise four lectures on chemistry, its general utility to man, the atmosphere, the earth, and the ocean. Pages 129–291 comprise five discourses delivered before the General Agricultural

Society of Barbados during the years 1846, 1847, and 1848. The discourses cover agriculture and its scientific relations, soils of Barbados in connection with sugar cane production, manures and their chemical action, drainage and irrigation, and the making of sugar and rum. In addition to their agricultural interest, these discourses contain much of chemical importance. Surprisingly, C. A. Browne does not mention this important agricultural work in his *Source Book of Agricultural Chemistry* (1944). It is apparently rare, as it is not mentioned by Caillet, Duveen, Ferchl, Knight, Morgan, Osler, Partington, Poggendorff, Smith, Thornton & Tully, Waller, etc. (Bolton, 392; Wellcome, II, 437)

DAVY, John

Miscellaneous Observations on the Blood. . . . From the Transactions of the Royal Society of Edinburgh, Vol. XXIV.
Edinburgh: Printed for the Society by Neill and Company. 1865.

First separate edition. Folio. 1 leaf, pp. 19–35. Fine copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated, with original wrappers bound in. Presentation copy, inscribed in ink on title page: "To William Francis Esq. with the compliments of the author."

A RARE OFFPRINT that contains much of interest on the chemistry of the blood of humans and animals (e.g., birds, frogs, fish). Experiments are described on the effects produced by mixing ammoniacal solutions with blood. Davy concludes the paper by stating that "it must be confessed that . . . the theory of the coagulation of the blood . . . is still an unsolved problem." The recipient of this copy, the noted chemist William Francis (1817–1904), edited *The Chemical Gazette, or Journal of Practical Chemistry in all its Applications to Pharmacy, Arts and Manufactures* (1842–1859), which was then incorporated in *The Chemical News* (1859–1932).

DAVY, John

Physiological researches.
London: Williams and Norgate. 1863.

First edition. 8vo. viii, 448 pp. Good copy in contemporary brown cloth, printed paper label on spine.

JOHN DAVY (1790–1868), physiologist, anatomist, and brother of Sir Humphry Davy, received his M.D. at Edinburgh, 1814. He championed his brother's discovery of the constitution of hydrochloric acid and was elected F.R.S. in 1834. As army surgeon and inspector-general of army hospitals, he traveled widely and published *An Account of the Interior of Ceylon*, 1821. He also published other works on

science and travel, as well as *Discourses on Agriculture* in 1849. The present work "is composed for the most part of papers which . . . have been published in scientific journals" (preface). In addition, there are some papers that appear here for the first time. Although much of the work concerns medicine, natural history, botany, and related subjects, there is also a great deal on chemistry, biochemistry, and biophysics. Of particular interest are discussions of animal heat and its production, the chemicals contained in the excrement of spiders and scorpions, the colostrum of the cow, albumen, toad venom, invertebrate blood, the biochemistry of the blood coagulation, the action of quicklime on animal matter, etc. Very scarce. Not mentioned by Bolton, Cole, Cushing, Duveen, Ferchl, Garrison-Morton, Knight, Morgan, Partington, Poggendorff, Smith, Thornton & Tully, Waller, et al. (Osler, 2429)

DEANE, Edmund

Spadacrene Anglica. Or, the English Spaw-Fountaine. Being a briefe treatise of the acide, or tart fountaine in the Forest of Knaresborow, in the West-Riding of Yorkshire. As also a relation of other medicinall waters in the said forest. By Edmund Deane, Dr. in Physicke, Oxon. dwelling in the City of Yorke. London: Printed for John Grismand: and are to be sold by Richard Foster, neere the Minster gate in Yorke. 1626.

First edition. 4to. 2 leaves, 32 pp. Fore-edge of title slightly frayed and bottom rule shaved; otherwise very good copy in calf antique, blind-stamped borders on covers, black morocco label gilt. Small release stamp of Wellcome Library on verso of title leaf.

DEANE (1572–1640), a famous York physician and iatrochemist (M.D., Merton College, Oxford, 1608), published his "*Spadacrene Anglica* . . . a model of lucid and logical exposition. It provides a quaint and interesting epitome of the medical opinion of the day, but it is of more special interest as the source for the earliest history of the Harrogate waters" (James Rutherford). Chemical tests used to determine the composition of the waters are described. Deane concluded that the five wells are comparable or medically superior to the waters of Spa. "A learned and ingenious treatise" (Nicholson [Lowndes]). An extremely rare book, the text of which was reprinted by Dr. James Rutherford (London, 1922) with a biography of Deane. Further editions appeared in 1649, 1654, and 1736, all of great rarity. Ferguson (II, 144) gives a brief biography of Deane, who also edited the alchemical works of Samuel Norton. Not in the usual early chemical bibliographies. The only copy located by Bishop in America is that in the College of Physicians Library, Philadelphia. (Bolton, *First Supplement*, 140; S.T.C., 6441; Waring, 791; Watt, I, 292r; Wellcome, I, 1725)

DEANE, Edmund

Spadacrene Anglica, The English Spaw, or, The Glory of Knaresborough, springing from severall famous fountains there adjacent, called the Vitrioll, Sulphurous, and dropping Wells; and also other Minerall Waters. Their nature, physicall use, situation, and many admirable cures being exactly exprest in the subsequent treatise of the learned Dr. Dean, and the sedulous observations of the ingenious Michael Stanhope Esquire. Wherein it is proved by reason and experience, that the Vitrioline Fountain is equall (and not inferiour) to the Germane Spaw. . . .

Published (with other additions) by John Taylor Apothecary in York. And there printed by Tho. Broad, being to be sold in his Shop at the lower end of Stonegate, near to Common-Hall-Gates. 1649.

Second (first York) edition. 4to. 4 leaves, 39 pp. Woodcut title border, headpieces and initials. Some lower edges shaved or cropped affecting catchwords and text. Blank leaf (A1) before title, and page 39 lacking; otherwise good copy in eighteenth-century half calf, marbled boards, maroon morocco label gilt.

IT IS EVIDENT from Taylor's dedication that the 1626 edition was rare by 1649: "The importunate desires of my friends has forced me to re-print this little treatise of Dr. Deans *Spadacrene Anglica*, which the vacillation of these distracted & ruinous times had almost lost, and obliterated. To this of Dr. Deans I have added the observations of Michael Stanhope, Esquire, which I have excerpted forth of his two books of the Spaw." In 1626 and 1632, respectively, Stanhope published *Newes out of York-shire* and *Cures without care* (S.T.P. 23226 and 23227), which are here abridged as *A relation of certain particular cures, done by vertue of minerall waters, neare Knaresborow*. Extremely rare, only two other copies have been located (British Library, Guildhall, London; see R. G. Neville, *The Book Collector*, 4 [1955], 170–171). New Wing locates another copy in the National Library of Medicine. A third edition appeared (12mo., 1654; not in Wing), and a fourth (Leeds, 1736). (Waring, 791; Wing, D491)

DEANE, Edmund

Spadacrene Anglica: or, The English Spaw. Being an account of the situation, nature, physical use, and admirable cures, performed by the waters of Harrogate, and parts adjacent. By the late learned and eminent physician, Dr. Dean, of York. And also the observations of the ingenious Dr. Stanhope. Wherein it is proved by reason and experience, that the Vitrioline Fountain is equal to the German Spaw. To which are added, some observations (collected from modern authors) of the nature, virtues, and manner of using the sweet and sulphur waters of Harrogate.

Leeds: Printed by James Lister, for John Swale, Bookseller in Leeds, and John Ross, Grocer in Knaresbrough, and sold by him at his shop in Harrogate. 1736.

Fourth (first Leeds) edition. Sm. 4to. 2 leaves (half title, title), 41, (1) pp. Fine copy in eighteenth-century maroon quarter morocco, marbled boards, spine gilt-lettered and dated.

THE FINAL and most complete edition of this important work, being an exact reprint of the 1649 edition. *Some observations (collected from modern authors) of the nature . . . of . . . the . . . waters at Harrogate* (pp. 37–41) first appears in this edition. Extremely rare. (R. G. Neville, *The Book Collector*, 4 [1955], 170–171; Smith, 464; Watt, I, 292r)

DE ARTE CHEMICA

De Arte Chemica Libri Duo, quibus omnia, quae ad lapidis sive pulveris philosophici compositionem usumque spectant, breviter & aperte traduntur. Quorum prior de veritate & antiquitate artis Chemicae & pulveris sive medicinae Philosophorum vel auri potabilis Testimonia & Theoremata ex variis autoribus per Robertum Vallensem selecta. Posterior. Ioan. Chrysippi Faniani de arte metallica metamorphoseos liber singularis. Item de Iure Artis Alchemiae veterum auctorum & praesertim Iurisconsultorum Iudicia & responsa ad quaestionem An Alchemia sit ars legitima. . . .

Montisbeliard (Montbéliard): Apud Iacobum Foillet, 1602.

First collected edition, second issue. 8vo. 51, (1) pp., 3 leaves, 67, (1) pp. Woodcut on title. Few side-notes shaved, and several neat contemporary annotations in ink; otherwise a fine copy in speckled calf antique, spine gilt-lettered and dated.

THE FIRST issue appeared in 1601, but there is no difference between them except the date. “The tract by Robertus Vallensis . . . contains the first attempt at a history of chemistry” (Duveen). The *De arte metallica* (first edition: Paris, 1560) of Johannes Chrysippus Fanianus (fl. 1559), a Basel lawyer, discusses the transmutation of metals, and in the section “De iure artis alchemiae” he covers the legal aspects of alchemy. Nothing is known of Vallensis (fl. 1561), ex-

cept that he was a practitioner of medicine and chemistry (signature A2v). The *De veritate . . . chemicæ* first appeared at Paris (1561) and was again reprinted (Leyden, 1593). The present edition is the first to contain the tracts by Fanianus. Patterson, Loudon, and Cook (*Annals of Science* [1948], 6, 1–23) translated the *De veritate* of Vallensis into English and list the editions of 1561, 1593, and those in the *Theatrum Chemicum* (1602, 1613, and 1659), but did not know of the present edition. Very rare. Not in most of the early chemical bibliographies. (Duveen, 28–29; Ferguson, II, 497 [not in Young Coll.]; Ferguson Coll., 725; Neu, 1101; Sotheran, Cat. 800 [1926], 10082 [“Rare”]; Wellcome, I, 1723)

DECREMPS, Henri

Diagrammes Chimiques, ou Recueil de 360 Figures (sur 112 planches) qui expliquent succinctement les expériences par l'indication des agnes et des produits à coté de l'appareil, et qui rendent sensible la théorie des phénomènes, en représentent le jeu des attractions par la convergence des lignes.

Paris: Carilian-Goeuri, etc., 1823.

First (only) edition. Large 4to. With 360 figures on 112 copperplates. Fine, crisp copy, in contemporary red boards, beautifully rebaked in matching crimson morocco, gilt.

A most attractive copy.

AN EXTRAORDINARY publication, probably the most richly illustrated book ever published depicting chemical operations in diagrammatic form. Preceded by a chemical nomenclature in six languages and a vocabulary (etymology and definition of chemical terms), and followed by synoptic tables representing the preparation and composition of chemical products. Very rare. Not mentioned by Ferchl, Ferguson, Partington, Poggendorff, Smith, or Waller. (Bolton, I, 393; Caillet, 2860; Duveen, 161–162; Morgan, 44; Wellcome, II, 439)

DE CROIX, Louis Joseph

Physico-Chymie Théorique, en Dialogue, par L. J. De Croix, Apothicaire à Lille. . . .

Lille: Chez P. S. Lalau. 1768.

First edition. 8vo. (in 4s). 2 leaves, iv pp., 1 leaf, 291 pp., 6 leaves. Title page with woodcut border. Old owner's entry and chemical symbols in ink on title. Very good copy in contemporary vellum.

THE ONLY edition of an excellent mid-eighteenth-century French course in chemistry, written in the form of questions and answers. De Croix (1725–1815) was an apothecary in Lille, where he also taught chemistry. Preceding the text is a recommendatory letter, addressed to him by

P.-J. Macquer. The book is divided into three sections, which cover elements, inorganic compounds, and plant and animal chemistry. Very rare. Not in Bolton, Duveen, Edelstein, Ferguson, Ferguson Coll., Morgan, Neu, Partington, Pogendorff, Sondheimer, Waller, Watt, etc. (Baumer, 62; Blake, 111; Ferchl, 109; Smith, 143; Wellcome, II, 439)

DECROOS, Gabriel

Manuel du Savonnier, ou l'art de fabriquer le savon vert ou noir, avec méthode. . . . Paris: Chez Bachelier . . .
Lille: Chez Vanackere. 1819.

First edition. 4to. 64 pp. Very good copy, uncut with wide margins, in quarter morocco antique, marbled boards, spine gilt-lettered and dated.

AN IMPORTANT WORK on the chemical technology of soap-making. Decroos (or DeCroos) describes his many years of experience in the manufacture of soap from animal fats and potash. He discusses the preparation of different types of soap, neither too oily nor too caustic, and those of the highest quality. Two tables at the end present quantitative data on the various soaps. Only two hundred copies of this rare work were printed, and Decroos has signed the verso of the half title to certify its authenticity. Not recorded in the usual bibliographies.

DECROOS, Gabriel

Traité sur les Savons Solides, ou Manuel du Savonnier et du Parfumeur, Contenant les Matières propres à la fabrication des Savons du commerce: Dissertations sur l'installation d'une Savonnerie, sur la confection des Lessives, sur les Chaudières, les Mises, etc.; la Fabrication des Savons du commerce et des Savons de toilette; Considérations sur ces Savons; Notes et Planches. Par Gabriel Decroos.
Paris: Chez l'Auteur, M.-P. Guyot, Bachelier, Ponthieu, Pelicier, Compere. Août 1821.

First edition. 8vo. 2 leaves, iv, 421, (1) pp. With 2 folding plates (engraved by Ambroise Tardieu). Verso of title page signed in ink by the author. Very good copy in contemporary tree calf, spine gilt.

A COMPREHENSIVE TREATISE on the manufacture of all kinds of soaps, by Decroos, who states in the *Avertissement* (p. ii) that he had been making soaps for many years. The first part of the book discusses the chemistry of soapmaking from various fats and alkalis, with references to the celebrated researches of Chevreul, Braconot, et al. Also described are the preparation and use of hypochlorites, fatty acids, olive oil, oils from various grains, resins, etc. The preparation of different types of soap, the determination of their causticity, water content, and other properties are also

described in detail. The manufacture of toilet soaps, perfumes to be incorporated with them, and industrial detergents are also covered. The plates illustrate apparatus for making soaps. A very rare book, of importance in the history of French soap manufacture and the chemical technology of the early nineteenth century. Not in the British Museum Library and not in the catalogues of the major early chemical libraries. (Bolton, *First Supplement*, 141)

DE DONDER, Th.

Premiers Compléments de la Gravifique Einsteinienne.
Paris: Gauthier-Villars & Cie. 1922.

First edition. Large 4to. 36 pp., 1 leaf. Minor neat repairs to top edges of some leaves; otherwise a fine, large copy in modern maroon quarter cloth, marbled boards, spine gilt-lettered and dated, with the original printed wrappers bound in. Presentation copy to Albert Einstein, with inscription in ink on half title: "À Monsieur le Professeur A. Einstein, Hommage de l'auteur. T. De Donder." Bound with: De Donder, T., *La Gravifique einsteinienne* (Paris, 1921), a 4-page prospectus announcing the publication of the 1921 work (4to., 198 pp.).

RARE AUTHOR'S separate from the *Annales de l'Observatoire royal de Belgique* (3rd series, vol. 1). De Donder was a professor at the University of Brussels, a member of the Royal Academy of Belgium, and corresponding astronomer of the Belgian Royal Observatory. His *La Gravifique einsteinienne* appeared in 1921, and in the present work he states that he has modified certain parts of his gravitation theory and has applied it to specific cases: for example, the behavior of electrons in electromagnetic fields. The book is largely a mathematical exposition of Einsteinian gravitational field theory and its relativistic implications. An important and most desirable copy, having come from the library of Einstein. No reference to this work has been located in available bibliographies.

DEE, John

The Private Diary of Dr. John Dee, and the Catalogue of His Library of Manuscripts, from the Original Manuscripts in the Ashmolean Museum at Oxford, and Trinity College Library, Cambridge. Edited by James Orchard Halliwell, Esq. F.R.S. . . .

London: Printed for the Camden Society, by John Bowyer Nichols and Son, Parliament Street. 1842.

First edition. 4to. viii, 102 pp., 1 leaf, 35, (1) pp. (Camden Society Report and list of members). Very good copy, in original blind-stamped cloth, spine gilt-lettered. Signature of Andrew Jervise (1820-1878), Scottish antiquary (see D.N.B.), and signature of Tenney L. Davis (1890-1949), chemical historian, on first free endpaper.

DEE KEPT a diary scribbled on the margins of old almanacs, which was discovered by the antiquary William Henry Black (1808–1872; see D.N.B.). The diary is here printed for the first time. “Not properly chemical, but very curious, and illustrating the magical and alchemical phase of chemistry. The catalogue of MSS. contains 224 titles” (Bolton). The record of Dee’s library is of value as it was plundered and dispersed when his house at Mortlake was attacked by an angry mob who believed him to be an evil magician. This list is the only record of several occult treatises of the Middle Ages that Dee owned, which are not now extant. The editor, Halliwell (1820–1889), librarian of Jesus College, Cambridge, published several scholarly works (see D.N.B.). (Bolton, 193; D.S.B., IV, 6; Duveen, 164; Ferguson, I, 203; Ferguson Coll., 185; Osler, 4709; Waller, 16720; Wellcome, II, 440)

DEE, John

A True & Faithful Relation of What passed for many Yeers Between Dr. John Dee (A Mathematician of Great Fame in Q. Eliz. and King James their Reignes) and Some Spirits: Tending (had it Succeeded) To a General Alteration of most States and Kingdomes in the World. His Private Conferences with Rodolphe Emperor of Germany, Stephen K. of Poland, and divers other Princes about it. The Particulars of his Cause, as it was agitated in the Emperors Court; By the Popes Intervention: His Banishment, and Restoration in part. As also The Letters of Sundry Great Men and Princes (some whereof were present at some of these Conferences and Apparitions of Spirits:) to the said D. Dee. Out of The Original Copy, written with Dr. Dees own Hand: Kept in the Library of Sir Tho. Cotton, Kt. Baronet. With a Preface Confirming the Reality (as to the Point of Spirits) of This Relation: and shewing the several good Uses that a Sober Christian may make of All. By Meric. Casaubon, D.D.

London: Printed by D. Maxwell, for T. Garthwait, and sold at the Little North door of S. Pauls, and by other Stationers. 1659.

First edition. Folio. 40 leaves, pp. 1–104 (105–108 omitted), 109–256 (257–352 omitted), 353–448; 1–45, (1). Pagination erratic, text complete. Title page in red and black. Fine impression of the frontispiece, comprising 6 portraits (Mahomet, Appolonius, Edward Kelley, Roger Bacon, Paracelsus, and Dr. Dee), and 3 engraved plates (1 folding). Few leaves lightly browned; otherwise a near pristine copy, in early-nineteenth-century diced calf, rebounded, spine gilt-ruled and dated, green morocco label. Armorial bookplate: Bibliotheca Lindesiana.

A CURIOUS WORK, of occult and alchemical interest. It is an account of Dee’s association with the notorious Edward Kelley (1555–1595), who, “although a charlatan . . . was a man of a very fertile imagination” (D.N.B.). Dee (1527–

1608), a scholar who studied alchemy, collected an extensive library. (Caillet, 2878; Duveen, 163; Ferguson, I, 202 [not in Young Coll.]; Hall, 60; Mellon, 112; Osler, 4708; Waller, 19559; Wellcome, II, 440; Wing, D811)

DEIDIER, Antoine

Chimie raisonnée. Où l’on tâche de découvrir la nature & la maniere d’agir des Remedes Chimiques les plus en usage en Medecine & en Chirurgie. Conformement aux Leçons Latines de Chimie qui se font publiquement chèque année dans le Laboratoire de Montpellier. . . .

Lyons: Chez Marcellin Duplain. 1715.

First edition. 12mo. 12 leaves, 522 pp. Small red ink stain in top margin of some leaves towards the end, and little worming in outer margin of last few leaves affecting a few letters; otherwise good copy in contemporary crimson morocco, both covers and spine richly gilt (corners restored). From the Wellcome Library, with release stamp on verso of title leaf.

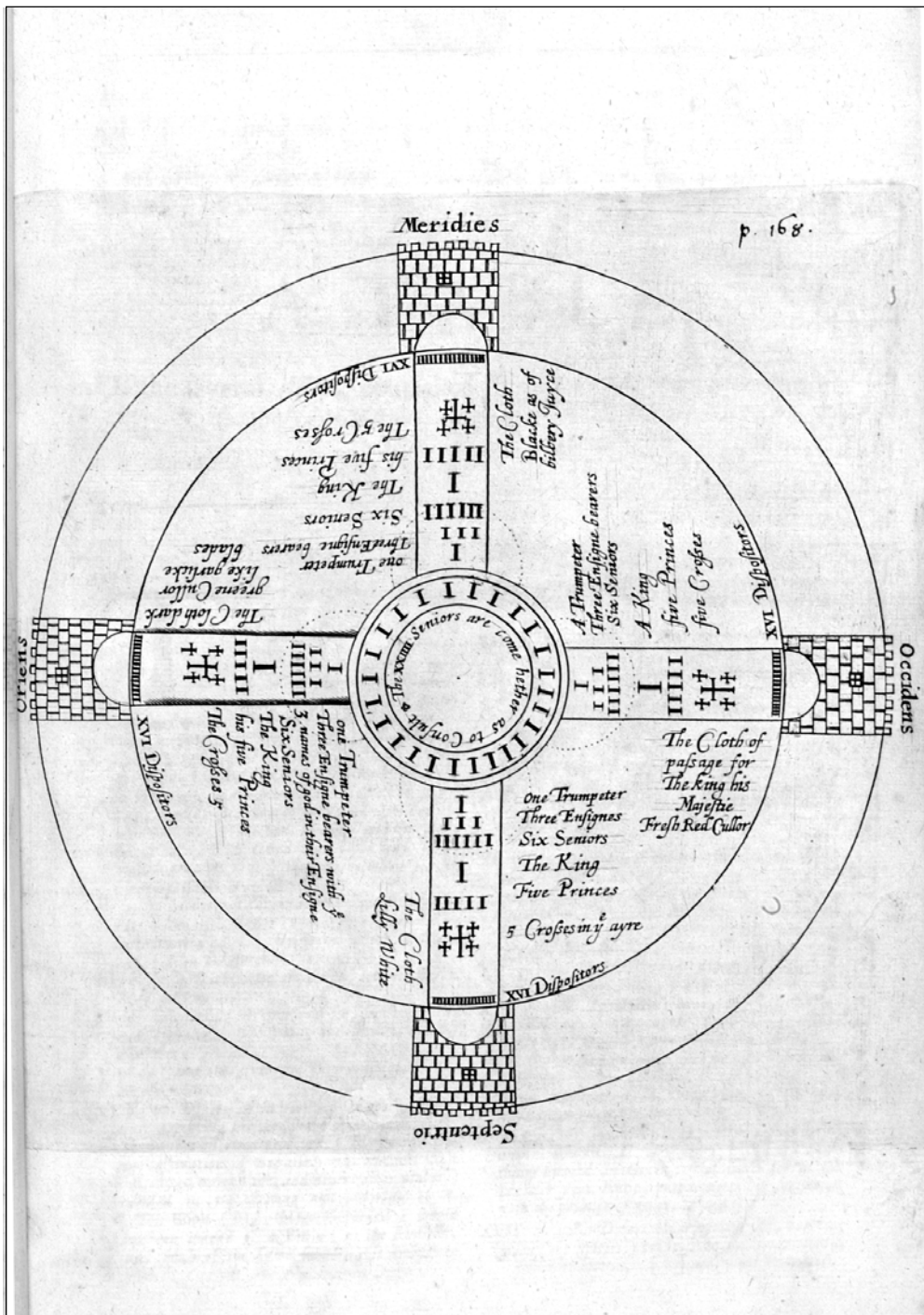
IN HIS DEDICATION to Guy Crescent Fagon (1638–1718), first physician to Louis XIV, Deidier (d. 1746) states that this book is the result of the course he has given annually to the public since 1697, when Fagon procured for him the post of *Professeur Royale en Chimie* at the University of Montpellier. Mainly on pharmaceutical chemistry, in this work Deidier describes seventy-four experiments in which he demonstrates the preparation of acids, alkalies, salts, etc. Compounds of antimony, mercury, iron, lead, silver, and gold are described in detail in twenty-six chapters, as are the preparations of several organic chemicals. An interesting work, providing details of the contents of a course of chemistry in France at the turn of the eighteenth century. Not in D.S.B., Duveen, Edelstein, Ferguson, Ferguson Coll., Smith, Sondheimer, Waller, etc. (Blake, 112; Bolton, 394; Ferchl, 117; Neu, 1107; Partington, III, 58; Pogendorff, I, 537; Watt, I, 293t; Wellcome, II, 442)

DELAMOTTE, P.

A Refutation of Mr. Henry’s Strictures on Glass’s Magnesia; supported by a Series of Experiments made under the Inspection of many Gentlemen of the Faculty, in the University of Oxford. To which is annexed, a Recommendatory Letter from the late celebrated Doctor Huxham. By the present Proprietor of Glass’s Magnesia. . . .

Oxford: Printed by W. Jackson and J. Lister; for W. Davis . . . and W. Nicoll . . . London. 1774.

First edition. 8vo. 24 pp. Very good copy in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated. Armorial bookplate: E. Bibl. Path. Nosoc. Radel.



Dee. True & Faithful Relation. London, 1659.

DELAMOTTE (fl. 1774) published this tract to refute the *Strictures on Mr. Glass's Magnesia* (dated 8 March 1773), which Thomas Henry had appended to his *Experiments and Observations on . . . Magnesia* (London, 1773). In April 1772 Samuel Glass sold the secret of making magnesia to Delamotte "for a valuable consideration. From that time I undertook the works, and became Proprietor of the Magnesia sold under his name. In February, 1773, Mr. Glass died, and immediately Thomas Henry, in Manchester, observing . . . the universal esteem in which Glass's Magnesia was held . . . publishes what he entitles *Strictures on Glass's Magnesia*." The present work defends Delamotte's claim against Henry that the magnesia he makes is as pure as that prepared by Glass. Later, not knowing that Glass had died, Henry published *A letter to Dr. Glass containing a reply to his examination of Mr. Henry's strictures* (London, 1774), in which he complained about the "illiberal abuse" he had suffered as a result of the intemperate language employed by Delamotte in this work. Farrar et al. (*Ambix*, XXIV, 11, 23) state that "Delamotte's contributions have not been traced, though their content can be guessed from Henry's replies; the dates of two of them are given by Henry as February and June, 1774." The present is the previously untraced first tract, dated 17 February 1774.

DELAVAL, Edward Hussey

An Experimental Inquiry into the Cause of the Changes of Colours in Opaque and Coloured Bodies. With an Historical Preface Relative to the Parts of Philosophy therein examined, and to the several Arts and Manufactures dependent on them. . . .

London: Printed for J. Nourse, . . . and P. Elmsly, . . . 1777.

First edition. 4to. 2 leaves, lxxv, (1), 93, (1) pp., 2 leaves, 99–138 pp. Two parts in 1 volume. Fine copy printed on thick paper with wide margins, in gilt-ruled half calf antique, marbled boards.

AN IMPORTANT book, inspired by Newton's *Opticks*, containing numerous chemical experiments. Also included is a paper read to the Royal Society in 1765 that was awarded the society's Gold Medal. The first part was originally issued in 1775 in an edition of five copies only for the author's friends. This work, which "attracted the notice of many European inquirers" (D.N.B.), was translated into French by Quatremère Disjonval and Millin (Paris, 1778; *ibid.*, 1796). Two Italian translations appeared in 1779: one at Bologna, the other at Milan. His "chief work" (D.N.B.). The author also published a book of similar title on the origin of permanent colors: *An experimental inquiry into the cause of the permanent colours of opaque bodies . . .* (Warrington: W. Eyres, 1785). Delaval (1729–1814), of Seaton-Delaval, Northumberland, and Dodington, Lincolnshire, was "an

excellent Chymist and experimental Philosopher" (Watt). Elected F.R.S. in 1759, he was a friend of Benjamin Franklin. Delaval is omitted entirely by Partington. (Duncan, 3048; Duveen, 165; Edelstein, 2974; Ferchl, 118; Ferguson Coll., 186; Neu, 1109; Poggendorff, I, 541; Smith, 144; Sotheran, Cat. 666 [1906], 1005 ["Rare"]; Watt, I, 294j)

DELFINO, Domenico

Sommario di Tutte le Scienze, del Magnifico Messer Domenico Delfino, nobile Vinitiano, dal quale si Possono Imparar molte cose appartenenti al vivere humano, & alla cognition di Dio. . . .

Venice: Appresso Gabriel Giolito de' Ferrari. 1565.

Second edition. 8vo. 28 leaves, 360 pp. Italic letter. Woodcut vignettes on title page, historiated woodcut initials, head- and tailpieces. Very good copy in modern blue-green boards, printed paper spine label.

A "SUMMARY OF all the sciences," which passed through at least four editions up to 1584 (first: Venice, 1556). Although published by Delfino (fl. 1500–1550) as an original work, it is actually a translation of *Vision Deleytable y sumario de todas las ciencias* (Seville, 1526), by Alfonso de la Torre (d. 1460). Subjects discussed in this early encyclopedia include alchemy, agriculture, astrology, astronomy, geometry, magic, medicine, music, rhetoric, vulcanology, and various philosophical matters: e.g., ethics, logic, and virtue. There is also a chapter on Boethian arithmetic (pp. 43–48). Edited by Nicolo Croce, the first edition of 1556 is in Durling (4383) and Wellcome (I, 1730). The dedication of the present edition is signed by Lodovico Dolce and dated 7 February 1564. (British Library, *S.T.C. Italian Books, 1465–1600*, 212; Collison, *Encyclopaedias*, 73, 79; Smith, *Rara Arithmetica*, 275)

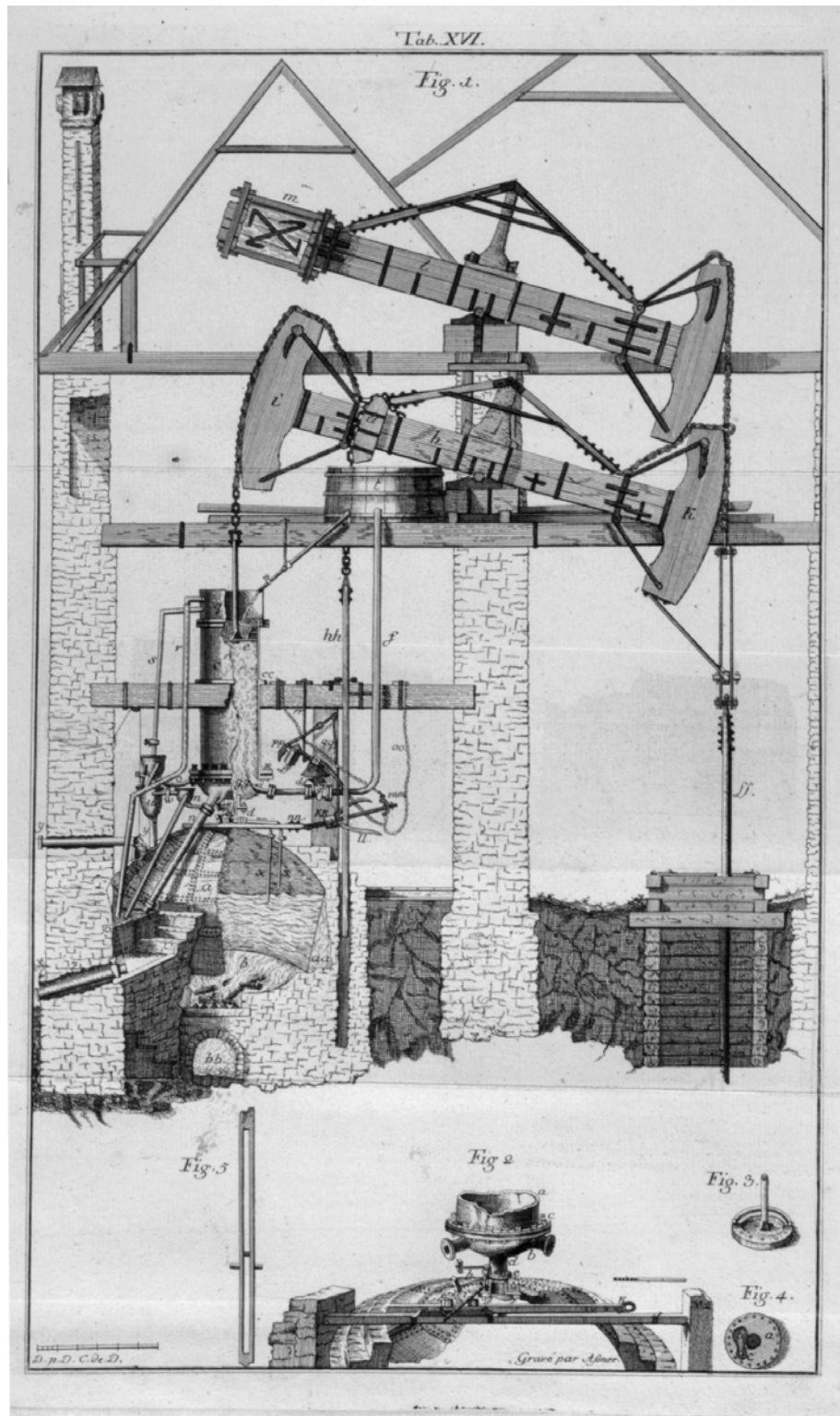
DELIUS, Christoph Traugott

Anleitung zu der Bergbaukunst nach ihrer Theorie und Ausübung, nebst einer Abhandlung von den Grundsätzen der Berg-Kammeral-wissenschaft, für die Kaiserl. Königl. Schemnitzer Bergakademie entworfen, von Christoph Traugott Delius . . .

Vienna: gedruckt auf Unkosten des höchsten Aerarii bey Joh. Thomas Edlen v. Trattnern. 1773.

First edition. 4to. 9 leaves, 45, (1), 519, (1) pp. With engraved title-vignette, and 24 large folding copperplates. Several neat ownership inscriptions on title, dated 1775 and 1790, respectively. Fine copy on thick paper, in original richly blind-stamped pigskin over boards, old printed paper label.

DESCRIBED AS the "best, most extensive, and informative work concerning mining technology of the time," this valuable treatise on geology, mining, and mineralogy contains



Delius. Anleitung zu der Bergbaukunst. Vienna, 1773.

an enunciation of Delius' important theory of the origin of mountains and their ore deposits. The German mineralogist, metallurgist, and instructor at the Schemnitz School of Mines, Delius (1725–1779) "sets forth the facts which underlie one of the greatest discoveries concerning ore bodies which has been made in modern times. . . . This is the surface alteration of ore deposits, with the development of secondary minerals, and an underlying zone of secondary enrichment" (Adams). The plates depict mines, mining equipment, structures, etc. A "greatly esteemed work" (Annen, *Historic Books on Mining* [1960, no. 23]). One of the most important eighteenth-century books on extractive metallurgy and mineralogy, and of chemical interest; a French translation by Schreiber appeared (Paris, 1778). Rare. (Adams, 311–313; D.S.B., IX, 534; Hoover, 259; Roller & Goodman, I, 307; Watt, I, 294o)

DE LUC, Jean André

Recherches sur les Modifications de l'Atmosphere. Contenant, l'Histoire critique du Barometre et du Thermometre, un Traité sur la Construction de ces Instrumens, des Experiences relative a leurs Usages, . . . Avec Figures: . . .
Geneva: (no printer or publisher), 1772.

First edition. 2 vols., 4to. Vol. I: 2 leaves, pp. viii, 416, with 2 folding engraved plates and 1 folding table. Vol. II: pp. xi, 489, with 5 folding engraved plates. Fine, crisp copy, bound in contemporary gilt-ruled calf (corners worn), strongly re-backed in modern leather, with maroon lettering label.

A MASTERPIECE OF scientific research on the history and (then) present state of development of the barometer and thermometer. The work contains inter alia many comments and observations of interest in the history of chemistry. Rare. Ferchl (p. 323) mentioned De Luc but does not cite the present very important work. It was likewise unknown to Partington (III, 351–357), who extensively discusses De Luc's work.

DE LUYNES, Victor Hippolyte

Recherches sur l'Erythrite et ses Dérivés. . . .
Paris: Gauthier-Fillars, Imprimeur-Libraire. 1864.

First edition. 8vo. 45, (1) pp., 1 leaf (blank). Fine copy in maroon quarter cloth antique, marbled boards, original printed wrappers bound in. Bound with: De Luynes, *Recherches sur l'orcine* (Paris, 1866).

AN OFFPRINT of an important paper on erythritol (tetrahydroxybutane) by De Luynes (1828–1904), professor of applied chemistry at the Conservatoire des Arts et Metiers. The author gives a history of erythritol, its preparation, and its physical and chemical properties, with reference

to the pioneering researches of Stenhouse (*Philosophical Transactions of the Royal Society*, 1848, p. 76). Also described is the preparation of several compounds from erythritol (e.g., esters, acetic acid, and sec-butyl alcohol). Only a few off-prints were made for the author before the paper appeared in *Annales de Chimie et de Physique*, II, 385–429 (1864). (Partington, IV, 520)

DE LUYNES, Victor Hippolyte

Recherches sur l'Orcine. . . .
Paris: Gauthier-Villars, Imprimeur-Libraire. 1866.

First edition. 8vo. 20 pp. Fine copy. Bound with: De Luynes, *Recherches sur l'érythrite* (Paris, 1864).

AN OFFPRINT from the *Annales de Chimie et de Physique* (VI, 1866) on orcinol (3,5-dihydroxytoluene), first isolated from lichens by Robiquet in 1829. De Luynes discusses the preparation, formula, and physical and chemical properties of orcinol and his researches on its reaction with acids, acid chlorides, chlorine, etc. (Partington, IV, 520)

DEMACHY, Jacques François

Examen Physique et Chimique d'une Eau Minérale trouvée chez M. de Calsabigi à Passy; comparée aux Eaux du même Côteau, connues sous le nom des nouvelles Eaux Minérales de Madame Belami. Par le Sieur de Machy . . .
N.p., n.d. (1756)

First edition. 8vo. 45, (1) pp. Fine copy, in modern marbled boards, maroon morocco label.

A COMPARATIVE DESCRIPTION and analysis of the newly discovered source of mineral water found in the basement of the house of Mr. and Mrs. Casabigi in Passy (today the 16th arrondissement of Paris) and that of a neighbor, Mrs. Belami. This is the first edition of the author's first book. Very rare. Not in N.U.C. or the usual bibliographies. (Ferchl, 120; Poggendorff, I, 547)

DEMACHY, Jacques François

Instituts de Chymie, ou principes élémentaires de cette Science, présentés sous un nouveau jour.
Paris: Aux dépens de Lottin le Jeune. 1766.

First edition. 2 vols., 12mo., in 1. I: xxiv, 359, (1) pp. II: 2 leaves, pp. 343–703, 1 leaf. Fine copy in quarter calf antique, marbled boards, maroon morocco label gilt, spine dated.

DEMACHY (or De Machy, 1728–1803), pharmacist at the Hôtel-Dieu, then chief apothecary in the Military Hospital at St. Denis, was a pupil of the elder Rouelle. In addition to translating the books of Juncker, Marggraf, Pott,

and Spielmann from Latin and German, he published a number of works on technical and pharmaceutical chemistry. The *Instituts de Chymie* comprises his detailed course of chemistry, in which he strongly supports the doctrine of phlogiston. He never adopted the views of Lavoisier. Nevertheless, the *Instituts* is an excellent, lucidly written book, which summarizes the state of chemistry at the time of its publication. Very scarce. Not in Blake, D.S.B., Ferguson, Ferguson Coll., Morgan, Smith, Sondheimer, Waller, Watt, etc. (Baumer, 43; Bolton, 396; Duveen, 166; Edelstein, 738; Ferchl, 120; Kopp, *Geschichte der Chemie*, II, 131; Neu, 1113; Partington, III, 99; Poggendorff, I, 547; Wellcome, II, 447)

DEMACHY, Jacques François

Précis de la Table des Principales Combinaisons Chymiques. N.p. (Paris), n.d. (ca. 1770).

First separate edition. 8vo. 40 pp. With folding engraved table. Caption title. Very fine copy, uncut with wide margins, in original plain pasteboards, contemporary ink lettering on spine.

IN HIS *Procédés Chymiques* (Paris, 1769; Cole, 364) Demachy included a "Table des principales combinaisons de chimie. Corrigée et augmentée par M. Demachy Apothicaire &c. en 1769." The table of affinity, also published separately (as here), contains twenty columns of chemical symbols. The text and table in this rare work attempt to summarize and explain the facts that were then known of the reactions of various chemicals and the products of the reactions. (Duveen, 166; Neu, 1114; Partington, III, 99)

DEMEL, Josephus Eustachius

Dissertatio Inauguralis Physico-Chemico-Medica sistens Analysin Plantarum, quam annuente inclyta facultate medica in antiquissima ac celeberrima Universitate Vindobonensi pro doctoratus medici suprema laurea, . . . Publicae eruditorum disquisitioni submittit Josephus Eustachius Demel, Patritius Plsnensis . . . Disputabitur in Magno Universitatis Palatio Die 16 Mensis hujus Anno MDCCLXXXII. Vienna: Typis Mathiae Andreae Schmidt. (1782).

First edition. 8vo. 4 leaves, 59 pp., 1 leaf. Fine copy in the original blue-green boards.

AN INTERESTING doctoral dissertation on the chemical products obtainable from plants by different processes (e.g., solvent extraction, fermentation, hydraulic pressure, distillation, and pyrolysis). No information has been found on the author, who mentions the works of Gesner, Helmont, Stahl, Homberg, Boerhaave, Tournefort, Spielmann, et al. On page 2 Demel discusses the recently reported work of Ingenhousz on the photosynthesis carried out by plants. Rare. Not in Blake, Duveen, Edelstein, Ferguson, Ferguson

Coll., Neu, Partington, Poggendorff, Smith, Waller, Wellcome, etc. (Bolton, 396; Watt, I, 294y)

DE NATURAE

De Naturae aliquot arcanis, sympathiis et antipathiis, insignibusque medicamentis libelli duo aurei. Authores sequens pagella indicat. . .

Bosphori: Apud Christophorum Justinum. 1622.

First edition. 12mo. 1 leaf, 252 pp., 11 leaves. Fine copy in contemporary vellum.

A BOOK OF medical and chemical secrets compiled from the works of eighteen authors, dating from Roman times to the end of the sixteenth century, including Baricellus, Cardan, Lemnius, Mizaldus, Pliny, the School of Salerno, Theophrastus, and Varro. Subjects of chemical interest include discussions of inorganic compounds (acids, alkalies, salts, sulphur, minerals), organic compounds (alcohol, vinegar, starch, amber, tobacco, opium), and metals (antimony, lead, iron, silver, gold). Various aspects of chemical technology are also covered (e.g., the manufacture of colored glasses at Venice, explosives, and iron magnets). The author of this interesting compilation is unknown. Variant forms of the imprint are found in different copies. Wellcome gives "Ochsenfurt," while Deschamps states "Bosphorus, Ochsenfurt, ville de Bavarie dans la prov. de Würzburg." The British Library catalogue gives "Bosphorus" without mentioning Ochsenfurt. Benzing (*Buchdrucker*) mentions neither "Bosphorus" nor "Ochsenfurt" and does not record Justinus as printer. A very rare book that is not in the usual early chemical bibliographies and is not mentioned by Ferguson in his *Books of Secrets*. (Wellcome, I, 1724)

DENIS, Prosper-Sylvain

Recherches Expérimentales sur le Sang Humain, considéré à l'état sain, faites pour déterminer les modifications auxquelles est sujette dans l'économie la composition de cette humeur, et apprécier les phénomènes physiologiques qui s'y rapportent. Mémoire présenté à l'Institut, Académie des Sciences, en 1828. . .

Commercy: Imprimerie de Cl.-Fr. Denis. 1830.

First edition. 8vo. xvi, 358 pp., 1 leaf (errata) + advertisements (4 + 8 + 4 + 4 + 4 + 4 + 8 pp.). Very good, crisp copy, in original quarter calf, marbled boards, spine richly gilt.

A HEMATO-CHEMICAL AND biochemical classic, being the first book devoted exclusively to the chemistry of human blood, its analysis, inorganic and organic chemical composition, and related matters. Denis (1799–1863), a professor of medicine at Paris, was one of the first to carry out important research on the chemistry of blood, its proteins,

and its iron content. Between 1830 and 1859 he published several books on blood chemistry and established the scientific basis for the study of this important subject. His investigations on the coagulation of blood and blood fibrin are particularly important. Rare. Not in the usual chemical and medical bibliographies. (Bolton, 397)

DERHAM, Samuel

Hydrologia Philosophica or, an Account of Ilmington Waters in Warwick-shire; with Directions for the Drinking of the same. By Sam. Derham Bachelour in Physick lately of Magd. Hall. Oxon.

Oxford: Printed by Leon. Lichfield, Printer to the University, for John Howell Bookseller. 1685.

First (only) edition. 8vo. 12 leaves, 162 pp., 2 leaves. Very good copy in nineteenth-century dark-blue blind-ruled sheep, crimson morocco label, spine dated in gilt.

DERHAM (1655–1689), a competent physician, received an M.A. from Oxford in 1679 and M.D. in 1687. He caught smallpox and died at thirty-four years of age. *Hydrologia Philosophica*, his only work, established the reputation of the Ilmington spa. Of this book Duveen says: “A rare and highly interesting little book. It contains much on chemistry both from a theoretical and practical point of view; the author deals with current theories of matter and quotes frequently from Boyle, van Helmont, Paracelsus, etc.” Also cited are works by Agricola, Bacci, Jorden, Descartes, Simpson, et al. There is a section on the circulation of the blood, with references to William Harvey, Glisson, Lower, Willis, et al. On page 26 Derham discusses experiments carried out by Boyle and reported in *The Sceptical Chymist*. Not in Bolton, Caillet, D.S.B., Edelstein, Ferchl, Ferguson, Ferguson Coll., Osler, Partington, Smith, Waller, etc. (Duveen, 168; Neu, 1118; Poggendorff, I, 552; Waring, 794; Watt, I, 298g; Wellcome, II, 451; Wing, D1098)

DERODON, David

Theses ex Universa Philosophia cum Disputatione de Atomis. . . . Sub Praesidio Domini Davidis Derodonis Philosophiae Professoris apud Arausionenses. Tueri conabitur Fran. L. Willadinus . . . Disputabuntur die 7 Martii, anno 1652.

Arausioni (Orange): Typis Edvardi Rabani, Celsitudinis suae, Urbis & Universitatis Typograp. 1652.

First edition. 8vo. 4 leaves, 96 pp. (last 2 blank). Woodcut printer's ornament on title, and 2 small woodcuts in text. Old library stamp on title (“Societe de Lecture de Geneve”), and some leaves with neat contemporary annotations and underlining in ink; otherwise fine copy in early-nineteenth-century quarter calf, marbled boards, spine gilt-lettered.

A DETAILED DISPUTATION on all aspects of the atomic theory, tracing its history from the Greek and Roman period to the mid-seventeenth century. The works of Aristotle, Democritus, Empedocles, Leucippus, Moschus, Plato, Pythagoras, and other ancient authors are discussed, as are the more recent theories of Paracelsus, Quercetanus, and other sixteenth- and seventeenth-century chemists. Arguments against atoms being mathematical points are made. The chemical nature and properties of the Paracelsian *tria prima* (philosophical salt, sulphur, and mercury) are discussed, and the conclusion is reached that matter cannot be created or destroyed. Derodon (fl. seventeenth century), professor of philosophy at Orange and at the Royal College at Nimes, Southern France, published *Logica Restituta* (Geneva, 1659), *Philosophia Contracta* (Geneva, 1664), and several other works (see Watt, I, 298x). This extremely rare Orange imprint is not in the British Library, which lists only a Geneva edition of 1662. Unknown to the usual bibliographers.

DESAGULIERS, Jean Théophile

A Course of Experimental Philosophy. By J. T. Desaguliers, LL.D., F.R.S. . . .

London: Printed for John Senex, . . . W. Innys and Richard Manby, . . . and John Osborn and Thomas Longman . . . 1734, 1744.

First edition. 2 vols., 4to. I: 12 leaves, 463, (1) pp., 6 leaves. 32 folding copperplates. II: 8 leaves, 568 pp., 4 leaves. 46 folding copperplates. Fine, crisp copy, in the original gilt-ruled calf, rebaked, gilt-lettered maroon morocco labels, spines gilt-ruled. Bookplates (eighteenth century): Henry & Elizabeth Goodwyn.

“AN EXCELLENT source of information on the state of the physical sciences in the first half of the eighteenth century” (Knight). Emphasizing the theoretical and practical aspects of physics, chemistry, mechanical engineering, mining, and related subjects, the list of subscribers includes Hales, the “late Sir Isaac Newton,” John Pringle, and Sir Hans Sloane. Highly regarded by Newton, Desaguliers had a genius for the simple explanation of complex subjects and in 1742 received the Copley Medal of the Royal Society for his original research and inventions. These two volumes contain the first series of learned scientific lectures delivered to general audiences. Volume I is a Newtonianum, in which there are simple explanations of Newton's theories, and volume II entitles Desaguliers to be considered a forerunner of the more advanced knowledge of machinery that characterized the Industrial Revolution. His “remarkable *Course . . .* exerted a profound influence on Benjamin Franklin” (Taton). Many topics of chemical interest are discussed. Second and third editions of volume I were published in 1745 and 1763,

and the second edition of volume II in 1763. A French translation by P. Pezenas also appeared (Paris, 1751, 2 vols., 4to.). First editions of both volumes, as here, are very rare. Not in Blake, Ferchl, Smith, Waller, etc. (D.S.B., IV, 45; Knight, 68; Morgan, 220; Partington, II, 739; Poggendorff, I, 554; Sotheran, *Bibliotheca Chemico-Mathematica*, Cat. 702 [1910], 7237 ["Rare"]; Taton, II, 475; Watt, I, 299c; Wellcome, II, 451 [vol. II only]; Wolf, II, 338)

DESAGULIERS, Jean Théophile

Lectures of Experimental Philosophy. Wherein the Principles of Mechanics, Hydrostatics, and Opticks, are Demonstrated and Explained at large, by a great Number of curious Experiments: With a Description of the Air-Pump, and several Experiments thereon: Of the Condensing-Engine; as also of the different Species of Barometers, Thermometers, and Hygrometers; with several Experiments to prove and explain Sir Isaac Newton's Theory of Light and Colours, as performed in a Course of Mechanical and Experimental Philosophy. By J. T. Desaguliers, M.A., F.R.S. Illustrated with several curious Copper Plates suitable to each Subject. To which is added, A Description of Mr. Rowley's Machine, called the Orrery, which represents the Motion of the Moon about the Earth, Venus and Mercury about the Sun, according to the Copernican System: All carefully Examined and Corrected by Mr. Desaguliers.

London: Printed for W. Mears, . . . B. Creak, . . . and J. Sackfield . . . 1719.

First edition, second issue. 4to. 10 leaves, 201, (1) pp., 2 leaves (booksellers' catalogues). With 10 folding copperplates. Fine copy in original paneled calf, rebaked, gilt-lettered maroon morocco label. From the library of George Lockhart (1673–1731) of Carnwath, Jacobite and author (see D.N.B.), with his armorial bookplate on verso of title page.

DESAGULIERS (1683–1744), born at La Rochelle and brought to England in 1685 by his father, a Huguenot refugee, was educated at Oxford and became F.R.S. in 1714. A close friend of Newton, he was a foremost experimenter in the Royal Society and popularized the demonstrative lecture in Great Britain. In 1717 he published *Physico-Mechanical Lectures*, an eighty-page abstract of the twenty-two lectures of his course. Although not authorized by Desaguliers, the present work is the first full account of his lectures, edited by Paul Dawson. Primarily of interest as a textbook of Newtonian physics, many chemical topics are included. The first issue of the same year appeared with the title *A System of Experimental Philosophy*. Not in Babson, Blake, Gray, etc. (D.S.B., IV, 45; Poggendorff, I, 554; Sotheran, Cat. 773 [1919], 1642 ["Rare"]; Wallis, 202.811)

DESCARTES, René

Principia Philosophiae. Ultima editio cum optima collata, diligenter recognita, & mendis expurgata.

Amsterdam: Apud Danielem Elsevirium. 1677.

Final Elzevier edition. 3 parts, 4to., in 1 vol. I (*Principia*): 18 leaves, 222 pp. II (*Specimena*): 8 leaves, 248 pp. III (*Passiones*): 12 leaves, 92 pp., 2 leaves. Woodcut printer's device on 3 title pages, and over 220 text woodcuts (26 full page). Good copy in original vellum.

THIS VOLUME contains three of the most important works of the great French mathematician and philosopher Descartes (1596–1650). After the *Discours de la methode* (1637), the *Principia philosophiae* (first, 1644) is the most noteworthy of his works on physics, in which he frames his famous theory of vortices, formulates the laws of motion foreshadowing those of Newton, lays down the first rational theory of magnetism, etc. Descartes postulated that matter consists of a system of swirling vortices rather than solid atoms. The Newtonian hard-atom was accepted until the end of the nineteenth century. Descartes' vortex hypothesis was partially vindicated in the early twentieth century with the discovery that atoms comprise electrons that "swirl around" a nucleus of protons, neutrons, and other subatomic species. The *Specimena philosophiae* discusses Descartes' theories of light, vision, fire, salts, etc. In the *Passiones animae*, Descartes propounds his psychological theories. All three works are of crucial importance in the history of science and philosophy, and they paved the way for Newton's later advances. There is much of chemical interest in these works, and Partington devotes a whole chapter to a discussion of Descartes' scientific investigations. (Partington, II, 431; Willems, 1530)

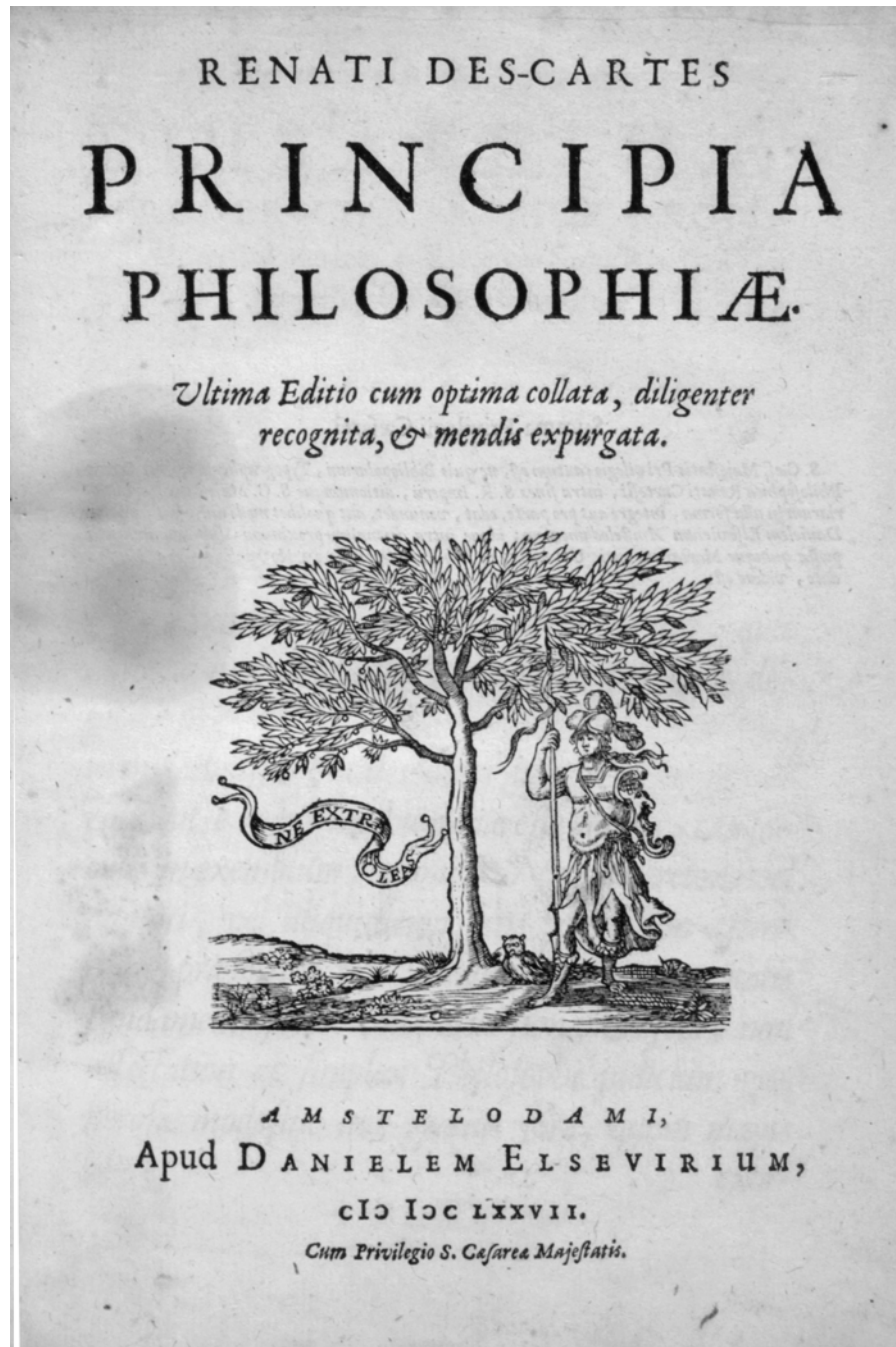
DESGENETTES, René Nicolas Dufriche

Éloges des Académiciens de Montpellier; recueillis, abrégés et publiés par M. Le Baron Des Genettes, pour servir à l'histoire des Sciences dans le dix-huitième siècle.

Paris: De l'Imprimerie de Bossange et Masson. 1811.

First edition. 8vo. viii, 300 pp. Fine copy in contemporary gilt-ruled green quarter calf, marbled boards.

A USEFUL BIOGRAPHICAL work containing forty *éloges* of scientists and physicians who were members of the Royal Society of Montpellier, from its foundation in 1706 through 1788. Originally published by several authors in the *Transactions of the Society*, the biographies were edited in shorter versions by the famous military surgeon Baron Desgenettes (1762–1837) and are presented in this book. Included are biographies of the chemists Jean Matte and Gabriel-François Venel; the botanist Pierre Magnol; the physicians



Descartes. Principia Philosophiae. Amsterdam, 1677.

Pierre Chirac, François de la Peyronie, François Chicoyneau, François Boissier de Sauvages, Henri Haguénot, and Charles Le Roy; and many others. Very scarce. Not in the usual reference sources. (Duveen, *Supplement* [1953], 85; Waller, 15890; Wellcome, II, 456)

DESMAREST, Nicolas

Lettre sur les différentes sortes de pozzolanes, et particulièrement sur celles qu'on peut tirer de l'Auvergne, à M. l'Abbé Bossut, de l'Académie des Sciences. Par M. Desmarest. Extrait du Journal de Physique, mois de mars 1779.

Paris: De l'Imprimerie de Clousier. 1779.

First separate edition. 8vo. 24 pp. With 2 large folding engraved plates. Two small stamps of U.S. Geological Survey on title (not affecting text), including release stamp. Fine copy, uncut, stabbed as issued, in maroon quarter morocco, marbled boards, spine gilt-lettered and dated.

DESMAREST (1725–1815), an illustrious geologist, technologist, and friend of Lavoisier, was made a member of the French Academy of Sciences in 1771. Of the several books he edited, the most significant is Francis Hauksbee's *Physico-Mechanical Experiments* (Paris, 1754, 2 vols.), to which he added voluminous notes. In the present work, an offprint from the *Journal de Physique* (March 1779), Desmarest describes the different types and chemical properties of pozzolana, or volcanic ash, containing silica, alumina, lime, etc., found in the Auvergne region of France. His discoveries in connection with the lavas, volcanic ash, and basalts of the Auvergne established his scientific reputation. Pozzolana is much used in the preparation of hydraulic cements, and Desmarest discusses its manufacture on pages 14–16. The plates show the mill for making cements containing pozzolana. This rare and important work on the chemical technology of hydraulic cement manufacture is not mentioned by Kenneth L. Taylor in his biography of Desmarest (D.S.B., IV, 70–73), and it is not in the usual early chemical library catalogues.

DESPLATS, Victor

De l'Ozone. Thèse pour le Doctorat en Médecine, présenté et soutenue le 14 août 1857, par Victor Desplats, né à Béziers (Hérault) . . .

Paris: Rignoux, Imprimeur de la Faculté de Médecine. 1857.

First edition. 4to. 44 pp. Very good copy in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

THE DOCTORAL thesis of Desplats, who is described on the title page as "Licencié ès Sciences mathématiques et physiques, Préparateur de Physique et de Chimie au Lycée

impérial Saint-Louis." An excellent account is given of ozone (an allotrope of oxygen), from its first notice by Priestley, Cavendish, and Van Marum to the great investigations of Schoenbein, who characterized the gas. Reactions with numerous inorganic and organic compounds are described, as are several electrical and chemical methods for preparing ozone. Desplats discusses atmospheric ozone, air pollution, and quantitative analytical methods for measuring its concentration in air. The action of ozone on blood is described, and the author emphasizes that animals exposed to air containing too much ozone quickly die. An interesting survey on the chemical, biological, and medical properties of ozone. Unknown to historians of chemistry and medicine. Unrecorded by the bibliographers.

DESSEN, Bernard von Kronenburg

De Compositione Medicamentorum, hodierno aevo, apud pharmacopolas, passim extantium: et quo artificio eadem recte parari queant, cum Simplicium, atque Aromatum (quibus consistunt) expositionibus, ac plerorumque omnium delectu, Libri decem. Non Medicis & Pharmacopoeis tantum, sed omnibus insuper rerum cognoscendarum studiosis, utilissimi pariter ac necessarii. . . . Cum indice locupletissimo, Latino ac Germanico.

Frankfurt: Apud Haered. Chr. Egenolphi. 1555.

First edition. Folio. 18 + 154 folios. Roman and italic letter. Woodcut printer's device on title page and last leaf. Historiated capitals. Very good copy in contemporary calf, gilt.

BORN IN Amsterdam, Dessen (Cronenburgius, 1510–1574) studied at Louvain and Bologna (M.D., 1539) and became professor of medicine at Groningen and later at Cologne. Achieving great fame as a physician and botanist, he defended Galenic medicine against the iatrochemical followers of Paracelsus, whom he called a lying, blasphemous, superstitious impostor. Dessen opposed alchemy, and this famous early pharmacopoeia was highly esteemed for over a century. Robert Record (*Urinal of Physic*, London, 1651; Wing, R651) recommended it "as pre-eminently suitable for apothecaries" (Matthews, *History of Pharmacy in Britain* [1962, p. 73]). The catalogue of authors consulted by Dessen lists 197 names. By an original mistake of the printer, a page of the prefatory letter in this copy is left blank (a⁶ recto); printing is properly continued on the verso. Partington (II, 121) mentions Dessen but not this title. The octavo second edition (Lyons, 1556) is the earliest in the Wellcome Library (I, 1747). Rare. (British Library, *S.T.C. German Books, 1455–1600*, p. 229; Durling, 1120; Ferchl, 110; Ferguson, I, 187–188; Watt, I, 300g)

DESTILLIR-KUNST

D.D.K. Destillir-Kunst, worinnen die raresten bereitesten künstlichen Stücke, nebst einem Anhang einiger chymischen approbirten Kunst-Stücke, welche bisher sehr geheim gehalten worden, wie auch etlicher bewahrten und curieusen Experimenten.

Leipzig: Verlegts Adam Wilhelm Kiessling. 1753.

First edition. 8vo. 120 pp. Good copy, in gilt-ruled unlettered quarter calf antique, marbled boards. Bound with: Becher, Johann Joachim, *Chymischer Rosen-Garten* (Nuremberg, 1717).

AN INTERESTING treatise on distillation, by an anonymous author, dealing with transmutation, extraction of the quintessence, the preparation of compounds of gold, antimony, mercury, copper, etc. Many recognizable compounds are described (e.g., ammonia, sulphur dioxide, antimony trichloride, nitric acid, and ethyl alcohol). Ferchl (p. 289) erroneously gives the imprint as Frankfurt but, under "Destillierkunst" (p. 123), correctly gives it as Leipzig. Rare. Not in Bolton, Duveen, Edelstein, Ferguson Coll., Forbes, Neu, etc. (Ferguson, I, 201; Rosenthal, 259; Wellcome, II, 458)

DE T***, and GROSSE

*Lettre de M. de T*** à un de ses amis, en Réponse d'un Mémoire de M. Geoffroy. Sur les Sels essentiels de M. le Comte de la Garaye. On y a joint aussi une Dissertation de M. Grosse sur les même Sels, & des lettres de plusieurs Médecins de la Faculté de Paris sur le même sujet.*

Paris: Chez Denis Monchet, Grand Sale du Palais, à la Justice. 1743.

First edition. 8vo. 1 leaf, 48 pp. Woodcut ornament on title. Very good copy in contemporary quarter calf, speckled boards, with morocco label ("Mélanges"). Bound with: Dubuisson, F. R. A., *Mémoire sur les Acides Natifs du Verjus, de l'Orange, et du Citron* (Paris, 1783), and 7 other chemical tracts (1731–1798).

A WORK ON so-called essential salts that can be extracted from various plants, by an unknown author (M. de T***); published in response to an article in the *Journal de l'Académie des Sciences* (1738, p. 193). There are references to Lemery, La Garaye, and other chemists. The second part (pp. 37–43) comprises *Observations et reflexions de M. Grosse*, on salts extracted from plants by a new process. Grosse (forenames and dates unknown) is mentioned by Partington (vol. III) several times and is described as a "young chemist." At the end are four letters on salts extracted from plants by, respectively, Coldevilers, Bourdelin, Pipereau de Bellevannes, and Malouin; the last three are dated 1738. Very rare. Apparently unknown to the usual bibliographers.

DEVILLE, Henri Étienne Sainte-Claire

De l'Aluminium. Ses Propriétés, sa Fabrication et ses Applications, par M. Hi. Sainte-Claire Deville . . .

Paris: Mallet-Bachelier, Imprimeur-Libraire . . . 1859.

First edition. 8vo. ix, (1), 176 pp. With folding plate (Dulos del, et sc.) containing 11 figures. Fine copy, uncut, in half calf antique, pebbled cloth, spine gilt-lettered and dated. From the library of the celebrated historian of science Dr. Charles Singer (1876–1960), with his book label on front pastedown endpaper.

A MILESTONE IN the literature of chemical technology, in which the preparation of aluminum on a large scale is described. It formed the starting point for the development of the first practical industrial production of aluminum, one of the lightest of metals used in many facets of modern life. Deville employed Wöhler's method but substituted sodium for potassium. His process depended upon the reduction of tetrachloroaluminate with metallic sodium, the product being metallic aluminum and sodium chloride. "The reaction was carried out in a series of Bohemian glass tubes heated over burning charcoal. . . . Some 50 tons of aluminium were made by this process in Sainte-Claire Deville's factories at Salindres, and later at Nanterre, between 1855 and 1888, during which period the price of the metal fell from 12 pounds to 50s per lb., the average purity being about 97 per cent" (Singer). Deville (1818–1881) was professor of chemistry at the École Normale Supérieure at Paris. The plate illustrates the apparatus used. (Bolton, 795; D.S.B., IV, 77; Duveen, 524; Edelstein, 742; Ferchl, 464; Partington, IV, 498; Poggendorff, II, 737; Singer, *A History of Technology*, V, 91, 100; Smith, 428; Sparrow, *Milestones of Science*, 39, 172; Tylecote, *History of Metallurgy*, 149; Weeks, *Discovery of the Elements*, 605)

DEVILLE, Henri Étienne Sainte-Claire

Leçons sur la Dissociation, professées devant la Société Chimique le 18 mars et le 1 avril 1864.

N.p., n.d. (Paris: Ch. Lahure. 1866).

First edition. 8vo. 126 pp., 1 leaf. Fine copy in modern black cloth, spine gilt-lettered.

AN IMPORTANT work on chemical dissociation, in which Deville demonstrated, by means of ingenious experiments, that equilibria of reactions at high temperatures are frequently different from those at lower temperatures. "Deville employed very high temperatures and became a recognized authority on the use of this technique. His measurements of the vapor densities of compounds at various temperatures helped to confirm Avogadro's hypothesis. These studies led Deville to his most notable discovery, the dissociation of heated chemical compounds and their recombination at

lower temperatures. He heated such substances as water, carbon dioxide, and hydrogen chloride and then cooled them suddenly to recover the decomposition products. This work led to a better understanding of the mechanism of chemical reactions and to significant developments in physical chemistry" (D.S.B.). Partington discusses this work and some of the reactions that Deville investigated. (D.S.B., IV, 77–78; Partington, IV, 495)

DEWAR, Henry

Contributions to Chemistry . . .
N.p., n.d. (Edinburgh, 1817).

First edition. 8vo. 14 pp., 1 leaf (blank). Fine copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated. Bound with: Dewar, Henry, *The Influence of Chemical Laws* . . . (1821).

DEWAR (b. 1780), M.D. and fellow of the Royal College of Physicians of Edinburgh, lectured on the institutions of medicine. This tract comprises reprints of four of his papers: 1) "Proposed improvement in the preservation of lime-water" (*Edinburgh Medical and Surgical Journal*, April 1817); 2) "Method of preserving volatile, deliquescent, and efflorescent substances" (*Thomson's Annals of Philosophy*, July 1817); 3) "A proposed improvement of the mercurial pneumatic apparatus"; and 4) "Application of a recent chemical discovery to practical botany." Not in the usual bibliographies.

DEWAR, Henry

The Influence of Chemical Laws on the Phenomena of Physiology.
N.p. (Edinburgh). 1821.

First edition. 8vo. 1 leaf, 17, (1) pp. Signed "J. Dewar" on title page. Bound with: Dewar, Henry, *Contributions to Chemistry* (Edinburgh, 1817).

REPRINTED FROM the *Edinburgh Medical and Surgical Journal* (October 1821), this paper discusses "Whether or not [living beings] depend entirely on the chemical laws of matter?" Read before the Royal Society of Edinburgh, the author contends that "the operations of life resemble those of chemistry in their minuteness." An early exposition of biochemical interest. Not in the usual bibliographies.

DEZALLIER D'ARGENVILLE, Antoine Joseph

L'Histoire Naturelle Eclaircie dans Une de ses Parties Principales, l'Oryctologie, qui traite des Terres, des Pierres, des Métaux, des Minéraux, et autres Fossiles, . . .
Paris: De Bure, 1755.

First edition. 4to. Title in red and black. With fine frontispiece (engraved by Chedel) and 25 other finely engraved plates (depicting crystals, minerals, figures stones, etc.). Very good copy with wide margins, in the original mottled calf, back gilt.

A SCARCE WORK illustrated with very fine plates. The author (1680–1765), a naturalist, contributed a number of works in the field of natural history based on his studies and travels through France, Italy, and England. Certain portions of this work are of direct chemical interest. Not cited by the usual chemical bibliographies. (Wellcome, II, 462)

DICKINSON, Edmund

D. Edmundi Dickinsoni M.D. Physica Vetus & Vera: sive Tractatus de Naturali veritate hexaëmeri Mosaici. Per quem probatur in historia Creationis, tum Generationis universae methodum atque modum, tum verae Philosophiae principia, strictim atque breviter à Mose tradi.

London: Typis Ilivianis, Vaenales prostant apud Henricum Ribotteau . . . 1702.

First edition. 4to. 4 leaves (including beautifully engraved title page by M. v. Gucht), 340 pp., 2 leaves (index). With 4 full-page copperplates. (N.B. The 2 plates between pages 16 and 17 are on separate leaves, not part of the pagination. The 2 plates on pages 94 and 95 form part of the pagination. Page 95 is misnumbered 59.) With beautiful copperplate and woodcut initials, head- and tailpieces (many repeated). Very good copy in contemporary full vellum.

DICKINSON (1624–1707) was educated at Eton and Merton College, Oxford, where he received the M.D. degree in 1656. In 1655 he published his *Delphi Phoenicizantes*, a very learned work, in which he attempted to prove that the Greeks had borrowed the story of the Pythian Apollo, and all that rendered the Oracle of Delphi famous, from Scripture, and in particular the book of Joshua. Dr. Sheldon, archbishop of Canterbury, had such a high opinion of it that he urged Dickinson to take holy orders. But Dickinson applied himself diligently to chemistry instead and became one of the leading authorities in England. He became a Fellow of the College of Physicians (1677) and was physician and chemist to both Charles II and James II. The present title is the chief work of the author, on which he spent many years. Dickinson attempted to show that all science is to be found in the writings of Moses. He denied

that metals grow from seeds as well as the spontaneous generation of animals, and he defended the atomic theory. He attempted to establish a philosophy founded on principles collected out of the Pentateuch. It is a very curious work, but attracted great attention when published. Continental reprints appeared (e.g., Rotterdam, 1703; Leoburg, 1705). A rare book. (Duveen, 171; Ferchl, 123; Ferguson, I, 210 [not in Young Coll.]; Ferguson Coll., 189; *Munk's Roll*, I, 395; Partington, II, 328; Watt, I, 302j; Wellcome, II, 464)

DICKSON, Stephen, and KIRWAN, Richard

An Essay on Chemical Nomenclature, by Stephen Dickson, M.D. . . . in which are comprised Observations on the Same Subject, by Richard Kirwan, LL.D. . . .

London: Printed for J. Johnson, . . . and W. Gilbert, Dublin. 1796.

First edition. 8vo. 2 leaves, xvi, 294 pp., 1 leaf. Very fine copy in contemporary mottled calf, gilt dentelles on each cover, spine gilt, black morocco label. Contemporary stamp on title page: Penzance Library.

AN IMPORTANT book, dedicated to Richard Kirwan, in which the chemical nomenclature proposed by Kirwan is defended against that of Guyton de Morveau, Lavoisier, et al. Most of the names proposed did not become part of the language, and the work remains largely unknown to chemical historians. "An interesting book on chemical nomenclature was published in 1796 by an Irish physician, Stephen Dickson, who was professor [of medicine] at Trinity College, Dublin. His Essay . . . was lent authority by the inclusion of observations by Richard Kirwan, almost to the extent that it might be called a joint work. Although Dickson agreed with Lavoisier on the importance to chemistry of its language, he did not accept the new terms and his position was fundamentally opposed to that of the reformers" (Crosland). As this copy came from Penzance Library, most probably this is one of the actual books that the young Humphry Davy studied before he journeyed to Bristol to work under Thomas Beddoes. It is well known that Davy "had his own ideas about chemical terms. He proposed the name *phosoxxygen* for oxygen . . ." (Crosland). Very rare. Not in Blake, D.S.B., Poggendorff, Wellcome, or the usual chemical libraries. (Bolton, 47; M. P. Crosland, *Historical Studies in the Language of Chemistry*, 1962, pp. 199–200, 203; Partington, III, 669; Sondheimer, 812; Watt, I, 302t)

DIDEROT, Denis, and d'ALEMBERT, Jean le Rond

Encyclopédie, ou Dictionnaire Raisoné des Sciences, des Arts et des Métiers, par un société des gens de lettres. Mis en ordre & publié par M. Diderot . . . & quant à la Partie Mathématique par M. D'Alembert . . .

Paris, Neuchastel, & Amsterdam: various printers. 1751–1780.

First edition throughout. 35 volumes, folio, including 17 volumes of text, 2 volumes of tables, 11 volumes of plates, plus a supplement with an additional 4 volumes of text and 1 volume of plates. Bound variously in mottled calf or sheep or half sheep with sprinkled paper boards, raised bands, the full leather bindings (on the 17 text vols.) with attractively gilt spine compartments with central floral ornament and floral or foliate corner decoration, and marbled or painted endpapers. With 12 volumes containing a complete series of nearly 3,000 striking large folio engravings (more than 300 being double page or folding), including all the engravings called for in the various lists of plates (plus an additional duplicate plate). Some minor wearing to joints and headbands; otherwise a fine set. Many volumes with eighteenth-century engraved armorial bookplate: "DeConstant Rebecque."

THE MOST important literary achievement of the Enlightenment, containing much information on contemporary chemistry and chemical technology. "A monument in the history of European thought; the acme of the age of reason; a prime force in undermining the ancien régime and in heralding the French Revolution; a permanent source for all aspects of eighteenth century civilization" (*Printing and the Mind of Man*). "The greatest encyclopedia of science, which had widespread effect in establishing uniformity of terminology, concept, and procedure in all fields of science and technology" (Horblit). (Collison, *Encyclopaedias*, 121; Dibner, 85; Horblit, 25b; Poggendorff, I, 567; P.M.M., 200; Thornton & Tully, 147)

DIETZE, David Gottlob

De Generatione Metallorum consensu amplissimi philosophorum ordinis disputabunt praeses M. Johannes Zacharias Platner, et respondens David Gottlob Dietze, Stolberg. Misn. D. (blank) Aug. Anno MDCCXVII. H. L. Q. C.
Leipzig: Literis Andreae Martini Schedii. (1717).

First edition. 4to. 46 pp., 1 leaf (Corollaria). Fine copy with wide margins, in half vellum antique, marbled boards, maroon label.

A LEARNED DISSERTATION on the generation of metals and their compounds in ores and minerals, presented by Dietze at the University of Leipzig under the direction of the professor of medicine Johann Zacharias Platner (1694–1747).

ENCYCLOPÉDIE,
 O U
 DICTIONNAIRE RAISONNÉ
 DES SCIENCES,
 DES ARTS ET DES MÉTIERS,
 PAR UNE SOCIÉTÉ DE GENS DE LETTRES.

Mis en ordre & publié par M. *DIDEROT*, de l'Académie Royale des Sciences & des Belles-Lettres de Prusse; & quant à la PARTIE MATHÉMATIQUE, par M. *D'ALEMBERT*, de l'Académie Royale des Sciences de Paris, de celle de Prusse, & de la Société Royale de Londres.

*Tantum series juncturaque pollet,
 Tantum de medio sumptis accedit honoris!* HORAT.

TOME PREMIER.



A PARIS,

Chez { *BRIASSON*, rue Saint Jacques, à la Science.
DAVID l'ainé, rue Saint Jacques, à la Plume d'or.
LE BRETON, Imprimeur ordinaire du Roy, rue de la Harpe.
DURAND, rue Saint Jacques, à Saint Landry, & au Griffon.

M. D C C. L I.

AVEC APPROBATION ET PRIVILEGE DU ROY.

Dietze displays a competent knowledge of chemical and metallurgical literature, citing the works of Agricola, Becher, Ercker, Hartsoeker, Hertzwig, Homberg, Kircher, Matthesius, Roessler, Sennert, Stahl, et al. On the title page of the copy in the Hoover Collection the date has been corrected to "1 Sept." in manuscript. (Ferchl, 124, 415; Ferguson, I, 212; Ferguson Coll., 190; Hoover, 265; Poggendorff, II, 468; Watt, I, 303p; Wellcome, II, 468)

DIGBY, Sir Kenelm

Choice and Experimented Receipts in Physick and Chirurgery, as also Cordial and Distilled Waters and Spirits, Perfumes, and other Curiosities. Collected by the Honourable and truly Learned Sir Kenelm Digby Kt. Chancellour to her Majesty the Queen Mother. Translated out of several Languages by G. H.

London: Printed for the Author, and are to be sold by H. Brome at the Star in Litte[sic]-Britain, 1668.

First edition. 8vo. 4 leaves (including longitudinal half title, and title), 308 pp., 6 leaves (11 pp. index, 1 p. books sold by H. Brome). Good copy in blind-ruled calf antique, spine gilt-lettered.

THE PRESENT work is found in two distinct states. In one there is a portrait of Digby (engraved by Cross), and the first leaf is blank without wording for the longitudinal title. In the other state there is no portrait, but the first leaf (sign. A1) is a longitudinal title printed with the words "Digby's Receipts," as in this copy. The state with the portrait has the imprint "London, Printed for the Author, 1668." Ferguson (*Books of Secrets*), who discusses both states, says that "There does not seem to have been any portrait" issued with the state having the imprint with "Litte-Britain," as here. No priority of issue or state has been established. The translator, George Hartman, was Digby's assistant, and he compiled this posthumous collection of receipts by Digby. "The volume deals mainly with receipts . . . for different common ailments, but incidentally there is a little practical chemistry in the preparation of the compounds employed" (Ferguson, *Secrets*). "Digby in 1633–5 made chemical experiments at Gresham College, and many processes . . . were published by one of his operators, George Hartman (as here). . . . Digby's alchemical manuscripts are in the British Museum and the Bodleian, Oxford" (Partington). (Cushing, D160; D.S.B., IV, 96; Duveen, 172; Edelstein, 752; Ferchl, 125; Ferguson Coll., 193; Ferguson, *Books of Secrets*, VI, 20; Neu, 1141; Osler, 2464; Partington, II, 426; Reynolds, 1258; Watt, I, 303z; Wellcome, II, 468; Wing, D1423)

DIGBY, Sir Kenelm

Choice and Experimented Receipts in Physick and Chirurgery, as also Cordial and Distilled Waters and Spirits, Perfumes, and other Curiosities. Collected by the Honourable and truly Learned Sir Kenelm Digby Kt. Chancellour to Her Majesty the Queen-Mother. The Second Edition Corrected & Amended.

London: Printed by Andrew Clark, for Henry Brome, at the Gun at the West-End of St. Paul's. 1675.

Second edition. 8vo. 2 leaves, 146 pp., 4 leaves (index). With fine engraved frontispiece portrait of Digby at age 62 (dated 1674). Signature K8 lacking (longitudinal half title); otherwise good copy in calf antique, maroon morocco label gilt.

THE AUGMENTED second and final edition of this important collection of chemical, pharmaceutical, and medical secrets, gathered and published by George Hartman. The text follows that of the first edition (London, 1668) but with differences in wording and additional material. The longitudinal half title (signature K8) is usually missing: it is not present, for example, in the copies listed by Neu, Smith, Wellcome, etc. Not in Bolton, Cushing, Edelstein, Ferchl, Ferguson, Ferguson Coll., Osler, Poggendorff, Rosenthal, etc. (D.S.B., IV, 96; Duveen, 172–173; Ferguson, *Books of Secrets*, VI, 20; Neu, 1142; Partington, II, 426; Smith, 148; Watt, I, 303z; Wellcome, II, 469; Wing, D1425)

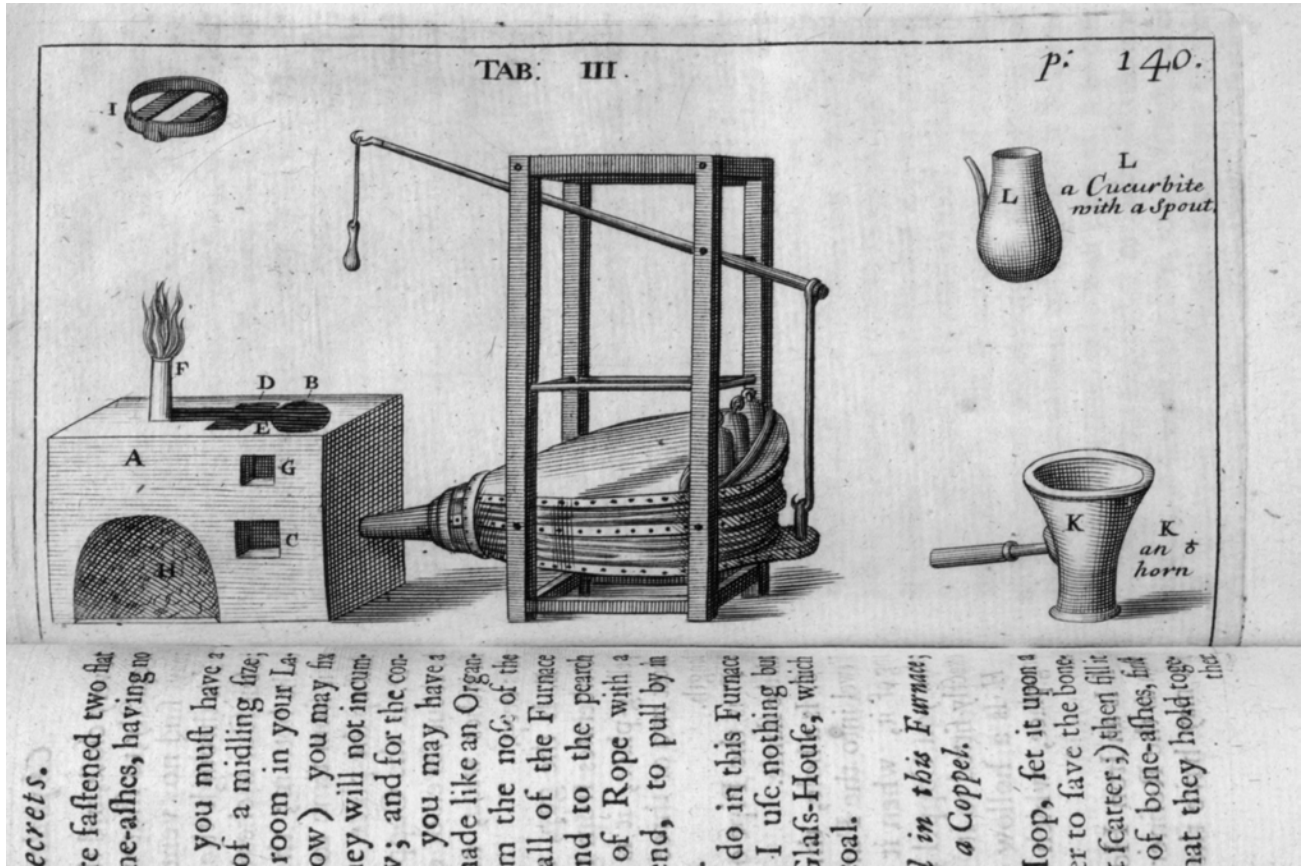
DIGBY, Sir Kenelm

A Choice Collection of Rare Chymical Secrets and Experiments in Philosophy: as also Rare and unheard-of Medicines, Menstruums, and Alkabeasts; with the True Secret of Volatilizing the fixt Salt of Tartar. Collected and Experimented by the Honourable and truly Learned Sir Kenelm Digby, Kt. Chancellour to Her Majesty the Queen-Mother. Hitherto kept Secret since his Decease, but now Published for the good and benefit of the Publick, by George Hartman.

London: Printed for the Publisher, and are to be Sold by the Book-Sellers of London, and at his own House in Hewes Court in Black-Fryers. 1682.

First edition, first issue. 8vo. 8 leaves, 272 pp. With 4 fine copperplates of chemical apparatus (facing pp. 72, 112, 140, and 234). Page 145 is a divisional title page (*Chymical Secrets, The Second Part* . . . London, Printed for the Author. 1682). Fine, crisp copy in contemporary calf, tastefully rebaked, green morocco label gilt, spine dated. From the library of the famous chemist Richard Watson (1737–1816), with the Calgarth Park bookplate.

A VERY DESIRABLE copy with a distinguished provenance. "This is the only account of Sir Kenelm Digby's chemical



Digby. Choice Collection of Rare Chymical Secrets. London, 1682.

experiments, which were never published during his lifetime. There are two parts bound together, the second having a separate title-page, dated 1682. At the end is a recipe for Digby's powder" (Duveen, who describes another issue of 1683, with variant title). For further details on the chemical content of this work, see Partington and Wyndham Miles (*Chymia*, 2 [1949], 119–128). A German translation appeared (Hamburg, 1684). Extremely rare: Wing lists only three copies with this imprint. Not mentioned by Bolton, Cushing, Edelstein, Osler, Smith, Waller, etc. (D.S.B., II, 96; Duveen, 173 [1683 issue, imperf.]; Ferchl, 125; Ferguson, I, 213 [1683 issue: not in Young Coll.]; Ferguson Coll., 190 [1683 issue]; Ferguson, *Books of Secrets*, vol. 2, Seventh Supplement, 70–71; Miles, 121; Neu, 1143; Partington, II, 426; Watt, I, 303z [1683 issue]; Wellcome, II, 469 [variant of 1682 issue]; Wing, D1425A)

DIGBY, Sir Kenelm

Discours fait en une celebre Assemblée, par le Chevalier Digby, . . . touchant la Guerison des Playes par la Poudre de Sympathie. Où sa composition est enseignée, & plusieurs autres merveilles de la Nature sont développées. . . .
Imprimé à Rouen, & se vend à Paris, Chez Augustin Courbé . . . 1660.

Second edition. 8vo. 195, (1) pp., 1 leaf. Very good copy in contemporary mottled calf, maroon morocco label gilt, spine gilt.

THE "POWDER of sympathy" had a remarkable vogue throughout the seventeenth century, and even physicians of great repute felt compelled to use it. It owed the major part of its reputation to that extraordinary and versatile genius Sir Kenelm Digby. "In 1657 his increasingly poor health led Digby to take the waters at Montpellier, where he gave his famous account of the 'powder of sympathy', which cured wounds by being rubbed on the weapon that inflicted them. . . . It worked by a combination of occult and natural powers, that is, by attraction and by the small particles given off by all objects" (D.S.B.). The "powder of sympathy" was merely ferrous sulphate (green vitriol), which was dissolved in rainwater, then applied to the weapon that caused the wound (note: not applied to the wound itself). Sir William Osler suggested that possibly the real secret of Digby's success lay in his directions that the wound was to be left alone and kept clean. First published two years previously (Paris: Augustin Courbé et Pierre Moet, 1658), it was immediately translated into English. Many editions followed, including translations into Latin, German, and Dutch. A very scarce edition, which is not mentioned by Bolton, Caillet, Cushing, Duveen, Edelstein, Ferchl, Ferguson's *Books of Secrets*, Neu, Osler, Smith, etc. (D.S.B., IV,

96; Ferguson, I, 213 [not in Young Coll.]; Ferguson Coll., 191; Goldsmith, 606; Guaita, 1753; Partington, II, 424; Waller, 2464; Watt, I, 303y; Wellcome, II, 468)

DIGBY, Sir Kenelm

Discours fait en une celebre Assemblée, par le Chevalier Digby, . . . touchant la Guerison des Playes par la Poudre de Sympathie. Où sa composition est enseignée, & plusieurs autres merveilles de la Nature sont développées. . . .
Paris: Chez Thomas Jolly, au Palais, en la Salle des Merciers, au coin de la Galerie des Prisonniers, à la Palme & aux Armes de Hollande. 1669.

Fifth edition. 12mo. (in 6s). 92 pp., 2 leaves. Very fine copy in original speckled calf, spine richly gilt. Old stamp on first and last free endpapers: "Comte le Gonidec de Penlan Chateau de Teatre Falaise."

OF THE TWELVE early French editions listed by Rubin in the Huston bibliography of Digby, this is the fifth. "According to a communication from Fredson Bowers to Dr. Huston in 1959, a relatively uncommon format, printed by half-sheet imposition, with the sheet turned in perfecting on the long axis (watermarks about center in the outer margin)." Rare. Not in the British Library or the usual chemical bibliographies. (Caillet, 3124; D.S.B., IV, 96; Huston, 52; Osler, 2454; Partington, II, 424)

DIGBY, Sir Kenelm

Discours fait en une celebre Assemblée, par le Chevalier Digby, . . . touchant la Guerison des Playes par la Poudre de Sympathie.
Paris: Chez Charles Osmont, . . . 1681.

12mo. 248 (i.e., 246) pp., 1 leaf (privilege). Small, old ink stain on blank foremargins of final 24 leaves; otherwise a good copy in contemporary mottled calf, rebounded with original gilt spine laid on. From the library of Baron Étienne Félix D'Hénin de Cuvillers (1755–1841), with his armorial bookplate, and 3-line presentation inscription in ink on front pastedown endpaper: "Donne en avril 1820 à Mr le Docteur Bertrand Médecin de la faculté de Paris. Le Bon. D'Hénin de Cuvillers."

AN IMPORTANT edition, containing the *Disertation touchant la Poudre de Sympathie* (pp. 153–248), here first translated into French by Rault from the Latin of Nicolas Papin. The latter's *De Pulvere Sympathetico Dissertatio* originally appeared about 1640 (with several later Latin editions), and it was attacked by Isaac Cattier in 1651. Ferguson (*Books of Secrets*, II, VI, 21) lists another edition of the *Discours* (Utrecht, 1681), with different pagination. For other French editions, see Caillet, Ferguson, Partington, etc. Not in D.S.B., Duveen, Edelstein, Ferchl, Guaita, Neu, Smith,

Watt, etc. (Caillet, 3124; Ferguson, I, 213 [not in Young Coll.]; Ferguson Coll., 191; Goldsmith, 607; Osler, 2456; Partington, II, 424; Waller, 2465; Wellcome, II, 468)

DIGBY, Sir Kenelm

A Discourse Concerning the Vegetation of Plants. Spoken by Sir Kenelme Digby, at Gresham College, on the 23 of January, 1660. At a Meeting of the Society for promoting Philosophical Knowledge by Experiments.

London: Printed by J. C. for John Dakins near the Vine Tavern in Holborn. 1661.

First edition. 12mo. 2 leaves, 100 pp., 1 leaf (errata), 1 leaf (blank). Initial and final blanks lacking, and minor browning of some leaves; otherwise very good copy, in calf antique, spine gilt-lettered. Bookplate: Kenneth Garth Huston.

ONE OF the earliest books on plant physiology, and of considerable chemical interest. Digby notes that air contains a "hidden food of life" (i.e., oxygen), present in saltpeter (potassium nitrate), which promotes plant growth. He also refers to the increase in weight of antimony when it is calcined by means of a burning glass that concentrates the rays of the sun. Air "impregnated with this benigne fire is healthfull to live in" and is "the food of the Lungs." The *Discourse* was the earliest lecture to be presented to the group of scientists who were to form the Royal Society. The anesthesiologist K. G. Huston, Sr. (1926–1987), from whose library this copy came, was a Californian bibliophile who collected books by and about Digby and who was especially influenced by John F. Fulton and Sir Geoffrey Keynes. This variant with J. C. (instead of the usual J. G.) in the imprint is extremely rare, and Dr. Huston located only the present copy. Both the J. G. and J. C. variants are illustrated by Davida Rubin (*Sir Kenelm Digby . . . Bibliography*, San Francisco, 1991, pp. 42–43). The J. G. imprint has forty-one ornaments in the right-hand border of the title, whereas the J. C. imprint has forty-two. (D.S.B., IV, 96; Ferguson Coll., 192; Henrey, I, 101; Keynes, 1838; Krivatsy, 3252; Osler, 2462; Partington, II, 425; Wing, D1432)

DIGBY, Sir Kenelm

A Late Discourse Made in a Solemne Assembly of Nobles and Learned Men at Montpellier in France; By Sr. Kenelme Digby, Knight, &c. Touching the Cure of Wounds by the Powder of Sympathy; With Instructions how to make the said Powder; whereby many other Secrets of Nature are unfolded. . . . Rendred faithfully out of French into English
By R. White, Gent.

London. Printed for R. Lowndes, and T. Davies, and are to be sold at their shops in St. Paul's Church Yard, at the sign of the White Lion, and at the Bible over against the little North Door of St. Paul's Church. 1658.

First English edition. 12mo. 6 leaves (first blank), 152 pp., 1 leaf (advertisements, defective). Minor water staining on a few leaves, and contemporary annotations in blank fore-margin of each recto; otherwise good copy in original unlettered blind-ruled sheep. Signatures of John Rice (seventeenth century) on recto of first blank leaf and at the end.

THE FIRST English translation by R. White of the most popular of Digby's books. White has dedicated it to Kenelm Digby's son, John Digby. In the dedication White flatteringly says: "You resemble him, not only in the outward Symmetry . . . of your body . . . but the tone of your voice . . . and articulate sounds are the same with his; insomuch, that . . . this . . . Identity, may be called one of the greatest wonders of these times." Ferguson (*Books of Secrets*, 1888, part VI, p. 23) says that he had "not met with a copy" nor had he "seen a reference to it." Later Ferguson (*Bibliotheca Chemica*, 1906, p. 213) states that he had only just discovered this first edition, that it is very rare, and that the D.N.B. suggested (erroneously) that "the second edition is the only one known and is probably the original." This edition is not in Blocker, Eales, Eimas, Waller, Wellcome, etc. (Krivatsy, 3247 [imperf.]; Osler, 2457; Parkinson & Lumb, 664; Partington, II, 424; Rubin, *Digby Bibliography*, No. 60; Wing, D1435)

DIGBY, Sir Kenelm

A Late Discourse Made in a Solemne Assembly of Nobles and Learned Men at Montpellier in France, By Sr. Kenelme Digby, Knight, &c. Touching the Cure of Wounds by the Powder of Sympathy; With Instructions how to make the said Powder; whereby many other Secrets of Nature are unfolded. . . . Rendered faithfully out of French into English
By R. White, Gent. *The second Edition corrected and augmented, with the addition of an Index.*

London: Printed for R. Lowndes at the White Lion, and T. Davies at the Bible in S. Paul's Church-yard, over against the little North Door, 1658.

Second edition. 12mo. 5 leaves, 152 pp., 3 leaves (final leaf: bookseller's catalogue, verso blank). Very good copy in contemporary half calf, marbled boards, rebacked in calf antique, maroon label gilt, spine dated.

THE FIRST French edition (*Discours*, Paris, 1658) was "translated at once into English by R. White and published in 1658, 12° . . . The second edition, corrected and augmented with the addition of an Index was published also in 1658, but it was entirely reset and is quite different from the first edition. The third edition was published in 1660, the fourth in 1664" (Ferguson). The first English edition is very rare, and this second edition is almost as rare. In addition to its chemical content, Partington indicates that the "book mentions magnetic and electric attraction, acoustic resonance," etc. Bolton, Duveen, Edelstein, and Osler list the 1660 London edition. (Cushing, D163; D.S.B., IV, 96; Ferguson, I, 213 [not in Young Coll.]; Ferguson Coll., 191; Ferguson, *Books of Secrets*, VI, 22; Partington, II, 424; Smith, 149; Watt, I, 303y; Wellcome, II, 468; Wing, D1436)

DIGBY, Sir Kenelm

Letters between the Ld George Digby, and Sr Kenelm Digby Kt. concerning Religion.

London: Printed for Humphrey Moseley, and are to be sold at his Shop, at the sign of the Prince's Arms in St. Paul's Church-yard. 1651.

First edition. 8vo. 2 leaves, 132 pp. 2 woodcuts on title page. Signature D3 signed D4 and D4 signed E4. Lower blank outer corners of final 7 leaves repaired; otherwise very good copy in modern tan calf, maroon leather label.

A TRACT CONTAINING correspondence between Kenelm Digby, a Catholic, and his "noblest cousin and dearest friend" George Digby, second Earl of Bristol (1612–1677). Roman Catholicism had been attacked by George Digby in his letters to Kenelm in 1638 and 1639. The letters published here were sent by Kenelm to George in response. Although written between 2 November 1638 and 30 March 1639, they were "not published until the Commonwealth was in place. On the subject of religious authority, the series of letters was widely read and considered representative of the issues between Catholics and Anglicans" (Rubin). The final letter is signed: Sherborn, March 30, 1639. An entirely reset second edition (not issue) appeared, with minor differences throughout, with a Sherburn imprint dated March 39 [*sic*], 1639. Wing does not distinguish between these two editions and lists them together under George Digby (as Earl of Bristol). (Rubin, *Digby*, No. 39; Watt, I, 303y; Wing, B4768)

DIGBY, Sir Kenelm

Nouveaux Secrets Experimentez, pour conserver la Beauté des Dames, et pour guérir plusieurs sortes de Maladies. Tirez des Mémoires de M. le Chevalier Digby . . . Avec son Discours touchant la guérison des Plaies, par la Poudre de Sympathie. . . . Septième Edition, revue, corrigée & augmentée d'un Volume.

Hague: Et se vend a Bruxelles, Chez Jean van Vlaenderen, vis à vis l'Eglise de S. Jean. 1715.

Ninth (so-called seventh), final, and best edition. 2 vols., 8vo., in 1. I: 9 leaves, 192 pp. II: 4 leaves, 156 pp. With 2 identical engraved frontispieces (by Jan Lamsveldt), 1 to each volume. Occasional light foxing; otherwise very good copy, in original speckled calf, spine richly gilt, brown morocco label.

ALTHOUGH STATED on the title to be the seventh, revised, and corrected edition, this is the ninth, final, and most complete French printing. This popular collection of Digby's secrets and receipts was formed by George Hartman, one of Digby's laboratory assistants. It comprises much more than Digby's chemical and pharmaceutical secrets and includes Hartman's own experiments, as well as those of other celebrated authors. The first part of the second volume reprints Digby's famous essay on his "powder of sympathy." There are descriptions of transmutating lead into silver and eventually into gold. Not in Blake, D.S.B., Duveen, Edelstein, Neu, Smith, Waller, Watt, Wellcome, etc. (Caillet, 3127; Ferchl, 125; Ferguson, I, 213 [not in Young Coll.]; Ferguson Coll., 192; Ferguson, *Books of Secrets*, II, 3rd Supplement, 51; Partington, II, 424; Rubin, *Sir Kenelm Digby*, 1991, no. 113)

DIGBY, Sir Kenelm

Observations upon Religio Medici. Occasionally Written By Sir Kenelm Digby, Knight. The second Edition corrected and amended.

London: Printed by F. L. for Lawrence Chapman and Daniel Frere. 1644.

Second edition. 8vo. 2 leaves (first blank), 124 pp. Very fine copy in nineteenth-century blind-ruled calf, all edges gilt, with 2 black morocco labels.

LARGELY A THEOLOGICAL tract (first: London, 1643), containing Digby's comments on Sir Thomas Browne's *Religio Medici* (London, 1642). Edward Sackville, Earl of Dorset, sent a copy of Browne's book to Digby, who was then in prison. "It can be seen as a Catholic versus Anglican disagreement, in which Digby is probably the better scientist. Digby read the book and composed his remarks over-night in a letter to Dorset" (Rubin). It is the first important appraisal of Browne's work and one of Digby's enduring pieces,

signed on 23 December 1642 (p. 122). Of some peripheral chemical interest, Digby illustrates his arguments by referring to Hermes Trismegistus, Hermeticall Philosophers, palingenesis (supposed regeneration of plants from their crystallized ashes), atomic theory, fire, etc. This copy of the second edition has the variant title page on which "The second Edition corrected and amended" is between rules. (Blocker, 108; Caillet, 3128; Keynes, 221; Krivatsy, 3255; Osler, 4542; Rubin, *Sir Kenelm Digby*, No. 20; Wellcome, II, 468; Wing, D1443)

DIGBY, Sir Kenelm

Of Bodies, and of Mans Soul. To discover the Immortality of Reasonable Souls. With two Discourses Of the Powder of Sympathy, and Of the Vegetation of Plants. By Sir Kenelm Digby Knight. . . .

London: Printed by S. G. and B. G. for John Williams, and are to be sold in Little Britain over against St. Buttolphs-Church. 1669.

Fifth edition. 4to. (in 8s). 28 leaves, 439, (1) pp., 5 leaves, 231, (1) pp. Woodcut diagrams in text. Fine copy in contemporary blind-ruled calf, rebounded, maroon morocco label gilt, spine dated. Signature in ink (erased) of Edward Pearse (ca. 1633–ca. 1674), nonconformist divine (see D.N.B.), dated 1674 on flyleaf; and signature in ink of Francis Fox (1675–1738), divine (see D.N.B.), on title.

THE FINAL (first posthumous) edition and the only one that collects Digby's main scientific works, excluding the book on chemistry by his pupil Hartman and the posthumous book of receipts. It is also the first with the slightly altered title and is unquestionably the best of the editions as it contains *A Discourse Concerning the Vegetation of Plants* (first: 1661). There is a laudatory seven-page poem to Digby (*On His Incomparable Treatises of Philosophy*) by John Sergeant (1622–1707), the Roman Catholic controversialist (see D.N.B.). "Digby presents in *The Nature of Bodies* the first fully developed atomistic system of the seventeenth century, in which he posits divisible atoms, adopts Galileo's dynamic principle of matter, and approaches the Cartesian universe of extension and motion only" (A. G. Debus, *Medicine in Seventeenth Century England* [1974, pp. 184–188]). The *Discourse on . . . Vegetation* reveals Digby as a careful observer of plant life, and a remarkable passage contains the earliest statement of the importance of "vital air" (i.e., oxygen) to the life of plants. Not in Bolton, Caillet, Duveen, Edelstein, Ferguson Coll., Neu, Osler, Sondheimer, Waller, etc. (Cushing, D165; D.S.B., IV, 96; Ferchl, 125; Ferguson, I, 212; Partington, II, 424; Thorndike, VII, 498; Watt, I, 303y; Wellcome, II, 468; Wing, D1445)

DIGBY, Sir Kenelm

Private Memoirs of Sir Kenelm Digby, Gentleman of the Bedchamber to King Charles the First. Written by Himself. Now first published from the original manuscript, with an introductory memoir.

London: Saunders and Otley, Conduit Street. 1827.

First edition. 8vo. lxxxviii, 328 pp. + 2 leaves, 50 pp. Frontispiece portrait of Digby (engraved by Hilliard from the painting by Van Dyck, dated 1828). Fine copy, all edges gilt, in original gilt-ruled half calf, marbled boards, gilt panels on spine, brown leather label.

DIGBY'S MOST important autobiographical works were still in manuscript when he died in 1665. The *Private Memoirs* (1827) were first published by the antiquary Sir Nicholas Harris Nicolas (1799–1848) from Digby's manuscript in the British Library. The youthful travels by Digby on the continent, his visit to Spain with Prince Charles and the Duke of Buckingham, and other exploits are described. The preface examines various controversial matters, including the alleged ill fame of Digby's wife, Venetia. This copy also contains the *Castrations from the private memoirs of Sir Kenelm Digby* (1828), fifty pages privately printed in very few copies, which "could not, with propriety, be retained in a volume destined for general circulation." The preface is dated 1 January 1828. This additional work contains passages that were considered too erotic or suggestive for early-nineteenth-century readers: to the modern reader they are innocuous. The Wellcome copy lacks this part. (Cushing, D166; D.S.B., IV, 96; Osler, 4729; Rubin, *Sir Kenelm Digby*, No. 137; Wellcome, II, 469)

DIGBY, Sir Kenelm

Remedes souverains et secrets experimentez, de M. Le Chevalier Digby, Chancelier de la Reine d'Angleterre. Avec plusieurs autres secrets & parfums curieux pour la conservation de la beauté des dames. Nouvelle edition.

Paris: Guillaume Cavelier. 1689.

Nouvelle edition. 12mo. 2 leaves, 300 pp., 14 leaves. Good copy in contemporary calf, spine richly gilt, maroon morocco label. Bound with: Le Clerc, Charles Gabriel, *Le medecine aisée* (Paris: E. Michallet, 1697). Seventeenth-century note in ink on the rear pastedown endpaper: "Ce livre apartien a moy Delmar etudiant en chirurgie a Bourdeaux Delmar."

"UNDER DIGBY'S name there appeared certain books of secrets in French and German, but they are not translations of this collection of Hartman's, although they contain a good many of his 'choice receipts'" (Ferguson, *Books of Secrets*, I, Part VI, 20–21). By this statement Ferguson meant that the present title was not the French translation of George

Hartman's *Choice and experimented receipts in physick and chirurgery* (London, 1668). Ferguson continues: "The French version was made by Jean Malbec de Tresfel, the royal privilege for seven years is dated 1668, but I do not know if the book first came out then. The copies I have seen are of a later time." Ferguson was writing in 1888. Comparison of a copy of Malbec de Tresfel's *Recueil des remedes et secrets* (Paris, 1669) with the present work reveals that the texts are identical, except that this edition of 1689 contains additional matter on pages 277–300: viz. "Secrets pour la conservation de la beauté des dames"; "L'usage du quinquina, ou remede contre toutes sortes de fievres"; "Remede du Prieur de Cabrieres, pour les descentes"; and "Maniere de traiter les descentes." Ferguson describes other editions of Utrecht (1681), Paris (G. Cavelier, 1684), and a "sixième edition" of La Haye (1700). By 1894 Ferguson was able to describe the present "nouvelle edition." This edition of 1689 is not mentioned by Bolton, Caillet, Cole, Cushing, Duveen, Ferchl, Ferguson, Goldsmith, Guaita, Neu, Osler, Partington, Poggendorff, Rosenthal, Waller, Watt, Wellcome, etc., although some of these authorities refer to the 1684 edition. This edition of 1689 is described in Ferguson Coll., 193; Ferguson, *Books of Secrets*, II, 3rd Supplement, 51; Smith, 149.

DIGBY, Sir Kenelm

Two Treatises. In the One of which, the Nature of Bodies; in the Other, the Nature of Mans Soule; is looked into: in Way of Discovery, of the Immortality of Reasonable Soules. . . . Paris: Printed by Gilles Blaizot. 1644.

First edition. Folio. 22 leaves, 466 pp., 1 leaf (blank, lacking). Woodcut ornament on title page. Historiated woodcut capitals, head- and tailpieces. Woodcut diagrams in text. Fine, tall, wide-margined copy, in original unlettered calf.

A BEAUTIFUL EXAMPLE of fine French printing and a significant work in the history of science; dedicated "To my sonne Kenelme Digby." "Sir Kenelm Digby (1603–1665) after a successful career . . . retired to study alchemy. . . . He went to France in 1643, returning to England after the Restoration to become one of the founders of the Royal Society. He was a curious mixture of real ability in science and a capacity for clear thinking with credulity and superstitious beliefs" (Partington). "In 1633 he withdrew to Gresham College and spent two years . . . occupying himself with chemical experiments" (Ferguson). "Digby's most important piece of work is the first of the *Two Treatises*, 'Of Bodies.' Here he displays a clarity and logic . . . that show his appreciation of Descartes" (D.S.B.). Many subjects of chemical interest are discussed (e.g., alchemy, iatrochemistry, atomic theories, fire, light, and composition and struc-

ture of matter). Other scientific topics covered include physics, magnetism, electricity, biology, circulation of the blood (confirming Harvey), and psychiatry. "In Digby's grand edifice 'Of Bodies,' is expressed the baroque spirit of the times. It is . . . a composition of numerous modern and traditional ideas in a new shape" (Pettersson, *Sir Kenelm Digby*, p. 191). Pages 1–346 cover scientific topics, pages 347–445 are theological ("Of Mans Soule"), and the book ends with Digby's "Conclusion" (pp. 446–466). Rare. Not in Bolton, Cushing, Edelstein, Ferchl, Ferguson Coll., Smith, Sondheimer, Waller, Wellcome, etc. (D.S.B., IV, 96; Duveen, 171–172; Ferguson, I, 213 [not in Young Coll.]; Goldsmith, 612; Knight, 19; Mottelay, 121; Neu, 1151; Osler, 2460; Partington, II, 424; Poggendorff, I, 572; Thorndike, VII, 498; Watt, I, 303y; Wing, D1448)

DIGBY, Sir Kenelm

Two Treatises: In the one of which, The Nature of Bodies; In the other, The Nature of Mans Soule, is looked into: in Way of Discovery of the Immortality of Reasonable Soules. . . . London: Printed for John Williams, and are to be sold at the Crowne in S. Paul's Church-yard. 1645.

Second (first London) edition. 4to. (in 8s). 12 leaves, 429, (1) pp., 5 leaves, 143, (1) pp., 1 leaf (*Privilege du Roy*, entirely in French, dated 26th September, 1644, verso blank); 12 leaves ("Table"). (N.B. In the first part the pagination skips, and after the correctly numbered page 312 there is a duplicate set of pages numbered 301–312; however, chapter 28 follows chapter 27 logically, the catchwords agree, and the text is continuous. Signature Ii2 is a divisional title page: *The Second Treatise: . . . of Mans Soule*). Woodcut capitals, head- and tailpieces. Woodcut diagrams in text. Crisp copy in quarter morocco antique, cloth boards, spine gilt-lettered and dated.

THE FIRST edition to be printed in London, and the first in 4to. format. It is an exact reprint of the first edition of the previous year (Paris, 1644). A very few copies were issued with a frontispiece portrait of Digby (not present here). A very scarce edition. Not in Duveen, Ferchl, Ferguson, Neu, Smith, Waller, etc. (Cushing, D167; D.S.B., IV, 96; Edelstein, 755; Ferguson Coll., 193; Osler, 2461; Partington, II, 424; Thorndike, VII, 498; Watt, I, 303y; Wellcome, II, 468; Wing, D1449)

DIGBY, Sir Kenelm

Two Treatises: In the one of which, The Nature of Bodies; In the other, The Nature of Mans Soul, is looked into: in Way of Discovery of the Immortality of Reasonable Soules. . . .

London: Printed for John Williams, and are to be sold at the Crown in S. Paul's Church-yard. 1665.

Third (second London) edition. 4to. 24 leaves, "429" (1) pp., 5 leaves, "143" (1) pp., 1 leaf (privilege). Mispaginated, but complete. Fine copy in original blind-ruled calf, spine richly gilt, maroon morocco label.

A PAGINARY REPRINT of the 1645 London edition. In the first part the pagination skips after page 312, and there is a duplicate set of pages numbered 301–312 (as in the 1645 edition). Signature Ii2 is a divisional title page: *The Second Treatise . . . of Man's Soul*, dated 1657. The text woodcuts are close (but reengraved) copies of those in the 1645 edition. In this edition the table of contents is printed in the leaves preceding the text of the first part. This copy has the early initials "T.ff" inside the front cover and "Tho.ffai" on the front cover. Most of the first front flyleaf is missing, but hidden in the fold-in at the inner hinge are the early signatures of "F. F. Plattes pret. 4s-6" and a few shorthand strokes, and also "Jo. Plattes." It is possible these persons could have been related to Gabriel Plattes (fl. 1638–1640), the famous writer on agriculture. (D.S.B., IV, 96; Eales, 533; Partington, II, 424; Rubin, *Sir Kenelm Digby*, 1991, No. 25; Watt, I, 303y; Wellcome, II, 468; Wing, D1450)

DIGBY, Sir Kenelm

Two Treatises: In the one of which, The Nature of Bodies; In the other, The Nature of Mans Soule is looked into: in Way of Discovery of the Immortality of Reasonable Soules. . . .

London: Printed for John Williams, and are to be sold at the Crown in S. Paul's Church-yard. 1665.

Fourth (third London) edition. 4to. (in 8s). 28 leaves, pp. 1–312, 301–385, 382–383, 388–392, 391–394, 397–429, (1); (10), 1–25, 30–31, 28–136, 139–143, (3). Pagination erratic, text complete. Signature Ii2 is a divisional title page: *The Second Treatise: . . . of Mans Soul* (dated 1645). Woodcut capitals, head- and tailpieces. Woodcut diagrams in text. Very good copy in contemporary blind-ruled calf, rebounded, red morocco label. Bound with: Ross, Alexander, *The Philosophicall Touch-Stone: or Observations upon Sir Kenelm Digbie's Discourses . . .* (London, 1645).

PRINTED IN the year of the Great Plague, this is a close paginary reprint of the second edition (London, 1645). It is the first edition to contain the seven-page poem praising Digby by John Sergeant (1622–1707), a Roman Catholic and acquaintance of Thomas Hobbes. Sergeant was a co-conspirator with Digby and White in "Blacklo's Cabal."

Rubin does not mention the erratic pagination in this edition. Although the title page of *The Second Treatise* is dated 1645, comparison of this section with that in the London (1645) second edition shows that this edition is printed from a different setting of type. (Cushing, D168; D.S.B., IV, 96; Rubin, 26; Watt, I, 303y; Wing, D1451)

DIOGENES LAERTIUS

De vita & moribus philosophorum. (Translated by Ambrosius Traversarius. Edited by Benedictus Brognolus).

Venice (Bonetus Locatellus, for:) Octavianus Scotus. January 15 (i.e., December 18), 1490.

4to. 112 leaves. Roman letter. 42 lines + headline, large and small woodcut capitals. Few leaves slightly embrowned, old stamp on title page and early inscription neatly crossed out; otherwise a very crisp, clean copy, in sixteenth-century vellum, spine lettered and dated in ink. From the library of the numismatist Stanley C. Bagg, F.N.S., with bookplate.

THE CHIEF service of Diogenes Laertius (fl. 220) in his *Lives* was the preservation of the "Sovran Maxims" of Epicurus, the collection of the forty most important articles in the Epicurean doctrine. Other biographies of scientific (including chemical) interest are those of Aristotle, Democritus, Leucippus, and Theophrastus. Diogenes's famous *Lives of the philosophers* was among the favorite school-books of the earlier Renaissance, and there were numerous editions of it, especially in Italy where it remained in favor until the beginning of the seventeenth century. The text contains many biographical facts and quotations not easily accessible elsewhere. Signature aii (recto) is dated August 1475. A rare incunabula. (British Library, *S.T.C. Italian Books, 1465–1600*, p. 216; GKW, 8381; Goff, D222; Hain, 6202; Oates, 1959; Pellechet, 4277; Watt, I, 305v; Wellcome, I, 1768)

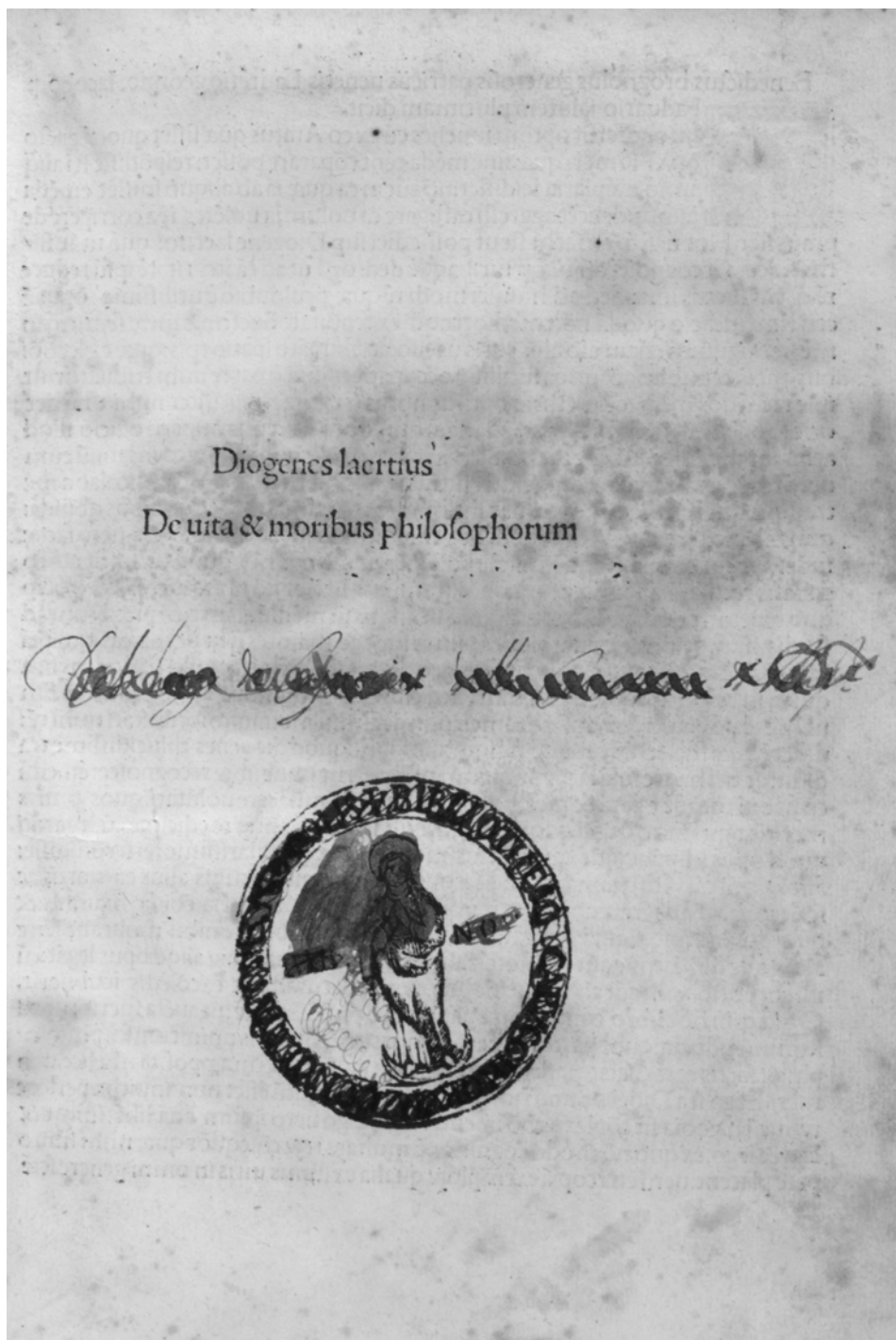
DIOGENES LAERTIUS

De vita et moribus philosophorum libri X. Cum Indice locupletissimo.

Lyons: Apud Seb. Gryphium. 1541.

First Gryphius edition. 8vo. 468 pp., 10 leaves (index). Griffin woodcut device on title page and last leaf (verso). Historiated woodcut initials. Printed in italics throughout. Fine copy in contemporary blind-ruled, unlettered calf (spine skillfully repaired).

A BEAUTIFUL EDITION of this celebrated work, published by Sebastianus Gryphius of Lyons. An excellent specimen of sixteenth-century fine French printing. Rare. Not in Durling, Osler, Waller, Watt, Wellcome, etc. (British Library, *S.T.C. French Books, 1470–1600*, p. 135)



Diogenes Laertius. De vita & moribus philosophorum. Venice, 1490.

DIOGENES LAERTIUS

Diogenes Laertii Clarissimi Historici de vita, & moribus philosophorum libri decem, nuper ad vetusti Graeci codicis fidem accuratissime castigati, idemque summa diligentia excusi, restituti pene innumeris locis, & versibus, epigrammatisque, quae desiderabantur, Graece repositis, iisdemque Latine factis, cum indice in omnes libros utilissimo.

Basel: In Aedibus Valentini Curionis. 1524.

First Curio edition. 4to. 10 leaves, 391, (1) pp. Roman and Greek letter. Woodcut headpiece on page 1, historiated woodcut capitals after Holbein in text, and large woodcut printer's device on final leaf. Few neat early marginalia in Greek and Latin; otherwise fine copy in modern vellum.

AN IMPORTANT and thorough revision of the classic translation by Ambrosius Traversarius (1386–1439), through which Diogenes Laertius's famous work first became known in the West. It is of incalculable importance, since most of our biographical knowledge of ancient philosophy is derived from it. Included are accounts of the lives and doctrines of Thales, Heraclitus, Pythagoras, Euclid, Socrates, Plato (who is assigned an entire book to himself), et al. Of particular importance is book X, devoted to Epicurus, including his *Letter to Herodotus*, which contains the only extant comprehensive review of Epicurus's natural philosophy, with an outline of the atomic system. In his preface the learned printer Valentinus Curio explains that Traversarius's version has here been thoroughly revised from Greek manuscripts by Matthaeus Aurigallus, a professor at Wittenberg, and by Michael Bentinus. Laertius's quotations from various authors are in the original Greek, followed by Latin versions. Curio claims that this edition corrects the "monstrous" edition recently published in France by Gilles de Gourmont and De Marnef (Moreau, III, 2043). (British Library, *S.T.C. German Books, 1455–1600*, p. 244)

DIOSCORIDES

De Materia Medica Libri Sex.

(Colophon:) Venice: In aedibus Aldi et Andreae Socerimense Junio. 1518.

Second Aldine edition. 8vo. 12 leaves (last blank), "235" (i.e., 243) folios, 1 leaf. Woodcut Aldine anchor device on title and last leaf. Text on second folio and colophon leaf in Latin, other text in Greek. Few neat early marginal notes. Very good, crisp copy, in contemporary blind-ruled calf, gilt fleurons in corners and gilt center ornament on each cover, tastefully rebacked, spine gilt-lettered and dated.

DIOSCORIDES (fl. A.D. 50), a Greek physician in the Roman army under Tiberius and Nero, studied many plants during his travels and compiled this, the first materia

medica. He describes over six hundred plants, of which over a hundred were known to Hippocrates. Also described are "thirty-five animal products, and ninety minerals" (D.S.B., IV, 119). For the next sixteen centuries his descriptions were copied, and the better medical botanics were actually mere commentaries on Dioscorides's work, from which much knowledge of early herbal therapy is derived. The *editio princeps* in Greek was printed by Aldus Manutius (Venice, 1499, folio). The present first 8vo. Aldine edition was edited by Francesco Torresani (F. Asulanus), with commentary by Girolamo Rossi (H. Roscius). "Dioscorides . . . the originator of the materia medica . . . is the authoritative source on the materia medica of antiquity" (Garrison-Morton). "His *Materia medica* . . . contains . . . all the materials then used in medicine" (Partington, I, 190). The "importance of . . . this treatise can scarcely be overestimated. Up to the height of the Renaissance period, and later [it] was accepted as the almost infallible authority" (Arber, p. 10). Rare. (Blocker, 109; British Library, *S.T.C. Italian Books, 1465–1600*, p. 218; Durling, 1133; Edelstein, 758; Lilly, *Notable Medical Books*, p. 21; Osler, 355; Renouard, 82; Sparrow, *Milestones of Science*, p. 3; Thornton, 10; Watt, I, 307f; Wellcome, I, 1777)

DIOSCORIDES

De Materia Medica Libri Sex, Ioanne Ruellio Suessionensi interprete. His accessit, praeter pharmacorum simplicium catalogum, copiosus omnium ferme medelarum sive curationum index.

Lyons: Apud Ioannem Frellonium. 1547.

First Lyons edition, second issue. 16mo. 2 leaves, 543, (1) pp., 78 leaves (indices). Woodcut device on title page. Printed in italics (text) and roman (indices). Occasional neat early marginal annotations; otherwise very good, crisp copy in contemporary vellum.

THE *editio princeps* of *De materia medica*, with commentary by Petrus Paduanensis, appeared in Latin in folio format in 1478. Jean Ruel, or Ruelle (Joannes Ruellius, 1474–1537), professor of medicine at Paris, "the most important French botanist of the earlier Renaissance period" (Artier), also translated Dioscorides's Greek text (Venice: Aldus Manutius, 1499) into Latin (Paris: Henrici Stephani, 1516, folio). "He did good service by his Latin translation . . . which was used by Mattioli in his *Commentarii*" (Arber, p. 116). Dioscorides's catalogue of animals included those whose parts were used in ancient medicinal practice, and the description of them as faunal forms is of importance in the history of vertebrate zoology. The first Lyons issue of this elegantly printed and authoritative pocket edition of Ruelle's translation appeared in 1546 (Lyons: J. & F. Frellonium: 16 leaves, 543 pp., 69 leaves; Wellcome, I, 1785). The text

sheets of that issue were used in the present second issue, which differs from the first only in the number of preliminary and final (index) leaves. Very rare. Not in Blocker, British Library, Osler, Reynolds, Watt, etc. (Pritzel, 2306; Waller, 2481; Wellcome, I, 1786)

DIRECTIONS

Directions for Preparing Aerated Medicinal Waters, by means of the improved Glass Machines made at Leith Glass-Works. Edinburgh: Printed for William Creech. 1787.

First edition. Sm. 4to. 12 pp., 2 leaves (advertisement, verso blank, and blank leaf). Finely engraved frontispiece depicting 3 figures (Nooth's apparatus). Fine, crisp copy, uncut, in quarter morocco antique, marbled boards, spine gilt-lettered and dated, original blue wrappers bound in.

AN INTERESTING work describing how carbon dioxide, prepared by the reaction of chalk or marble with dilute sulphuric acid, is passed into water to make "aerated" waters. By dissolving carbon dioxide in solutions of salt of tartar (potassium carbonate), magnesia, common salt, Epsom salt, etc., "alkaline aerated water," "Selters water," "Pymont water," and similar artificial mineral waters are prepared. The advertisement states: "Glass Machines, of different sizes and constructions, for preparing Medicinal Waters, and all sorts of Glasses for Chemical and Philosophical Experiments, made by The Edinburgh Glass-house Company, at their Bottle, Flint, and Window-Glass Manufactory, Leith. Arch. Geddes Manager." Robison, in his preface to the *Lectures on the Elements of Chemistry . . . by Joseph Black* (Edinburgh, 1803, pp. lxx-lxxi), mentions that Black "got another pupil, Mr. Archibald Geddes, manager of the glass-works at Leith . . . which developed into the most . . . confidential friendship." In Duveen's copy, "Suppd. by Dr. Black" is written on the title page by Sir John Hall. The apparatus by John Mervin Nooth, M.D., depicted in the plate, is an improved version of Priestley's equipment. A rare work in the history of techniques for the manufacture and handling of gases in the late eighteenth century. Not in Bolton, D.S.B., Edelstein, Smith, Sondheimer, etc. (Duveen, 81; Neu, 1170; Wellcome, II, 472)

DISPENSATORIUM

Dispensatorium Pharmaceuticum Austriaco-Viennense, in quo hodierna die usualiora medicamenta secundum artis regulas componenda visuntur, . . . Sumptibus Collegii Pharmaceutici Viennensis.

Vienna: Anno Incarnationis Dominicae 1729. Reimpresum apud Gregorium Kurtzböck, Universitatis Typographum. 1744.

Third edition. Folio. 17 leaves, 273, (19) pp. With 2 folding engraved plates (allegorical title page, and portrait of Emperor Charles VI). Engraved and woodcut initials, head- and tail-pieces. Old ink stain affecting 8 leaves (pp. 131-146), but text legible; otherwise fine copy in contemporary calf, rebaked, with original richly gilt spine laid on, black morocco label.

THE FIRST official pharmacopoeia of the Royal College of Pharmacy in Vienna, containing a dictionary of chemical terms (11 pp.), a table of chemical symbols (4 pp.), and a detailed index (19 pp.). A beautifully printed work. The first edition (Vienna, 1729) was reprinted by G. Kurtzböck in 1737, and again in the present edition. Further editions appeared in 1751, 1756, and 1770. "From 1729 on, various pharmacopoeias appeared in Austria, culminating with the first edition (1812) of the present *Pharmacopoeia Austriaca*" (Kremers & Urdang). The copy of the 1744 edition of this work in the Young Collection is bound with another, independent volume, with the title *Nova Pharmacopoeorum Taxa*. (Blake, 347; Ferchl, 126; Ferguson, I, 216; Kremers & Urdang, *A History of Pharmacy*, 341; Neu, 1175)

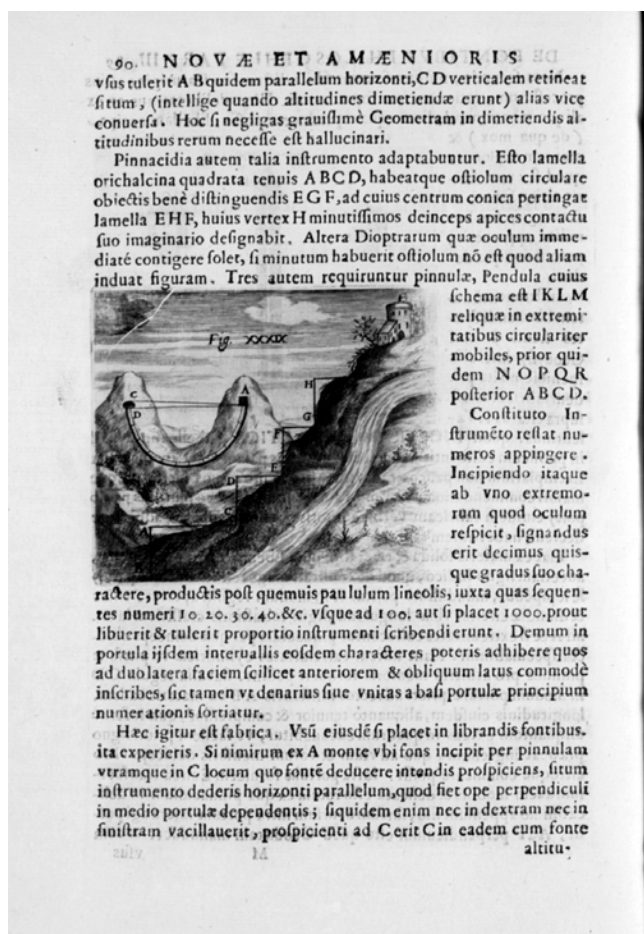
DIXON, Joshua

The Literary Life of William Brownrigg, M.D., F.R.S. To which are added an account of the coal mines near Whitehaven: and observations on the means of preventing epidemic fevers, by Joshua Dixon, M.D. . . .

Longman & Rees, London; G. Burnet, Dublin; J. Guthrie, Edinburgh; J. Ware, and A. Dunn, Whitehaven. 1801.

First edition. 8vo. (in 4s). xiii, 239 pp. Very good copy, completely uncut, in the original boards, rebaked in old calf.

DIXON (d. 1825) was a biographer who received his M.D. at Edinburgh (1786) and practiced at Whitehaven. This biography of Brownrigg (1711-1800), the famous chemist who also practiced at Whitehaven for many years, is Dixon's most important work. E. L. Scott, in the *Dictionary of Scientific Biography*, describes the book as "eulogistic but invaluable." There are references to Priestley, Cavendish, Hales, Pringle, Black, et al., with whom Brownrigg corresponded. The important work of Brownrigg on salt, agriculture, platinum, mineral waters, carbon dioxide, firedamp (methane) in coal mines, etc., is covered extensively. The "Account of the Coal Mines near Whitehaven" is by Brownrigg himself. Scarce. Not in Bolton, Cushing, Ferchl, Ferguson, Poggendorff, Waller, etc. (Duveen, 104; D.S.B., II, 524; Osler, 6613; Partington, III, 124; Smith, 150; Watt, I, 308g; Wellcome, II, 475)



Dobrzenski. Nova, et Amaenior. Ferrara, 1659.

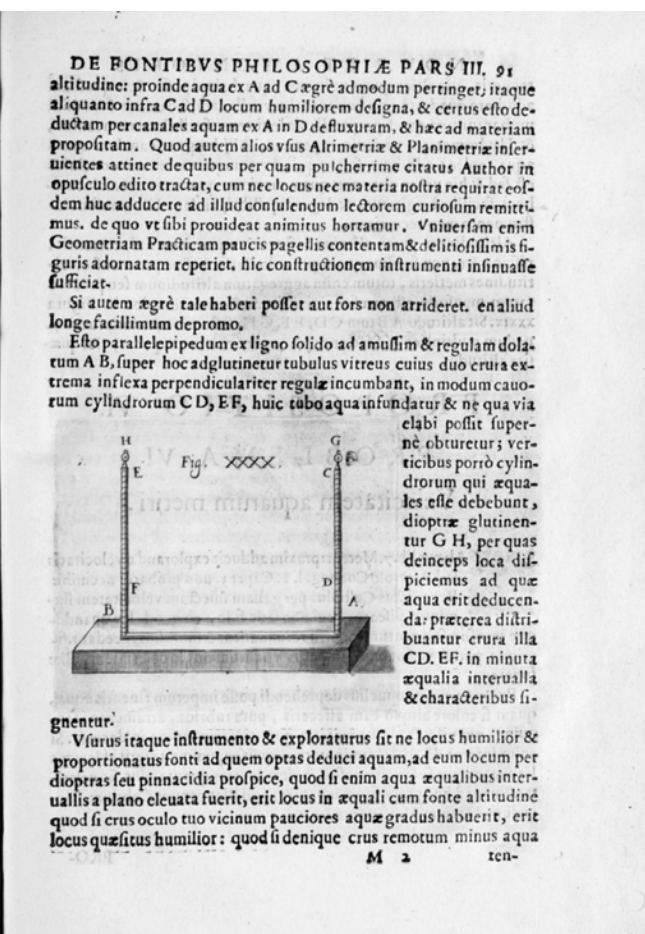
DOBRZENSKI, Jacobus Joannes Wenceslaus

Nova, et Amaenior de Admirando Fontium Genio (ex Abditis Naturae Claustris, in Orbis Lucem Emanante) Philosophia. . . . Auctore Jacobo I. W. Dobrzenski de Nigro Ponte Boemo Pragensi. . . .

Ferrara: Apud Alphonsum, & Jo: Baptistam de Marestis. 1659.

First edition, second issue. Folio (in 4s). 12 leaves, 121, (3) pp. With fine engraved frontispiece, 56 copperplates in text, woodcut capitals, head- and tailpieces. Fine, tall copy, with wide margins, in early marbled boards, later gilt-ruled spine. Engraved armorial bookplate: Henry Thomas Ellicombe (1790–1885), inventor of apparatus enabling one man to chime all of the bells in a steeple (see D.N.B.).

A TREATISE THAT combines the newly emerging experi- mental method with natural magic. The sheets of the first issue (Ferrara, 1657) were reissued in 1659 (as here), the date on the printed title being changed from M.DC.LVII to M.DC.LVIII. The frontispiece is dated 1657. Dobrzen-



ski (d. 1697), professor of medicine at the University of Prague, describes his numerous experiments and those of his contemporaries, including Balianus, Kircher, Mersenne, Torricelli, and Valerianus. There are discussions of his “new philosophy of fountains,” vacuum experiments, pneumatic and hydraulic engines, water clocks, a table of specific gravities, the center of gravity, perpetual motion, etc. Citing Kircher, he describes a “meteo-technic machine” that produces dew, rain, snow, hail, and even thunder. The fifty-six text engravings are of high quality. This important book is considered to contain the first printed description of a steam engine (p. 65). “Ever since the sale of the French scientist Arago’s books, early in the XIXth century, this book was regarded as valuable since it describes a steam engine, six years before the publication (1663) of the Earl of Worcester’s *Century of Inventions*” (E. Weil [Cat. 12, no. 80]). Partington comments on the differences of Dobrzenski’s specific gravities and those of Francis Bacon. Very rare. (Partington, II, 398; Thorndike, VIII, 202; Wellcome, II, 475)

DOBSON, Matthew, and FALCONER, William

A Medical Commentary on Fixed Air: particularly, I. On the different methods of procuring and administering Fixed Air. II. On its sensible effects in health . . . III. On its effects in diseases . . . IV. On putrefaction . . . V. On the effects of Fixed Air, on the putrefactive process . . . VI. On the use of Fixed Air . . . VII. In some diseases . . . VIII. In the stone . . . IX. On the disposition of the stone . . . X. On the noxious effects of Fixed Air. . . With an Appendix on the efficacy of the solution of fixed alkaline salts saturated with fixible air, in the stone and gravel. With large additions . . . by William Falconer, M.D., F.R.S. . . .
London: Printed for T. Cadell. 1787.

Third edition, 8vo. vii, (1), 172, 126 pp. Fine copy in modern gilt-lettered quarter cloth, boards.

THE BEST edition of this chemically important work (first, 1779; second, 1785), containing descriptions of many experiments. Falconer's *Appendix* appears in its second edition: the first was published as a separate book and was reissued separately. There are numerous references to contemporary chemists (e.g., Brownrigg, Cavendish, Glass, Henry, Macbride, and Priestley). "An interesting work" (Duveen [1779 ed.]). Dobson (d. 1784), F.R.S., graduated at Edinburgh and assisted William Cullen in his experiments on the cold produced by evaporation. He successfully treated urinary concretions and abscess of the lungs with carbon dioxide and proved that the sweet taste of diabetic urine was due to glucose, and thus discovered hyperglycaemia (see Garrison & Morton, 3928). The second and the present editions were edited by Falconer after Dobson died. On page vii Falconer states that his *Appendix* has been "considerably enlarged" in this edition. Not in Bolton, Edelstein, Ferchl, Smith, Waller, etc. (Blake, 123; Neu, 1184; Partington, III, 689; Sondheimer, 439; Waring, 316; Watt, I, 3551; Wellcome, II, 475)

DODD, George

British Manufactures. I: The Textile Manufactures of Great Britain. II: Chemical. III: Metals.
London: Charles Knight & Co. 1844, 1844, 1845.

First editions. 3 vols., 12mo., in 1. I: 232 pp. II: 248 pp. III: 224 pp. Numerous woodcut illustrations (some full page) in each volume. Very good copy in contemporary gilt-ruled half calf, marbled boards, black morocco label.

AN INTERESTING volume containing three works on mid-nineteenth-century chemical technology, by Dodd (1808–1881) (see D.N.B.). The first volume covers the dyeing, bleaching, and printing of textiles. Some of the illustra-

tions depict young boys and girls busily working at machines with no safety guards for the operators. The second volume describes the industrial production of chemicals, soap, candles, dyes, pottery and porcelain, coal gas, etc. The third volume deals with the making of metals and their alloys, and the manufacture of knives, saws, wire, nails, screws, bells, and other useful articles. Very scarce. Not in Duncan, Singer, Wellcome, or the usual bibliographies. Sondheimer (no. 440) lists the volumes on chemicals and metals.

DODDRIDGE, John

The History of the Ancient and moderne Estate of the Principality of Wales, Dutchy of Cornwall, and Earldome of Chester. Collected out of the Records of the Tower of London, and divers ancient Authours. By Sir John Doddridge Knight, late one of his Maiesties Iudges in the Kings Bench. And by himselfe Dedicated to King Iames of ever blessed memory.
London: Printed by Tho. Harper, for Godfrey Emondson, and Thomas Alchorne. 1630.

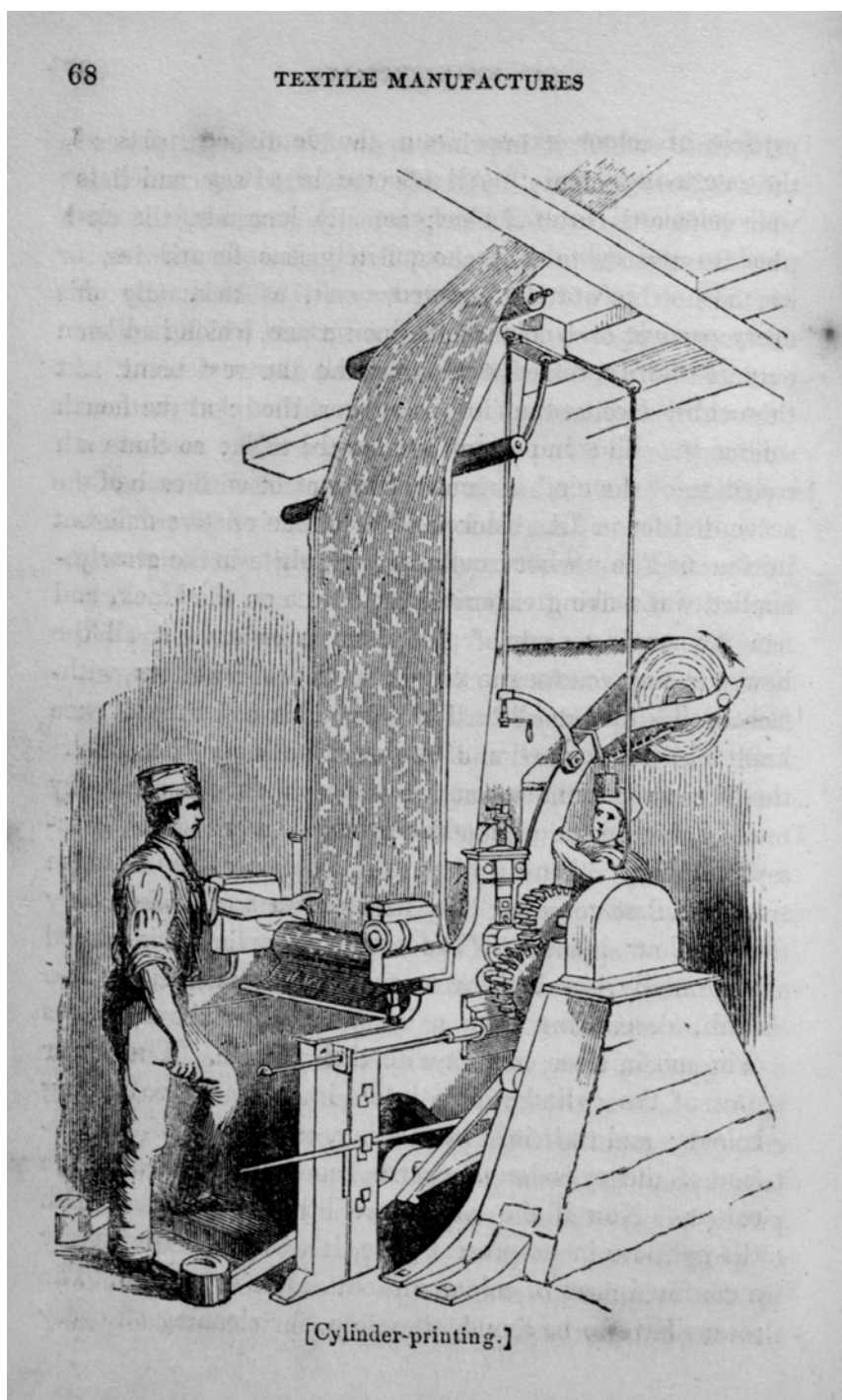
First edition. 4to. 8 leaves, 142 pp. Old strengthening to gutter of title; otherwise very good copy, in early blind-ruled sheep, maroon label, spine dated.

A POSTHUMOUSLY PUBLISHED work including an interesting section on "the Stannaries and profits of the Coynage of Tynne within the said Counties of Devon and Cornwall." These counties contain "great quantities of Tynne, the purest, best, and most plentifullest in Europe." Tin is discussed in detail (pp. 92–97, 111–115). Doddridge (or Doderidge, 1555–1628), judge and justice of the King's Bench, published *The English Lawyer* (1631) and other works (see D.N.B.). (S.T.C., 6982; Watt, I, 309m)

DODOENS, Rembert

A Nieuwe Herball, or Historie of Plantes: wherin [sic] is containd the whole discourse and perfect description of all sortes of Herbes and Plantes: their divers & sundry kindes: their straunge Figures, Fashions, and Shapes: their Names, Natures, Operations, and Vertues: and that not onely of those whiche are here growyng in this our Countrie of Englande, but of all others also of forrayne Realmes, commonly used in Physicke. First set foorth in the Doutche or Almaigne tongue, by that learned D. Rembert Dodoens, Physition to the Emperour: and nowe first translated out of French into English, by Henry Lyte Esquyer.

London: by me Gerard Dewes, dwelling in Pawles Churchyarde at the signe of the Swanne. 1578.



Dodd. British Manufactures. London, 1844-1845.

The wine wherein Lynsee de hath bene boyled, preserveth the blcers & old sores, & shalbe washed in the same, fro corruption, festering or unward racking.

The water wherein Lynsee de hath bene boyled, doth quicken and cleare the sight, if it be often dropped or stilled into the eyes.

The same taken in glister swageth the grrping paynes of the belly, and of the Matrix or Mother, and cureth the woundes of the bowelles, and Matrix, if there be any.

Lynsee de mengled with Hony, & taken as an Electuary, or Lochoch, cleanseth the breast, and appeaseth the Cough, and eaten with Raysons, is good for such as are fallen into Consumptions, and feuer Heticques.

✽ *The Danger.*

The see de of Lin, taken into the body, is very euill for the stomacke: it hindereth the digestion of meates, and engendreth much windnesse.

Of Hempe. Chap. I.

✽ *The Kyn des.*

There are two kindes of Hempe, the one is frutefull and beareth see de: The other beareth but floures onely.

✽ *The Description.*

The first kind of Hempe, hath a rounde hollow stalk foure or five foote long, full of branches, & like to a little tree: at the top of the branches groweth little smal round bags, or huskes, wherin is coteyned the see de which is round. The leaues be great, rough, & blackishe, parted into seuen, nine, ten, and sometymes into moe partes, long, narrow, and snipt or dented round about with notches, like the teech of a Saw. The whole leafe with all his partes is like to a hand spread abroade.

The secod is also in leaues like to the first, and it hath a thicke stalke, out of whiche by the sides groweth foorth sundry branches: but it beareth neither see de nor frute, sauing small white floures, the whiche like duste or powder is caried away with the winde.

Cannabis semen faciens.

See de Hempe.

Cānabis absq; semine.

Barren Hempe.



✽ *The Place.*

1. 2. These two sortes of Hempe are sowed in fieldes, and (whiche is a thing to be marueled at) they do both spring of one kinde of see de. A mā shall sometymes finde the male Hempe growing in the borders of fieldes, and by the wayes.

✽ *The Tyme.*

The

First English edition. Folio. 12 leaves, 779, (1) pp., 12 leaves. Woodcut title page, arms of Lyte, portrait of Dodoens, and 876 woodcuts of plants. With dedication to Queen Elizabeth. Signatures Eeiii, Yyyii, and Yyyiv in excellent facsimile on sixteenth-century English paper. Minor marginal stains on a few leaves and neat marginal repairs to index leaves; otherwise very good copy, in contemporary paneled calf, rebacked, green morocco label.

THE BELGIAN physician Dodoens (1517–1585) was one of the three great botanists of the sixteenth century. Printed in Antwerp in order to secure the original woodblocks, this was the standard work on plants in England during the later sixteenth century and was used by Shakespeare and Spenser. It is a translation of the *Histoire des plantes* (Anvers, 1557) by Charles de l'Écluse, which was an adaptation of Dodoens' *Cruydeboek* (Antwerp, 1554). The translator, Henry Lyte (ca. 1529–1607), a botanist whose own copy of the *Histoire* is in the British Library, corrected and amended the French version, and included unpublished material sent to him by Dodoens. Most of the fine woodcuts were derived from Fuchs's herbal (1542). (Arber, 125; Blocker, 110; Cushing, D207; D.S.B., IV, 139; Durling, 1171; Henrey, I, 35; Neu, 1186; Pritzel, 2345; S.T.C., 6984; Watt, I, 309s; Wellcome, I, 1814)

DOERNER, Joseph

Dissertatio Inauguralis de Corpore Animalis Chemista . . . pro gradu doctoris . . . disquisitioni subjicit Josephus Doerner, Wissena-Coloniensis, . . . die XXVII. Augusti A.C. MDCCLXVII.

Strassburg: Excudebat Joh. Henricus Heitz, Universitatis Typographus. (1767).

First edition. 4to. 20 pp. Fine copy with wide margins, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

AN EARLY biochemical dissertation by Doerner (dates unknown), an iatrochemist, on animal fluids (e.g., chyle, saliva, blood, mucus, stomach acid, and bile), with references to Macquer, Spielmann, Wullamof, et al. Section VII discusses respiration and the chemistry of blood, citing the works of Boyle, Mayow, and Haller. Section XIII describes different inorganic salts and organic compounds that can be obtained from urine. Rare. Unknown to chemical historians and not in the major early chemical libraries. (Ferchl, 128)

DOLAEUS, Johann

Encyclopaedia, Medicinae Theoretico-Practicae, qua tam veterum, quam recentiorum, Paracelsistarum, nempe, Helmontianorum, Willisianorum, Sylvianorum, Cartesianorum, de causis, & curationibus morborum sententiae exhibentur, addita simul authoris de his opinione; una cum medicamentis Galeno-chymicis ut plurimum ab ipso authore experientia comprobatis. Editio novissima.

Venice: Apud Jo: Jacobum Hertz. 1690.

First Venice edition. 4to. 8 leaves, 744 pp., 16 leaves. Title page in red and black, with large copperplate vignette (Picini sc.). Few minor water stains; otherwise fine copy, in original vellum.

DOLAEUS (1650–1707), a chemist and physician of French origin, studied at Heidelberg (M.D., 1673), was councillor of the landgrave of Hesse-Cassel and was a member of the Academia Naturae Curiosorum. Discussing the present iatrochemical work, Partington (II, 235) states: "Van Helmont's idea of the Archeus was taken up by Johannes Dolaeus . . . who called it Gasteranax (king of the stomach), Cardimelech (king of the heart), or Microcosmeter, and attributed diseases to the vagaries of these kings . . . who produced toxic bodies in the blood." The Venice edition is a reprint of the first (Frankfurt, 1684), with the preface dated 5 March 1684. On the leaf facing the first page of text are two laudatory poems: one by Michael Etmüller dated Leipzig, March 1683; and the other by Thomas Sydenham dated London, October 1683. Ferchl (p. 128) and Ferguson (I, 218) mention a Venice edition of 1691, of which the present edition of 1690 may be the first issue. Rare. Not in the British Library. (Krivatsy, 3319)

DOLHOPFF, Georg Andreas

Lapis Animalis Microcosmicus. Oder, die höchste Artzney aus der kleinen Welt des Menschlichen Leibs. Sampt einem Tractätlein vom Urin oder Harn des Mensehen.

Strassburg: In Verlegung Georg Andreas Dolhopffen. 1681.

First edition. 8vo. 8 leaves, 80 pp. Uniformly lightly browned; otherwise fine copy, in blind-ruled calf antique, green morocco label. Bound with: 2 companion works by Dolhopff (both 1681).

THE PUBLISHER, Dolhopff, was also the compiler of this tract, chiefly containing observations on animal products and urine and the salts obtainable from them. Ferguson (I, 219) lists the names of the alchemical and iatrochemical authors from whose works excerpts were made. At the end of the preface, Dolhopff asks his readers to bring to his attention other hitherto unpublished chemical tracts, as he had in mind to publish a seventh volume of Zetzner's

Theatrum Chemicum (1659–61). Dolhopff was evidently unaware of the existence of the *Ginaeceum Chemicum* (Lyons, 1679), which an anonymous (probably French) editor had published two years before the appearance of the present work and which also forms a seventh, or supplementary, volume to Zetzner's *Theatrum*. Dolhopff never published his projected seventh volume to Zetzner's work. The works of Dolhopff are of notorious rarity, and this author is not mentioned by Partington. Not in Bolton, Edelstein, Ferguson Coll., Wellcome, etc. (Caillet, 6102; Duveen, 176; Ferchl, 128; Ferguson, I, 218; Krivatsy, 3322; Neu, 1196; Sudhoff, 412)

DOLHOPFF, Georg Andreas

Lapis Mineralis oder die höchste Artzney, aus denen Metallen und Mineralien, absonderlich dem Vitriolo.

Strassburg: In verlegung Georg Andreas Dolhopff. 1681.

First edition. 8vo. 6 leaves, 116 pp. Uniformly lightly browned; otherwise fine copy. Bound with: Dolhopff, G. A., *Lapis Animalis Microcosmicus* (Strassburg, 1681).

OBSERVATIONS ON the preparation of salts from minerals and metals are contained in this tract of great chemical interest. It also discusses the transmutation of mercury and sulphur into silver and gold, by the agency of the philosopher's stone. Not in Ferchl, Ferguson, Ferguson Coll., Krivatsy, etc. (Caillet, 6103; Duveen, 176; Neu, 1197; Wellcome, II, 477)

DOLHOPFF, Georg Andreas

Lapis Vegetabilis, oder die höchste Artzney, aus dem Wein, auch andern Erden-Gewächsen. Sambt dem zehenden Buch der Archidoxen Philippi Theophrasti Paracelsi.

Strassburg: In verlegung Georg Andreas Dolhopff. 1681.

First edition. 8vo. 2 leaves, 92 pp. Uniformly lightly browned; otherwise fine copy. Bound with: Dolhopff, G. A., *Lapis Animalis Microcosmicus* (Strassburg, 1681).

THE THIRD and final work of this Dolhopff trilogy, containing a summary of the *Archidoxis* of Paracelsus. That the three works here bound together were published separately is shown by Dolhopff's preface in the present volume, in which he mentions that the other two were published the previous February and May 1681. Not in Ferchl, Ferguson, Ferguson Coll., Wellcome, etc. (Caillet, 6104; Krivatsy, 3323; Sudhoff, 414)

DOMESTIC

The Domestic Chemist: comprising instructions for the detection of adulteration in numerous articles employed in domestic economy, medicine, and the arts. To which are subjoined, the art of detecting poisons in food and organic mixtures; and a popular introduction to the principles of chemical analysis. Illustrated by engravings on wood.

London: Bumpus & Griffin. 1831.

First edition. 12mo. xvi, 340 pp., 1 leaf (advertisements). Woodcut frontispiece (chemical apparatus) and woodcuts in text. Very good copy, uncut, in original boards, rebounded in cloth, maroon label gilt.

A RARE WORK written to "erect a barricade against the cupidity of fraudulent tradesmen, and to put it into every man's power to ensure his health and wealth against the ravages of adulteration and disease" (preface). Undoubtedly inspired by the works of F. C. Accum, this anonymous book on analytical and forensic chemistry became very popular. It was this and similar works that eventually led to the enactment of pure food and drug laws. Not in Duveen, Edelstein, Ferchl, Ferguson Coll., Morgan, Osler, Partington, Sondheimer, Waller, etc. (Bolton, 404; Smith, 151; Wellcome, II, 478)

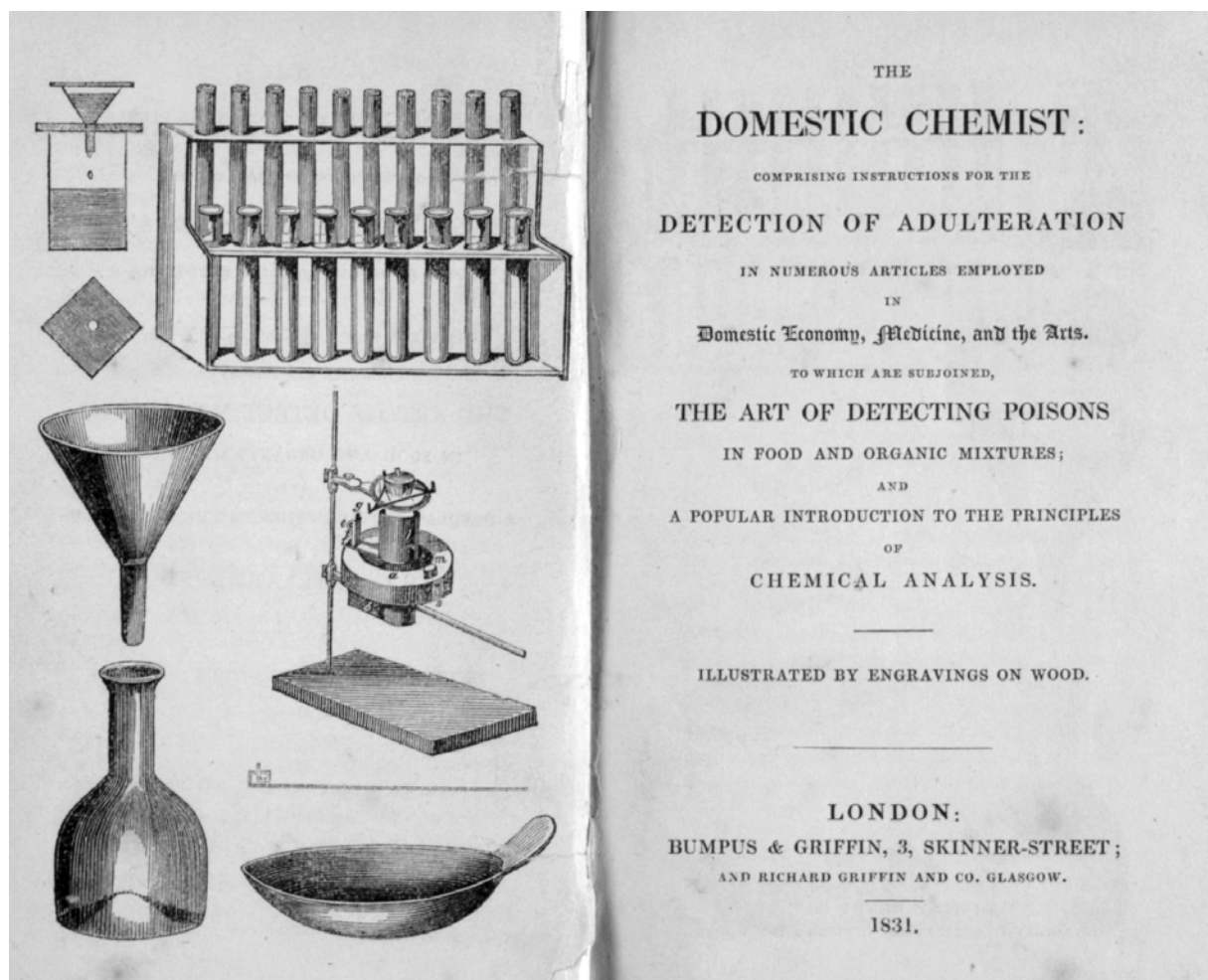
DONOVAN, Michael

A Treatise on Chemistry. . . .

London: Longman, Rees, Orme, Brown & Green. 1832.

First edition. 8vo. xii, 407, (1) pp. With title-page vignette (by H. Corbould, engraved by E. Finden). Very good copy in contemporary blind-tooled blue half calf, marbled boards, maroon morocco label.

A POPULAR TEXTBOOK of the period that passed through several editions. Donovan (1790–1876) was William Higgins's successor as professor of chemistry and materia medica in Apothecaries' Hall, Dublin. On page 390 he states: "Mr. Dalton was the first who distinctly conceived that, from the relative weights of the elements in the mass of any compound body, the relative weights of the ultimate particles or atoms of the bodies may be inferred." He mentions Avogadro by name (p. 379), enunciates the latter's famous hypothesis, and gives the reference to the original paper. Not in Edelstein, Smith, Waller, Wellcome, etc. (Bolton, 405; Duveen, 177; Ferchl, 129; Partington, III, 726, IV, 217; Pogendorff, I, 591; Sondheimer, 441)



Domestic. Domestic Chemist. London, 1831.

DÖRCKES, Jacob

Q. D. B. V. Dissertatio Juridica De Metallis Eorumque Fodinis, Occasione Tituli Codic. De Metallis & Metallariis Conscripta, & In Academia Illustri Jenensi Magnificae Facultatis Juridicae consensu, sub Praesidio Viri Nobilissimi et Consultissimi, Dn. Henrici Linckens/ U.J.D. Fautoris ac Praeceptoris sui aetatem colendi, Publicae Eruditorum disquisitioni Ad diem 27. Junii Anni LXXI. proposita à Jacobo Dörckes, Güstr. Meclenb. Autore et Respondente.
Jena: Typis Johannis Wertheri. (1671).

First (only) edition. 4to. Unpaginated. 1 leaf, signatures A–E⁴, 1 leaf. Fine, crisp, wide-margined copy, bound in maroon half morocco, marbled boards, spine gilt-lettered and dated.

A DISSERTATION ON mining laws and the extraction of metals from their ores, presented to the faculty of law at the University of Jena. Dr. Heinrich Linckens presided over the examination on 27 June 1671. The works of Linckens (or Linckius) are mentioned by Watt (II, 607u), but not this title. Mining laws from earliest times are discussed, with references to works by sixteenth- and seventeenth-century authors on law, mining, metallurgy, chemistry, etc. A very rare book, to which no bibliographical reference has been found.

DORN, Gerhard

Clavis totius Philosophiae Chymisticae, per quam potissima Philosophorum dicta reserantur. Cui accessit iam recens Artificium supernaturale. Quorum omnium Summarium versa pagella ostendet. . . . Singula per eundem authorem denuo recognita & castigata.

Frankfurt: Excudebat Christophorus Corvinus. 1583.

Second (first Frankfurt) edition. 12mo. 429, (1) pp., 13 leaves. With 4 full-page woodcuts of furnaces and distillation apparatus (on pp. 22, 50, 55, and 94). Roman letter. Very good, crisp copy, in contemporary unlettered calf, rebounded, with blind-stamped medallion on each cover.

DORN, an alchemist who lived during the second half of the sixteenth century in Frankfurt, was an ardent follower of Paracelsus, several of whose works he edited. His first book, the *Clavis* or “Key to all chemical philosophy” (first ed., Lyons, 1567), exerted a considerable influence on iatrochemistry. Partington (II, 160) and Thorndike (V, 631–635) discuss its chemical importance. Reprinted at Herborn in 1594 and again in the *Theatrum Chemicum*, a German translation also appeared as *Schlüssel der Chymistischen Philosophie* (Strassburg: Lazarus Zetsner, 1602, 12mo.). The 1567 or 1594 editions are listed by Bolton, Ferguson, Smith, Watt, and Wellcome. The Waller copy is imperfect. Not in the British Library, Durling, etc. Very rare. (Bolton, 405; D.S.B.,

IV, 170; Duveen, 178; Ferchl, 130; Ferguson Coll., 197; Neu, 1205; Partington, II, 159; Poggendorff, I, 596; Waller, 11118)

DORN, Gerhard

Trevisanus de Chymico Miraculo, quod Lapidem Philosophiae appellant. Dionys. Zecharius Gallus de eodem. Auctoritatibus variis Principum huius artis, Democriti, Gebri, Lullii, Villanovani, confirmati & illustrati per Gerardum Dorneum. . . .

Basel: Typis Conradi Waldkirchii. 1600.

Second edition. 8vo. 3 leaves, 198 pp. Superb copy in pristine condition, in marbled boards antique, gilt-lettered maroon label.

AN IMPORTANT collection of alchemical works (first: Basel, 1583), comprising the following texts: *Berhardus Trevisanus, De Alchimia Liber; Dionysius Zacharius, Opusculum Philosophiae Naturalis Metallorum; Annotata quaedam ex Nicolao Flamello; Testamentum Arnaldi Villanovani; Aliae quaedam Annotationes ex variis authoribus; Collectanea quaedam ex antiquis Scriptoribus; Collectanea ex Democrito; Summaria Declaratio eorum, quae dicta sunt hactenus ex Democrito, per aenigmata.* This collection was reprinted in the *Theatrum Chemicum*. Duveen (p. 178) and Neu (no. 1209) cite the 1583 edition only. Extremely rare. Not in British Library, D.S.B., or the usual chemical bibliographies. (Ferchl, 130; Ferguson, I, 222; Ferguson Coll., 197; Wellcome, I, 1855)

DOSSIE, Robert

The Elaboratory laid open, or, the Secrets of Modern Chemistry and Pharmacy revealed: containing many Particulars extremely necessary to be known to all Practitioners in Medicine.

London: Printed for J. Nourse. 1758.

First edition. 8vo. 1 leaf, xi, (3), 375, (9) pp. Fine, crisp copy, in contemporary gilt-ruled speckled calf, tastefully rebounded, spine gilt, maroon morocco label.

DOSSIE (1717–1783), a consulting chemist in Sheffield and then London, “was active in the Society of Arts. . . . His best-known work (the present) was published anonymously. It deals with furnaces and distillation apparatus . . . alembics, making oil of vitriol from sulphur, various chemical operations, alkalis, . . . distilled spirits, and adulterations and their detection” (Partington). According to Kopp (*Geschichte der Chemie*, II, 131; III, 244, 306), Dossie first described in this work the manufacture of concentrated sulphuric acid on the commercial scale. The book gives an excellent overall view of industrial chemistry in the mid-eighteenth century. Dr. Samuel “Johnson was well acquainted with Mr.

Dossie, . . . and said of him, 'Sir, of the objects which the Society of Arts have chiefly in view, the chemical effects of bodies operating upon other bodies, he knows more than almost any man'" (*Boswell's Life of Johnson* [Birkbeck Hill's Edition, 1887, vol. iv, p. 11], quoted in: H. T. Wood, *A History of the Royal Society of Arts*, 1913, p. 331). Translations into French and German appeared. (Blake, 125; Bolton, 405; Duveen, 179; Edelstein, 767; Ferchl, 130; Ferguson, I, 222 [not in Young Coll.]; Ferguson Coll., 198; Forbes, *A History of . . . Distillation*, 1970, p. 373; Neu, 1211; Partington, II, 761; Poggendorff, I, 597; Smith, 152; Sondheimer, 442; Watt, I, 314b; Weeks, *Discovery of the Elements*, 1960, p. 186; Wellcome, II, 481)

DOSSIE, Robert

The Elaboratory laid open; or, the Secrets of Modern Chemistry and Pharmacy revealed: containing many Particulars extremely necessary to be known to all concerned in Medicine: as well as to others engaged in the Practice of various oeconomical Arts. The second edition: with considerable Additions, and several Emendations.

London: Printed for J. Nourse. 1768.

Second edition. 8vo. xviii, (2), 456, (8) pp. (index). Fine copy in original unlettered speckled calf, spine gilt-ruled. Signature of "Henry Wigley, Tithing near Worcester" on recto of first free endpaper, and 3-line memorandum in Wigley's handwriting on verso of last endpaper. Wigley, an eighteenth-century owner interested in chemistry, appears to be unrecorded in biographical works.

THE CONSIDERABLY enlarged final edition of this important work on chemical technology and pharmaceutical chemistry, covering subjects not in the first edition. The second edition, again published anonymously, is rarer than the first. Not in the usual chemical bibliographies, Waller, Watt, or Wellcome. (Blake, 125; Partington, II, 761; Soth-eran, Cat. 773 [1919], 2484 ["Rare"])

DOSSIE, Robert

Les Secrets et les Fraudes de la Chymie et de la Pharmacie modernes dévoilés, par l'exposition de plusieurs pratiques nouvelles et importantes pour tous ceux qui ont intérêt de s'assurer de la bonté des remèdes, et de pouvoir les fournir a un prix raisonnable. Ouvrage traduit de l'Anglois.

The Hague: Chez Pierre Gosse Junior. 1759.

First French edition. 8vo. xii pp., 4 leaves, 370 pp., 1 leaf. In this copy the 4 leaves of the table have been misbound at the front, instead of the end, of the book. Few leaves very slightly embrowned; otherwise good copy in original mottled calf (worn), spine gilt, maroon morocco label.

AN ANONYMOUS translation of *The Elaboratory Laid Open* (London, 1758). According to Ferchl, the translator was Mme. Marie Geneviève Charlotte Thiroux d'Arconville (1720–1805); however, in the *Catalogue of the Ferguson Collection* (1943) the translation is attributed to Dr. Peter Shaw. Rare. Not in the usual bibliographies. (Ferchl, 533 [wrong date: 1706]; Ferguson Coll., 198; Smith, 152; Wellcome, II, 481)

DOSSIE, Robert

The Handmaid to the Arts, . . . Teaching, I. A perfect knowledge of the materia pictoria . . . all the various substances employed in painting . . . II. The means of delineation . . . (of) designs from nature . . . III. The various manners of gilding, silvering, bronzing, . . . art of japanning, . . . method of staining different kinds of substances, with all the several colours. . . . The Second Edition, with considerable Additions and Improvements.

London: Printed for J. Nourse. 1764.

Second edition. 2 vols., 8vo. I: xxvii, (9), 522 pp., 5 leaves (index). II: xiv, (14), 462 pp., 5 leaves (index). Fine, crisp copy in original tree calf, spines richly gilt, dark-green and red morocco labels. Signature (eighteenth century) on front flyleaf of each volume: Philip Griffin Hadnock. Monmouthshire.

THE BEST edition (first: London, J. Nourse, 1758, 2 vols.) of an important compendium on all aspects of the practical arts and sciences, published anonymously. Dedicated to the Society for the Encouragement of Arts, Manufactures, and Commerce, the book contains one of the earliest descriptions of the manufacture of glazing and porcelain in England. Dossie's introduction places special emphasis on the art of enameling in England, which had recently broken the monopoly long held by Geneva. Mathew Boulton (who owned a copy of the first edition) opened his famous Soho factory in 1762 and specialized in the manufacture of the artistic metalwork advocated by Dossie. Reference is made in the preface of each volume to Neri's *Art of Glass* (1662), Caneparius's *De Atramentis*, (1660), Salmon's *Polygraphice* (1672), and other works on applied chemistry. A German translation appeared (Dresden, 1793, 2 vols.). Only the first edition, a shorter work, is listed by Duveen and Partington. Scarce. Not in Blake, Bolton, Edelstein, Ferguson, Smith, etc. (Duncan, 3348; Ferchl, 213; Ferguson Coll., 198; Neu, 1213; Watt, I, 314c; Wellcome, II, 481)

DOSSIE, Robert

Institutes of Experimental Chemistry: being an Essay towards reducing that branch of Natural Philosophy to a regular System. . . . By the Author of the Elaboratory laid open, &c. . . .

London: Printed for J. Nourse. 1759.

First edition. 2 vols., 8vo. I: xx pp., 4 leaves, 491, (1) pp. II: 1 leaf, 437, (1) pp. Fine copy in original marbled boards, rebacked in modern calf, maroon morocco labels, gilt. Bookplate: H. R. Knight.

A VERY SCARCE book, published anonymously, dealing with all aspects of contemporary practical chemistry. When reviewed unfavorably by an anonymous critic (possibly William Lewis) in *Remarks on Mr. Robert Dossie's Institutes of Experimental Chemistry* (London, 1760), Dossie immediately published a counterblast: *A Refutation of the Remarks on the Institutes of Experimental Chemistry* (London, 1760). Despite the unfavorable review, this is a very creditable piece of work in which Dossie attempts to present chemical science in a systematic manner. A German translation appeared in 1762. "The rarest of Dossie's writings, all of which are excellent, and were highly commended by Dr. Johnson" (H. Zeitlinger [Sotheran]). Not in Blake, Duveen, Edelstein, Ferguson Coll., Morgan, Neu, Waller, etc. (Bolton, 405; Ferchl, 130; Ferguson, I, 222 [not in Young Coll.]; Partington, II, 762; Poggendorff, I, 597; Smith, 152; Sondheimer, 443; Sotheran, Cat. 894 [1951], 152; Watt, I, 314b; Weeks, *Discovery of the Elements*, 1960, pp. 186, 189, 193; Wellcome, II, 481)

DOSSIE, Robert

Memoirs of Agriculture, and other Oeconomical Arts. . . .
London: Printed for J. Nourse. 1768, 1771, (C. Nourse), 1782.

First edition. 3 vols., 8vo. I: xxviii, (4), 455, (1) pp., 8 leaves (index). II: xx, 482 pp., 4 leaves (index). III: xxxi, (1), (8), 462 pp., 9 leaves (index); text woodcuts, and 4 folding copperplates. With all required half titles, and advertisement leaf at end of volume III. Very fine copy in original gilt-ruled calf, red morocco labels. Armorial bookplate (eighteenth century) in each volume: Joseph Pickford.

THE THIRD volume of this excellent work on agriculture and agricultural chemistry was not published until five years after Dossie's death (21 February 1777; see *Gentleman's Magazine*, Feb. 1777, p. 96). Dossie made several contributions to this work, notably his important *A brief History of the Transactions of the Society . . . of Arts, Manufactures, and Commerce* (vol. I, pp. 28–321). "Under the auspices of the Royal Society of Arts, Robert Dossie was enabled to issue his *Memoirs of Agriculture . . .* 2 Vols copies of which are in the Ministry of Agriculture Library and at Rothamsted, while the Royal Agricultural Society has three volumes, 1768–82; but I have failed to trace this book in the British Museum" (Fussell). This work was intended by the Society of Arts to be a periodical, as the society was dissatisfied with the six-volume *Museum Rusticum et Commerciale*

(London, 1764–66). These *Memoirs* contain much of interest to the chemical historian. Complete sets in pristine condition with the third volume, as here, are of great rarity. Not in Blake, Browne, Wellcome, or the usual chemical bibliographies. (Ferchl, 130; Fussell, *Early Agricultural Works*, 1930, p. 15 [no. 90]; Fussell, *More Old English Farming Books*, 1950, pp. 53–55; Ferguson, I, 222 [not in Young Coll.]; Gibbs, *Annals of Science*, 7 [1951], 167–171; McDonald, *Agricultural Writers*, 1908, p. 213; Partington, II, 762; Poggendorff, I, 597; Watt, I, 314c; Wood, *A History of the . . . Society of Arts*, 1913, p. 330)

DOSSIE, Robert

A Refutation of the Remarks on the Institutes of Experimental Chemistry: in a Letter Addressed to the Members of the Society for the Encouragement of Arts, Manufactures, and Commerce. . . .

London: Printed for J. Nourse in the Strand. 1760.

First edition. 8vo, 1 leaf (half title), 54 pp., 1 leaf (blank). Few page numerals just touched by the binder; otherwise fine copy in half calf antique, marbled boards, crimson morocco label, gilt. Bound with: Lewis, W., *Remarks on Mr. Robert Dossie's Institutes . . .* (London, 1760).

THE RARE *Refutation* of the anonymous *Remarks* (London, 1760), which were probably published by Dr. William Lewis. Dossie carefully documents each accusation, answering it accurately and without acrimony. An analysis of the *Remarks* and of the *Refutation*, with illustrations of the title pages of each work, has been published by F. W. Gibbs. Not in the usual chemical bibliographies. (F. W. Gibbs, *Annals of Science*, VII (1951), pp. 157–158)

DOSSIE, Robert

Theory and Practice of Chirurgical Pharmacy; Comprehending a complete Dispensatory for the use of Surgeons; With explanatory and critical notes on each composition; and an introductory inquiry concerning the particular intentions of cure, in which remedies are applied, or administred [sic]; the nature, and medicinal efficacy, of the severall simples subservient to them.

Dublin: Printed for George and Alexander Swing. 1761.

Second (first Irish) edition. 8vo. xvi, (4), 380 pp., 2 leaves (index). Very good copy in original calf, spine gilt, maroon morocco label.

A PHARMACEUTICAL CHEMICAL work in which part I covers the theory of chirurgical pharmacy and part II the practice of this subject. Part I discusses the purpose of surgical pharmacy, chemical preparations, materia medica, etc. Part II describes pharmaceuticals used in surgery. The range of

drugs and medicines available to the eighteenth-century surgeon was extensive. Specific preparations are described for cancers, piles, leprosy, venereal disease, etc. The first edition (London: J. Nourse, 1761) has entirely different pagination: pp. xviii, 3 leaves, pp. 485, 1 leaf. The present first Irish edition is very rare and is unrecorded in the usual bibliographies. (Blake, 125)

DOVE, William Taube

A Short Account of Several Excellent Medicines Lately discovered in the Argol or Tartar; Together with Its Preparations; viz. The Volatile Salt, Oil, Spirit, and Fixed Salt.

To which are annexed, Divers remarkable Instances of the Efficacy of these noble Medicines in the following Disorders: The Raw Crystals, in Pits, Convulsions, &c. The Volatile Salt, in the Scurvy, . . . The Spirit, in the Dropsy, . . . The Oil, in the Gout, . . . The Fixed Salt, in the Stone, Gravel, &c. By L.W.T.D.C.

London: Printed for R. Baldwin. 1755.

First edition, first issue. Sm. 4to. 1 leaf, iv, 5–38 pp. Minor stain on bottom margin of title page; otherwise good copy in quarter cloth antique, marbled boards, maroon morocco label, gilt.

AN INTERESTING discourse, dedicated to Dr. Laurence Heister, on the “essential Salt of Wine, called Tartar” (i.e., cream of tartar, potassium bitartrate, or potassium hydrogen tartrate), obtained from the sediments in the manufacture of wine, known as argol or wine lees. Dove (dates unknown), a physician of German extraction, describes several chemicals he prepared by the distillation of tartar and discusses their medicinal uses. A second issue appeared in 1757, to which Dove added a second part (“Addenda,” 20 pp.), including testimonial letters dated 1757. Rare. Not in the usual bibliographies. (Blake, 126; Waring, 640)

DRAPER, John William

History of the Conflict between Religion and Science. . . .
New York: D. Appleton and Company. 1875.

First edition. 12mo. xii, 373, (1) pp., 5 leaves (advertisements). Fine, crisp copy, in original publisher's pictorial red cloth, blocked in black and gold.

“HIS most popular book, widely read in many translations, was *History of the Conflict between Religion and Science* (1874), a vigorous polemic against the persecution of scientists by religionists” (D.S.B.). “A genius, Draper was highly regarded internationally. In 1869 youthful William H. Nichols, later founder of the giant Allied Chemical & Dye Corp., decided to study under Draper because he considered him ‘the most outstanding of all the chemists of

that time’” (Miles). Forming volume XII of the International Scientific Series, the present copy is a later issue of the first edition. (Caillet, 3239; D.S.B., IV, 183; Miles, *American Chemists and Chemical Engineers*, 1976, p. 128; Partington, IV, 716)

DRAPER, John William

Introductory Lecture, to the Course of Chemistry: delivered by Professor Draper, on the Relations and Nature of Water. . . .

New York: Printed for the Medical Class of the University, at the Herald Job Office, 97 Nassau-Street. 1845–6.

First edition. 8vo. 15, (1) pp. Very good copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated; with original pictorial printed wrappers bound in.

A RARE LECTURE on the chemical and physical properties of water, delivered to students of the medical department of New York University. Draper was president of the medical school from 1850 to 1873. Morgan (no. 227) lists a companion work: *An introductory lecture on oxygen gas* (New York, 1848, 15 pp.), but not the present title. (Edelstein, 772)

DRAPER, John William

A Text-Book on Chemistry. For the Use of Schools and Colleges. . . .

New York: Harper & Brothers. 1846.

First edition. 12mo. xii, 408 pp. + 12 pp. (advertisements). With 272 woodcuts in text. Very minor foxing in places, but a very good copy in the original gilt-ruled calf, crimson morocco label, gilt.

AN EXCELLENT work covering the whole of inorganic and a part of organic chemistry. Draper (1811–1882), born in St. Helens, Lancashire, and educated at London University, emigrated to the United States in 1832. He taught chemistry and physics at Hampden-Sidney College, Virginia, and in 1839 became professor of chemistry at New York University. In 1876 he was the first president of the American Chemical Society. The inventor of several new photographic processes (see D.S.B.), in this work he gives an early history of photography. He was the first to photograph the moon, first to photograph the infrared spectral region, and one of the first to use photomicrographs. For a discussion of Draper and his connection with Grotthuss, see Partington (IV, 716–724). The present work passed through forty editions (Ferchl), but the first is rare. Bolton, Morgan, and Smith list later editions. Not in the usual bibliographies. (Ferchl, 131; Miles, *American Chemists and Chemical Engineers*, 1976, p. 128)

DREBBEL, Cornelius Jacobszoon

Tractat oder Abhandlung von Natur und Eigenschafft der Elementen . . . Nebst einem Anhang von der Quint-Essenz . . . Wie auch Herrn Edmund Halleis Erzzerhlungen von denen Winden, zusammen gesammet und herausgegeben von Polycarpo Chrysostomo.

Leipzig: Verlegts Johan Sigmund Strauss, Buchhändler in Hoff. 1723.

First combined edition in German. 8vo. 14 leaves, 106 pp., 3 leaves. Title page in red and black. Engraved frontispiece, full-page alchemical plate, and woodcuts in text. Fine copy, in original unlettered half calf, covers in gold-stamped floral design on red paper. From the library of Denis Duveen (Kraus, Cat. 62).

BORN IN Holland, Drebbel (1572–1633) came to England in 1604 and was employed by James I. In 1610 Emperor Rudolph II asked James II to allow Drebbel to go to Prague, where he was made tutor to the son of Emperor Ferdinand II. Prague was captured by Frederick V in 1620, and Drebbel lost all his possessions and was imprisoned, but was allowed to return to England at the request of James I. Esteemed highly by Robert Boyle and others, Drebbel was a fertile inventor, and he demonstrated a submarine in the Thames from Westminster to Greenwich. The present tract on alchemy and the elements was first published at Leiden (1608). Edmund Halley's text on winds (pp. 65–106), with separate divisional title page, is taken from the *Philosophical Transactions of the Royal Society*, No. 183 (1686), by Johann Clerc. Partington discusses Drebbel's chemical researches in detail, including his discovery of a tin mordant for dyeing scarlet with cochineal, later used by the Gobelins in Paris. (Duveen, *Supplement*, 15; Ferchl, 131; Ferguson, I, 223; Ferguson Coll., 199; Partington, II, 322–323)

DRECHSZLER, Johann Gabriel

Curieuser Tractat von Goldmachen, aus dem Lateinischen ins Deutsche übersetzt von M. M.

Dresden und Leipzig: Bey Johann Christoph Miethen. 1702.

First edition in German. 8vo. 44 pp. Large woodcut printer's device on title. Fine copy in nineteenth-century maroon half calf, marbled boards, spine gilt-lettered and dated.

THE FIRST German translation of *Disputatio I & II: De Metallorum Transmutatione* (Leipzig, 1673, 4to., 32 pp.), on which see Ferguson. It is a critical account of the concepts of the art of transmuting base metals into gold by means of the philosopher's stone. The works of many earlier and contemporary chemists are cited (e.g., Geber, Paracelsus, Phaedro, Libavius, Isaac Holland, Hoghelande,

Suchten, and Mylius). Bolton, Kopp, Schmieder, and Wellcome cite only the Latin edition of 1673. Not in Blake, Caillet, Duveen, Edelstein, Hoover, Mellon, Neu, Partington, Smith, Waite, etc. Very rare. (Ferchl, 131; Ferguson, I, 224; Ferguson Coll., 200)

DREW, William

The Art of Making Coloured Crystals to imitate Precious Stones, Translated from the French of Mons. Fontanieu, Member of the Royal Academies of Sciences and Architecture: to which are added, Numerous Explanatory Notes; and, a short Account of the Nature and Composition of the True Gems, with the Method to distinguish them from the Factitious: also, A New Theory of Phlogiston, Electric Fluid, &c. By William Drew, Esq.

London: Printed for the Author, at the Literary-Press, No. 14, Red-Lion-Street, Clerkenwell, and sold by all Booksellers. 1787.

First edition. 8vo. iv, (5), 6–60 pp. With 1 copperplate. Corrections in ink on p. 46 (by author?). Near-fine copy with wide margins, in original gilt-ruled quarter calf, marbled boards.

THE SOLE edition of a very rare work on the manufacture of imitation precious stones. "This is not a literal translation of *L'art de faire les cristaux colorés imitans les pierres précieuses*, Paris 1778 by Pierre-Elisabeth Fontanieu (ca. 1730–1784), but is an attempt to give the sense of the original and make it intelligible to all by modifying the use of the language of chemists. Drew has added notes and a section on the composition of true gems. On p. iv he gives his theory of phlogiston, a chemical combination of the matter of light, the matter of fire and aerial acid. Drew also states that light inflammable air is formed of the same elements but with a larger proportion of matter of fire. He announces that he plans to write on these ideas later" (Cole). The plate shows the plan and elevation of the kiln used to make artificial gems. The composition of mixtures for making gems (pp. 41–44) is followed by "some general information on the nature and composition of the True Gems and the manner of distinguishing them from the Factitious" (pp. 45–58). At the end is a Table of Comparative Hardness and Specific Gravities of minerals (from diamond to chalk). Not seen by Sinkankas, who states that "no place" is given in the imprint, but this copy plainly gives the place of publication as London. Not in the usual bibliographies, Roller & Goodman, Wellcome, etc. (Cole, 387; Sinkankas, 1785; Watt, I, 318f)

DREY CURIEUSE CHYMISCHE TRACTÄTLEIN

Betittelt: Ambrosii Müllers, Paradeis-Spiegel . . . Der Teutschen Schützen-Hoff, . . . Beschreibung des grossen Geheimnisses des Steins der Weisen, . . . Von einen [sic] Q.J.R.V. M.D.

Frankfurt & Leipzig: Christian Liebezeits; Lauenburg: Christian Albrecht Pfeiffer, 1704.

First edition. Sm. 8vo. Pp. 128. With 3 (of 4) plates. The second and third tracts have separate titles, pagination, and signatures; viz. pp. 60, folding table (printed on both sides), folding plate; pp. 16. Apart from some neat annotations in an early-eighteenth-century hand and the missing plate in part 1, a very good copy in modern half calf antique, marbled boards, spine gilt.

FOR DETAILS on these three tracts, see Ferguson (I, 225–226). Very rare. Not cited by Bolton, Caillet, de Guaita, Ferchl, Neu, Partington, Poggendorff, or Waller. (Duveen, 180–181 [imperfect: lacking 4 plates]; Smith, 153; Wellcome, II, 487)

DREY CURIEUSE CHYMISCHE TRACTÄTLEIN

Das Erste, betitult: Güldene Rose, . . . Das Ander Brun der Weissheit . . . Das Dritte Blut der Natur, . . .

Frankfurt & Leipzig, 1706.

First edition. Sm. 8vo. The 3 tracts have separate titles and pagination. Title to first tract in red and black. Engraved frontispiece to first tract: p. 70. Second tract: p. 45, with woodcut frontispiece depicting Heinrich Khunrath's famous owl. Third tract: p. 77. Fine and crisp copy, bound in modern half calf, antique marbled boards, longitudinal maroon label.

COMPLETE COPY of an extremely rare alchemical collection. Note: Ferguson (I, 226) describes a fragmentary copy containing the first tract only. Duveen (p. 181) describes a copy lacking the engraved frontispiece. This collection was reprinted in 1767 and 1774. This collection is not mentioned by Ferchl, de Guaita, Heym, Mellon, Partington, Poggendorff, Smith, Waller, or Wellcome. Bolton (I, 976) and Caillet (3252) cite the 1774 edition only, and Neu (p. 76) cites the Duveen copy. An absolutely complete copy, as here, is thus of very great rarity.

DUBLIN SOCIETY

The Art of Tanning and Currying Leather: With an Account of all the Different Processes Made Use of in Europe and Asia, for Dying Leather Red and Yellow, Collected and Published at the Expence of the Dublin Society. To which are added, Mr. Phillipos Method of Dying the Turkey Leather . . . Also, The New Method of Tanning: Invented by the late David Macbride, M.D.

London: Reprinted for J. Nourse, in the Strand, Bookseller to His Majesty. 1780.

Third (second Nourse) edition. 12mo. 1 leaf, xx, 259 pp. + 5 pp. (advertisements). Fine copy, top edge gilt, others uncut, in red half morocco antique, marbled boards, title and date blocked in gilt on spine.

AN IMPORTANT work on the chemical technology of tanning leather, by "C. V.," a member of the Dublin Society. First published in Dublin (1773), Nourse reprinted the text (London, 1774, 244 pp.; Wellcome, II, 489), to which he added "Mr. Philippos method of dying the Turkey leather. By the late David Macbride," dated Dublin, 31 May 1777. Macbride had originally published *Some Account of a New Method of Tanning* (Dublin, 1769; Partington, III, 144), which appeared in the *Philosophical Transactions of the Royal Society*, 1778, lxxviii, 111–130. Macbride describes the extraction of oak bark with limewater, followed by subsequent treatment of the leather (pp. 251–257). "One of the very few of the older books on tanning, which should be of special interest now, when sulphuric acid and other corrosive agents for 'lightning' tanning threaten to wear out leather before its time" (Zeitlinger). Rare. Not in Bolton, Duveen, Edelstein, Nierenstein, Partington, etc. (D.S.B., VIII, 585; Ron, 326; Sotheran, Cat. 800 [1926], 13228)

DUBOIS, HUZARD, HÉRICART DE THURY, Vicomte Ferrand, and NEUFCHÂTEAU, Comte François de

Rapport sur les Fosses Mobiles et Inodores de MM. Caze-neuve et Compagnie, fait à la Société royale et centrale d'Agriculture, dans sa séance du 19 août 1818; par MM. Dubois, Huzard, et Héricart de Thury, rapporteur; suivi d'un Supplément contenant des recherches sur l'utilité de l'urine par rapport à l'agriculture, par M. le Comte François de Neufchâteau.

Paris: De l'Imprimerie de Madame Huzard. 1818.

First edition. 8vo. 62 pp., 1 leaf. With 3 folding copperplates (depicting portable privies and their parts). Fine copy. Bound with: Héricart de Thury, *Des fosses d'aisances mobiles* . . . (Paris, 1818), and 7 other works on the same subject (q.v.).

AN IMPORTANT work on the newly invented portable privies, made odorless by chemicals. The report by Comte François de Neufchâteau (pp. 29–62) describes how these privies can make fertilizer of use in agriculture. Not mentioned by the usual bibliographies.

**DUBOIS, HUZARD, HÉRICART DE THURY,
Vicomte Ferrand, and NEUFCHÂTEAU,
Comte François de**

Fosses Mobiles Inodores. Report made to the Royal & Central Agricultural Society of France, by Messrs. Dubois, Huzard and Héricart de Thury, at a meeting held August, 19, 1818, on the Moveable, Inodorous Conveniences invented by Messrs. Cazeneuve & Co. To which is added a Supplement containing researches on the utility of urine in agriculture, by M. le Cte. François de Neufchâteau. (N.p., n.d. 1818).

First edition in English. 8vo. 56 pp. Caption title. Fine copy. Bound with: Héricart de Thury, *Des Fosses d'aisances mobiles* . . . (Paris, 1818), and 7 other works on the same subject (q.v.).

THE ENGLISH translation of the *Rapport sur les fosses mobiles et inodores de MM. Cazeneuve et Compagnie* (Paris, 1818), praising the virtues of the newly invented chemical privies and their production of fertilizer useful in agriculture. Not mentioned by the usual authorities.

DUBRUNFAUT, Augustin Pierre

Sucrage des Vendages avec les Sucres raffinés de Canne, de Betterave, etc. ou vues sur cette méthode industrielle de vinification considérée comme moyen de régulariser la qualité des vins au niveau des grandes années et d'en augmenter au besoin la quantité dans les années de récoltes mauvaises ou insuffisantes. . . .

Paris: Chez Mme Bouchard-Huzard. 1854.

First edition. 8vo. 68 pp. Very good copy. Bound with: Cossigny de Palma, *Observations sur l'art de faire le vin* (Paris, 1807), and 5 other works on the chemistry of winemaking.

AN IMPORTANT work on the economic advantages to be derived by the sweetening of wines with refined sugar extracted from sugar cane, sugar beet, and other sources. A celebrated industrial chemist, Dubrunfaut (1797–1881) discovered a process for the preparation of refined crystallizable sugar by the osmotic separation of salts from molasses, on which see Partington (IV, 731), who does not mention the present title. Dubrunfaut received a patent for his process in 1854. Not in D.S.B., Waller, Wellcome, or the usual chemical bibliographies. (Bolton, 409)

DUBUISSON, F. R. A.

Mémoire sur les Acides Natifs du Verjus, de l'Orange, et du Citron. Par M. Dubuisson, ancien Maître Distillateur.

Paris: De l'Imprimerie de Lambert & Baudouin, rue de la Harpe, près S. Côme. 1783.

First edition. 8vo. 30 pp., 1 leaf (*Approbation*). Woodcut on title page. Very good copy in contemporary quarter calf, speckled boards, with morocco label ("Melanges"). Bound with: 8 other chemical tracts (1731–1798).

AN INTERESTING tract on the nature of the acid extracted from oranges and lemons (i.e., citric acid), by the famous distiller Dubuisson (1763–1836), whose first names are unknown. This work was never for sale but was distributed free from the author's house (on the Boulevard du Montparnasse) to those who had purchased a copy of his *L'Art du distillateur . . . de liqueurs* (Paris, 1779, 2 vols.; Wellcome, II, 490). Presented to the faculty of medicine at the University of Paris, the running title indicates that this is a supplement to his work on distillation. The "Rapport" (pp. 23–27) on Dubuisson's process for extracting citric acid is signed by Duhaume, D'Arcet, Bourru, Nollan, Paulet, de la Planche, and Doublet. The "Extrait . . . de la Société Royale de Médecine" (8 July 1783) is signed by Caille, de Fourcroy, and Vicq d'Azyr. The "Approbation" is dated 12 November 1783 and is signed by Pierre Joseph Macquer. Rare. Not in the usual bibliographies. (Waring, 363)

DUCHANOY, Claude François

Essais sur l'Art d'imiter les Eaux Minérales, ou de la Connoissance des Eaux Minérales & de la manière de se les procurer, en les composant soi-même, dans tous les tems & dans tous les lieux. . . .

Paris: Chez Méquignon l'aîné. 1780.

First edition. 12mo. vii, (1), xxiv, 402 pp. Page xxiv misnumbered xxix. With 1 copperplate of apparatus. Fine, crisp copy, in original mottled calf, spine gilt, maroon morocco label.

ONE OF the earliest books on the production of artificial mineral waters in France, which did not develop into an industry until more than forty years later. "An interesting work which is almost entirely devoted to chemistry and its application to the manufacture of 'ersatz' mineral waters" (Duveen). Black, Cavendish, Macquer, Lavoisier, Priestley, and many other contemporary chemists are quoted. Duchanoy (1742–1827), a pupil of Antoine Petit, to whom the book is dedicated, was a well-known French physician who later became administrator of the Paris hospitals and dean of the medical faculty. Scarce. Not in Bolton, Edelstein, Ferguson, Partington, Poggendorff, Watt, etc. (Blake, 128; Dezeimeris, *Dictionnaire historique de la médecine*, II,

140; Duveen, 182; Ferchl, 132; Neu, 1237; Smith, 153; Waller, 2601; Wellcome, II, 491)

DUCHESNE, Henri Gabriel

Dictionnaire de l'Industrie, ou Collection Raisonnée des Procédés Utiles dans les Sciences et dans les Arts; contenant nombre de secrets curieux & intéressants pour l'économie & les besoins de la vie; l'indication de différentes expériences à faire; la description de plusieurs jeux très singuliers & très amusants; les notices des découvertes & inventions nouvelles; les détails nécessaires pour se mettre à l'abri des fraudes & falsifications dans plusieurs objets de commerce & de fabrique: ouvrage également propre aux artistes, aux négociants & aux gens du monde. Par une Société de Gens de Lettres. . . .
Paris: Chez Humblot, Libraire. 1776.

First edition. 3 vols., 8vo. I: xxiv, (4), 700 pp. Folding table (hydrostatics) facing p. 91. II: 2 leaves, 739, (1) pp. Woodcut on p. 260. III: 2 leaves, 754 pp. Woodcuts of music (pp. 55–56), and 2 folding tables (thermometric scales) at pp. 638–639. Pages 337–352 mispaginated 347–362. The “Chez Humblot” imprint is printed on a strip of paper pasted over the usual “Chez Lacombe” imprint. Very good set in original mottled calf, gilt, maroon morocco labels.

DESCRIBED AS being by “Une Société de Gens de Lettres,” this excellent dictionary was “the work of Henri Gabriel Duchesne. . . . In compiling this new dictionary Duchesne drew on the works of many authors . . . and he quoted or paraphrased descriptions of a number of chemical processes from the *Dictionnaire de Chymie*” of Pierre Joseph Macquer (see R. G. Neville and W. A. Smeaton, *Annals of Science*, 38 [1981], 616). This encyclopedic work covers all aspects of science, technology, medicine, and natural history. N.U.C. erroneously calls for plates. Very scarce. Not in the usual bibliographies. (Duncan, 3452; Wellcome, II, 491)

DUCHESNE, Henri Gabriel, and MACQUER

Manuel du Naturaliste. Ouvrage dédié à M. De Buffon, De l'Académie Française, &c. &c. Intendant du Jardin Royal des Plantes.

Paris: Chez G. Desprez, Imprimeur du Roi & du Clergé de France, rue S. Jacques. 1771.

First edition, second issue. 8vo. viii, 598 pp., 1 leaf. Ornamental woodcut border surrounding title. Very good copy in contemporary mottled calf, spine gilt, gilt-lettered maroon label.

DUCHESNE (1739–1822) was a naturalist who wrote this work in collaboration with a cousin of the famous chemist Pierre-Joseph Macquer. The forenames of this particular Macquer are not known. In most library catalogues and bibliographies P.-J. Macquer is erroneously listed as the

coauthor, but Willem C. Ahlers has established that this was definitely not the chemist himself, but his cousin of the same surname. See W. C. Ahlers, “Un Chimiste du XVIIIe Siècle. Pierre-Joseph Macquer (1718–1784). Aspects de sa Vie et de son Oeuvre” (Université de Paris, Faculté des Lettres et Sciences Humaines, thèse de troisième cycle, 1969; unpublished doctoral thesis).

Intended as a general encyclopedia of nature, this work contains many articles of chemical and mineralogical interest. Neville and Smeaton have shown that most of the entries on chemistry and related subjects are paraphrased versions from P.-J. Macquer's *Dictionnaire de Chymie* (Paris, 1766), although some descriptions come from other sources. Dedicated to the celebrated biologist Buffon, this work gives a valuable survey of natural and physical sciences of the period. Very scarce. Not mentioned by Blake, Caillet, Collison, Duncan, Duveen, Ferchl, Neu, Partington, Smith, Waller, Watt, etc. (R. G. Neville and W. A. Smeaton, *Annals of Science*, 38 [1981], 616; Wellcome, II, 491 [1770 issue])

DUCHESNE, Henri Gabriel, and MACQUER

Manuel du Naturaliste. Ouvrage Utile aux Voyageurs, & à ceux qui visitent les Cabinets d'Histoire Naturelle & de Curiosités, en forme de Dictionnaire, pour servir de suite à l'Histoire Naturelle. Par M. de Buffon, de l'Académie Française, &c. &c. Intendant du Jardin du Roi. . . .
Paris: De l'Imprimerie Royale. 1771.

Second edition. 2 vols., 12mo. I: xii, 531, (1) pp. II: xii, 400 pp. Volume numbers on spines interchanged; otherwise fine copy in contemporary vellum, maroon morocco labels, gilt.

THE FIRST augmented edition of this interesting work, containing 333 more pages than the edition of the previous year and with a differently worded title page. The title erroneously states that the book is “par M. de Buffon,” whereas in the first edition this work is clearly dedicated to Buffon. Although the title indicates that the book was printed by the Royal Press, there is no “approbation” or “privilege du roi.” It is possible, therefore, that this is a pirated edition. Popular works were often printed in pirated editions in late-eighteenth-century France. For a discussion of this and similar works, see Y. Laissus, *Les cabinets d'histoire naturelle: Enseignement et diffusion des sciences en France au XVIIIe siècle* (Paris, 1964).

DU CHESNE, Joseph

Ad Iacobi Auberti Vindonis de Ortu et Causis Metallorum contra Chymicos Explicationem . . . brevis Responsio. Eiusdem de exquisita Mineralium, Animalium, & Vegetabilium medicamentorum Spagyrica praeparatione & usu, perspicua Tractatio.

Lyons: Apud Ioannem Lertotium. 1575.

First edition. 8vo. 8 leaves, 186 pp., 7 leaves (index). Woodcut ornament on title page and another on final leaf. Roman letter. Fine, crisp copy, in old quarter vellum, boards, tan morocco label, gilt. Bound with: Aubert, J., *Iacobi Avberti . . . de metallorum ortu & causis . . .* (Lyons, 1575).

THE FAMOUS physician Du Chesne (ca. 1544–1609), also known as Quercetanus, graduated at Basel in 1573 and went to Paris in 1593, where he became physician-in-ordinary to Henry IV. Upon the appearance of Aubert's *De metallorum* (Lyons, 1575), Du Chesne, a staunch follower of Paracelsus, wrote this book (his first), which attacked Aubert's work and began a fierce controversy that lasted many years. It is "a strong defense of the iatrochemical position, and . . . was reprinted often and attracted considerable attention" (D.S.B.). The reply to Aubert (pp. 1–76) is followed by a spagyric pharmacopoeia (pp. 77–186). Page 77 is a divisional title page, dated 1575, but pagination and signatures are continuous. An English translation, by John Hester, appeared as *A breefe aunswere of J. Quercetanus to the exposition of J. Aubertus Vindonis* (London, 1591; S.T.C. 7275). This book and that of Aubert with which it is bound is of importance in the history of chemistry and geology (see Adams, *The development of the geological sciences*, p. 290). Rare, especially when in fine condition. (British Library, *S.T.C. French Books, 1470–1600*, p. 142; D.S.B., IV, 209–210 ["Major work"]; Durling, 1289; Duveen, 492; Edelstein, 775; Ferchl, 133; Ferguson, II, 234; Ferguson Coll., 201; Hoover, 268; Neu, 1238; Partington, II, 167; Poggendorff, II, 550; Thorndike, VI, 247; Waller, 11121; Wellcome, I, 1879)

DU CHESNE, Joseph

Ios. Quercetani Doctoris Medicique Regii, Diaeteticon Polyhistoricon. Opus utique varium, magnar utilitatis ac delectationis, quod multa Historica, Philosophica, & Medica, tam conseruandae sanitati, quam varijs curandis morbis necessaria contineat.

Paris: Apud Clavdivm Morellvm, via Iacobaea, ad insigne Fontis. 1606.

First edition. 8vo. 6 pp., 171 (recte 170), 369–463 recte 171–266) folios, 3 leaves (1 blank). Badly numbered, text complete. Woodcut ornament on title page. Roman letter. Very good copy in contemporary half vellum, marbled boards, old ink lettering on spine.

A TREATISE WITH numerous historical references to the correct principles of diet and good health from the standpoint of chemistry and medicine. Food and drink that should be ingested to achieve and optimize health are discussed. The author describes the best kinds of meats, fish, poultry, fruits, vegetables, wines, etc., to promote excellent health. He also lays down rules about sleep, lovemaking, obesity, exercise, quietness and introspection, anger, etc. The privilege is dated 10 November 1605. A few copies have a portrait of the author (possibly inserted after publication), but not in this copy. Other editions of this popular book appeared: e.g., Geneva: David Anastasius, 1607; Leipzig: Michael Lantzenberger, 1607 (Duveen, 493); Paris, 1608, 1615; Leipzig, 1615; Trévoux, 1625; and Geneva: Petrum Chouet, 1626. The first edition was immediately translated into French as *Le pourtraict de la santé* (Paris: Claude Morel, 1606; Duveen, 493). "Du Chesne's numerous writings attracted much attention" (Partington). This edition is not in Caillet, D.S.B., Duveen, Ferguson Coll., Osler, Waller, etc. (Blocker, 115; Ferchl, 133; Ferguson, II, 237 [not in Young Coll.]; Goldsmith, 947; Partington, II, 170; Rosenthal, 3249; Vicaire, 168; Watt, I, 220f; Wellcome, I, 1886)

DU CHESNE, Joseph

La Pharmacopée des Dogmatiques Reformée, et enrichie de plusieurs remèdes excellens, choisis & tirez de l'art Spagyrique. Avec un traicté familier de l'exacte préparation Spagyrique des medicamens prins d'entre les Mineraux, Animaux & vegetaux: et une breve Response au livret de Iacques Aubert, touchant la generation & les causes des Metaux. . . .

Paris: Chez Claude Morel, ruë Saint Iacques à l'Enseigne de la Fontaine. 1624.

First edition. 2 parts in 1 vol., 8vo. 7 leaves, 549, (31) pp., 2 leaves (blank); 152, (14) pp., 1 leaf (blank). With engraved portrait of Du Chesne (remargined). Divisional title page and separate pagination to second part. Occasional minor damp stains; otherwise good copy, in original limp vellum, edges worn, ties lacking.

"THERE IS little question that Du Chesne's most popular work was the *Pharmacopoea dogmaticorum restituta* (Paris, 1607)" (D.S.B.). The present iatrochemical work, a completely new book, is an updated and enlarged version of the *Pharmacopoea* with numerous additions. The *Traicté familier de l'exacte préparation spagyrique*, with separate divisional title page, includes the famous response of Du Chesne to the *De metallorum ortu & causis contra chemistas* (Lyons, 1575), by Jacques Aubert, here first translated into French. This part is of considerable alchemical interest, as well as being important for the clear descriptions of the preparation of numerous identifiable chemical compounds. Very

rare. The earliest edition of this title in the National Library of Medicine is the second (Paris, 1630) (Krivatsy, 3436, 3451), and the earliest edition in the British Library is that of Lyons, 1648. Only the second part (*Traicté familier*, 1624) is listed by Duveen (pp. 493–494), who describes it as rare. (Wellcome, I, 1896)

DU CHESNE, Joseph

Recueil des Plus Curieux et Rares Secrets Touchant la Medecine Metallique & Minerale tirez des Manuscripts, de Feu Mre Ioseph Dv Chesne sieur de la Violette Conseiller & Medecin ordinaire du Roy.

Paris: Chez Simeon Piget, ruë S. Iacques, à l'Enseigne de la Syreine. 1648.

First edition, second issue. 8vo. 4 leaves, 370 pp., 7 leaves. Added fine engraved title page (Mich. van Lochof fecit, dated 1641, with the "1" changed to "8" in contemporary ink). Beautiful engraved portrait of Du Chesne at age 60 on verso of leaf facing page 1 of text. The recto of the same leaf is numbered "13." Fine, crisp copy, with wide margins, in contemporary vellum. Bound with: Du Chesne, J., *Traicté de la matiere* (Paris, 1626).

THE FIRST ISSUE was published by J. Brunet in 1641, but all copies lack pages 3–10, which were probably suppressed. In the Wellcome and British Library copies pages 11–12 are glued to the title leaf. The present second issue contains an *extraict du privilege* stating that Simeon Piget had taken over the rights of publication from Brunet and that this work was "Achevé d'Imprimer pour la premiere fois le 10 Juin 1648." It is a collection of alchemical, chemical, and medicinal preparations taken from the manuscripts of Du Chesne, containing chapters on compounds of gold, silver, iron, copper, tin, lead, mercury, antimony, sulphur, arsenic, etc. The final chapter describes the "grand Electre" of Paracelsus, with further experiments by Du Chesne. Not in Blocker, Bolton, D.S.B., Poggendorff, Smith, Waller, Watt, etc. (Caillet, 3311 [imperf.]; Duveen, 494; Edelstein, 777; Ferchl, 133; Ferguson, II, 237 [not in Young Coll.]; Ferguson Coll., 202; Goldsmith, 955 [imperf.]; Guaita, 255; Neu, 1258; Osler, 3751 [imperf.]; Partington, II, 170; Wellcome, II, 491)

DU CHESNE, Joseph

Le Ricchezze della Riformata Farmacopea del Sig. Giuseppe Quercetano . . . Nuovamente di Favella Latina trasportata in Italiana dal Sig. Giacomo Ferrari . . . Oltre nuove osservazioni, pensieri gratiosi, utilissime inventioni, avvertimenti necessarii per la compositione di molti medicamenti Hermetici . . .

Venice: Appresso Giovanni Guerigli. 1619.

First edition in Italian. 4to. 12 leaves, 256 pp. Fine engraved title page, and letterpress title with woodcut printer's device. Woodcut capitals, head- and tailpieces. Fine, crisp copy, in original vellum.

THE TRANSLATION into Italian by Giacomo Ferrari (fl. 1601) of Du Chesne's *Pharmacopoea dogmaticorum restituta* (Paris, 1607, and later editions), which became very popular. It "deals with waters, decoctions, wines, oxymels, syrups, purgatives, emetics (including antimony), clysters, conserves, antidotes (including theriac with 68 ingredients, and preparations of vipers), narcotics (including laudanum) and extracts. It contains many recipes . . . and had a great influence" (Partington). The Latin edition was "recommended by Boerhaave to his pupils" (Watt). Other editions in Italian appeared: Venice, 1638, 1646, 1657, 1665, and 1684. Very rare. Not in British Library (only 1638 ed.), or the usual bibliographies. (Neu, 1255; Wellcome, I, 1894)

DU CHESNE, Joseph

Traicté de la Matiere, preparation et excellente vertu de la Medecine balsamique des Anciens Philosophes. Auquel sont adioustez deux traictes, l'un des Signatures externes des choses, l'autre des internes & specifiques, conformément à la doctrine & pratique des Hermetiques. . . .

Paris: Par C. Morel, Imprimeur ordinaire du Roy, rue saint Jacques à la Fontaine. 1626.

First edition. 8vo. 4 leaves, 215, (1) pp. Excellent copy with wide margins, in contemporary vellum, maroon label, gilt. Bound with: Du Chesne, J., *Recueil des plus curieux et rares secrets* (Paris, 1648).

POSTHUMOUSLY PUBLISHED from notes left by Du Chesne, this work describes the preparation and properties of the "balsamic" medicines of earlier and contemporary iatrochemists, as well as those of the author. Of alchemical interest are sections on the transmutation of metals, philosopher's stone, spagyric principles, etc. Du Chesne believed in the doctrine of signatures and palingenesis (the resuscitation of plants from their ashes), and "he accepted the philosophers' stone and transmutation as a matter of course" (Ferguson, II, 237). The section on external signatures (pp. 120–150) is followed by that on internal signatures (pp. 151–215). Rare. Not in Blocker, Caillet, D.S.B., Guaita, Osler, Waller, Watt, etc., or most of the usual chemical bibliographies. (Duveen, 494; Ferchl, 133; Ferguson Coll., 202; Goldsmith, 957; Neu, 1247; Verginelli, 94; Wellcome, I, 1883)

DUCLO, Gaston

Claveus Germanicus, das ist: ein köstlichesz Büchlein von dem Stein der Weisen: weyland von dem vornehmen Phisopho [sic] Gastone Claveo, in Lateinischer Sprachen beschrieben: auff etlicher guten Freunde begehren, auss dem Latein, in Teutsch versetzt, durch einen liebhaber der Uhralten, wahren, und sehr geheimen Kunst Chymiae.

Halle: Peter Schmidt, in verlegung Joachimi Krusicken. 1617.

First edition in German. 8vo. 8 leaves, 398 pp. Title within ornamental woodcut border. Woodcut capitals, head- and tailpieces. Paper slightly embrowned (characteristic of period); otherwise fine copy in levant morocco antique, spine gilt-lettered and dated.

DUCLO (Gaston de Clave Le Doux, b. ca. 1530), of Nivernois, an advocate at Nevers, answered the attack on Paracelsus by Erastus (i.e., Thomas Lieber, 1523–1583) by publishing *Apologia Chrysopoeia* (Nevers, 1590; see Thorn-dike, V, 666). The present German translation is the first edition of the *Apologia* to appear in the vernacular. It is also the first edition to contain the German translation of *De triplici auri et argenti praeparatione* (pp. 155–392). In this alchemical work on the philosopher's stone, the author attempts to prove the reality of the transmutation of mercury into silver and gold. The works of Raymund Lully and Geber are mentioned in the preface, which was written by Bernard Georges Penot. Very rare. This edition not in Duveen, Edelstein, Ferguson Coll., Mellon, Verginelli, etc. (Ferchl, 98; Ferguson, I, 227 [not in Young Coll.]; Neu, 1260; Partington, II, 158; Wellcome, I, 1915)

DUCLO, Gaston

Le Filet d'Ariadne, pour entrer avec seureté dans le Labirinthe de la Philosophie Hermetique. . . .

Paris: Chez Laurent d'Houry, ruë S. Jacques, devant la Fontaine Saint Severin, au Saint Esprit. 1695.

First edition. 12mo. 4 leaves, 176 pp., 16 leaves. Woodcut on title, and 6 woodcuts of furnaces and chemical apparatus in text. Old stamp on title ("Library of the Sup. Council So. Jurisdiction"; with cancel stamp dated April 1985). Final leaf with 2 pages of advertisements of books on alchemy and chemistry. Few leaves with light embrowning; otherwise very good copy in calf antique, gilt, red morocco label, spine dated.

AN ALCHEMICAL treatise on the preparation of the philosopher's stone and transmutation, usually attributed to Gaston Duclou (e.g., by Duveen, Ferguson, Mellon). The text refers to the works of Arnaldus de Villanova, Augurellus, Bernardus Trevisanus, Flammel, Zacaire, and other alchemists, which accord with Duclou's dates. However, the references to Sendivogius (1556–1636), and especially

(p. 45) to Philaletha (i.e., George Starkey, ca. 1622–1665), suggest that this work may possibly be based on a manuscript by Duclou, which has been updated by an anonymous seventeenth-century author. Newton owned a copy of this book, which is erroneously dated 1693 by Waite. (Duveen, 217; Edelstein, 779; Ferguson, I, 276; Harrison, 619; Kopp, *Die Alchemie*, II, 369; Mellon, 145; Neu, 1261; Partington, II, 158; Waite, 286)

DUCLO, Gaston

Traité Philosophique de la Triple Preparation de l'Or et de l'Argent. . . .

Paris: Chez Laurent d'Houry, ruë Saint Jacques, devant la Fontaine Saint Severin, au Saint Esprit. 1695.

First French edition. 12mo. 119, (1) pp. Title page dated M.D.XCV (i.e., 1595, for 1695). Fine copy in early-eighteenth-century maroon morocco, all edges gilt. Bound with: Salmon, Guillaume, *Dictionaire hermetique* (Paris: L. d'Houry, 1695).

THE FIRST translation into French of *De triplici praeparatione auri & argenti . . .* and *De vera & recta ratione progignendi Lapidis Philosophici . . .* (first: Nevers, 1592). These are works on the alchemical preparation of gold and silver by means of the philosopher's stone. The writings of Albertus Magnus, Augurello, Bernhardus Trevisanus, Fani-anus, Fernel, Geber, Raymund Lull, Scaliger, et al., are cited. "Ouvrage presque introuvable" (Guaïta). The making of gold and silver is described (pp. 3–48), as is the process for the preparation of the legendary philosopher's stone (pp. 49–119). (Bolton, 74; Caillet, 3349; Duveen, 182–183; Ferchl, 98; Ferguson, I, 211, 227; Guaïta, 949; Krivatsy, 3197; Neu, 3344; Partington, II, 158; Smith, 429; Sotheran, Cat. 773 [1919], 2616 ["Rare"]; Wellcome, II, 492)

DUCLOS, Samuel Cottureau

Dissertation sur les Principes des Mixtes Naturels, faite en l'An 1677. . . .

Amsterdam: Chez Daniel Elsevier. 1680.

First edition. 12mo. 103, (1) pp. Woodcut on title page. Top of title and some headlines shaved, also inner margin of pages 73–74 defective (with loss of several words of text); otherwise very good, crisp copy, in modern boards.

ONE OF the first members of the Académie Royale des Sciences in Paris, Duclos was a good chemist. He "produced a brief dissertation on the principles of mixed bodies (i.e., chemical compounds). Such bodies could act upon each other without physical contact by means of a universal spirit which surrounded and penetrated bodies, and through which Nature impressed on them the specific character of its type ideas, the originals of which Du Clos, like

Plato, held existed in the mind of the First Cause" (Thorndike). The entire book is of considerable chemical interest. Duclos reviewed Boyle's *The Sceptical Chymist* (London, 1661) for the Académie in 1669, but it was not translated into French. Not in Duveen, Edelstein, Ferguson, Krivatsy, Neu, etc. (Bolton, 410; Cushing, D297; Ferchl, 133; Ferguson Coll., 204; Goldsmith, C1672; Partington, III, 12; Poggendorff, I, 610; Thorndike, VIII, 389; Watt, I, 240v; Wellcome, II, 492)

DUCLOS, Samuel Cottreau

Observationes super Aquis mineralibus diversarum Provinciarum Galliae, in Academia Scientiarum Regia in annis 1670 & 1671 factae, et ejusdem Dissertatio super Principiis Mixtorum Naturalium habita anno 1677.

Leyden: Apud Petrum Vander Aa. 1685.

First Latin edition. 12mo. 2 leaves, 204 pp., 4 leaves (last blank). Engraved title page (by Ad. Schoonebeek) and separate divisional title page (p. 133) to *Super principiis mixtorum naturalium*. Very good copy in original mottled calf, rebounded, spine gilt-lettered and dated. Signature on flyleaf (R. Frewin, 1704), armorial bookplate of Radcliffe Library, and cancellation stamps of Bodleian Library.

THE LATIN translation of *Observations sur les eaux minerales . . . de France* (Paris, 1675), to which is appended the first Latin translation of *Dissertation sur les principes des mixtes naturels* (Amsterdam, 1680), on pages 133–204. An interesting association copy from the library of the physician Richard Frewin (ca. 1681–1761), of Westminster and Christ Church, Oxford (M.A., 1704; M.D., 1711), Camden professor of ancient history (1727). Frewin left his books to the Radcliffe Library and his house (Frewin Hall) for the regius professor of medicine. This volume passed from the Radcliffe Library to the Bodleian Library, from which it was sold as a duplicate. Partington (II, 479, 489) states that Frewin assisted John Freind (1675–1728) in lecture demonstrations and chemical experiments when, in 1704 (date of signature in this copy), Freind was appointed reader of chemistry at Oxford. Scarce. Not in Thorndike, Wellcome, or the usual chemical bibliographies. (Ferchl, 133; Krivatsy, 2770; Partington, III, 12; Waller, 2612)

DUCLOS, Samuel Cottreau

Observations sur les Eaux Minerales de Plusieurs Provinces de France, faites en l'Academie Royale des Sciences en l'Année 1670 & 1671. . . .

Paris: De l'Imprimerie Royale. 1675.

First edition. 12mo. 203, (1) pp., 4 leaves. Very fine copy in near-mint condition, in original mottled calf, spine richly gilt in compartments.

A MILESTONE WORK in the history of analytical chemistry, in which sixty-eight French mineral waters, their acids, alkalies, salts, and other components are discussed. The author divided mineral waters into eight different types, containing various combinations (or omissions) of "common salt, a nitrous or gypsum-like substance, and other salts, but no alum, vitriol, sulphur, or bitumen. He also investigated drinking water, using various reagents. He detected a bitter salt (Epsom salt) in some mineral spring waters and sea water" (Partington). Thorndike discusses this work in detail. Translations into English (London, 1684) and Latin (Leyden, 1685) appeared. Confusion exists in the literature as to the name and dates of the author. By some he is called Clos, Du Clos, or Duclos, and by others Cottreau Du Clos (or Duclos). Krivatsy gives his dates as 1598–1685, but Partington (quoting Condorcet, *Oeuvres*, 1847) states that he "retired in 1685 to a Capuchin convent, where he died in 1715." (Bolton, 410; Duveen, 183; Ferchl, 133; Goldsmith, C1673, Krivatsy, 2769; Neu, 1030; Partington, III, 12; Poggendorff, I, 610; Thorndike, VIII, 374; Waller, 2613; Watt, I, 240v; Wellcome, II, 492)

DUDLEY, Dud

Dud Dudley's Metallum Martis: or, Iron made with Pit-coale, Sea-coale, &c. And with the same Fuell to Melt and Fine Imperfect Mettals, and Refine perfect Mettals.
London: Printed by T. M. for the Authour. 1665 (1851).

First facsimile edition. 12mo. 10 leaves, 54, (2) pp., 2 leaves (blank). Folding plate at end. Fine copy, in original publisher's blind-stamped vellum, printed in ink on front cover.

A SCARCE REPRINT of an extremely rare metallurgical work (i.e., Wing, D2438; 3 copies, 1 in United States). A slip following the title leaf states: "The Reader is informed that this work is an exact re-print, and that obvious errors in spelling as well as grammar have been literally followed." "Dudley (1599–1684), son of Lord Dudley and a collier's daughter, was brought down from Balliol College, Oxford, to supervise a furnace and two forges belonging to his father at Pensnet in Worcestershire, where (under a patent taken out by his father in 1621) he made, he says, iron of good quality with pit coal" (Partington, II, 61). "Dudley, the first to smelt iron ore with coal, operated a blast furnace near Bristol, England, in 1651" (Hoover). The editor, John N. Bagnall, gives an interesting bibliographical account of this work in "The Publisher to the Reader," which is dated "West Bromwich, March, 1851." Another edition, in quarto format, appeared in 1854, together with reprints of works on the same subject by Simon Sturtevant and John Rovenzon. (Ferguson Coll., 204; Hoover, 269; Smith, 154; Sotheran, Cat. 702 [1910], 7381)

DUDLEY, Dud, ROVENZON, John,
and STURTEVANT, Simon

Dud Dudley's Metallum Martis: or, Iron made with Pit-coale, Sea-coale, &c. And with the same Fuell to Melt and Fine Imperfect Mettals, and Refine perfect Mettals.
London: Printed by T. M. for the Author. 1665.

First collected facsimile edition. 3 vols., 4to., in 1. I: (19), 40, (5) pp. II: 30, (2) pp. III: 119, (1) pp. Folding frontispiece (genealogical table of Dudley's family, engraving of his coat of arms, and reproduction of his signature), and sepia-colored plate. Fine copy in original printed cream-colored cloth. Bookplate: Institution of Naval Architects, Scott Library Collection, Presented by Mr. R. E. Scott, 1930. Bound with: Rovenzon, John, *A Treatise of Metallica* . . . London, 1613; and Sturtevant, Simon, *Metallica or The Treatise of Metallica* . . . London, 1612 (1854).

A SCARCE REPRINT of three very rare metallurgical treatises. The "Publisher to the Reader" states: "The first reprint was published in 1851, but the whole edition being speedily sold, and many copies still applied for, the editor thought it would be advisable to issue a second edition, together with the 'Metallica' of Simon Sturtevant, published in 1612, and that of Rovenzon printed in 1613, both of which works are referred to by Dud Dudley." The editor, John N. Bagnall, signs the notice from West Bromwich, December 1854. The list of subscribers shows orders for 263 copies. Very scarce. (Duveen, 183; Edelstein, 781; Ferguson Coll., 204; Hoover, 67, 697, 771; Partington, II, 61; Sotheran, Cat. 702 [1910], 7382)

DUETTEL, Philip Jacob

Demonstratio Sincera, de Alchymistarum Vanitate, odor Aufrichtiger Beweiss der Eitelkeit der Goldmacher, da selbige ohne Grund vorgeben, mit dem Stein der Weisen nicht nur Gold zu machen, sondern auch mit dem Menstruo Universali das Gold radicaliter zu solviren, . . .

Augsburg: Zufinden im Mertz und Mayrischen Buch-Laden. 1737.

First edition. 8vo. 6 leaves, 98 pp., 2 leaves (last blank). Last 2 leaves of prelims misbound at end. Woodcut initials, head- and tailpieces. Very good copy, entirely uncut, in old unlettered patterned blue boards.

OF THIS work Ferguson says: "I have not succeeded in finding anything about this author. He is not mentioned by writers on the history of alchemy. His attack, however, on alchemy is such an uncompromising one that it merits consideration in order to learn what a contemporary considered the weak points of the pursuit." Ferguson notes that Duettel's *Tractatus de virulenta plantarum indole* (1722) is

cited by Haller (*Bibliotheca Botanica*, 1772). Duettel, a physician of Memmingen, studied under Friedrich Hoffmann and presented his *Dissertatio inauguralis medico-practica de morbis foetuum in utero materno* (Halle, 1702), on which see Waller, 4758. Very rare. Not in Blake, Bolton, Caillet, Duveen, Edelstein, Neu, Partington, Smith, Waite, Wellcome, etc. (Ferchl, 133; Ferguson, I, 228–229; Ferguson Coll., 204; Rosenthal, 267)

DUETTEL, Philip Jacob

Tractatio Medico-Practica, de virulenta purgantium indole, qua cautissimus eorum usus & perversus abusus, selectis observationibus & solidis ratiociniis, methodo celeberrimi D. Friderici Hoffmanni, demonstratur . . .

Augsburg: Apud David Raymund Mertz, & Jo. Jacob Mayer. 1722.

First edition. 8vo. 14 leaves, 186 pp. Frontispiece portrait of Duettel (Iac. Andr. Fridrich Sc.), and 2 folding engraved plates. Title page in red and black. Very fine copy, in unlettered half vellum antique, marbled boards.

A PHARMACEUTICAL TREATISE on the organic and inorganic chemicals employed in the preparation of laxatives and purgatives, with their medicinal properties. The book is based on the precepts of Friedrich Hoffmann, to whose works the author frequently refers. Duettel also cites the writings of Gaebelchover, Helmont, Potier, Rolfinck, Tachenius, Wedel, et al. The frontispiece portrait of Duettel is a beautiful example of the engraver's art. Rare. Not in the usual bibliographies. (Blake, 128; Wellcome, II, 493)

DUGNIOLLE, Maximilien

Les Fabriques de Produits Chimiques et les Maladies des Plantes Alimentaires.

Brussels: Imprimerie d'Emm. Devroye. 1856.

First edition. 8vo. 90 pp., 1 leaf. Crisp copy in original unlettered, pale-orange boards.

AN IMPORTANT early work on air pollution. Dugniolle (dates unknown), professor of natural history at the University of Ghent, was a member of the commission appointed by the Belgian government to investigate the adverse effects of atmospheric pollution produced by chemical industries on plants, and in particular vegetables. He discusses the effects of hydrochloric acid and other acid vapors on plants (especially potatoes) in the Namur region of Belgium and takes issue with Léon Peeters, who claimed that the devastation of edible crops was exclusively owing to acid vapors. Dugniolle demonstrates experimentally that in addition to the presence of acid vapors, the spotting on

the leaves of plants is also due to diseases. He advocates that environmentally sound procedures be used by chemical industries to prevent the release of acid vapors into the atmosphere. Very rare. Unknown to the usual bibliographers.

DUGUD, Patrick

Dissertatio Physica Inauguralis, de Caloris Animalium Causa: quam, . . . D. Gulielmi Robertson, . . . Pro gradu doctoris, . . . Patricius Dugud Scoto-Britannus. . .
Edinburgh: Apud Balfour & Smellie. 1775.

First edition. Sm. 4to. 2 leaves, 71, (1) pp. Fine copy in quarter morocco antique, marbled boards, spine gilt-lettered. With author's presentation inscription in ink on verso of title page: "Dr. Duncan from his obliged humble servt. the Author."

THE DOCTORAL dissertation of Dugud, who shortly thereafter changed his name to Leslie and published an expanded version of the above as *A Philosophical Inquiry into the Cause of Animal Heat: with Incidental Observations on Several Physiological[sic] and Chymical Questions, connected with the Subject* (London, 1778; see Duveen, p. 650, and Partington, III, 614). The importance of the 1778 edition has been discussed by Partington and McKie. Dugud attempts to explain the increase in weight of metals on calcination by the "levity" of phlogiston, which apparently convinced Joseph Black. The explanations of calcination put forward by Priestley and Lavoisier were opposed by Dugud. This dissertation cites the works of many important chemists. Andrew Duncan, the elder (1744–1828), physician and professor at Edinburgh, to whom this copy was presented, is mentioned on pages 30 and 34. Duveen states that Dugud's works are "unknown to all the usual authorities." Rare. (Edelstein, 786; Partington & McKie, *Annals of Science*, 2 [1937], 384–387; Wellcome, 495)

DU HALDE, Jean Baptiste

Gründlicher Unterricht vom Seidenbau. Oder Johann Baptist du Halde Chinesische Nachrichten, wie mit dem Seiden- und dem dazu nötigen Maulbeerbaumbau zu verfahren, welche in dem Ilten Theil seiner ausführlichen Beschreibung des Chinesischen Reichs befindlich, wegen ihrer Kürze und Wichtigkeit aber absonderlich zum Druck befördert, und mit kurzen Anmerkungen versehen von einem erfahrenen Freunde des Seidenbaues im Braunschweigischen.

Wolfenbüttel: bey Johann Christoph Meissner, privil. Hof-Buchhändler. 1753.

First edition in German. 8vo. 135, (1) pp. Paper lightly embrowned; otherwise good copy, in gilt-ruled unlettered quarter calf antique, marbled boards. Bound with: Becher,

Johann Joachim, *Chymischer Rosen-Garten* (Nuremberg, 1717), and 2 other works.

A treatise on the growing of silkworms and the preparation and treatment of silk, translated by Johann Christian Koppens from Du Halde's (1674–1743) *History of China*, with numerous additions by the translator. The dyeing of silk is described, and there is much of chemical and technological interest. Du Halde's original work appeared as *Description Historique, Géographique et Physique de l'Empire de la Chine et de la Tartarie Chinoise* (Paris, 1735, 4 vols., folio). The present translation is from the section on silk in the second part of the French edition. Rare. Unknown to the usual bibliographers.

DUHAMEL, Jean Baptiste

Astronomia Physica, seu de Luce, Natura, et Motibus Corporum Caelestium Libri Duo. In priori libro de lumine, & coloribus agitur. In posteriori universa astronomia tum speculatrix, tum practica physicè, & geometricè, citra Euclidis opem demonstratur.

Paris: Apud Petrum Lamy. 1660.

First edition. 4to. 12 leaves, 224 pp., 2 leaves (index). With this copy is bound the rare *Observationes aliquot eclipsium Solis & Lunae* (Paris, 1660) of Pierre Petit, 10 leaves, 62 pp., which has a separate title page, collation and pagination but was obviously issued by Lamy simultaneously with the *Astronomia Physica*. Woodcut on title, woodcut diagrams in text. Fine copy. Bound with: Duhamel, J. B., *De Meteoris et Fossilibus* (Paris, 1660).

A COMPANION WORK to the *De Meteoris et Fossilibus*, in which the author discusses celestial phenomena. Again written in dialogue form between Theophilus, Simplicius, and Menander, Duhamel maintained that comets were celestial bodies. He opposed astrology, and on the subject of tides he remarks: "Why are the tides greatest at full moon, and why does the sea swell twice each day?" Galileo failed to explain these and other phenomena, but they were explained by Descartes, who put earth and moon in the same "vortex." The *Astronomia* is important for containing at the end the observations of solar and lunar eclipses by Pierre Petit (1598–1667), who is remembered for his collaboration with Pascal in his barometrical experiments. There are inter alia subjects of peripheral chemical interest. Not in Waller, Wellcome, etc. (Sotheran, Cat. 828 [1931], 2228 ["Rare"]; Thorndike, VIII, 204; Watt, I, 460d)

DUHAMEL, Jean Baptiste

De Consensu Veteris et Novae Philosophiae Libri Duo. In priori libro Platonis, Aristotelis, Epicuri, Cartesii, & aliorum de principiis rerum naturalium placita excutiuntur, ac physica generalis penè tota pertractatur. In posteriori agitur de elementis, & chymicorum principiis, nec non de mixtione, & dissolutione corporum, ubi chymia ferè universa explicatur. Paris: Apud Carolum Savreux, . . . 1663.

First edition. 4to. 14 leaves, 280 pp. Woodcut printer's device on title, full-page engraved arms of the archbishop of Har-douin de Pérèfixe (to whom the book is dedicated) on verso of title, and full-page woodcut of the Cartesian system on page 157. Woodcut head- and tailpieces. A superb, wide-margined copy of this beautifully printed book, in contemporary speckled calf; spine richly gilt, headbands neatly repaired. From the library of the Earl of Kintore, with armorial bookplate on front pastedown endpaper.

AN IMPORTANT review of the old and new views of science, comparing the theories of the ancients with those of contemporary authors. "Directed to a lay audience, [his] works outlined the then current state of physics and of philosophical disputes, Their originality lies in the effort to emphasize what is valuable in the ancients for the moderns, in an interesting compilation of knowledge in the era following the death of Descartes" (D.S.B.). The second book, which is almost entirely on chemistry, discusses the Aristotelian elements (air, earth, fire, water) and their transmutation, the Paracelsian *tria prima* (spagyric salt, sulphur, and mercury), chemical compounds and their analysis by various means, etc. Duveen describes this as a "rare work." There is no copy in the British Library. Not in Bolton, Edelstein, Ferchl, Ferguson, Ferguson Coll., Poggendorff, Smith, Sondheimer, Waller, Watt, etc. (D.S.B., IV, 222; Duveen, 184; Neu, 1267; Partington, III, 9; Thorndike, VIII, 207; Wellcome, II, 495)

DUHAMEL, Jean Baptiste

De Consensu Veteris et Novae Philosophiae Libri Quatuor. Seu promotae per experimenta philosophiae pars prima. Autore J.B. Du Hamel P.S.L. & Regiae scientiarum Aca-demiae à Secretis. Editio nova multò auctior & emendatior. Rouen: Apud Jacobum Lucas. 1675.

Third (second Continental) edition. 12mo. 12 leaves, 572 pp., 1 leaf (errata). Woodcut on title page. Fine copy in original blind-ruled, unlettered calf.

THE THIRD edition (first: Paris, 1663), enlarged to four books, containing the author's mature thoughts on the subjects covered. "In 1668 Duhamel met Boyle in England and two chapters in the second edition (Oxford, 1669) . . .

contain experiments on the elasticity of air and refer to Boyle's work on it" (Partington, III, 10). "In 1675 at Rouen was printed the second [*sic*] edition of the work of 1663, of which the title now read, 'Of the Agreement of ancient and modern philosophy four books, or the first part of philosophy advanced by experiments.' He explained that he had added in this edition many things which had been recently discovered or which at least had not come to his attention at the time of the first edition. He also omitted some things which seemed too difficult or less true to him. The first book dealt with Platonism; the second, with the Peripatetics, Epicureans and Cartesians; the third, with the elements; and the fourth, with chemical principles" (Thorndike). "Book IV (from p. 451 onwards) is entitled *De principiis Chymicorum*. Unknown to the bibliographers" (Duveen). Very rare. This edition is listed by bibliographies published after Duveen's catalogue appeared. Not in D.S.B., Edelstein, Goldsmith, Hoover, Morgan, Smith, Waller, Wellcome, etc. (Duveen, 184; Neu, 1268; Partington, III, 9; Thorndike, VIII, 210)

DUHAMEL, Jean Baptiste

De Meteoris et Fossilibus Libri Duo. In priore libro mixta imperfecta, quaeque in sublimi aëre vel gignuntur, vel apparent, fusè pertractantur. Posterior liber mixta perfecta complectitur; ubi salim, bituminum, lapidum, gemmarum, & metallorum naturae, causae, & usus inquiruntur. Paris: Apud Petrum Lamy. 1660.

First edition. 4to. 14 leaves, 310 pp., 3 leaves (index). Large woodcut on title, woodcut headpieces, initials, and diagrams in text. Fine copy in original calf (repaired), spine gilt. Bookplates: Michael Chasles, and Royal Meteorological Society (Symons Bequest 1900). Bound with: *Astronomia Physica*, 1660.

THE FIRST book by Duhamel, or Du Hamel (1624–1706), who, "besides being a mathematician, philosopher, and theologian, was much interested in chemistry and physics. . . . the first part is on geology, etc., the second is a compendium of chemistry and alchemy" (Partington, III, 9). The *De Meteoris* and *Astronomia Physica* were published simultaneously, as the privilege of each is dated 22 October 1659. Each work is in dialogue form (in imitation of Galileo's *Dialogo*) between Theophilus, Simplicius, and Menander, representing the Aristotelian and Cartesian philosophies, and the author. Duhamel's "works outlined the then current state of physics and of philosophical disputes. Their originality lies in the effort to emphasize what is valuable in the ancients for the moderns, in an interesting compilation of knowledge in the era following the death of Descartes" (D.N.B., 4, 221). Counselor and almoner to Louis XIV, Duhamel was first secretary of the French Academy

DE CONSENSU
VETERIS ET NOVÆ
PHILOSOPHIÆ
LIBRI QUATUOR.

SEU
PROMOTÆ PER EXPERIMENTA
PHILOSOPHIÆ
P A R S P R I M A.

*Autore J. B. DV HAMEL P. S. L.
& Regiæ scientiarum Academia à Secretis.*

Editio nova multò auctior & emendatior.



ROTHOMAGI,
Apud JACOBUM LUCAS, in vico Judeorum,
ad insigne Globorum.

M. DC. LXXV.
CVM PRIVILEGIO REGIS.

Dubamel, Jean Baptiste. De Consensu Veteris . . . Libri Quatuor. Rouen, 1675.

of Science. All of this important author's works have become rare, and most bibliographies omit them. Not in Bolton, Caillet, Duveen, Edelstein, Guiata, Ferchl, Ferguson, Ferguson Coll., Neu, Smith, Waller, Watt, Wellcome, etc. (D.S.B., IV, 222; Partington, III, 9; Poggendorff, I, 616; Thorndike, VIII, 204)

DUHAMEL, Jean Baptiste

Operum Philosophicorum Tomus I. In quo continentur tractatus hi sequentes: I. Astronomia physica. II. De meteoris & fossilibus libri duo. III. De consensu veteris & novae philosophiae. Tomus II. . . . IV. De corporum affectionibus cum manifestis, tum occultis, libri duo. V. De mente humana libri quatuor. VI. De corpore animato libri quatuor.
Nuremberg: Sumptibus Johannis Ziegeri, Bibliopolae. Literis Christophori Gerhardi. 1681.

First edition. 2 vols., 4to., in 1. I: 4 leaves (including fine engraved frontispiece), 799, (1) pp. II: 2 leaves, 712 pp. With 5 copperplates in text, and numerous woodcuts. Woodcuts on both title pages. Very fine copy, in pristine condition, in the original overlapping vellum, gilt stamp on front cover, spine lettered in ink.

THE FIRST collected edition, comprising the *opera omnia* of Duhamel's works on chemistry, physics, astronomy, electricity, medicine, etc. Two chapters on vision are illustrated by a copperplate, and the discussion on the anatomy of the brain is accompanied by three copperplates. This useful compendium is not listed by the usual early chemical bibliographies and is rare. (Sotheran, Cat. 825 [1931], 308; Watt, I, 461f)

DUHAMEL DU MONCEAU, Henri Louis

L'Art du Savonnier, ou la Maniere de Faire Différentes Espèces de Savon. . . .
(Paris:) De l'Imprimerie de L. F. Delatour. 1774.

First separate edition. Folio. 1 leaf, 70 pp. With woodcut headpiece by Papillon (p. 1), and 6 full-page copperplates (1 double page) by N. Ransonnette. Fine copy with wide margins, in twentieth-century blue boards, printed paper label on spine.

AN OFFPRINT from the *Académie royale descriptions des arts et métiers* (vol. 4, 1774). It is one of the more than twenty treatises on industrial arts and chemical processes that Duhamel du Monceau published in the *Descriptions*, the luxuriously printed and illustrated periodical sponsored by the French Royal Academy of Sciences. This comprehensive treatise on the manufacture of different types of soap contains descriptions of processes for making shaving soap, scented soap, etc. Of chemical importance are details on the selection of the oils and alkalis necessary for making

various soaps, with comments on their origin, purification, etc. The plates, illustrating apparatus and plans, include a beautiful double-page engraving of an eighteenth-century soap factory. A new edition by J. E. Bertrand appeared later (Paris, 1812). (Bolton, 414; Ferchl, 134; Partington, III, 69; Poggendorff, I, 618)

DUHAMEL DU MONCEAU, Henri Louis

The Elements of Agriculture. By M. Duhamel du Monceau, . . . Translated from the Original French, and Revised by Philip Miller, F.R.S. . . .
London: Printed for P. Vaillant, and T. Durham, . . . and R. Baldwin. 1764.

First English edition. 2 vols., 8vo. I: xx, 445 pp. II: 4 leaves, 343, (1) pp. With 14 folding copperplates (engraved by J. Ellis). Fine, crisp set, in original gilt-ruled tan calf, maroon morocco labels.

DUHAMEL DU MONCEAU (1700–1782), F.R.S. (1734), attended the lectures of the chemists Du Fay, Bernard de Jussieu, Geoffroy, and Lemery. A man of considerable wealth, he devoted his life to the service of France, and his valuable work in applied chemistry, agriculture, botany, meteorology, and physiology was carried out mostly in collaboration with his brother on his large estate at Denainvilliers. He was the first to cultivate the potato in France and was a "prominent advocate of Jethro Tull's (1674–1740) doctrine of fine tillage" (Browne, who discusses this important early work on agricultural chemistry [first edition: *Éléments d'Agriculture*, Paris, 1762, 2 vols]). Partington (III, 69–71) describes Duhamel du Monceau's chemical researches but does not mention the present work. Fussell discusses this book and gives an account of the translator, Philip Miller (1691–1771; see D.N.B.). Scarce. Not in Blake, D.S.B., Waller, Wellcome, or the usual chemical bibliographies. (Browne, *A Source Book of Agricultural Chemistry*, 1944, pp. 112–116; Fussell, *Early Agricultural Works*, 1930, p. 14 (no. 80); Fussell, *More Old English Farming Books*, 1950, pp. 48–49; Perkins, 534; Watt, II, 671m)

DUHAMEL DU MONCEAU, Henri Louis

A Practical Treatise of Husbandry: Wherein are contained, many Useful and Valuable Experiments and Observations in the New Husbandry, Collected during a Series of Years, by the Celebrated M. Duhamel du Monceau, . . .
London: J. Whiston, B. White, R. Baldwin, W. Johnston, P. Davey, and B. Law, 1759.

First edition. 4to. With large folding table at page 236 and 6 engraved plates (4 folding). Title printed in red and black. Fine copy in the original calf, strongly rebacked to match, with the original maroon lettering label preserved.

A VERY IMPORTANT book in the history of agricultural chemistry in which are described the experiments that Duhamel du Monceau carried out to prove that plants derive their mineral constituents from soil and not by the supposed transmuting power of a vital agency. The importance of Duhamel's work is fully discussed by C. A. Browne in *A Source Book of Agricultural Chemistry* (1944, pp. 112–116) and elsewhere in Browne's book. Not mentioned by Duveen, etc. Rare.

DUMAS, Jean Baptiste André

Discours et Éloges Académiques par J.-B. Dumas, . . .
Paris: Gauthier-Villars. 1885.

First edition. 2 vols., 8vo. I: lii, 314 pp., 1 leaf (table). II: 2 leaves, 328 pp., 1 leaf (table). With fine portrait frontispiece (engraved by Henriquel Dupont) in volume I. An exceptionally fine set, crisp and spotless, in pristine condition, in contemporary dark-purple quarter morocco, spines gilt, marbled boards.

EDITED BY J. Bertrand, secretary of the Académie des Sciences, this excellent, posthumously published work contains extensive biographies of the following chemists whom Dumas knew personally: August Bérard, Michael Faraday, Jules Pelouze, Isidore Geoffroy Saint-Hilaire, Arthur-Auguste De La Rive, Alexandre and Adolphe Brongniart, Antoine-Jérôme Balard, Victor Regnault, and Benjamin Thompson Count Rumford. There are also essays on Dumas' election to the French Academy (1 June 1876), "Report on the Prix de Vertu," "Response to a Discourse by M. Taine," and "Discourse to the National Society of Agriculture." The second volume ends with valuable biographies of Charles and Henri Saint-Claire Deville. Very scarce, not in the usual bibliographies. The E. F. Smith Collection (University of Pennsylvania) has only the first volume. (Bolton, 196 [wrong date: 1884]; Partington, IV, 339; Smith, 154)

DUMAS, Jean Baptiste André

Essai de Statique Chimique des Êtres Organisés. Leçon professée par M. J. Dumas le 20 août 1841 . . . Deuxième édition, augmentée de Documens numériques.
Paris: Fortin, Masson & Ce, Libraires. 1842.

Second edition. 8vo. 4 leaves, 88 pp. Top edge lightly damp-stained; otherwise very good copy in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

THE ENLARGED second edition (first: Paris, 1841) of a lecture given by Dumas on 20 August 1841, at the end of his course at the École de Médecine. Dumas and Jean Baptiste Boussingault, a professor of agricultural and analytical chemistry, collaborated to produce this work on biological chemistry, in which they compared and contrasted the me-

tabolism of animals and plants. The book clarifies the differences in the chemical processes occurring in animals and plants. "This scheme of the chemical relations of plant and animal life . . . was the first compendium of its kind" (Browne). Liebig charged Dumas with plagiarism, as this work covers some of the material in Liebig's book on agriculture and physiology (Braunschweig, 1840), but the accusation was unfounded, as the views were put forward independently. An anonymous English translation appeared as *The Chemical and Physiological Balance of Organic Nature* (London, 1844), as well as translations into Dutch (1843), German (1844), Italian (1847), and Spanish (1846). (Bolton, 415; Browne, *A Source Book of Agricultural Chemistry*, 240; Cole, 392; D.S.B., IV, 248; Ferchl, 136; Partington, IV, 340; Poggendorff, I, 621; Roller & Goodman, I, 342)

DUMAS, Jean Baptiste André

Leçons sur la Philosophie Chimique professées au Collège de France, par M. Dumas, recueillies par M. Binou.
Paris: Bechet jeune. 1837.

First edition, first issue. 8vo. 2 leaves, 430 pp. + 4 pp. (advertisements). Occasional minor foxing of few leaves; otherwise very good copy in contemporary quarter calf, spine richly gilt, marbled boards.

"THE AUTHOR's lectures on the history of chemistry given at the Collège de France in 1836" (Duveen). "His historically oriented *Leçons sur la philosophie chimique* was very influential upon subsequent studies in the history of chemistry" (D.S.B.). These "lectures contain lively but not always accurate sketches of the history of chemistry" (Partington). "The individuality of the man comes out in his *Leçons . . .* (1837), in which he treats the development of chemical theories with great clearness and with a rare charm of style" (Ernst von Meyer). A popular work, it was reprinted in 1839, 1878, and 1937. Several translations appeared: German (Berlin, 1837), Italian (Livorno, 1842), and Spanish (Madrid, 1844). Some undated copies of the first edition (or second issue) have Ebrard as the publisher in the imprint. (Bolton, 415; Caillet, 3359; D.S.B., IV, 243; Duveen, 185; Ferchl, 136; Guaita, 607 ["Rare"]; E. von Meyer, 284; Partington, IV, 338; Poggendorff, I, 621; Smith, 155; Sondheimer, 450; Thornton & Tully, 218; Wellcome, II, 497)

DUMAS, Jean Baptiste André

Mémoire sur les Équivalents des Corps Simples. . . .
Paris: Mallet-Bachelier. 1859.

First edition. 8vo. 1 leaf, 82 pp. With 1 extending folding engraved plate. Fine, crisp copy, uncut, original printed wrapper preserved, in contemporary quarter morocco, marbled boards.

Author's presentation copy, inscribed in ink on printed wrapper: "M. Nicklès. Souvenir affectueux. J. Dumas." From the library of Professor Franz Sondheimer, with bookplate.

THE FIRST edition in book form of an important lecture on the chemical equivalents of the elements, originally read to the Académie des Sciences, 9 November 1857 and 27 December 1858. The lecture was printed in the *Annales de Chimie et de Physique*, 3rd Series, vol. 55 (Feb. 1859). Dumas attempted to prove that all elements were multiples of the hydrogen atom (Prout's hypothesis). "He also published two papers [the present] in which he tried to develop the view that for the classification of the elements it was possible to discover 'generating' relations similar to those defining the series of organic compounds. The elements could be divided into 'natural families.' The atomic weights of all the members of the same family were linked by a simple arithmetic relationship; they increased by multiples of sixteen" (D.S.B.). This work represents a dim foreshadowing of the periodic table. An important copy, having been given to the celebrated scientist François-Joseph Jérôme Nicklès (1820–1869), professor of chemistry at Nancy. Very rare. Not in the usual chemical bibliographies. (D.S.B., IV, 247; Ferchl, 136; Sondheimer, 452)

DUMAS, Jean Baptiste André

Précis de l'Art de la Teinture, . . .
Paris: Bechet jeune. 1846.

First edition. 8vo. viii, 416 pp. Some slight watermarks near the beginning; otherwise a good copy, entirely uncut and unpressed, with wide margins, in modern maroon pebbled quarter cloth, marbled boards, spine gilt-lettered.

A SEPARATELY PUBLISHED work comprising the sheets of the first 416 pages of volume 8 of the *Traité de Chimie* (Paris, 1846), with new prefatory leaves (i.e., half title, title, contents; viii pp.). On dyes and pigments, mordants, the coloring of various types of fabrics, etc. Very scarce. Not in D.S.B., Wellcome, or the usual chemical bibliographies. (Bolton, 416; Edelstein, 3005; Lawrie, 174)

DUMAS, Jean Baptiste André

Traité de Chimie, appliquée aux Arts. . .
Paris: Chez Bechet jeune, . . . et à Brussels. 1828–1846.

First edition. 8 vols., 8vo., and atlas, folio. I: xviii, lxxx, 689, (1) pp. II: vii, (1), 480, 465*–480*, 481–808 pp. III: vii, (1), 784 pp. IV: vii; (1), 744 pp. V: viii, 819, (1) pp. VI: vi, 752 pp. VII: ix (1), 716 pp. VIII: viii, 760 pp. Atlas (bound in 3 thin vols.): 91, (1) pp.; 147 finely engraved plates (pure and applied chemistry). Very good copy in contemporary gilt-ruled quarter calf, marbled boards.

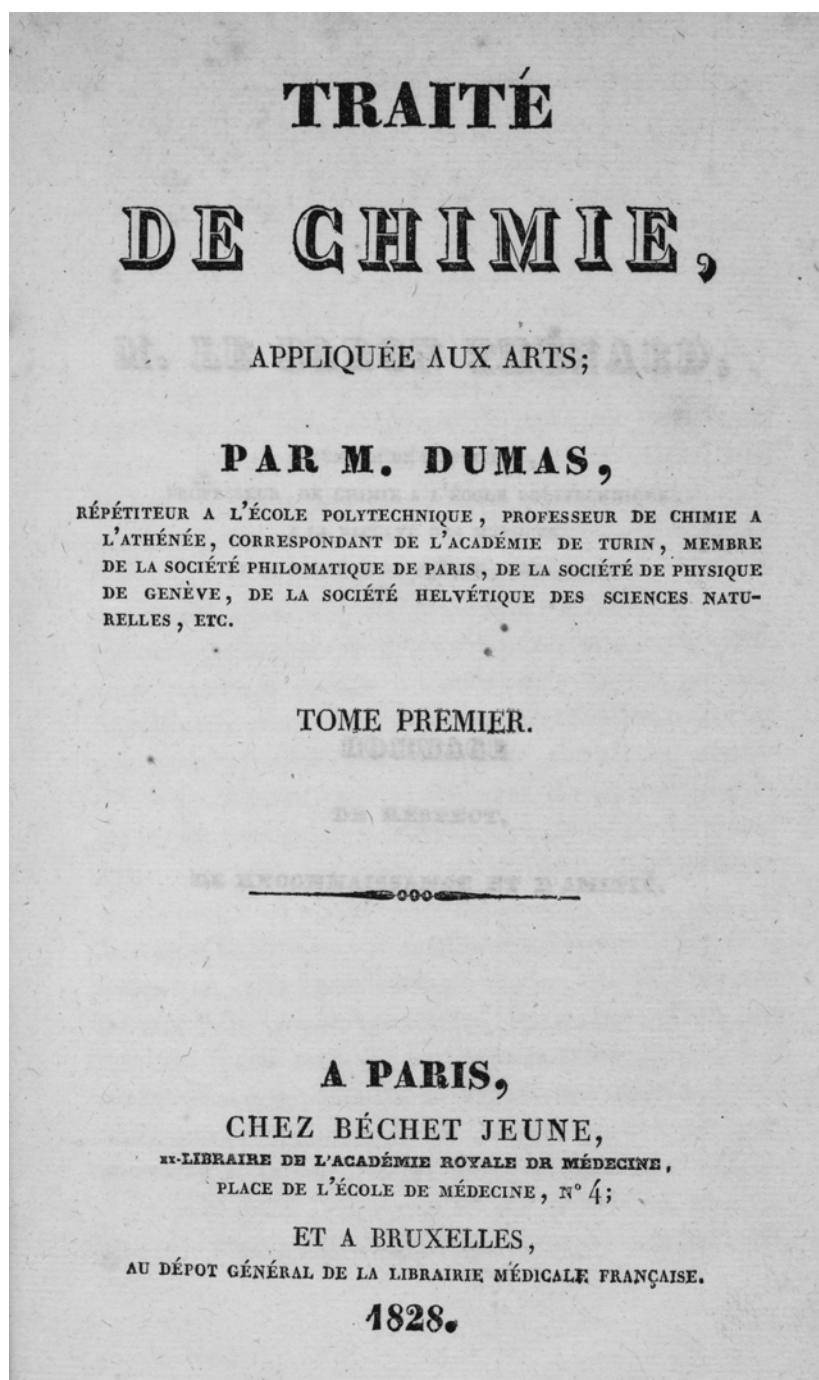
A CLASSIC TEXTBOOK on chemistry and chemical technology, comprising four volumes of inorganic and four volumes of organic chemistry. Dumas (1800–1884) possessed a profound knowledge of all branches of chemistry. "His treatise contains an unusual amount of information on pure chemistry, mostly from original sources (references to which are given fully), and on technical processes (collected with considerable trouble) not otherwise accessible, with valuable diagrams of industrial apparatus" (Partington). He was a cofounder of the École Centrale des Arts et Manufactures and was successively professor of chemistry at the Sorbonne, the École Polytechnique, and the École de Médecine. Dumas, one of the great chemists of the nineteenth century, was the first in France to give practical laboratory instruction to his students. He "was a brilliant teacher and trained a galaxy of chemists, including Laurent, Stas, Leblanc, and Louis Melsens" (D.S.B.). "Scarce" (Zeitlinger). The Wellcome copy is imperfect (lacks vols. vi–viii and atlas). (Bolton, 416; D.S.B., IV, 243; Duveen, 185; Edelstein, 3006; Ferchl, 135; Morgan, 234; Partington, IV, 338; Poggenorff, I, 621; Smith, 155; Sondheimer, 449; Sotheran, Cat. 666 [1906], 1116; Thornton & Tully, 218; Wellcome, II, 497)

DUMAS, Jean Baptiste André, and BOUSSINGAULT, Jean Baptiste Joseph Dieudonné

The Chemical and Physiological Balance of Organic Nature: An Essay, By M. J. Dumas & M. J. B. Boussingault, Members of the Institute of France. The Third Edition with new Documents.
London: H. Bailliere, Publisher, . . . 1844.

First English edition. 8vo. xii pp., 1 leaf, 164 pp. Very good copy in the original blind-stamped green cloth, spine gilt-lettered. Nineteenth-century stamp of University College London on title page.

"DUMAS AND Boussingault published an essay on the physiology of animals and vegetables, based on a final lecture by Dumas on 20 August 1841 in the course in the École de Médecine, which emphasises the correlation between vegetable and animal metabolism. It covers some of the material in Liebig's book (*Organische Chemie in ihre Anwendung auf Agricultur und Physiologie*, 1840) published a year before, and Liebig charged Dumas with plagiarism; this was unfounded, and the views were put forward independently" (Partington, IV, 340). Although the title page states that this is the third edition, it is in fact the first English edition, being a translation of the third French edition. An American edition appeared (New York, 1844). Boussingault (1802–1887), professor of agriculture and analytical



Dumas. Traité de Chimie. Paris, 1828.

chemistry in Paris, collaborated with Dumas and was an early pioneer on the fixation of atmospheric nitrogen (see W. P. D. Stewart, *Nitrogen fixation in plants*, London, 1966, p. 12). This important subject is covered on page 133 et seq. of the present work. C. A. Browne (*A Source Book of Agricultural Chemistry*, Waltham, 1944, pp. 239–252) discusses Boussingault's researches extensively and states that "the chemist who first made agricultural chemistry a true experimental science by transferring it from the laboratory to the field . . . was J. B. Boussingault." Not in Caillet, D.S.B., Duveen, Edelstein, Ferchl, Ferguson Coll., Morgan, Osler, Poggendorff, Smith, Sondheimer, Waller, Wellcome, etc. (Bolton, 415; Browne, 252; Partington, IV, 340; Sotheran, Cat. 666 [1906], 1120 ["Scarce"])

DUNCAN, Daniel

La Chymie Naturelle, ou l'Explication Chymique et Mechanique de la Nourriture de l'Animal. . . .
Paris: Chez Jean d'Houry. 1681.

First edition, first issue. 8vo. 16 leaves, 339, (1) pp. Very fine, crisp copy, in contemporary mottled calf, rebounded with original gilt spine laid on. Bookplate: Paul Gavelle.

THE FIRST issue of this "early tract on the chemistry of food by an author of whom we know little. Zanichelli (*De Ferro*, Venice, 1719, p. 3) speaks well of his ability" (Duveen). Born at Montauban but of Scottish ancestry, Duncan (1649–1735; M.D., Montpellier, 1673) was professor of medicine at Berlin, physician to Frederick I of Prussia (1702–1703), and eventually settled in England (1714), where he refused all fees. He published several iatrochemical works (see D.N.B.), including the present in which "he stated that Nature both in microcosm and macrocosm followed the rules of chemistry exactly" (Thorndike). Duncan can therefore be regarded as one of the earliest biochemists. He later added second and third volumes (Montauban and Paris, 1686, 1687), but the first volume is complete in itself. It was reissued in 1682 (see Bolton, Caillet, Ferguson Coll., Poggendorff) and again in 1683 (see Duveen, Neu, Wellcome) with different names in the imprint. Even Manget, writing in 1731 (*Bibliotheca Scriptorum Medicorum*, I, part 2, p. 204) knew only the second issue of 1682, which Caillet describes as "tres rare." The present first issue is extremely rare. Not in the British Library. Ferchl (p. 137), Thorndike (VIII, 441), and Watt (I, 322u) are the only authorities located who list the 1681 issue.

DUNCAN, Daniel

Histoire de l'Animal ou la Connoissance du Corps Animé, par la Mechanique & par la Chymie. Où l'on explique sa formation, sa naissance, sa vie & sa mort. . . .
Paris: Chez Laurent d'Houry, . . . & Daniel Horthemels. 1687.

First edition, second issue. 8vo. 43 leaves, 255, (1) pp. (paginated from p. 3, text complete). Fine copy in contemporary quarter calf, gilt. Armorial bookplate: Bibliotheca Raschkiana.

AN INTERESTING work in which Duncan sets forth his theory of how life processes in animals and man obey the laws of mechanics and chemistry. He compares bodily functions with various chemical operations (e.g., distillation, precipitation, and sublimation). Duncan, who propounds an iatromechanical and iatrochemical doctrine of life processes, was the first to teach the ideas of Thomas Willis in France in his *Explication nouvelle et mechanique des actions animales* (Paris, 1678). The first issue of the present work appeared in 1686 (Ferchl, p. 137, erroneously states 1666). Because of his Protestant faith, Duncan emigrated first to Geneva, and from there to Berlin and The Hague, and then to London, where he died. For biographical details on Duncan see D.N.B. and John Gorton, *A General Biographical Dictionary* (London, 1851, vol. I, signature 2U [verso]). Very rare. Not in the British Library or the usual chemical bibliographies. (Waller, 2640; Watt, I, 322u; Wellcome, II, 499)

DUPORT, Antoine

Quaestiones Medicae. Circà Thermas Borbonienses. Quas, Deo Duce, favente Virgine Deiparâ, ac Praeside Nobili, Clarissimo, Consultissimoque Domino D. Renato Charles, D.M. in Academia Bisuntina Medicae Facultatis Professore Regio, propugnabit D. Antonius Duport, Borboniensis, Medicinae Licentiatus, in publico illius Academiae Auditorio, die 16 Aprilis 1721, horâ octavâ matutina. Ad Doctoratus Lauream in Medicina consequendam. Ex Mandato Magnifici Domini D. Rectoris.

Vesontione (Besançon): Typis Nicolai Couché & Francisci Gauthier, Universitatis Regiae Typographorum. (1721).

First edition. 4to. 2 leaves, 81, (1) pp. Full-page engraved coat of arms on verso of second leaf. Fine copy in contemporary mottled calf, spine richly gilt in compartments, gilt-lettered maroon label. Bound with: Baudry, *Traité des eaux minerales de Bourbonne les Bains* (Dijon, 1736).

THE DOCTORAL dissertation of Duport, of whose life and works nothing appears to have been recorded. It deals with the mineral hot springs of Bourbon les Bains, with references to chemists and physicians who have analyzed the waters. "L'auteur a réuni les cinq dissertations soutenues et

publiées séparément à Besançon en 1721 sous la présidence de René Charles; il y a ajouté celle de J.C. Callet sur le même sujet" (Carrère, II, 294). This copy came from the library of Dr. Hugues Alexis Juvet (1714–1789), who succeeded Baudry as superintendent of mineral waters at Bourbonne les Bains. Juvet was the author of many works on these waters and undoubtedly used this dissertation as one of his sources of information.

DUPORTAL, Antoine Simon Jude

Recherches sur l'État actuel de la Distillation du Vin en France, et sur les Moyens d'améliorer la Distillation des Eaux-de-Vie de tous les Pays . . .

Paris: J. Klostermann, fils, . . . Saint Petersburg: Klostermann père et fils. 1811.

First edition. 8vo. 112 pp. With 5 folding engraved plates (Adam sculp.). Fine copy. Bound with: Cossigny de Palma, *Observations sur l'art de faire le vin* (Paris, 1807).

DEDICATED TO J. A. C. Chaptal, this valuable book summarizes the state of the technology of wine distillation in France at the time of Napoleon. It was quickly translated into German by Hermstädt (Berlin, 1812; Bolton, 418). Duportal (1777–1861), a physician, was professor of chemistry and physics at the Imperial Academy in Montpellier. Very scarce. Unknown to the usual bibliographers. (Forbes, *A History of . . . Distillation*, 1970, pp. 297, 374; Wellcome, II, 502)

DUPUIS, Guillaume

De Medicamentorum quomodocunque purgantium facultatibus, nusquam antea neque dictis, neque per ordinem digestis libri duo. Prior eam facultatem, quae à substantiarum similitudine succos trahere & purgare Medicis dicitur, ab omnium purgantium consortio explodit. Posterior eorumdem purgantium omnium Medicamentorum veram & germanam rationem certa methodo atque ordine nosse demonstrat. . . .

Lyons: Apud Mathiam Bonhomme. 1552.

First edition. 4to. 4 leaves, 179, (1) pp. Large woodcut on title page and historiated woodcut initials. Roman letter. By an original error, signature N (pp. 97–104) was left blank by the printer. Blank upper corners of first 3 leaves repaired; otherwise fine, crisp copy, in modern boards.

A COMPREHENSIVE WORK of chemical interest, on purgatives. Dupuis (Du Puis, fl. 1537), who latinized his name as Puteanus, a physician from Blangy-sur-Ternoise, became a professor and citizen of Grenoble. He defended Mesue against Manard and Fuchs as to the use of aloes and rhubarb and claimed that many recent physicians had intro-

duced errors into medical practice, basing their judgment not on reason but on witnesses and not depending on tried and tested simples and chemical remedies. Reprinted in 1554 with the title *De occultis pharmacorum purgantium facultatibus*, this useful work even appeared a century later (Lyons, 1656). Partington (II, 97) mentions the author but not this title. Very rare. Not in the usual chemical and medical bibliographies. (British Library, *S.T.C. French Books, 1470–1600*, p. 145; Ferchl, 428; Thorndike, V, 450; Wellcome, I, 5300)

DURADE, Johann Georg

Traite Physiologique et Chymique sur la Nutrition. Ouvrage qui a remporté le prix de Physique de l'Académie Royale des Sciences & Belles-Lettres de Berlin en 1766. . . .

Paris: Chez Lottin jeune, & Herissant Fils. 1767.

First edition. 12mo. xii, 158 pp., 1 leaf + 6 pp. (advertisements). Old stamp on title page (Séminaire des Missions Étrangères). Very good copy in contemporary calf, rebounded with original gilt spine laid on. Bound with: *L'Art de conserver sa santé*, composé par l'École de Salerne (Paris, 1753).

AN EARLY work on the biochemistry of digestion and nutrition, being an enlarged version of the author's *Dissertation sur la nutrition* (62 pp.), which appeared in the *Deutsche Akademie der Wissenschaften* (Berlin: Haude & Spener, 1767, 122 pp.). Of the Geneva physician Durade little is known. He quotes the works of Boyle, Becher, Stahl, and especially Rouelle. The copy described by Duveen has different wording in the imprint ("Aux dépens de Lottin le jeune . . ."). Not in Blocker, Bolton, Edelstein, Osler, Partington, Waller, Wellcome, etc. (Blake, 130; Duveen, 186; Ferchl, 137; Neu, 1281; Smith, 156)

DURAND, David

Histoire Naturelle de L'Or et de L'Argent, extraite de Pline le Naturaliste, Livre XXXIII. Avec le Texte Latin, corrigé sur les MSS. de Vossius et sur la I. Edition, et éclairci par des Remarq. Nouvelles, outre celles de J. F. Gronovius & un Poeme sur la Chute de L'Homme et sur les Ravages de L'Or et de L'Argent; Dedié au Roi et a la Reine. Par David Durand, Ministre de l'Eglise de St. Martin, & Membre de la Société Royale.

A Londres: Chez Guillaume Bowyer, & se trouve chez l'Auteur, at Gresham-College, Broadstreet. 1729.

First (sole) edition. Folio. 4 leaves, 72 + 258 pp., 3 leaves. With fine copperplate frontispiece (George Vertue del. & sculps.). A beautiful copy in contemporary calf, rebounded. From the library of Charles Atwood Kofoed (1865–1947), celebrated professor of zoology, University of California (Berkeley), with his pictorial bookplate on the front pastedown endpaper.

DURAND (ca. 1679–1763), doctor of divinity, was a very eloquent French Protestant preacher at the Savoy, in London, where he died. He was elected F.R.S. in 1728. His interest in the writings of Pliny is evidenced by the present work and by the publication in 1728 of his own edition of Pliny's *Historiae Naturalis*. Watt, writing before 1824, states that this work is "marked by French Bibliographers among their rare books." The extract from Pliny occupies only a small part of this volume. The so-called supplement, notes by Gronovius, and the poem by Durand account for most of the text. The supplement brings the history of gold and silver into the eighteenth century, with material relating to the New World, mining and chemical refining processes, world currency, etc. Among the personalities mentioned in the text are Cromwell, Sir Hans Sloane, and Richard Mead. Duveen states that the poem on the "Fall of Man" in this book is an attempt at an imitation of Milton's *Paradise Lost*. A curious and rare work, which is not mentioned by Bolton, Caillet, Ferchl, Ferguson, Guaita, Neu, Partington, Poggen-dorff, Waller, Wellcome, etc. (Duveen, 477; Smith, 156; Watt, I, 324g)

DURANTE, Castore

Il Tesoro della Sanità, di Castor Durante da Gualdo, Medico, & Cittadino Romano. Nel quale s'insegna il modo di conservar la Sanità, & prolungar la vita, & si tratta della natura de' cibi, & de' Rimedii de' nocumenti loro. . .
Venice: Appresso Domenico Farri. 1588.

Second Venice edition. 8vo. 8 leaves, 328 pp. Woodcut printer's device on title and papal arms on following page. Historiated woodcut capitals, head- and tailpieces. Roman and italic letter. Few neat early marginal annotations; otherwise very good copy in old patterned boards, maroon label, gilt.

THE FIRST edition in Latin of this popular work on dietetics and good health appeared as *De bonitate et vitio alimentorum . . .* (Pisa, 1565). In his dedication to Signora Donna Camilla Peretta, the author states that this Italian translation was made by him and published in Rome, 1586. Andrea Muschio then reprinted it in Venice, 1586. Durante (1529–1590), physician to Pope Sixtus V, took an intelligent interest in food and wine. In this work he gives twelve rules on how best to enjoy wine and describes many of the wines in favor at the time in Italy. There is also much on meat, fish, vegetables, fruits, and condiments, as well as discussions of naturally occurring mineral baths, the virtues of common salt, various animal and vegetable oils, etc. Surprisingly, although there is emphasis on longevity, no mention of this work is made by Shock (*Bibliography of Gerontology and Geriatrics*). Other editions: Venice, 1589, 1593, 1597, 1600, 1611; Bergamo, 1588; Mantua, 1590;

and Turin, 1612. An English translation appeared (London, 1686). Another issue of the present (1588) Venice edition has A. Muschio's name in the imprint. Very rare. This edition not in the British Library. (Durling, 1336; Wellcome, I, 6874)

DU SOUCY, François

Sommaire de la Medecine Chymique. Ou l'on void clairement beaucoup de choses que les Autheurs ont tenües jusques icy dans l'obscurité. Avec un Recueil de Divers Secrets de Medecine.
Paris: Chez Pierre Billaine, ruë S. Jacques, à la Bonne-Foy, devant S. Yues. 1632.

First edition. 8vo. 8 leaves, 433, (1) pp. Woodcut printer's device on title, and woodcut capitals in text. Very good copy in eighteenth-century quarter calf, gilt, marbled boards. The Duveen copy, with small maroon bookplate.

"THE *Sommaire de la Medecine Chymique*, which is a treatise on pharmaceutical chemistry, only occupies the first 50 pages of the book. The rest is a collection of medicinal secrets, which, however, contains some alchemical recipes, as the making of the Philosophers' Stone (pp. 55–59), 'or potable' (pp. 127–133), etc." (Duveen). Thorndike (VII, 186) briefly refers to Du Soucy (whom he calls F. de Soucy) but does not mention this work. A rare book, unknown to Bolton, Osler, Partington, Waller, etc. (Caillet, 10274; Duveen, 186–187; Ferchl, 510; Ferguson, II, 388; Ferguson, *Books of Secrets*, I, pt. 2, p. 43; Goldsmith, 6797; Neu, 1287; Wellcome, I, 1973)

DUTENS, Louis

Recherches sur l'Origine des Découvertes attribuées aux Modernes, où l'on démontre que nos plus célèbres Philosophes ont puisé la plûpart de leurs connoissances dans les Ouvrages des Anciens: & que plusieurs vérités importantes sur la Religion ont été connues des Sages du Paganisme. . .
Paris: Chez la Veuve Duchesne. 1766.

First edition. 2 vols., 8vo., in 1. I: xlviij, 228 pp. II: 2 leaves, 257, (1) pp., 2 leaves. Few leaves slightly discolored; otherwise very good, crisp copy, in original mottled calf, gilt.

BORN AT TOURS, the son of Calvinist parents, Dutens (1730–1812) spent most of his life in London and Turin (1758–66), where he was chargé d'affaires. He was rector of Elsdon, Northumberland. The Duke of Northumberland presented him with a large estate, and he was appointed historiographer to George III (see D.N.B.). Dutens was famous for his knowledge of history, literature, and politics. In the present work he maintained that many ideas and discoveries claimed by the moderns had, in fact, been known to the

ancients. He lists many Greek, Roman, and other early authors to support his thesis. "These two volumes afford a complete survey of the ideas which revolutionized the seventeenth and eighteenth centuries and have many bibliographical footnotes" (Babson). Chapter 8 (vol. I) is on Newton's system of colors. Other chapters cover the invention of glass, acids, alkalies, distillation, and various chemical subjects. "Ouvrage fort intéressant et rare" (Guaita). Ferguson (*Books of Secrets*) cites French editions of 1776 and 1812 only. English (1769) and Spanish (1792) translations appeared. Not in the usual chemical bibliographies. (Babson, 51; Blake, 130; Caillet, 3472; Duncan, 3521; Guaita, 1778; Poggendorff, I, 633; Wallis, 382.55; Watt, I, 325n; Wellcome, II, 505 [vol. I only]; Wheeler Gift, 425)

DUTROCHET, René Joachim Henri

L'Agent Immédiat du Nouvèment Vital dévoilé dans sa Nature et dans son Mode d'Action, chez les Végétaux et chez les Animaux. . . .

Paris: Chez J.-B. Bailliere. 1826.

First edition. 8vo. 226 pp., 1 leaf (errata). Fine copy, uncut with wide margins, in original plain wrappers.

THE FIRST quantitative experiments on osmosis and the most important contribution of Dutrochet (1776–1847) to physical chemistry and physiology. The author, who studied medicine in Paris (graduating in 1806), at age thirty-four abandoned medical practice and devoted his efforts to research in natural science. "The principal field of Dutrochet's studies was plant physiology, although he also studied that of animals. . . . Dutrochet's research on the phenomena of osmosis and diffusion (or endosmosis and exosmosis . . .) and their applications to . . . previously unexplained vital phenomena attracted general attention. His chief observation was that certain organic membranes allow the passage of water but stop the molecules dissolved in it, . . . he made the first important steps toward the study of osmosis and diffusion. He constructed an osmometer for measurements of osmotic pressure . . ." (D.S.B.). Chapter IV (pp. 105–158) contains the description of the experiments that led him to the recognition of the activity of osmotic forces in the operation of vital processes in plants and animals. Not in Blocker, Eales, Osler, Waller, Wellcome, or the usual chemical bibliographies. (D.S.B., IV, 265; Ferchl, 137; Partington, IV, 651; Poggendorff, I, 633; A. R. Rich, "The Place of J. H. Dutrochet in the Development of the Cell Theory," in *Bull. Johns Hopkins Hospital*, 39 [1926], pp. 351–356)

DUTROCHET, René Joachim Henri

Mémoires pour servir à l'Histoire Anatomique et Physiologique des Végétaux et des Animaux. . . .

Paris: Chez J.-B. Bailliere. 1837.

First edition. 3 vols., 8vo. I: xxxi, (1), 576 pp. II: 2 leaves, 573, (1) pp., 1 leaf (errata). III: 36 pp., 30 engraved plates (including 4 folding). Volumes I and II in contemporary quarter morocco gilt, pebbled boards, and volume III (atlas), uncut, in quarter morocco antique, marbled boards, spine gilt-lettered and dated, with original printed wrappers bound in.

A COLLECTION of memoirs previously published in journals, but the opening memoir on endosmosis has been rewritten, rendering his previous work on the subject obsolete. "An advance in the knowledge of the chlorophyll system of plants was made when Dutrochet recognized that only those plant cells which contain green matter are capable of absorbing carbon dioxide. The *Mémoires* are a collection of all his more important biological papers" (Garrison & Morton). In this work "Dutrochet repeated the relation to density and chemical composition, but doubted the electrical origin" (Partington). A classic work in physical and biochemistry. Scarce. Not in Bolton, D.S.B., Duveen, Edelstein, Ferchl, Osler, Poggendorff, Smith, Sondheimer, Waller, Wellcome, etc. (Garrison-Morton, 110 [not mentioning the Atlas vol.]; Partington, IV, 651–652)

DUTROCHET, René Joachim Henri

Nouvelles Recherches sur l'Endosmose et l'Exosmose, suivies de l'Application Expérimentale de ces Actions Physiques à la Solution du Problème de l'Irritabilité Végétale, et à la Détermination de la Cause de l'Ascension des Tiges et de la Descente des Racines. . . .

Paris: Chez J.-B. Bailliere. 1828.

First edition. 8vo. 2 leaves, ii, 106 pp., 1 leaf (table). With two engraved plates. Very good copy in modern marbled boards, crimson morocco label, gilt.

AN ACCOUNT of the important researches by Dutrochet on the osmotic properties of plant cells, carried out since the appearance of his *L'Agent immédiat du mouvement vital* . . . (Paris, 1826). Some of the results of this investigation were previously published in the *Annales de physique et de chimie* (see Garrison-Morton). The plates depict the osmometers devised by Dutrochet. Partington discusses the experiments described in this work. "His attempt to apply physicochemical forces and phenomena in explanation of physiological processes overcame that mysticism which had been introduced into physiology by teleologically minded physiologists. A convinced antivitalist, Dutrochet developed a

unitary conception of nature—animate and inanimate, organic and inorganic, all subject to the laws of physics and chemistry” (D.S.B.). Not in Duveen, Edelstein, Smith, Sondheimer, etc. (D.S.B., IV, 265; Ferchl, 137; Garrison-Morton, 670; Partington, IV, 651; Poggendorff, I, 634; Waller, 11500a; Wellcome, II, 506)

DUVAL, Jules Edmond

Des Ferments Organisés de leur Origine et du rôle qu'ils sont appelés à jouer dans les phénomènes naturels. Thèse présentée et soutenue à l'École Supérieure de Pharmacie de Paris, le 24 mars 1869. Par Jules-Edmond Duval . . .
(Paris:) 1869.

First edition. 4to. 1 leaf, 47, (1) pp. Very good copy in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

AN IMPORTANT thesis on the biochemical nature of fermentation of plant and animal matter, with numerous references to the epochal researches of Pasteur. Awarded the *Prix unique des thèses, médaille d'or de la Société de Pharmacie de Paris*, the title page of this copy has a strip of paper printed in gold type laid across it, with the above legend. Duval (dates unknown), a pharmacist, describes many experiments on fermentation and gives explanations of his results in chemical terms. He refers to other researchers on fermentation (e.g., Bernard, Duclaux, Joly, Pouchet, Trécul, and Turpin) and describes different types of fermentation using ascophora, aspergillus, penicillium, and other microorganisms. Continuing his research on the biochemistry of fermentation, Duval published a book entitled *Sur la genèse des ferments figurés* (Paris, 1878; Bolton, *First Supplement*, 152). A very rare and significant work, unrecorded by the usual bibliographers.

DYEING

The Whole Art of Dying. In Two Parts. The First being an Experimental Discovery of all the most useful Secrets in Dying Silk, Wool, Linnen and the Manufactures thereof, as Practised in England, France, Spain, Holland and Germany. To which is Added, a Discourse of Pot and Weyd Ashes, as well as several other Foreign Ingredients used in Dying. Written Originally in the German Language. The Second Part is a General Instruction for the Dying of Wools and Woollen Manufactures of all Colours; for the Culture of the Drugs used in the Tinctorial Art, as also for the Dying of Hats; Published by the especial Command of the present French King in that Language, and Illustrated with several Philosophical and Practical Annotations by the German Translator. Both which are Faithfully rendred into English from their Respective Originals.

London: Printed by William Pearson, for J. Sprint, Dan. Midwinter, G. Conyers, and Tho. Ballard. 1705.

First English edition. 8vo. 10 leaves, 356 pp. Fine copy in original paneled calf, spine gilt-ruled, black label. With engraved bookplate of Thomas Percival (1719–1762), antiquary.

THE FIRST part of this milestone book on the chemistry of dyeing comprises a verbatim but anonymous English translation of two works entitled *Ars Tinctoria Experimentalis* (Frankfurt & Leipzig, 1683 & 1685) and *Gruendliche Nachricht von der Pott- und Weyd-Asche* (Frankfurt & Leipzig, 1685), all possibly by Georg Ernst Stahl. The second part is the English version of *Instruction generale pour la teinture des laines . . . de toutes couleurs* (Paris, 1671), the first systematic technical treatise for the French dyeing industry. Precise instructions are given for preparing particular colors for dyeing various fabrics. Very rare. (Edelstein, 3648; Ferguson Coll., 762; Lawrie, 776; Ron, 1113)

EARTHQUAKE

An Account of the Late Terrible Earthquake in Sicily; with most of its Particulars. Done from the Italian Copy Printed at Rome.

London: Printed for Richard Baldwin near the Oxford-Arms in Warwick-Lane. 1693.

First edition. 4to. 35, (1) pp. Fine copy, in brown quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A VIVID ACCOUNT of the devastating earthquake and volcanic eruption that occurred in Sicily between January 7 and 11, 1693. The anonymous English translator states that the author of the Italian original was a priest, but does not name him. Catania was buried under the ashes from Mount Etna, with the loss of over 24,000 lives, and many other towns suffered a similar fate. Of chemical interest are descriptions of the sulphurous vapors and different types of volcanic ashes produced during the eruption. After the catastrophe was over, Sicily was described as “a heap of Rubbish,” and the number of its inhabitants that perished was “120,000 Souls, over and above a vast number bruised by the fall of Churches and Houses . . . which may amount to 2,000 more.” (Wing, A316)

EARTHQUAKES

A Dissertation upon Earthquakes, their Causes and Consequences; comprehending an explanation of the nature and composition of subterraneous vapours, their amazing force, and the manner in which they operate; the sentiments, on this head, of the most learned philosophers ancient and modern; the different kinds of earthquakes, distinguished by their effects; a copious collection of authentick relations digested under those titles, the greater part of which have happened in Great Britain. Together with a distinct account of, and some remarks upon, the shock of an earthquake, felt in the cities of London and Westminster, on Thursday, February 8, 1749–50.

London: Printed for James Roberts at the Oxford-Arms, in Warwick-Lane, and for the Booksellers in London and Westminster. 1750. (Price one shilling.)

First edition. Sm. 4to. 1 leaf, 70, (1) pp. Fine copy in quarter speckled calf antique, marbled boards, spine gilt-lettered and dated.

THE ANONYMOUS author attempts to explain earthquakes as being the result of explosive reactions of subterranean vapors. The history of earthquakes is traced, with examples of explosive chemicals and mixtures of compounds, reference being made to Boyle, Hooke, et al. Lemery's experiment of 1700 is described in which a paste of 30 pounds of

equal quantities of powdered sulphur and moist iron filings was placed in a vessel that was then buried a foot deep in the ground. After about eight hours the earth began to swell, then erupted violently with thick sulphurous smoke and fire. The author asserts that when Vesuvius and Etna erupt, “vast Quantities of Sulphur mixed with . . . iron, are dispersed.” He concludes that this confirms his hypothesis that earthquakes are due to subterranean explosive chemical reactions. Partington (III, 36) and Zittel (*A History of Geology*, 1901, p. 44) discuss Lemery's experiment. Very rare. Not in the usual bibliographies.

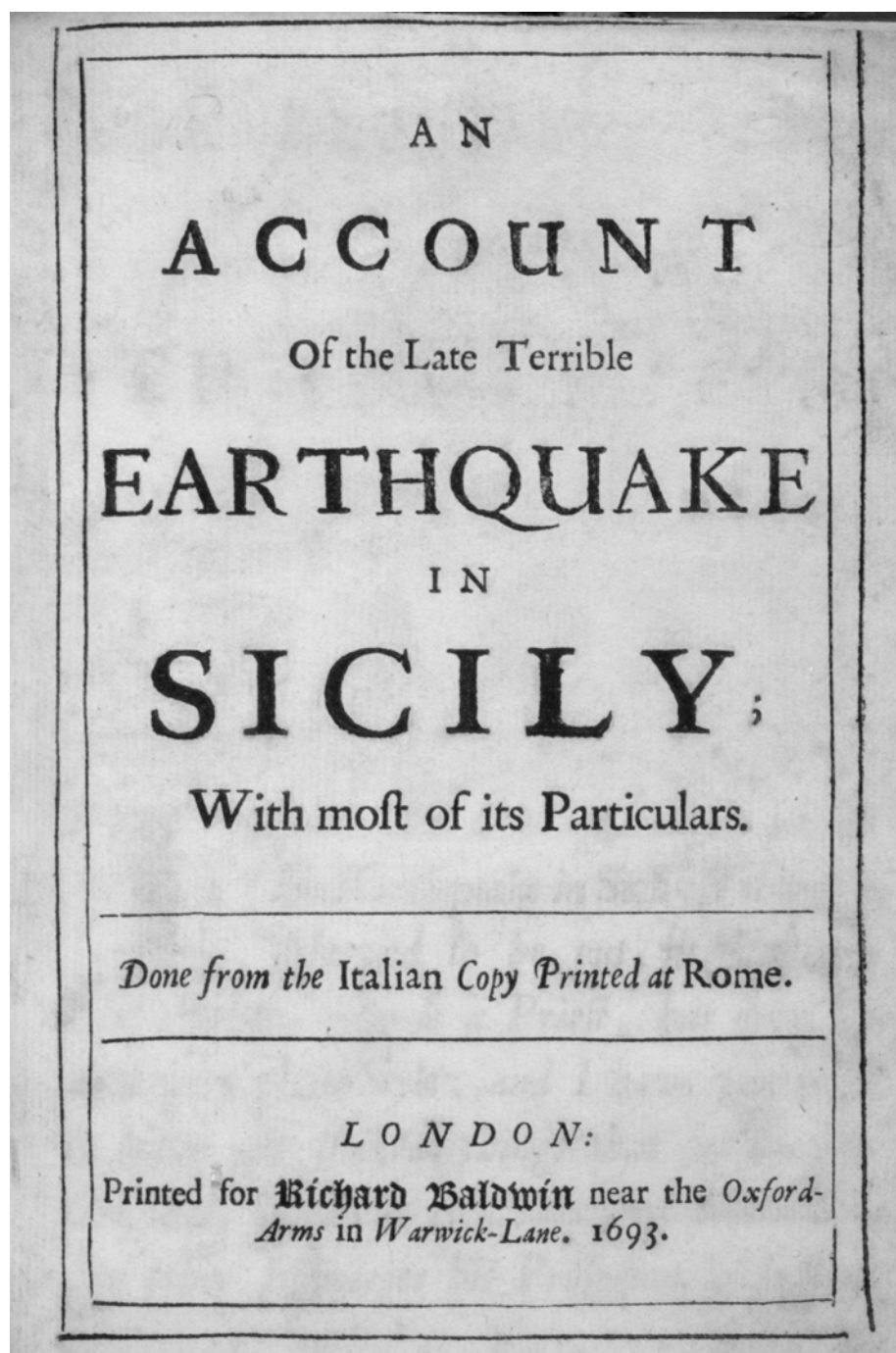
EARTHQUAKES

The Theory and History of Earthquakes. Containing, I. A rational Account of their Causes and Effects; illustrated by Experiments and Observations on subterraneous Vapours, and the Manner of making artificial Earthquakes. II. A particular and authentic History of those which have happened in these Kingdoms, and the most remarkable of those abroad, viz. in Sicily, Jamaica, and Lima, with the most considerable Eruptions of Vesuvius and Aetna. III. Some seasonable Reflections on the two late Earthquakes, with a pathetic Address, on that Occasion, to the Inhabitants of London and Westminster. Humbly inscribed to the Right Rev. Thomas, Lord Archbishop of Canterbury.

London: Printed for and sold by J. Newbery in St. Paul's Church-yard; R. Baldwin, in Pater-noster-Row; J. Brindley, in, New Bond-street; G. Woodfall, at Charing-Cross; and M. Sheepey, at the Royal Exchange. N.d. (ca. 1750).

First edition. 8vo. (in 4s). 1 leaf, 62 pp., 1 leaf (appendix). Woodcut headpiece. Fine copy, in quarter calf antique, marbled boards, maroon label, spine dated.

A WORK OF chemical interest on the supposed causes of earthquakes. The anonymous author postulates that subterranean iron pyrites, which exhibit “the dreadful effects of gunpowder” (p. 7), are responsible for many earthquakes. He states (p. 8): “This dreadful mineral is found in England, as well as in other places more subject to earthquakes. . . . When the vapour arising from the pyrites meets with large quantities of nitre, bitumen, vitriol, &c. the explosion becomes more dreadful, all the inflammable matter is immediately on fire, and nothing is seen but ruin and devastation, which is more violent in proportion to the opposition it meets with, rocks of the hardest marble becoming more shattered than a pavement of sand, earth, or gravel.” He describes how an artificial earthquake and volcano can be made from moist iron filings and sulphur mixed together and buried in the ground (i.e., Lemery's experiment). Rare. Not traced in the usual bibliographies.



Earthquake. Account of the . . . Earthquake in Sicily. London, 1693.

EATON, Amos

Chemical Instructor: presenting a familiar method of teaching the chemical principles and operations of the most practical utility to farmers, mechanics, housekeepers and physicians; and most interesting to clergymen and lawyers. Intended for academies and for the popular class-room. . . .

Albany: Printed and published by Websters and Skinners. 1822.

First edition. 12mo. 231, (1) pp. Occasional minor browning; otherwise very good copy in original gilt-ruled sheep, dark-green morocco label.

“PUBLISHED TO bring down the sublime science of chemistry within the reach of the laboring agriculturalist, the industrious mechanic, and the frugal housekeeper” (preface). Amos Eaton (1776–1842), a lawyer, was interested in biology, botany, chemistry, geology, mineralogy, and physics. Becoming disgusted with law, in 1815 he attended Silliman’s chemical lectures at Yale and in 1820 published a *Chemistry Notebook for the Country Classroom*, followed in 1822 by the present *Chemical Instructor*. He had a hand in starting the Rensselaer Polytechnic Institute at Troy and established a chemical laboratory there for students before Liebig opened his laboratory at Giessen. Scarce. Not in Duveen, Ferchl, Morgan, Partington, Waller, Wellcome, etc. Bolton (p. 420) lists the fourth edition (Troy, 1833) only. (D.S.B., IV, 275; Edelstein, 788; W. D. Miles, *American Chemists and Chemical Engineers*, 1976, pp. 135–136; F. J. Moore, *A History of Chemistry*, 1939, p. 195; Smith, 158)

EBELL, Ernest Friedrich

De medicamentorum antimonialium differentia. Consentiente illustri medicorum ordine pro gradu doctoris medicinae ac chirurgiae disseret auctor Ernestus Fridericus Ebell Gottingensis. Die XXXI. Decembr. MDCCLXXXIV.
Göttingen: Frid. Andr. Rosenbusch. (1784).

First (only) edition. 4to. 21, (3) pp. Fine copy in contemporary marbled wrapper.

THE DOCTORAL dissertation of Ebell presented to the University of Göttingen on 31 December 1784. The entire range of antimonial compounds is covered, and the author divides these into six classes: reguli, calces, vitra, sulphurea, salina, and spirituosia. For a given compound the old and newer names are given, as are references to its preparation. There are references to the works of older chemists such as Schroeder, Zwelfer, and Geoffroy, but most references are to modern authors: e.g., Bergman, Gmelin, Spielmann, Waller, and Fourcroy. A very useful guide to the classification of antimony compounds as known toward the end of the eighteenth century. No biographical information on

Ebell has been found. Ferchl briefly mentions this work and another in German (Hannover, 1794) on lead, but erroneously gives Ebell the initials “G. A.” Very rare. Not in the major early chemical, pharmaceutical, and medical libraries. (Ferchl, 138; Waring, 238)

EBELMEN, Joseph-Jacques

Chimie, Céramique, Géologie, Métallurgie, par J.-J. Ebelmen, . . . revu et corrigé par M. Salvétat, . . . Suivi d’une notice sur la vie et les travaux de l’auteur, . . . par M. E. Chevreul, . . .
Paris: Mallet-Bachelier. 1861.

Second edition. 2 vols., 8vo. I: 1 leaf, vii, (1), 598 pp. II: 1 leaf, vii, (1), 628 pp. Illustrations in text. Very good set in original quarter morocco, marbled boards. Old library stamps on titles.

THE MOST complete edition (first: 1855–61) of the collected papers of the celebrated chemist Ebelmen (1814–1852), professor of assaying at the École des Mines (1840), of ceramics at the Conservatoire des Arts-et-Métiers, and administrator of the Royal Porcelain Factory at Sèvres (1847). Ebelmen carried out a great deal of original chemical research, particularly in ceramics, mineralogy, and geology. His works include several papers on Chinese porcelain. Partington, who discusses some of Ebelmen’s investigations, does not mention the present book, nor do Poggendorff or Ferchl, although both give long lists of Ebelmen’s publications. Very scarce. Not in D.S.B., Wellcome, or the usual chemical bibliographies. Both Bolton and Malloizel (who gives an incorrect title) claim that this work is in three volumes, but page 600 (vol. 2) clearly states: “Fin du deuxième et dernier volume.” (Bolton, 420; Malloizel, *Oeuvres Scientifiques de M.-E. Chevreul*, 1886, p. 158, no. 276)

ECKHARDT, Christian

De Atomis, in Electorali ad Albim Academia, sub praesidio M. Georgio Caspari Kirchmaier, . . . respondens Christianus Eckhardtus Ossit: Viennensis Nob. Ad d. VI August . . .
M.DC.LIX . . .

Wittenberg: Literis Haered. Melchioris Oelschlegelii. 1659.

First edition. 4to. 9 leaves (unpaginated). Water staining on last 4 leaves; otherwise good copy, in half calf antique, maroon morocco label. Bound with: Schockwitz, Johann, *Ferax metallorum atque mineralium Dübensis saltus* (Wittenberg, 1692).

A DISSERTATION ON the atomic theory of Daniel Sennert (1572–1637), as expounded in the *Institutiones physicae* (Lübeck, 1647) of Johann Sperling (1603–1658). Sennert, Sperling, and the praeses Georg Caspar Kirchmaier (1635–1700) were professors of chemistry and medicine at the University of Wittenberg. Nothing appears to have been recorded of Eckhardt, except that the title states he was from Vienna. Unknown to the usual bibliographers.

ÉCOLE POLYTECHNIQUE

Journal Polytechnique, ou Bulletin du Travail fait à l'École Centrale des Travaux Publics, publié par le Conseil d'Instruction et Administration de cette École. . . .

Paris: De l'Imprimerie de la République. 1794–1799, 1801.

First edition. 7 vols., 4to. Cahiers I–VI, as follows. I: viii, 189, (3) pp. With 2 large folding tables and folding engraved plate. II: viii, 48, 41–56, 65–208 pp. With 2 large folding tables and 4 engraved plates (3 folding). III: 2 leaves, xvi, (2), 209–444 pp. With 1 large folding table and 1 engraved plate. IV: 1 leaf, xxviii, 445–744, (4) pp. With 2 large folding tables and 7 folding engraved plates. V: iv, 208 pp. With 1 folding engraved plate. VI: iv, 209–456 pp. With 4 large folding tables and 4 engraved plates (1 folding). Bound with: *Rapport sur la Situation de l'École Polytechnique . . .* (Paris, 1801). Title leaf (lacking), 128 pp. With large folding table. Few leaves slightly water stained and occasional light marginal water staining elsewhere; otherwise very good copies in original quarter roan, gilt, marbled boards.

THIS WORK contains important contributions on all practical subjects (especially chemistry) taught in the first technical college ever founded by its professorial staff, including Berthollet, Fourcroy, Guyton, Monge, Prony, and Vauquelin. Many of the early numbers are now rare. The first few cahiers are particularly strong on chemistry, and all the chemists listed contributed to this run. Cahier V (designated “Tome II” on title page) contains an *éloge* (pp. 185–190) by Guyton on the famous chemist Bertrand Pelletier (1761–1797). Further volumes appeared until 1862 (i.e., Cahiers 1–39, in 22 vols.). (Bolton, *Catalogue of Scientific Periodicals, 1665–1882* [1885], p. 287, no. 2334; Partington, III, 497–498; Sotheran, Cat. 676 [1907], 2196)

EDE, Robert Best

Practical Facts in Chemistry; exemplifying the rudiments and showing with what facility the principles of the science may be experimentally demonstrated at a trifling expense by means of simple apparatus & portable laboratories, more particularly in reference to those by Robert Best Ede.

London: Thomas Tegg, and Simpkin, Marshall, and Co.; also, John Ward. 1839.

First edition. 12mo. xix, 193 pp., 1 leaf (errata), 47, (1) pp. (catalogue of wares). Engraved frontispiece of a “chemical cabinet,” and many engraved illustrations in text. Very good copy, uncut, in original blind-stamped green cloth, front cover gilt-lettered.

AN INTRODUCTORY textbook of chemistry intended to accompany the portable laboratory chests sold by the author. On page 15 of the advertisements, a specimen title page of this work is given, dated 1837. However, in the dedication, the author apologizes “for the length of time

which has elapsed since some practical hints [*sic*] were first promised.” Ede (dates unknown) was a manufacturer of portable chemical and mineralogical laboratories, and his charming illustrated catalogue of wares (47 pp.) makes interesting reading. The book was very well received, as attested by the five complimentary reviews by the press (p. 16 of the catalogue). Very rare. Not in Duveen, Edelstein, Ferchl, Ferguson Coll., Morgan, Partington, Poggendorff, Smith, Sondheimer, Waller, Wellcome, etc. (Bolton, 422)

EDE, Robert Best

Practical Facts in Chemistry: exemplifying the rudiments and showing with what facility the principles of the science may be experimentally demonstrated, at a trifling expense, by means of simple apparatus and portable laboratories, more particularly in reference to those by Robert Best Ede. A new and enlarged edition. To which is added, a distinct chapter on agricultural analysis.

London: William Tegg and Co. 1850.

12mo. xxxiv pp., 1 leaf (blank), 206 pp., 1 leaf (blank); 34 pp., 3 leaves. Woodcut frontispiece of Ede's Chemical Cabinet, and 61 engravings in text. Fine copy, uncut, in modern black cloth, gilt-lettered on spine.

APPARENTLY ANOTHER issue of the enlarged second edition (ca. 1845), augmented by a chapter on the analysis of soils and manures (pp. 147–155). Bolton (p. 422), who does not mention this issue of 1850, describes an apparently identical issue of 1845. Despite its agricultural chemical interest, it remained unknown to C. A. Browne. Very rare. Not mentioned by the usual early chemical bibliographies.

EDINBURGH PHARMACOPOEIA

Pharmacopoeia Collegii Regii Medicorum Edinburgensis.
Edinburgh: Apud G. Drummond et J. Bell. 1774.

Sixth edition. 8vo. (in 4s). xviii, (2, erratum), 184 pp., 8 leaves (index). Very good copy, in quarter calf antique, marbled boards, spine gilt and dated.

AN IMPORTANT edition of the *Pharmacopoeia* of the Royal College of Physicians of Edinburgh. Owing to the advice and influence of Sir John Pringle, much of the outmoded materia medica of former editions was omitted, and “many changes were made to bring the publication more in line with current medical thought than had been possible earlier” (Matthews). Revisions of the first edition (Edinburgh, 1699) had been made about every decade up to the fifth edition of 1756. Dedicated to George III, this edition lists the members of the College, including William Cullen, Joseph Black, Francis Home, and John Pringle. The preface is dated 11 August 1774. Of chemical interest are clear

descriptions of the preparation of many inorganic and organic compounds. (Blake, 348; Matthews, *A History of Pharmacy in Britain* [1962], 82; Neu, 3184)

EEK, Claud Johann

Dissertatio Academica, sistens Historiam Philosophiae Naturalis, cuius partem priorem, . . . sub praesidio Mag. Samuelis Duraei, . . . submittet Claudius Johannis Eek, Norcopia-O-Gothus. . . XXIX Maji, Anni MDCCLIV. . .

Uppsala: Excud. Laur. M. Höjer, Reg. Acad. Typogr. (1754).

First edition. 4to. 3 leaves, 29, (1) pp. Large woodcut headpiece and capital. Fine copy. Bound with: Wimermark, Sven, *De Diversa Radiorum* (Uppsala, 1776), and 30 other dissertations.

THE FIRST of two dissertations that review the discoveries of the most important scientists from classical antiquity through the thirteenth century. Eek discusses the contributions of the Egyptians, Greeks, Romans, Arabs, and others to all branches of science, with numerous literature references. His comments throw much light on the authors considered historically significant in the mid-eighteenth century. An important work to which no bibliographical reference has been found.

EEK, Claud Johann

Dissertatio Gradualis, sistens Historiam Philosophiae Naturalis, cujus partem posteriorem, . . . sub praesidio Mag. Samuelis Duraei, . . . submittit . . . Claudius Johannis Eek, . . . XII Junii, Anni MDCCLVIII.

Uppsala: Excud. L.M. Höjer, Reg. Acad. Typogr. (1758).

First edition. 4to. 1 leaf, pp. 33–44, 1 leaf. Large woodcut capital, head- and tailpieces. Fine copy. Bound with: Wimermark, Sven, *De Diversa Radiorum* (Uppsala, 1776), and 30 other dissertations (q.v.).

THE SECOND of two dissertations (first, 1754), in which the discoveries of the most important scientists from the thirteenth to the eighteenth centuries are reviewed. Eek discusses Roger Bacon, Albertus Magnus, Paracelsus, Copernicus, Kepler, Gilbert, Francis Bacon, Fludd, et al. On page 40 he speaks of the invention of the telescope and microscope. Experiments on air, the barometer, vacua, and related subjects, carried out by Guericke, Boyle, Pascal, Torricelli, Hauksbee, et al., are mentioned (p. 41), and the contributions of Newton to mathematics and astronomy are covered (pp. 43–44). No reference to Eek or this work has been found.

EHRMANN, Friedrich Ludwig

Versuch einer Schmelzkunst mit Beyhülfe der Feuerluft von Friedrich Ludwig Ehrmann, . . . mit einer Kupfertafel.

Strassburg: verlegts Johann Georg Treuttel. 1786.

First edition, first issue. 8vo. xix, (1), 252 pp. With folding copperplate (Weis sc.) at the end. A superb, unsophisticated copy, unpressed and uncut, in the original plain boards. Old stamp on title (Bibliothek Thun). From the library of Professor Franz Sondheimer, with his bookplate on the front pastedown endpaper.

AN IMPORTANT book in the history of chemistry, in which the use of the oxygen blowpipe to achieve very high temperatures is first described. Ehrmann (1741–1800), professor of physics at Strassbourg, carried out numerous experiments on the fusion of refractory minerals and metals that are discussed in this work. The *Versuch einer Schmelzkunst* contains the earliest illustration of a blowpipe using oxygen. Ehrmann corresponded with Lavoisier and was one of the first German scientists to adopt the antiphlogistic theory. Two issues of the first German edition exist. The first issue, as here, has a printer's ornament on the title page. In the second issue, also of 1786, the title page differs in punctuation, capitalization, and absence of the printer's ornament (see Hoover, 273). A supplementary volume appeared later, entitled *Abhandlungen Ueber die Wirkung des durch die Lebensluft verstärkten Feuers* (Strassburg, 1787), which contains memoirs by Lavoisier and Meusnier translated from the French edition of 1787. This first German edition is rare. Not in Blake, Bolton, D.S.B., Edelstein, Ferguson, Ferguson Coll., Morgan, Neu, Smith, Waller, Watt, Wellcome, etc. (Duveen, 646; Duveen & Klickstein, p. 274; Ferchl, 139; Hoover, 272; Partington, III, 461; Poggendorff, I, 648; Sondheimer, 473)

EHRMANN, Friedrich Ludwig

Essai d'un Art de Fusion a l'Aide de l'Air du Feu, ou Air Vital par Mr. Ehrmann, . . . Traduit de l'allemand par M. De Fontallard & revu par l'Auteur. Suivi des Mémoires de Mr. Lavoisier, de l'Académie Royale des Sciences, sur le même Sujet.

Strasbourg: chez Jean George Treuttel, . . . & à Paris: chez Cuchet. 1787.

First French edition. 8vo. xxxii, 366 pp., 1 leaf (Treuttel book list). With 3 detailed copperplates of apparatus (plate I unsigned, plate II signed Hegui sc., plate III signed Weis sc., identical with plate in the German edition of 1786). Fine copy in original mottled calf, spine gilt, maroon morocco label.

THE FRENCH translation of Ehrmann's important experiments on high-temperature fusion, which first appeared the previous year as *Versuch einer Schmelzkunst* (Strassburg,

1786). Ehrmann's experiments "were conducted at the same time as Lavoisier was working on the effects of high temperatures on various substances. The results which both obtained were so similar that Lavoisier, who must have seen Ehrmann's manuscript before its publication, requested that his own memoirs on the subject be printed together with Ehrmann's essay. The latter complied and included them at the end of his book (pp. 235–349). He also added a memoir by Meusnier which describes the apparatus used by both Lavoisier and Ehrmann in their experiments (pp. 350–366)" (Duveen & Klickstein, p. 274). Not in Blake, D.S.B., Edelstein, Ferchl, Ferguson, Poggendorff, Waller, Watt, Wellcome, etc. (Bolton, *First Supplement*, 154; Duveen, 190; Duveen & Klickstein, 241; Ferguson Coll., 209; Hoover, 274; Morgan, 236; Neu, 1299; Partington, III, 461; Smith, 159; Sondheimer, 474)

EHRSTRÖM, Carl Gustav

Dissertatio Chemica de Chloreto Chromico quam venia Amplissimae Facultatis Philosophicae ad Imperialem Alexandri in Fennia Universitatem p. p. Adolphus Moberg . . . Respondente Carolo Gustavo Ehrström Stip. Publ. Austro-Ostrob. In Auditorio Philosophico die 25 Februarii 1843. Helsingfors (Helsinki): Ex Officina Typographica Frenckeliana. (1843).

First edition. 8vo. 1 leaf, 52 pp. Fine copy, uncut, in maroon quarter cloth antique, marbled boards, spine lettered in gilt: Moberg & Ehrström. Two dissertations. 1838, 1843.

A COMPREHENSIVE DISSERTATION on the history, preparation, properties, and chemical reactions of chromium chloride, presented by Ehrström under the direction of Adolf Moberg (1813–1895), professor of chemistry and physics at the University of Helsinki. Complete analytical data are given for each of the compounds discussed. This early monograph on chromium chloride is not in the usual bibliographies. Poggendorff (II, 163) lists this work under Moberg.

EK, Johann

Dissertationes Hydrologicam de Aqua Rorali, praeside . . . Johan. Gotsch. Wallerio, . . . Socio, . . . D. XXVII April . . . MDCCCLXIII. . . . Publice examinandam sistit Johannes Ek, Gesticus. Upsaliae. (N.p., n.d.) (1763).

First edition. 4to. 1 leaf, 12 pp. Large woodcut initial, head- and tailpieces. Very good copy, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A DISSERTATION ON dew and other volatile vapors found in the atmosphere and their condensation products, pre-

sent by Ek (dates unknown) with Professor J. G. Waller presiding. The phenomena of evaporation and condensation are discussed, with reference to the works of Henshaw, Musschenbroek, Rutty, et al. The supposedly enhanced chemical properties of dew water, when mixed with acids, alkalies, and salts, are described, with reference to the works of Barner, Boerhaave, Digby, Helmont, Neumann, Nollius, Sendivogius, et al. This dissertation is not included in Waller's collection of his students' theses (i.e., *Disputationum Academicarum*, Stockholm and Leipzig, 1780–81). Very rare. Unrecorded by the usual bibliographies.

EKEBERG, Anders Gustaf, and BERGSTEN, Nicolaus A.

Dissertatio Chemica De Calce Phosphorata, quam suffrag. ampliss. ordin. philos. publicae censurae submitunt Andreas Gust. Ekeberg philosophiae magister, et Nicolaus A. Bergsten, Fjerdhundrensens. In audit. gust. Maj. D. XIV Dec. MDCCXCIII.

Uppsala: Litteris viduae Director. Johann Edman. (1793).

First edition. 4to. 12 pp. Fine, crisp copy, in maroon half morocco antique, marbled boards, spine gilt-lettered and dated.

EKEBERG (1767–1813), professor of chemistry at Uppsala from 1794, discovered tantalum in an analysis of a mineral from Ytterby and investigated calcium phosphate in bones. He was an examiner of Berzelius when the latter presented his dissertation on a mineral water. The present work describes the preparation of calcium phosphate from chalk and phosphoric acid. An attempt at a quantitative analysis of calcium phosphate is given on pages 10–12. The discovery of calcium phosphate in bones by Gahn and Scheele is discussed, and there are references to the writings of Bergman, Crell, Klaproth, Richter, Wiegand, et al. Bergsten was a student of Ekeberg, but no reference to him in the literature has been found. A biography of Ekeberg is in the D.S.B., but this work is not mentioned. Rare. Not in Duveen, Edelstein, Ferguson, Neu, Partington, Smith, Waller, Wellcome, etc. (Bolton, 424; Ferchl, 140; Poggendorff, I, 655; Waring, 298; Watt, I, 332s)

EKEBERG, Anders Gustaf, and KEWENTER, Jah. Christoph

Dissertatio Chemica de Topazio, . . . publico iudicio subjiunt Mag. And. G. Ekeberg, . . . et Jah. Christoph. Kewenter, . . . In Audit. Gust. Maj. d. XXIII Martii MDCCXCVI. Uppsala: Litteris Joh. Fr. Edman, Reg. Acad. Typogr. (1796).

First edition. 4to. 10 pp. Fine, crisp copy, in maroon quarter cloth antique, spine gilt-lettered and dated. Bound with: Ekeberg, Anders Gustaf, and Tidbeck, Anders, *Dissertatio . . . de materiis oleosis* (Uppsala, 1789).

A DISSERTATION ON the composition of Brazilian topaz (hydrous aluminum fluorosilicate), containing details of its chemical analysis, with references to the works of Bergman, Gadolin, Klaproth, et al. Kewenter was a student of Ekeberg. Not in the usual chemical bibliographies. (Bolton, 424; Ferchl, 140; Poggendorff, I, 655; Watt, I, 332s)

EKEBERG, Anders Gustaf, and TIDBECK, Anders

Dissertatio Oeconomica, de Materiis Oleosis e Regno Animalis, . . . publicae censurae submittunt Magister Andreas Gust. Ekeberg, et Andreas Tidbeck, Vestrogothus. In Audit. Gust. Maj. d. XXVII Maji MDCCLXXXIX.
Uppsala: Litteris Direct. Joh. Edman. (1789).

First edition. 4to. 18 pp. Fine, crisp copy, uncut with wide margins. Bound with: Ekeberg, Anders Gustaf, and Kewenter, Jah. Christoph, *Dissertatio chemica de topazio* (Uppsala, 1796).

A DISSERTATION OF chemical interest on the economics and advantages of extracting oils and fats from various kinds of animals (e.g., primates [including humans], seals, whales, bears, horses, birds, fish, and insects). The quality of different types of butter made from the milk of various mammals is discussed. Tidbeck was a student of Ekeberg. Rare. Unknown to the usual bibliographers. (Watt, I, 332s)

EKENSTEDT, Christian

Kort Afhandling om Chemiens Nyttä uti Physiquen. Andra Delen. . . Under Doct. Christian Wollins . . . Inseende . . . Den V Junii MDCCLXXXIII. Af Christian Ekenstedt.
Lund: Typis Berlingianis. (1783).

First edition. 4to. 2 leaves, pp. 39–79, (1). Fine copy with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

THE SECOND of two dissertations (each complete in itself) on the uses of chemistry in the study of physics. Ekenstedt (1763–1808), who later became a well-known physician, presented this work under the direction of the professor of chemistry at Lund, Christian Wollin (1730–1798). Subjects covered include phlogiston and its supposed role in combustion, the production of cold by freezing mixtures, chemical affinity, explosives (e.g., gunpowder and fulminating gold), and mining and metallurgy. Poggendorff (II, 1364) mentions only the first dissertation (by N. Frisbek, Lund, 1782; 38 pp.). Rare. Unknown to the usual bibliographers.

EKMAN, Johan Herman

Dissertatio Physico-Medica de Ortu et Generatione Salis Alcalini Fixi et Volatilis, in Acidulis et Thermis. Quam praeside . . . Doct. Gustavo Harmens . . . subjicit Johan. Herm. Ekman . . . Babusia Gothoburgensis in Auditorio Majori, ad diem 25 Octob. 1760.

Lund: Ex Officina Directoris Caroli Gustavi Berling. Regiae Academiae Carolinae Typograph. (1760).

First edition. 4to. 24 pp. Fine copy with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered: Harmens. Dissertations. 1748–1760. Bound with: 4 other dissertations by Harmens.

A DISSERTATION ON the origin and formation of volatile and nonvolatile alkaline salts in hot and cold mineral springs, presented by Ekman under the direction of Gustav Harmens (1699–1774), professor of medicine and chemistry at the University of Lund. Alkalies and salts derived from them in the animal, vegetable, and mineral kingdoms are described, with references to the works of Boerhaave, Cramer, Hoffmann, Le Givre, Wallerius, and others. Details are given (pp. 20–21) on qualitative analytical methods (including the use of indicators) for detecting acids, alkalies, and salts in mineral waters. Very rare. Not located in the usual bibliographies. (Bolton, 515)

EKMARCK, Laurentius

Dissertatio Chemico-Physica de Diversis Ignem Producenti Modis, quam, . . . moderante . . . Job. Gotschalk Wallerio, . . . publice ventilandam exhibet . . . Laurent. Ekmarck Laur. Fil. Nericus.
Uppsala. (1764).

First edition. 4to. 8 pp. Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A DISSERTATION ON the chemistry and physics of the production of fire, with Johann Gottschalk Wallerius presiding. Ekmarck traces the history of fire making from the ancient Greeks and Romans to the mid-eighteenth century, with references to the works of many chemists. Heat and fire produced by friction, electricity, chemical reactions, fermentation, etc., are covered. On page 8 the preparation of phosphorus from urine by Brandt is discussed. An interesting discourse on fire, the nature of which remained a mystery until the late eighteenth century. Poggendorff (I, 656) briefly mentions a certain Lars Ekmark (1739–1797), born at Nericke, provost at Strengnäs and member of the Academy of Sciences at Stockholm. Whether he is the same man as the author of the present work is not known. Wallerius was greatly interested in the subject of fire, and his

Disputationum Academicarum (1780–81) includes several dissertations on it, but not the present rare work, to which no bibliographical reference has been located.

EKSTRÖM, Carl

Specimen Academicum de Corporum Simplicium dubia Simplicitate, . . . publico examini submittit Mag. Jonas Albinus Engeström, . . . Respondente Carolo Ekström, Wermelando. In Academia Carolina die XII Junii MDCCCXI.
Lund: Literis Berlingianis. (1811).

First edition. 4to. 26 pp. Fine copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated. Bound with: Ruhnberg, Isaac Olaus, *Dissertatio discrimen veteris et recentioris theoriae chemicae* (Lund, 1798).

AN IMPORTANT dissertation on substances originally considered to be elementary, which were later proved to be complex, and on substances formerly regarded as complex, which were later shown to be elementary (e.g., chlorine). The electrochemical decomposition of the alkalies and alkaline earths by Davy, and the decomposition of water to hydrogen and oxygen by electrolysis are described. A list of the then-known chemical elements is given (p. 9), which includes heat and light, thought by some scientists to be material. The researches of many chemists are cited (e.g., Berzelius, Davy, Gay-Lussac, and Scheele). Ekström presented this work under the direction of Jöns Albin Engeström (1787–1846), professor of chemistry and physics, at the University of Lund. (Poggendorff, I, 670)

EKSTRÖM, Daniel

Tal, om Järn-Förädlingens Nytt och Vårdande; hållit i Kongl. Vetenskaps Akademien . . . 28 Apr. 1750. . .
Stockholm: Tryckt hos Lars Salvius. 1750.

First edition. 8vo. 1 leaf, 44 pp. Copperplate vignette on title page. Woodcut initials, head- and tailpieces. Some embrowning of paper; otherwise very good copy, uncut, with wide margins, in maroon quarter cloth antique, spine gilt-lettered and dated.

A SPEECH DELIVERED to the Swedish Royal Academy of Sciences on the manufacture of iron and different types of steel. Ekström (1711–1755), a member of the Academy, was a famous Swedish mathematical instrument and scientific apparatus maker. He discusses the physical and chemical properties of steel in the fabrication of scientific equipment, with references to works by Joseph Moxon, Sven Rinman, Thomas Tompion, et al. The author states that iron frequently surpasses in value all noble metals, even gold. When a pound of iron is drawn into wire, its value increases a hundred times over that of wrought iron. When a pound

of steel is used in the construction of watches, it is seventy thousand times more valuable (C. S. Smith). Poggendorff (I, 656) lists several titles by Ekström, but not the present work. Rare. (C. S. Smith, *Sources for the History of the Science of Steel, 1532–1786* [1968], p. 175)

ELERS, Johann

Disputatio Inauguralis Medica de Volatili et Fixo, sanitatis humanae conservativo, destructivo & restaurativo, . . . Sub praesidio . . . Dn. Conradi Johrenii, . . . pro licentia . . . doctoris gradum . . . M. Johannes Elers, Neoburgo-Lynaeburg. Ad d. (blank) Octobr. Anno 1678.

Rinteln: Excudebat G.C. Wachter, Acad. Typogr. 1678.

First edition. 4to. 40 pp. Very good copy, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A DOCTORAL DISSERTATION on the volatility and non-volatility (fixedness) of chemical compounds, with numerous references to the writings of earlier authors (e.g., Paracelsus, Quercetanus, and Sylvius) and contemporary chemists (e.g., Croll, Becher, Wedel, Borrichius, Tachenius, and Zwelfer). Elers discusses (p. 8) the studies on sal volatile (ammonium carbonate) as described in the section on “fluidity and firmness” in *Certain Physiological Essays* (1661) by Robert Boyle. The praeses, Johann Conrad Johrenius, was a professor at Rinteln. He edited an enlarged edition of Hartmann’s *Praxis chymiatrica* (Rostock, 1676; Halle, 1678); also Hartmann’s *Opera omnia chymica* (Frankfurt, 1684 & 1690), on which see Ferguson (I, 366), Partington (II, 178), and Thorndike (VIII, 117). Very rare. Not in the usual early chemical libraries. (Wellcome, II, 518)

ELLER, Johann Theodor

Physikalisch-Chymisch-Medicinische Abhandlungen, aus den Gedenkschriften der königl. Akademie der Wissenschaften herausgezogen und übersetzt von D. Carl Abraham Gerhard. Zwey Theile. Mit Kupfern.

Berlin, Stettin und Leipzig: Johann Heinrich Rüdiger. 1764.

First edition. 8vo. 2 leaves, 414 pp., 3 leaves (including errata). With 10 folding copperplates. Very good copy in contemporary half calf, speckled boards, with printed paper lettering label on spine. From the library of Professor Franz Sondheimer, with his bookplate on the verso of the first free endpaper.

THE VOLUME comprises twenty-one memoirs by Eller (1689–1760), which were originally published in *Memoirs and Miscellanea Beroliniensia*, of the Berlin Academy, here collected and translated into German. Eller made extensive studies in chemistry and mineralogy, which are included in some memoirs in this book. Divided into two parts,

topics of chemical interest include theoretical chemistry, the role of heat and fire, attempts to convert water into earth, the solubility of salts in water, and the origin and production of metals. "It is known that Lavoisier read Eller's papers, especially those dealing with the elements, and his early views have an interesting resemblance to Eller's ideas, about heat and fluidity" (Dyck [D.S.B., IV, 352–353]). Partington (II, 716–717) describes Eller's investigation on the solubility of salts in water as a "really important" study. The views of Becher and Stahl and the theory of phlogiston are covered in detail. An important mid-eighteenth-century German publication. Rare. Not in Bolton, Cushing, Duveen, Ferguson, Ferguson Coll., Neu, Osler, Smith, Waller, Wellcome, etc. (Blake, 133; D.S.B., IV, 353; Edelstein, 796; Ferchl, 141; Partington, II, 716; Poggendorff, I, 659; Sondheimer, 479; Watt, I, 333m)

ELLIOT, John

An Account of the Nature and Medicinal Virtues of the Principal Mineral Waters of Great Britain and Ireland, and those most in repute on the Continent. To which are prefixed, Directions for Impregnating Water with Fixed Air, . . . Extracted from Dr. Priestley's Experiments on Air. With an appendix, containing a description of Dr. Nooth's apparatus, with the improvements made in it by others. And a method of impregnating water with sulphureous air, so as to imitate the Aix-la-Chapelle and other sulphureous waters. . . . London: Printed for J. Johnson. 1781.

First edition. 8vo. 2 leaves, 236 pp. With folding engraved frontispiece. Pristine copy, entirely uncut and unpressed, in gilt-ruled half calf antique, marbled boards, spine dated, crimson morocco label, original wrappers bound in.

SIR JOHN ELLIOT (or Elliott, 1736–1786), physician (M.D., St. Andrews, 1759), knighted in 1776, was created baronet in 1778. He became physician to the Prince of Wales and published several books on medical subjects. He was interested in the history of experimental philosophy and was a great admirer of Priestley. The present work covers the chemistry of the mineral waters of the British Isles and the Continent. Included is Priestley's pamphlet on the *Impregnation of Water with Fixed Air* (1772), then out of print, as well as additions to the second volume of his *Experiments on Air* (1775). The plate illustrates the apparatus of Priestley, improved by Nooth, Magellan, and Parker and further improved by Blades. Very scarce, as are all of Elliot's works. Not in Bolton, D.S.B., Duveen, Edelstein, Neu, Poggendorff, Smith, Waller, etc. (Blake, 134; Cushing, E39; *Munk's Roll*, II, 240; Partington, III, 615; Sotheran, Cat. 800 [1926], 10685; Waring, 777; Watt, I, 333t; Wellcome, II, 519)

ELLIOT, John

An Account of the Nature and Medicinal Virtues of the Principal Mineral Waters of Great Britain and Ireland; and those most in repute on the Continent . . . The Second Edition, corrected and enlarged.

London: Printed for J. Johnson. 1789.

Second edition. 12mo. 2 leaves, 296 pp. With folding plate (re-engraved, but closely resembling the plate by Royce in the first edition). Printed on bluish paper, very fine copy in original gilt-ruled tree calf (covers scuffed), maroon morocco label, gilt.

THE FINAL edition, containing updated information on the chemical composition of various natural and artificial mineral waters, together with a "considerably enlarged" part on the analysis of waters. Rare. Not in Duveen, Munk, Neu, Smith, Waller, Watt, etc. (Blake, 134; Edelstein, 797; Partington, III, 615; Waring, 777; Wellcome, II, 519)

ELLIOT, John

Elements of the Branches of Natural Philosophy connected with Medicine. Viz. Chemistry, Optics, Sound, Hydrostatics, Electricity and Physiology. Including the Doctrine of the Atmosphere, Fire, Phlogiston, Water, &c. Together with Bergman's Tables of Elective Attractions, with Explanations and Improvements. By J. Elliot, M.D.

London: Printed for J. Johnson. 1782.

First edition. 8vo. xvi, 302 pp., 1 leaf (advertisements). 1 folding printed table ("Elective Attractions", p. 105), and 4 folding engraved plates (nos. 3 & 4: Bergman's tables). (N.B. Signature K comprises 9 leaves: the pagination of pages 142–143 is repeated). Eighteenth-century inscription in ink at top of title page ("Ex Libris Societatis Medicae Edinensis"). Very good copy in contemporary calf, rebacked, spine gilt-ruled and dated, maroon morocco label. Bookplate: Franz Sondheimer.

"PROBABLY THE earliest textbook of medical physics. It is valuable for containing Bergman's table of elective attractions" (Zeitlinger). Almost half the volume deals with chemistry. In the postscript (p. 293) Elliot states: "I have lately learnt that it is the opinion of M. Lavoisier, and others, that there is no such thing as phlogiston. . . . They account for combustion by saying, that the dephlogisticated air unites with the inflammable body; and hence the increase of weight of the calces of metals, and of the acids of phosphorus and sulphur, &c. They even explain the acidity of these acids by imputing it to the dephlogisticated air combined with the inflammable substance." One of the earliest English chemical texts to mention Lavoisier and his correct explanation of the phenomenon of combustion. A copy of this edition was in the library of Lavoisier, with his bookplate and handwritten class mark: J. No. 1 (see Offenbacher, Cat. 19 [1967], item 50). Rare. Not in Blake, Cushing, Osler,

Reynolds, Waller, Wellcome, etc., or the usual chemical bibliographies. (Ferchl, 141; Partington, III, 615; Sondheimer, 481; Sotheran, Cat. 725 [1912], 7509 ["Rare"]; Watt, I, 333t)

ELLIOT, John

Elements of the Branches of Natural Philosophy connected with Medicine. Viz. Chemistry, Optics, Acoustics, Hydrostatics, Electricity, and Physiology. Including the Doctrine of the Atmosphere, Fire, Phlogiston, Water, &c. Together with Bergman's Tables of Elective Attractions, with Explanations and Improvements. The Second Edition, corrected with additions. By J. Elliot, M.D.

London: Printed for J. Johnson. 1786.

Second edition. 8vo. xvi, 338 pp., 1 leaf (advertisements). With 2 folding printed tables ("Elective Attractions," p. 105; "Affinities" by R. Kirwan, at the end), and 4 folding engraved plates (N.B. Plate 3, Bergman's first table, lacking). Good copy in contemporary calf, rebacked, maroon morocco label, gilt.

A CLOSE PAGINARY reprint of the first edition (1782), to which is added an appendix (pp. 301–331) containing essays on light, lime treated with inflammable air, and chemical affinity. At the end (pp. 333–338) is a letter from a "philosophical friend (my old worthy school-master)," Nathanael Jesse, reprinted verbatim. The letter comments on the "chemical doctrine of light," concluding that "Light . . . is probably an ingredient in inflammable air . . . [as] it makes its appearance during its combustion." Very rare. Not in Blake, Cushing, D.S.B., Osler, Waller, Wellcome, or the usual chemical bibliographies. (Bolton, 426; Ferchl, 141; Watt, I, 333t)

ELLIS, Daniel

An Inquiry (Vol. II: Farther Inquiries) into the Changes induced on Atmospheric Air, by the germination of seeds, the vegetation of plants, and the respiration of animals. . . .

Edinburgh: William Creech and J. Murray (Vol. II: W. Blackwood and J. Murray). 1807, 1811.

First editions. 2 vols., 8vo., in 1. I: xiii, (3), 246 pp. II: ix, (1), 375, (1) pp. Apart from the half titles (which have not been bound in), a fine, crisp copy, in contemporary gilt-ruled half calf, rebacked, maroon morocco label, gilt.

AN IMPORTANT treatise on the chemical aspects of the respiration of plants and animals. "A painstaking compilation, including all the researches recorded in scientific journals of the time. It includes chapters 'Of the Changes on the Air by the Respiration of Insects, Worms, Fishes, and Amphibious Animals' and 'Of the Source of the Carbon in Vegetables and Animals by which the changes in the air

are effected'. . . An interesting work containing many references to the work of Lavoisier, Priestley, Beddoes, Davy, Dalton, etc." (Duveen). Bolton lists only the second volume (1811). The Wellcome Catalogue gives an incorrect pagination for volume I (373 pp.). Only the first volume (1807) is in the Blocker, Duveen, and Wellcome libraries. Rare. Not in Browne, D.S.B., Edelstein, Ferchl, Partington, Poggendorff, Smith, Waller, etc. (Blocker, 123; Bolton, *First Supplement*, 155; Duveen, 191; Perkins, 553, 554; Sondheimer, 482; Sotheran, Cat. 725 [1912], 7524 ["Rare"]; Watt, I, 334a; Wellcome, II, 520)

ELLIS, Robert

The Chemistry of Creation: being a sketch of the chemical phenomena of the Earth, the Air, the Ocean. By Robert Ellis, F.L.S., M.R.C.S., etc. . . .

London: Society for Promoting Christian Knowledge. (1850).

First edition. 8vo. x, 512 pp., 2 leaves (advertisements). Numerous woodcuts in text (some full page). Very good copy, all edges gilt, in original blind-stamped and gilt crimson cloth.

A COMPREHENSIVE BOOK, written in an engaging style, giving a broad overview of chemistry in the mid-nineteenth century. "In the present Work the attempt has been made to introduce all the recent discoveries in chemical science, related to Nature's chemistry, and to apply them to the explanation of the chemical phenomena presented in the earth, the air, and the ocean" (preface). The second edition appeared in 1852 (see Sotheran, Cat. 725 [1912], 7526). Very scarce. Not in the usual early chemistry libraries. (Bolton, 426)

ELSHOLTZ, Johann Sigismund

Destillatoria Curiosa, sive Ratio ducendi liquores coloratos per alembicum, hactenus si non ignota, certe minus observata atque cognita. Accedunt Utis Udenii & Guernerii Rolfincii Non-Entia Chymica.

Berlin: Typis Rungianis, Impensis Ruperti Volcheri. 1674.

First edition. 8vo. 7 leaves, 176 pp. With engraved frontispiece (distilling room), copperplate of cinnamon plant (facing p. 84), and small woodcut (p. 26). Paper very lightly embrowned; otherwise very good copy in original vellum. Bound with: Balduin, C. A., *Aurum Aurae* (Berlin, 1674).

AN IMPORTANT treatise on distilling colored liquors, spirits, and oils from minerals, plants, and animals, with several references to the works of Boyle and those of Beguin, Langelott, Schroeder, Sennert, Tachenius, Willis, et al. Elsholtz (1623–1688), iatrochemist, botanist, and physician to Frederick William, elector of Brandenburg, was made a

member of the Academia Naturae Curiosorum in 1674. He published this work to clarify the confused notions regarding distillation that existed in Germany at that time. "Elsholtz is convinced that the result of the distillation is determined by the type of cucurbit and furnace used" (Forbes). Pages 99–140 comprise *Utis udenii non-entia chymica*, and pages 141–176 are extracted from Werner Rolfinck's *Chimiae in artis formam redacta* (book VI), dealing with chemical nonentities or mistaken beliefs. Second (Nuremberg, 1683) and third (Berlin and Frankfurt, 1704) editions appeared, as well as an English translation (London, 1677). Not in Duveen, Neu, Smith, etc. (Bolton, 426; Edelstein, 798; Ferchl, 142; Ferguson, I, 238 [not in Young Coll.]; Ferguson Coll., 210; Forbes, *History of Distillation*, 203; Krivatsy, 3640; Partington, II, 88; Poggendorff, I, 660; Thorndike, VII, 197; Waller, 11122; Watt, I, 335i; Wellcome, II, 521)

ELSHOLTZ, Johann Sigismund

The Curious Distillatory: or The Art of Distilling Coloured Liquors, Spirits, Oyls, &c. from Vegetables, Animals, Minerals, and Metals. A Thing hitherto known by few. Containing many Experiments easy to perform, yet Curious, surprizing, and useful: relating to the production of Colours, Consistence, and Heat, in divers Bodies which are Colourless, Fluid, and Cold. Together with several Experiments upon the Blood (and its Serum) of Diseased Persons, with divers other Collateral Experiments. Written Originally in Latin by Jo. Sigis. Elsholt. Put into English By T. S. M.D. Physician in Ordinary to his Majesty.

London: Printed by J. D. for Robert Boulter, at the Turks-head, over against the Royal-Exchange in Cornhil. 1677.

First English edition. 8vo. 8 leaves, 111, (1) pp. Engraved frontispiece (distilling room), and copperplate of cinnamon plant (p. 63), both by Tho. Cross. Small woodcut (p. 29). Very good copy, in blind-ruled calf antique, maroon morocco label, spine gilt-ruled and dated. Old signature rather illegibly scrawled on pages 96 and 111, possibly that of James Keir (1735–1820), translator of Macquer's *Dictionary of Chemistry* (1771; 2nd ed., 1777).

THE ENGLISH translation of the *Destillatoria Curiosa* (Berlin, 1674), by Thomas Sherley (or Shirley, 1638–1678), physician to Charles II (see D.N.B.). It omits the *Non-entia chymica* of Elsholtz, and the *Utis udenii non-entia chymica* of Rolfinck, present in the original German edition. This rare book contains a section (pp. 84–96) entitled "Observations upon Blood, and its Serum," in which detailed chemical experiments on blood are described. One of the first to deal with blood transfusion, Elsholtz claims to have discovered the transfusion of drugs by venesection.

(Bolton, *First Supplement*, 155; Duveen, 191–192; Ferchl, 142; Ferguson, I, 238; Ferguson Coll., 211; Forbes, 203; Keynes, 1987; Krivatsy, 3641; Neu, 1305; Partington, II, 88; Watt, I, 335i; Wellcome, II, 521; Wing, E638)

ÉMERY, Antoine Joseph d'

Modern Curiosities of Art and Nature. Extracted out of the Cabinets of the most Eminent Personages of the French Court. Together with the choicest Secrets in Mechanicks: communicated by the most approved Artists of France. Composed and Experimented by the Sieur Lemery Apothecary to the French King. Made English from the Original French. London: Printed for Matthew Gilliflower, at the Spread Eagle in Westminster-Hall, and James Partridge, at the Post-house between Charing-Cross and White-hall. 1685.

First English edition. 12mo. 22 leaves, 355, (1) pp., 2 leaves. Nicely engraved title page in compartments (depicting laboratories, workshops, etc.). Fine, crisp copy, with a few neat contemporary annotations; beautifully bound in polished mottled calf antique, gilt edges, richly gilt and dated spine, maroon morocco label, triple gilt fillets on each cover, by Bayntun.

AN INTERESTING and very rare book of secrets, many of chemical importance, by d'Émery (dates unknown), whose first edition appeared as *Recueil de Curiositez Rares et Nouvelles des plus admirables effets de la nature . . . Recherchées Par le Sieur d'Émery* (Paris: Chez Louis Vendosme, 1674). Immediately popular, many editions in French were published (e.g., 1676, 1680, 1684, 1685, 1686, 1688, 1697, 1700, and 1708). It was believed, incorrectly, to be by the chemist, Nicolas Lemery, and even the anonymous translator of this English edition states that it is "a Collection of Approved Experiments, made by the Sieur Lemery, famous for his Excellent Course of Chymistry." The receipts are alchemical, chemical, pharmaceutical, medicinal, cosmetic, culinary, etc. In addition, directions are given for making fireworks, dyes, pigments, paints, varnishes, gilding materials, casting of bronzes, etc. Advice is given on gardening, fishing, fowling, hunting, and other pastimes. Many reference works still persist in attributing this book to Lemery (e.g., Ferchl, Ferguson, and Wing). This edition is not listed by most bibliographers. (Neu, 2308; Partington, III, 31; Wing, L1041)

ÉMERY, Antoine Joseph d'

New Curiosities in Art and Nature: or, a Collection of the most Valuable Secrets in all Arts and Sciences, as appears in the contents. Being very useful for all persons who are desirous to consult their health, pleasure, or beauty; enrich'd with an infinite variety of curious rarities in perfuming, colouring, painting, making of cordial waters, pomatums, washes, scenting of snuffs, and all sort of varieties of that nature, which have been try'd and approv'd by people of the best quality. Composed and experimented by the Sieur Lemery, Apothecary to the French King. Translated into English from the seventh edition. Printed this last year in French, in which is near one half more than in any former edition. Illustrated with cuts. To which is added a supplement by the translator. London: Printed for John King, at the Bible and Crown in Little Britain, and sold by John Morphew, near Stationers-Hall. 1711.

Second English edition. 8vo. 8 leaves, 354 pp., 7 leaves. Engraved frontispiece in compartments (laboratories, workshop, agricultural scenes), and 8 copperplates (hospital, laboratory, firework display, hunting and fishing, cookery, painting and varnishing, gardening, molding and casting). First signature moderately embrowned (except for title page), as are 4 signatures at the end; otherwise fine, crisp copy, in original paneled calf, rebaked, with original gilt spine laid on, maroon morocco label.

THE GREATLY enlarged second edition of this book of secrets, containing a considerable extension and revision of the text of the first English edition of 1685. In addition, there is a supplement of sixty-six pages by the anonymous translator (pp. 289–354). A rare and interesting book, containing numerous practical directions for the preparation of acids, alkalies, salts, oils, and other chemicals, as well as their medicinal, technological, and household applications. (Blake, 134; Duveen, 649; Eales, 1225; Ferchl, 307; Ferguson, II, 21; Ferguson Coll., 401; Ferguson, *Books of Secrets*, I, part 1, p. 19; Neu, 2309; Partington, III, 31)

EMES, Thomas

A Dialogue between Alkali and Acid: containing divers Philosophical and Medicinal Considerations, wherein a late pretended New Hypothesis, asserting Alkali the Cause, and Acid the Cure of all Diseases; is proved Groundless and Dangerous. Being a Specimen of the Immodest Self-applause, Shameful Contempt, and abuse of all Physicians, gross Mistakes and great Ignorance of the Pretender John Colbatch. By Thomas Emes, Chirurgo-Medicus. . . . The Second Edition. London: Printed for Thomas Speed, over against Jonathan's Coffee-House in Exchange Alley in Cornhil. 1699.

Second edition. 8vo. 3 leaves, 108 pp. Paper embrowned; otherwise good copy in blind-stamped paneled sheep antique, crimson label gilt. Bound with: Emes, Thomas, *A letter to a gentleman concerning alkali and acid* (London, 1700); and Anonymous, *A tryal of skill* (ca. 1700).

EMES (d. 1707), known as “the prophet,” was a quack surgeon who practiced among the poor. Hoping to obtain notoriety he allied himself with the Camisards, or French prophets, a “pack of crazy enthusiasts who scandalized the town by their indecent buffooneries” (D.N.B.). In the present work (first edition: 1698), written as a dialogue between “Mr. Acid” and “Mr. Alkali,” Emes attacks the contention of John Colbatch that the cause of many diseases is due to alkalies. Many chemical experiments are described, and the book throws light on the biochemical theories of the time. Colbatch had advanced his concept in *A physicomedical essay concerning acid and alkali* (London, 1696) and in *The doctrine of acids in the cure of diseases further asserted* (London, 1698). The second edition may be, in fact, the second issue of the first edition, as there are the same number of pages in each. Very rare. Not in the usual early chemical bibliographies. (Ferguson Coll., 211; Watt, I, 336r; Wellcome, II, 522 [1698 ed. only]; Wing, E709)

EMES, Thomas

A Letter to a Gentleman concerning Alkali and Acid. Being an Answer to a late Piece, intituled, A Letter to a Physician concerning Acid and Alkali. To which is added a Specimen of a new Hypothesis, for the sake of the Lovers of Medicine. By Thomas Emes, Author of the Dialogue between Alkali and Acid. . . .

London: Printed for Tho. Speed, over against Jonathan's Coffee-House in Exchange-Ally in Cornhill, 8vo. Price 6d. 1700.

First edition. 8vo. 64 pp. Fore-margin of title leaf trimmed (not touching border); otherwise very good copy. Bound with: Emes, Thomas, *A dialogue between alkali and acid* (London, 1699); and Anonymous, *A tryal of skill* (ca. 1700).

THE RESPONSE by Emes to an anonymous work entitled *A letter to a physician concerning acid and alkali* (London: For Andrew Bell, 1700, 8vo., i.e., Wing, L1694, two copies only). Pages 22–24 describe four experiments of the anonymous author, and confirmed by Emes, on mixing blood with acids and alkalies. The whole book deals with the reactions of acids and alkalies with metals, salts, and biological materials (e.g., blood, perspiration, saliva, urine, bile, and milk). The attack on Dr. Colbatch, begun in *A dialogue between alkali and acid*, is continued by Emes in this biochemical work. Watt mentions an earlier edition (London, 1698),



Émery. New Curiosities in Art and Nature. London, 1711.

but that is obviously a ghost, as the book is a response to the anonymous work that appeared in 1700. Very rare. Not in the usual early chemical bibliographies. Not in Cushing; Reynolds, Waller, Wellcome, etc. Wing lists only one copy in America (New York Academy of Medicine). (Watt, I, 336q; Wing, E710)

EMILI, Marco Antonio

De Thermis Milzanelli, & illarum natura, situ, & minera, nec non & facultate: cum aliquibus non minus necessariis, quam iocundis disputationibus. Cum plenissimo Indice omnium rerum notabilium, quae in eo continentur. Cum licentia Superiorum.

Brescia: Apud Iacobum, & Polycrētum de Turlinis Fratres. 1576.

First edition. 4to. 4 leaves, 65, (1) pp., 4 leaves. Text in italic; title, dedication, and index in roman letter. Large woodcut printer's device on title and several historiated woodcut capitals. Fine, crisp copy, in gilt-ruled maroon morocco antique, spine gilt-lettered and dated.

NOTHING APPEARS to have been recorded of the Brescian physician Emili (Aemilius, fl. sixteenth century), the author of this detailed account of a hot spring found in a field near Brescia. Referring to the works of Agricola, Aristotle, et al., Emili speculates on the causes of hot mineral springs. Of considerable chemical and mineralogical interest, this work discusses many of the substances that occur in hot springs: e.g., alum, silver, gold, iron compounds, sulphur, bitumen, and other materials. Very rare. Not found in the usual chemical and medical bibliographies. (British Library, *S.T.C. Italian Books, 1465–1600*, p. 7; Durling, 1363; Manget, *Bibliotheca Scriptorum Medicorum*, 1731, vol. I, part 1, p. 48)

EMMERT, August Gottfried Ferdinand

Dissertatio Inauguralis Medica de Incombustibilitate nonnullorum Vi in Aeram Atmosphaericum. . . praeside I. H. F. Autenrieth, . . . pro licentia in medicina et chirurgia publice defendet die (blank) Martii MDCCC. Auctor Aug. Godofr. Ferd. Emmert, Gottingensis.

Tübingen: Litteris Fuesianis. (1800).

First edition. 12mo. Very good copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated, with the original yellow wrapper bound in.

AN INTERESTING dissertation on the combustibility of substances and on respiration, by Emmert (dates unknown), with Johann Herrmann Autenrieth (1772–1835), professor of medicine at Tübingen, presiding. The work of Cavendish, Fontana, Humboldt, Lavoisier, Priestley, et al., on

combustion and the work of Ingenhousz, Senebier, Scherer, et al., on respiration are discussed. Emmert concludes that the respiration of plants and animals is a form of slow combustion. He also refers to the researches of the American scientists Samuel Latham Mitchill and Benjamin Rush. No bibliographical reference to this very rare work has been located.

EMMET, Thomas Addis

Tentamen Chymico-Medicum, de Aere Fixo, sive Acido Aereo. Quod, annuente summo numine, . . . D. Gulielmi Robertson, S.S., T.P. Academiae Edinburgensae Praefecti; . . . Pro gradu doctoris, . . . Thomas Addis Emmet, Hibernus. . . Ad diem 13 Septembris, . . .

Edinburgh: Apud Balfour et Smellie, Academiae Typographos. 1784.

First edition. Sm. 4to. 3 leaves, 60 pp. Fine copy in red half calf antique, marbled boards, spine gilt-lettered and dated. A presentation copy, inscribed in ink on verso of dedication leaf: "Dr. De Butts with best wishes & real regards, from his Country-Man & very sincere friend Thos. Addis Emmet."

THE DOCTORAL dissertation of Emmet (1764–1827), United Irishman, B.A. (Dublin, 1783). He obtained the LL.B. from Dublin and was called to the Irish bar in 1790. Taking the oath of the United Irishmen in open court (1795), he thereafter engaged in political activities in the interests of Ireland. He was arrested several times, incarcerated in Scotland (1799), sent to Holland (1802), attempted to raise a battalion of Irishmen in the pay of France, then fled to America and died in New York. This dissertation is almost entirely chemical in content and gives detailed descriptions of the preparation, physical and chemical properties, and medicinal uses of carbon dioxide. There are numerous references to contemporary chemists (e.g., Bergman, Black, Cavendish, Ingenhousz, Kirwan, Lavoisier, Macbride, and Priestley). The biographies of the praeses, William Robertson (1721–1793), and Emmet are in the D.N.B. Rare. Not in the usual bibliographies. (Ferchl, 142 [under "Emmer"]; Waring, 315)

ENFIELD, William

Institutes of Natural Philosophy, Theoretical and Experimental. By William Enfield, LL.D. Second Edition, with Corrections and Considerable Additions in the Different Branches of Science: To which is Added, An Introduction to the First Principles of Chemistry. . . .

London: Printed for J. Johnson. 1799.

Second edition. 4to. Pp. xvi, 428. With 13 finely engraved, folding copperplates (depicting scientific diagrams, apparatus, etc.). Fine, crisp copy, bound in contemporary half calf, green

marbled boards, spine gilt in compartments, with blue morocco lettering label. From the library of the famous English barrister and legal writer Herbert Broom (1815–1882), with his neat signature (“Herbt. Broom”) in ink at the top of the title page. On Broom, see the D.N.B.

ENFIELD (1741–1797), divine and author, was tutor in belles lettres and rector of the Warrington Academy, 1770–1783. He became LL.D., Edinburgh, 1774, and pastor of two Presbyterian congregations, and published “The Speaker” (1774) and translations of foreign and religious works. He was a good friend of Joseph Priestley. The first edition of this very popular textbook of natural science appeared in 1785, with eleven folding plates. The present second edition is the first to contain the very important “Introduction to . . . Chemistry,” which comprises Book VIII (pp. 394–428), divided into three chapters. Chapter I (pp. 394–398) covers “Chemical Attractions.” Chapter II (pp. 399–406) deals with “Fire,” “Heat,” etc. Chapter III (pp. 407–428) discusses “Permanently Elastic Fluids, or Airs,” referring to the discoveries of Priestley, Lavoisier, Scheele, Chaptal, Ingenhousz, Lametherie, Cavallo, Carmichael Smyth, Cavendish, Higgins, et al. The gases described include hydrogen, oxygen, carbon dioxide, nitric oxide, and nitrogen. The composition of water is discussed on pages 425–428. Dedicated to Joseph Priestley, this book was used in the Warrington Academy. In addition to the first principles of chemistry, other topics covered include mechanics, hydrostatics, pneumatics, optics, astronomy, magnetism, and electricity. Another edition in greatly reduced format (2 vols., 32mo.) appeared in 1809. The first American edition (Boston, 1802), by Samuel Webber, was made from this second, posthumous, and best English edition. Scarce (Morgan, 23). Not mentioned by Bolton, Duveen, Ferchl, Morgan, Neu, Osler, Partington, Smith, or Waller. Wellcome (II, 54) lists the 1785 edition only. (Poggendorff, I, 668)

ENGELBRECHT, Georg

De Judiciis Metallicis, von Berg-Aemtern and Berg-Gerichten.

Jena: Joh. Christ. Crockeri. 1740.

First edition. 4to. 1 leaf, 46 pp. Woodcut ornament on title, large woodcut capital on page 2, and fine woodcut head- and tailpieces. Very fine copy, entirely uncut, with wide margins, in half vellum, marbled boards.

A VALUABLE SOURCE of references on the laws relating to mining and extractive metallurgy and the chemical processes involved, mainly in Germany and adjoining countries. Engelbrecht, on whom no biographical information has been found, was evidently a very competent attorney. In the title to this work he is described as “Professoris Pub-

lici Ordinarii in Academia Julia,” so presumably he held a teaching position in Julian law. The history of laws relating to mining and metallurgy is traced from the Roman period to about 1740, with many references to the works of classical as well as medieval, sixteenth-, seventeenth-, and early-eighteenth-century writers (e.g., Pliny, Mathesius, Thomas Hobbes, Panciroli, Agricola, Löhneiss, Spigelius, Kircher, Conring, and Boecler). An extremely rare book to which no bibliographical reference has been found.

ENGELHART, Johan Henrik

Dissertatio Chémico-Médica de Vinis Lithargyrio Mangonisatis quam . . . in Alma Gothorum Carolina praeside Doct. Christiani Wollini . . . Publico Eruditorum Examine submittit, Johan Henric Engelhart Gothoburgensis. Die XXX Aprilis Anno MDCCLXXVII.

Lund: Typis Berlingianis. (1777).

First edition. 4to. 1 leaf, 21, (1) pp. Fine copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A DISSERTATION ON the chemicals that can be prepared by the distillation of wine, employing progressively increasing temperatures up to the destructive distillation of the residue remaining in the retort. Products include ethyl alcohol, acetaldehyde, water, acetic acid, a fetid oil, and inorganic salts containing charcoal. The chemical and medicinal uses of the products are described. Engelhart (1759–1832), who became a celebrated physician in Lund, presented this work under the direction of Christian Wollin (1730–1798), professor of chemistry and pharmacy at the University of Lund. Rare. (Ferchl, 588; Poggendorff, II, 1364)

ENGESTRÖM, Gustav von

Beskrifning på et Mineralogiskt Fick-Laboratorium och i synnerhet Nyttan af Blasröret uti Mineralogien . . .

Stockholm: På Direct. Carl G. Ulfs Bekostnad . . . 1773.

First Swedish edition. 8vo. (5), 6–50 pp. With 2 folding copperplates (blowpipes and mineralogical apparatus). Very fine copy, in original half calf, speckled boards. Old signature inside front cover: J. M. O. Kiörning.

A BOOK OF great importance in the history of the introduction of the blowpipe into systematic inorganic chemical analysis. The text was first published in English as a supplement from a manuscript by Engeström, in Axel Frederic Cronstedt's *An Essay Towards a System of Mineralogy* (London, 1770, pp. 273–318). Cronstedt (1722–1765) is considered the first to apply the blowpipe to chemical analysis, and Engeström gives a description of Cronstedt's method and of the instrument. Described by Ferchl as an

“important treatise,” this first separate edition in Swedish was published by Anders Jahan Retzius. From this edition Christian Ehrenfried Weigel (1748–1831) made a German translation (Greifswald, 1774), to which he added his own observations. Rare. Not in Cole, Duveen, Partington, etc. (Bolton, *First Supplement*, 157; Ferchl, 143; Poggendorff, I, 670)

ENGESTRÖM, Gustav von

Laboratorium Chymicum . . . om Gull och Silfwer Fineraren . . .

Stockholm: Tryckt hos Commissar. P. A. Brodin. 1781–84.

First edition. 3 vols., 8vo., in 1. I (1781): 184 pp. II (1783): 128 pp. III (1784): 336 pp., 4 leaves (index). With 8 folding copperplates (chemical and assaying equipment). Occasional minor foxing; otherwise fine copy, in original unlettered half calf, speckled boards.

ONE OF the most important works by von Engeström, in which all aspects of the mining, extraction, refining, and chemical reactions of gold and silver are described in great detail. The ores and chemical properties of other metals are also briefly discussed (e.g., antimony, copper, lead, and mercury). Only the first volume (1781) is listed by Smith (p. 162). Rare. (Bolton, *First Supplement*, 157; Ferchl, 143; Poggendorff, I, 670)

ENGESTRÖM, Gustav von

Tal om Mineralogiens hinder och framsteg i senare ären; hållet för Kongl. Vetenskaps Akademien, vid praesidii nedläggande, den 4 Maji 1774, of Gustav von Engeström, . . .

Stockholm: Tryckt i Framl. Direct. Lars Salvii Tryckeri, 1774.

First separate edition. 8vo. 26 pp. Large engraved printer's vignette on title. Woodcut capital, head- and tailpieces. Very good copy, uncut, with wide margins, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A SCARCE OFFPRINT from the *Kongl. Vetenskaps Akademien Handlingar* (Stockholm Academy of Sciences), which outlines the difficulties encountered in mineralogical research using chemical methods. The speech was delivered on 4 May 1774, by Engeström (1738–1813), who was warden of the Stockholm mint. He discusses the problems of chemists when they attempted to analyze minerals, using the then rudimentary techniques available, with references to the works of Acosta, Baumé, Cadet, Lewis, Magellan, Scheffer, Swab, et al. There are many references to Cronstedt, under whom Engeström had studied mineralogy. On pages 20–21 there is a discussion of cobalt and its compounds and also of nickel, the metal discovered a few years

earlier by Cronstedt. Engeström also published on the chemical blowpipe, soda, borax, iron and steel, the separation of metals, etc., on which see Partington (III, 179). Not mentioned by the usual early chemical bibliographies. (Poggendorff, I, 670)

ENTRETIENS

Entretiens sur la Chimie, d'après les méthodes de MM. Thenard et Davy . . .

Paris: Boulland et Cie, Libraires-Éditeurs. 1826.

First edition. 8vo. 2 leaves, 610 pp. With 15 steel-engraved plates of chemical apparatus (by Ambroise Tardieu). Fine copy, in original mottled calf, black morocco label, spine richly gilt, small piece gnawed from middle of rear cover.

AN INTRODUCTORY textbook presented in twenty-four lectures, in dialogue form, based on Jane Marcet's *Conversations on Chemistry* (first: London, 1806). The text discusses the researches of Davy in England and Thenard in France. The teacher, Madame De Beaumont, instructs two pupils, Caroline and Gustave (cf. Marcet's "Mrs. B, Caroline, and Emily"). Comparison of the text of Marcet's *Conversations* with the present text reveals that this is a close (but not identical) version of Marcet's work. The plates are also close, but not identical, versions of those in Marcet. Cole (no. 910) states that there is an earlier French translation (Geneva, 1809). Cole (no. 1016) also mentions that there is a French edition (Bruxelles, 1825) listed in the British Library catalogue, with a note that it is a translation and adaptation by Payen of the twelfth English edition of Marcet's *Conversations on Chemistry*. The present edition is possibly the first Paris printing of the Belgian edition. Unknown to the usual bibliographers.

ENTZELT, Christoph

De Re Metallica, hoc est, de origine, varietate, & natura corporum metallicorum, lapidum, gemmarum, atque aliarum, quae ex fodinis eruuntur, rerum, ad medicinae usum deservientium, libri III. . . .

Frankfurt: Apud Chr. Egenolphum. N.d. (1551).

First edition. 8vo. 8 leaves, "271" (recte 269), (1) pp., 1 leaf (blank). Pages 93–269 misnumbered 94–271. Woodcut printer's device on title page and 5 woodcut figures in text. Historiated woodcut capitals. Italic letter. Very good, crisp copy, with wide fore- and lower margins (some uncut), in eighteenth-century half vellum, marbled boards, spine lettered in ink.

ENTZELT (Encelius, 1517–1583), of Saalfeld, Thuringia, was a pastor at Osterhausen. He was a friend of Philip Melancthon, who wrote a commendatory letter to the Frankfurt printer Egenolph, urging him to print this book,

which, he said, contains matter not found elsewhere. The letter, dated 19 August 1551, is printed on signature a2. Published five years before the *De Re Metallica* (1556) of Agricola, Entzelt acknowledges his debt to Agricola's earlier works. He was primarily interested in the medicinal uses of metals, minerals, and salts. Partington discusses the chemical content of this work. "In the field of alchemy and metallurgy Encelius holds the old view that all metals are generated from sulphur . . . and mercury. . . . In addition to the seven metals he discusses . . . minerals" (Thorndike, VI, 310). Later issues of the 1551 edition contain two extra double leaves (following F8) and an extra folding leaf (following G8), as in the second edition (Frankfurt, 1557), which has a reset title page. Otherwise the two editions are identical. The 1551 edition is very rare. Only the 1557 edition is listed by Annen, Edelstein, Hoover, Neu, Partington, Watt, et al. Not in Bolton, Caillet, D.S.B., Smith, Tylcote, etc. (British Library, *S.T.C. German Books, 1455–1600*, p. 270; Duveen, 192; Ferchl, 142; Ferguson, I, 240 [imperf.]; Ferguson Coll., 212; Poggendorff, I, 672; Ward & Carozzi, 751; Wellcome, I, 2009; Wheeler Gift, 30)

ERASTUS, Thomas

Disputatio de Auro Potabili, in qua accurate admodum disquiritur, num ex metallis, opera Chemiae, concinnata pharmaca tutè utiliterque bibi possint. . . . Adjectum est ad calcem libri Judicium ejusdem Authoris de indicatione Cometarum, ex veris fundamentis & naturae principijs erutum.

Basel: Apud Petrum Pernam. 1578.

First edition. 8vo. 4 leaves, 148 pp., 6 leaves (index); 24 pp. Roman and italic letter. Historiated woodcut capitals. Few leaves of text affected by small wormtrails or wormholes; otherwise good copy in modern marbled boards.

ERASTUS (1523–1583), a Swiss whose real name was Lieber, was originally educated in philosophy and theology at Basel. Beginning about 1549, he studied medicine for several years in Italy at Bologna and Padua. Returning to Germany, he was successively physician to count Henneberg, professor of medicine at Heidelberg, then in 1580 professor of theology and ethics at Basel. Erastus was a fierce opponent of astrology and alchemy; his writings were especially directed against Paracelsus and the iatrochemical school. "Having condemned the use of antimony . . . in a *Disputation Concerning Potable Gold*, printed at Basel in 1578, Erastus continued his objurgations against Paracelsus. . . . He again attacks the substitution of salt, mercury and sulphur for the old four elements and the Paracelsan denial of the four humors" (Thorndike [V, 664], who devotes a whole chapter to Erastus). Both Gerard Dorn in 1583 and Gaston Duclou

in 1590 published works repudiating the attacks on Paracelsus by Erastus (see Partington). Nevertheless, the views of Erastus against alchemy, astrology, and the iatrochemistry of the time were meritorious. Duveen (pp. 193–194) describes the second edition only (Basel, 1584). The final twenty-four pages comprise a discourse on comets. (British Library, *S.T.C. German Books, 1455–1600*, 285; D.S.B., IV, 388; Durling, 1381; Ferchl, 143; Lenglet-Dufresnoy, III, 156; Osler, 2530; Partington, II, 158; Poggendorff, I, 673; Watt, I, 340r)

ERBERFELDE, Heinrich

Disputatio Medica Inauguralis de Spiritibus ex Vegetabilibus per Fermentationem paratis quam . . . sub praesidio . . . Dn. Henrici Meibomii, . . . pro summis in arte medica . . . et privilegiis doctoralibus . . . publico examini submittit Henricus Erberfelde Bremensis . . . ad diem VIII. Octobris.
Helmstädt: Typis Henrici Davidis Mulleri, Acad. Typ. 1674.

First edition. 4to. 22 leaves (unpaginated). Woodcut headpieces and initials. Fine copy, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

THE DOCTORAL dissertation of Erberfelde (dates unknown), of Bremen, presented under the direction of Heinrich Meibom (1638–1700), celebrated professor of medicine and chemistry at Helmstädt. The physical properties and chemical reactions of the products of fermentation of plants are described (e.g., alcohol, acetic acid, esters, and oils), with references to the works of earlier and contemporary chemists. There are many references to Boyle's *Septical Chymist* (1661), and, like Boyle, Erberfelde questions the validity of the Paracelsian *tria prima*. Extremely rare. Unknown to Manget (*Bibliotheca Scriptorum Medicorum*, 1731) and not in the usual early chemical and medical bibliographies.

ERCKER, Lazarus

Aula Subterranea Domina Dominantium Subdita Subditorum. Das ist: Untererdische Hofhaltung, ohne welche weder die Herren regieren, noch die Untertanen gehorchen können. Oder Gründliche Beschreibung der jenigen Sachen, so in der Tieffe der Erden wachsen, als aller Ertzen der Königlichen und gemeinen Metallen, auch fürnehmster Mineralien . . . zusambt angehangter Auslegung der Terminorum und Redarten der Bergleute, Probiren, Wardeinen und Müntzmeister, deren sie sich was ihre Profession belangt, zu bedienen pflegen . . .

Frankfurt: In Verlegung Johann David Zunners, Buchhändlers. Gedruckt bey Paulus Hummen Sel. Wittib. 1672.

Fifth edition. Folio. 8 leaves (last blank), 332 pp., 2 leaves + 2 leaves, 47, (1) pp. Engraved allegorical title page (P. Kilian

Von dem Gold-Erz.

97

Stäg vest an/damit er sich nicht biege oder auffblähe. Die Größe aber ^{Die Größe} des Raders soll seyn sieben Spannen lang/fünff Spannen weit. und einer guten Spannen tieff/ mit einem Boden/ der auff zween Drittheil in Räder reiche/und mit dem einen Drittheil vorn zum Auftragen komme/



Der Wäscher so mit dem Räder arbeitet/ A. Die mitler Bühn/ darauß das Durchzerene fället/ B. Die under Bühn/ auff der das Werck auff dem Plaen-herd aebet/ C. der Plaen-herd/ D. Der Arbeiter/ so auff die ober Bühne das Werck laufft/ und durch ein Loch u Räder stürgt/ E. die Wasser-Minne/ F.

daselbst er dann mit Blech beschlagen seyn solle. Es soll auch der Räder auff beyden Seiten angeschlagene hölzerne Klößlein haben / mit welchen

sculp.) and letterpress title. Gothic letter. With 41 large woodcuts in text. Divisional title page to section by Berward, dated 1673. Light embrowning of some leaves (as usual), and 1 leaf (pp. 299–300) with repair (not affecting text); otherwise very good copy, in early-eighteenth-century unlettered half vellum, marbled boards.

THE FIRST edition to contain the important annotations and *Interpres phraseologiae metallurgicae* (glossary of mining terms) of Christian Berward, separately paginated with its own title page dated 1673. The engraved title of the main work is also dated 1673, although the letterpress title is dated 1672. The forward is signed by Johannes Hiskias Cardilucius (fl. seventeenth century), the physician and chemist who edited and enlarged the work. This is the first edition to appear with the title *Aula Subterranea*, and it was translated by Sir John Pettus into English as *Fleta Minor. The Laws of Art and Nature* (London, 1683). (D.S.B., IV, 394; Ferchl, 144; Ferguson, I, 243; Ferguson Coll., 214; Hoover, 283; Partington, II, 104; Sisco & Smith, 330; Ward & Carozzi, 753; Wellcome, II, 527)

ERCKER, Lazarus

Aula Subterranea Domina Dominantium Subdita Subditorum. Das ist: Untererdische Hoffhaltung, Ohne welche weder die Herren regieren, noch die Unterthanen gehorchen können. Oder Gründliche Beschreibung derjenigen Sachen, so in der Tieffe der Erden wachsen, als aller Ertzen der Königlichen und gemeinem Metallen, auch fürnehmster Mineralien . . . zu samt angehängter Auslegung der Terminorum und Red-Arten der Bergleute, Probierer, Wardeinen und Müntzmeister deren sie sich, was ihre Profession belangt, zu bedienen pflegen . . .
Frankfurt: In Verlegung Johann David Zunner. 1703.

Seventh edition. Folio. 6 leaves, 196 pp., 2 leaves; 39, (1) pp. With undated engraved title page, and 41 large woodcuts in text. Ornamental woodcut capitals, head- and tailpieces. Paper very lightly toned; otherwise fine copy in original unlettered vellum.

THE PENULTIMATE early edition of this famous book, containing the engraved title page from the same plate as the 1672 edition, with vignette and border at bottom to occupy the difference between folio and quarto pages. The contents and illustrations are the same as the 1672 edition. The letterpress title page is dated 1703, and the divisional title to the section by Christian Berward is dated 1702. As in the 1672 edition, the dedication is signed by Johann David Zunner, and the forward is by Johannes Hiskias Cardilucius. The title page erroneously states that this is the fourth edition: in fact it is the third edition of Ercker's

work to appear under the title *Aula Subterranea*. The second edition of this title appeared in 1684, and the fifth and final edition in 1736. Scarce. Not in Duveen, Edelstein, Hoover, Neu, Smith, Ward & Carozzi, etc. (Bolton, 430; D.S.B., IV, 394; Ferchl, 144; Ferguson, I, 245 [not in Young Coll.]; Partington, II, 104; Roller & Goodman, I, 365–366; Sisco & Smith, 333; Wellcome, II, 527)

ERCKER, Lazarus

Aula Subterranea Domina Dominantium Subdita Subditorum. Das ist: Untererdische Hoffhaltung . . . oder Gründliche Beschreibung dererjenigen Sachen, so in der Tieffe der Erden wachsen, als aller Ertzen der Königlichen und gemeinen Metallen, auch fürnehmster Mineralien, durch welche, nechst Gott, alle Künste, Übungen und Stände der Welt gehandhabet und erhalten werden, . . . Zusamt einem neuen angehengten gründlichen Unterricht von dem Salpeter pflantzen . . . Ein sehr vollständig und nützlich Werck für Berg- und Hütten-Bediente, und alle die mit Metallen und Mineralien umzugehen willens oder verbunden sind. . . .
Durch J.E.C. . . .

Frankfurt: Verlegt von Johann David Jung. 1736.

Final German edition. Folio. 6 leaves, 208 pp., 2 leaves, 36 pp. Engraved title page (Badollet fec.), letterpress title in red and black, and 44 large woodcuts of mining, assaying, distilling, etc. Divisional title page to *Interpres phraseologiae*, by Christian Berward, dated 1736. Engraved arms of the Landgrave of Hessen, the dedicatee (Badollet sculp.). Fine, crisp copy, in original vellum, rebounded in matching vellum, brown morocco label.

THE EIGHTH, final, and most complete German edition. Although "the title-page credits one 'J.E.C.' with editing and enlarging it, this is essentially a reprint of the 1703 edition, with an added section on gunpowder, illustrated by engravings of powder mills and graining shops. 'J.E.C.' may stand for Johann Hiskias Cardilucius, who wrote the Foreword to the 1672 edition, or may refer to another writer responsible for the section on gunpowder. . . the illustrations in this 1736 edition are identical with the ones in the 1580 edition and with a few exceptions were obviously printed from the same blocks" (Sisco and Smith). This edition was translated into Dutch (The Hague, 1745). (Bolton, 430; Cushing, E88; D.S.B., IV, 394; Duveen, 195; Ferchl, 144; Ferguson, I, 244; Ferguson Coll., 214; Honeyman, 964; Neu, 1317; Partington, II, 104; Sisco & Smith, 334; Smith, 162; Ward & Carozzi, 754; Watt, I, 340z; Wellcome, II, 527)

ERCKER, Lazarus

Beschreibung, Allerfürnemisten Mineralischen Ertzt unnd Bergkwercks arten, wie dieselbigen, und eine jede in sonderheit, irer natur und eigenschafft nach, auff alle Metaln Probirt, und im kleinem feuer sollen versucht werden, mit erklärang etlicher fürnemer nützlicher Schmelztwerck, im grossen feuer, auch scheidung Goldts, Silbers, und anderer Metaln, Sampt einem bericht dess Kupffer-saigerns, Messing brennens, und Salpeter siedens, auch aller saltzigen Mineralischen proben, und was denen allen anhengig, in fünf Bücher verfast, Dessgleichen zuvorn niemals in Druck kommen. . . .

Frankfurt: (Johannem Schmidt in verlegung Sigmundt Feyrabends.) 1580.

Second (first Frankfurt) edition. Folio. 4 + 134 + 3 folios. Title in red and black with woodcut vignette of laboratory, woodcut arms of Emperor Maximilian II, and 41 large woodcuts in text. Very fine copy in seventeenth-century gilt-ruled speckled calf, all edges gilt, with silk ties.

THE FIRST complete edition and the last published in the author's lifetime of this classic work on mining and metallurgy, containing nine more woodcuts than the first (Prague, 1574). Ranking in importance with the *De la pirotechnia* (1540) of Biringuccio and the *De re metallica* (1556) of Agricola, this work is second only to the latter "in the number of original contributions to the literature of mining and metallurgy and the beauty of the graphic treatment of the crafts" (Dibner). It "presents a systematic review of the methods of testing alloys and minerals of silver, gold, copper, antimony, mercury, bismuth, and lead; of obtaining and refining these metals, as well as of obtaining acids, salts, and other compounds. . . . Ercker's *Beschreibung* may be regarded as the first manual of analytical and metallurgical chemistry" (D.S.B.). Ercker (1530–1594) was inspector-general of the mines of Hungary, Transylvania, and the Tyrol. Very rare. (Annen, 37; Bolton, 430; Dibner, 89; D.S.B., IV, 394; Ferchl, 144; Ferguson, I, 245 [not in Young Coll.]; Partington, II, 104; Sisco & Smith, 327; Thornton & Tully, 74; Ward & Carozzi, 752; Wellcome, I, 2066)

ERCKER, Lazarus, and PETTUS, John

Fleta Minor. The Laws of Art and Nature, in Knowing, Judging, Assaying, Fining, Refining and Inlarging the Bodies of confin'd Metals. In Two Parts. The First contains Assays of Lazarus Erckern, Chief Prover (or Assay-Master General of the Empire of Germany) in V. Books: originally written by him in the Teutonick Language, and now translated into English. The Second contains Essays on Metallick Words, as a Dictionary to many pleasing Discourses. By Sir John Pettus, of Suffolk, Kt. . . .

London: Printed, for the Author, by Thomas Dawks, his Majesty's British Printer, at the West-end of Thames-street. 1683.

First English edition. Folio. 23 leaves, 345, (1) pp.; 4 leaves, (1–80), 81–133, (1) pp. Engraved frontispiece portrait of Pettus aged 70 (by R. White), dated 1683; 43 large copperplates in text, numerous woodcut calligraphic initials. Very fine, crisp copy, with wide margins, in original calf, strongly rebaced in matching blind-tooled calf, crimson morocco label.

THE ENGLISH translation of Ercker's *Aula Subterranea* (Frankfurt, 1672), by Sir John Pettus (1613–1690), deputy-governor of the royal mines, who devoted most of his life to the service of Charles I and II. Losing almost all of his estates in the royal cause, he was several times in the notorious Fleet Prison for debt, where he wrote the present work: hence the punning title. The second part, with separate divisional title page dated 1683, is the first metallurgical dictionary in English. Pettus paid for the printing of this work, of which two issues appeared. This is the so-called second issue, more complete than the first, containing in addition the portrait, dedications to the Earl of Halifax, subscribers, Warden of the Fleet, and an epistle to the reader. An eight-page list of key words precedes the dictionary. The *Fleta Minor* is one of the most important books of the seventeenth century on metals and assaying. (Annen, 38; Bolton, 734; D.S.B., IV, 394; Edelstein, 3896; Ferchl, 144; Ferguson, I, 245 [not in Young Coll.]; Neu, 3139; Partington, II, 104; Sisco & Smith, 337; Wing, P1906; Wellcome, II, 527)

ERCKER, Lazarus, and PETTUS, John

Fleta Minor. The Laws of Art and Nature, in Knowing, Judging, Assaying, Fining, Refining and Inlarging the Bodies of confin'd Metals. . . .

London: Printed for and sold by Stephen Bateman at the Sign of the Bible over against Furnivals-Inn Gate in Holbourn. 1686.

First edition, third issue. Folio. 23 leaves, 345, (1) pp., 4 leaves, (1–80), 81–133, (1) pp. Title page in red and black. Engraved frontispiece portrait of Pettus aged 70 (by R. White), dated 1683; 43 large copperplates in text, numerous woodcut calligraphic initials. Fine, tall copy, with wide margins, in original ruled sprinkled calf, gilt. Old signature on title page: "Hen. Ben. Hall."

THE FINAL issue, with a new title page and different imprint. "Inspection of the text . . . shows it to be indistinguishable from that of the first and second issues. The second part . . . 'Essays on Metallick Words,' bears a separate title-page in the last two issues, dated 1683 and naming Dawks as printer. . . . The paper bears the same watermarks, and there are the same errors in pagination.

There is no doubt that all the sheets were printed at one time, supposedly in 1683, and that they were reissued as occasion demanded" (Sisco and Smith). On page 17 of this issue the engraved plate is inverted. In the 1683 issue the plate is correctly printed. The printing of the text on page 17 of both issues is identical. Sisco and Smith state that the frontispiece portrait (here present) is missing in some copies. Ferguson's conjecture about the dates of the second and third issues (1683 being altered to 1686 by insertion of V for II) is wrong: the title pages have been completely reset. (Bolton, 734; D.S.B., IV, 394; Duveen, 468; Ferchl, 407; Ferguson, II, 185–186; Ferguson Coll., 214; Hoover, 633; Neu, 3140; Partington, II, 104; Sisco & Smith, 338; Smith, 163; Wellcome, II, 527; Wing, P1907)

ERDMANN, Otto Linné

Populäre Darstellung der neueren Chemie mit Berücksichtigung ihrer technischen Anwendung. Entworfen von Otto Linné Erdmann, . . .

Leipzig: Verlag von Johann Ambrosius Barth. 1828.

First edition. 8vo. x, 586 pp., 1 leaf (additions and errata). Fine, crisp copy in contemporary marbled boards, gilt-lettered green label on spine. From the library of Professor Franz Sondheimer, with his bookplate on the first free endpaper.

ERDMANN (1804–1869) became full professor of technical chemistry (1830) at Leipzig, where he published this, his first book on industrial chemistry. "His textbooks, and especially his encyclopedia of industrial chemistry, helped to educate the revolutionary generation of Kolbe and Kekulé. . . . Erdmann's researches, which spanned mineralogical, industrial, inorganic and organic chemistry, were primarily descriptive and analytical. . . . Erdmann was able to compete with Liebig at Giessen and attract large numbers of students, many of whom achieved eminence, e.g., Gerhardt" (W. H. Brock [D.S.B., IV, 394–395]). He discovered several important organic compounds (e.g., isatin, tetrachloroquinone, and trinitroresorcinol), on which see Partington. One of Erdmann's rarest works, giving an excellent account of the state of chemical technology in the early nineteenth century. Not in D.S.B., Duveen, Edelstein, Ferchl, Partington, Poggendorff, Smith, Waller, Wellcome, etc. (Bolton, *First Supplement*, 157 [wrong date: 1825]; Sondheimer, 488)

EREMITA, Donato d'

Dell'Elixir Vitae di Fra Donato d'Eremita Di Rocca d'Euandro dell'Ord. de Pred. Libri Quattro . . .

Naples: per Secondino Roncagliolo con licenza de superiori. 1624.

First edition. Folio. 6 leaves (including engraved title), 19 full-page copperplates, 1 blank leaf, 182 pp. (pp. 152–153 misnum-

bered 150–151). Outer margins of engraved title leaf frayed (not touching engraving), minor stains to first few leaves, and short marginal tear in second plate (no loss); otherwise fine copy in contemporary limp vellum. Engraved Masonic bookplate dated 1900 on front pastedown endpaper.

ONE OF the rarest and most beautiful books on distillation from an alchemical point of view. The magnificent plates with their decorative borders are "unexcelled among distillation books" (F. S. Taylor). Of the life of the author (fl. 1624), a Dominican monk who lived in Naples, nothing is recorded. Dedicated to Ferdinando II, Grand Duke of Tuscany, this treatise on the Elixir of Life (ethyl alcohol and other compounds) shows that d'Eremita was conversant with alchemical processes and practices. The first three books on the Elixir are followed by the long fourth book, which deals with a great number of substances used in its preparation and the necessary recipes. The plates depict furnaces and various distillation and other chemical apparatus, with alchemical experiments in progress. Full descriptions are given for the many processes for making alcohol, also a copious account of the numerous herbs used in the preparation of liqueurs. There is a dictionary of medical terms (pp. 133–165) and list of medical writers (pp. 166–168). (British Library, *S.T.C. Italian Books, 17th Century*, 1986, p. 319; Duveen, 176; Ferchl, 129; Ferguson Coll., 214; Krivatsy, 3672; Neu, 1199; Partington, II, 87; Taylor, *A Hundred Alchemical Books*, 1952, pp. 11–12; Wellcome, I, 2069)

ERLING, Jacob Johan

Dissertatio Chemica Animadversiones Celeberrimi Gmelin, de Natura Acidi Nitrici Examinans. Quam . . . praeside Mag. Joh. Gadolin, . . . Pro gradu philosophico . . . Jacobus Johannes Erling, Borea-Fenno, . . . die 20 Junii 1801.

Abo: In Officina Frencckelliana.

First edition. 4to. 2 leaves, 10 pp. Mint copy, uncut and with wide margins, in quarter maroon morocco antique, marbled boards, spine gilt-lettered and dated. From the library of Professor Franz Sondheimer, with his bookplate.

AN IMPORTANT dissertation by Erling (dates unknown), with the famous Finnish chemist Gadolin (1760–1852) presiding, in which the attack on Lavoisier's theory of the nature of nitric acid by J. F. Gmelin is successfully refuted. There are many references to the works of contemporary chemists (e.g., Crell, Lavoisier, Priestley, Richter, and Vauquelin). Very scarce. Not in Bolton, D.S.B., Duveen, Edelstein, Ferchl, Ferguson, Neu, Poggendorff, Smith, Waller, Watt, Wellcome, etc. (Partington, III, 235; Sondheimer, 579)



Eremita. Dell'Elixir Vitae. Naples, 1624.

ERLING, Jacob Johan

Dissertatio Chemica Animadversiones Celeberrimi Gmelin, in Theoriam Lavoisierianam, de Natura Acidi Nitrici Examinans. . . Praeside Mag. Job. Gadolin, . . . pro gradu philosophico publicae censurae subjicit Jacobus Johannes Erling, Borea-Fenno. In Auditorio Minori die 20 Junii 1801, . . .

Abo: In Officina Frenckelliana. (1801).

First edition. 4to. 2 leaves, 10 pp. Mint copy, uncut with wide margins, in maroon quarter cloth antique, marbled boards, spine labeled: Gadolin, *Nature of Acids. 1801–1802.*

A DISSERTATION ON the preparation, composition, and reactions of nitric acid, being one of a series of replies to Gmelin's rejection of Lavoisier's theory of acids, which appeared in Crell's *Chemische Annalen* (1796). The phlogistic opinions of Stahl are compared with those of Lavoisier, and the conclusion is reached that nitric acid is a compound of hydrogen, nitrogen, and oxygen. The experiments of Gmelin on the formation of nitrogen oxides (by passing electric discharges through mixtures of nitrogen and oxygen) are described. Erling presented this work under the direction of Gadolin at Åbo. (Partington, III, 235)

ERXLEBEN, Johann Christian Polycarp

Anfangsgründe der Chemie von Job. Christ. Polyk. Erxleben. . . Göttingen: Johann Christian Dieterich. 1775.

First edition. 8vo. 16 leaves, 472 pp., 26 leaves. Fine copy in contemporary speckled boards.

"FIRST EDITION of an important early contribution to the history of chemistry. Several editions were published and it was translated into Russian in 1798. The author was professor of philosophy and physics at Göttingen, where he died at the early age of 33" (Duveen). Erxleben (1744–1777) investigated fixed air (carbon dioxide), gold purple (colloidal gold), and the red color of alum from Brunswick (owing to cobalt). There is a good bibliography of chemistry, including alchemy, on pages 8–22, which is praised by Partington. The author discusses Black's and Meyer's theories in detail, to the advantage of Black. Posthumous editions were edited by J. C. Wiegand. The first edition is very scarce. Not in Blake, D.S.B., Edelstein, Ferguson, Ferguson Coll., Morgan, Smith, Sondheimer, Waller, Watt, Wellcome, etc. (Bolton, 430; Duveen, 195; Ferchl, 145; Neu, 1321; Partington, III, 591; Poggendorff, I, 679)

ERXLEBEN, Johann Christian Polycarp

Anfangsgründe der Naturlehre. Entworfen von Johann Christian Polycarp Erxleben. . . Sechste Auflage. Mit Verbesserungen und vielen Zusätzen von G.C. Lichtenberg. Göttingen: Johann Christian Dieterich. 1794.

Sixth edition. 8vo. xlv, (1), 773, (1) pp., 15 leaves. With 8 folding copperplates. Fine copy in contemporary mottled half calf gilt, marbled boards, tan gilt-lettered label.

THE FINAL and best edition of this important work, brought up-to-date by Lichtenberg. The first edition appeared at Göttingen and Gotha in 1768. Air, light, heat, magnetism, electricity, and related topics are extensively covered, together with a great deal of chemistry. Bolton (pp. 430–431) cites editions of 1775, 1784, and 1793, but not this 1794 edition. Very scarce. Not in Blake, D.S.B., Duveen, Edelstein, Ferchl, Ferguson Coll., Morgan, Neu, Smith, Waller, Wellcome, Wheeler Gift, etc. (Partington, III, 591; Poggendorff, I, 679)

ESCHENBACH, Christian Gotthold

De Liquoribus Salinis Officinarum eorumque Medicis Virtutibus Specimen . . . pro summis in medicina, honoribus defendet M. Christianus Gotthold Eschenbach . . . XX mens. Jun. MDCCLXXXIII.

Leipzig: Ex Officina Klaubarthia. (1783).

First edition. 4to. 28 pp. Fine copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A DOCTORAL DISSERTATION of pharmaceutical chemical interest by Eschenbach (1753–1831) on the medicinal value of solutions of various salts, with numerous references to the writings of contemporary chemists. The praeses is not named. The author founded the chemical laboratory at the University of Leipzig and became the first professor of chemistry there. He translated the works of several scientists (e.g., Brugman and La Metherie). Blake, Bolton, Ferchl, Poggendorff, and Waring list his various publications but not this title, which is unrecorded by the usual authorities.

ESCHENMAYER, Carl Adolph

Principia quaedam Disciplinae Naturali, imprimis Chemiae ex Metaphysica Naturae Substernenda. Dissertatio inauguralis . . . praeside G.C.C. Storr . . . A. D. (blank) Mai. MDCCXCVI. . . Auctor Carl Adolph Eschenmayer Württembergo-Neoburgensis.

Tübingen: Litteris Fuesianis. (1796).

First edition. 4to. 27, (1) pp. Very fine copy, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated, with contemporary Dutch gilt wrapper bound in.

ESCHENMAYER (1770–1852), born at Württemberg, was a physician, scientist, and philosopher who belonged to the so-called dynamic school of Gren, Kant, et al. In this doctoral dissertation he examines from a philosophical point of view the basic tenets of chemistry, arguing that matter is the result of the opposite tendencies of attractive and repulsive forces. The concept is of interest as it foreshadows theories of electrochemistry that were put forward by others several years later, based on experimental data rather than theoretical speculation (as here). The present work was summarized by F. W. J. Schelling (1775–1854) in *Ideen zu einer Philosophie der Natur* (Landshut, 1803, pp. 448 et seq.). The praeses for this thesis was Gottlieb Conrad Christian Storr (1749–1821), professor of chemistry, botany, and medicine at Tübingen (see Poggendorff, II, 1018–1019). Scarce. Not in Blake, Bolton, Duveen, Edelstein, Ferguson, Ferguson Coll., Neu, Smith, Waller, Watt, Wellcome, etc. (Ferchl, 145; Partington, IV, 165; Poggendorff, I, 680)

ESPAGNET, Jean d'

Enchyridion Physicae Restitutae: Or, The Summary of Physicks Recovered. Wherein the true Harmony of Nature is explained, and many Errours of the Ancient Philosophers, by Canons and certain Demonstrations, are clearly evidenced and evinced.

London: Printed by W. Bentley, and are to be sold by W. Sheares at the Bible, and Robert Tutchein at the Phenix, in the New-Rents in S. Pauls Church-Yard. 1651.

First English edition. 12mo. 12 leaves (last blank), 167, (1) pp. First 3 leaves (signatures A1–A3) and blank leaf (signature A12) lacking. Several leaves sprung in signature D; otherwise a good copy in late-eighteenth-century brown russia, both covers richly gilt with "John," "Mary," "GR" (surmounted by a coronet), and religious symbols in gilt, spine gilt and blind-stamped, by the Buckingham Palace Bindery for King George III. Bound with: Nollius, Heinrich, *The Chymists Key* (London, 1657).

ACCORDING TO Ferguson, Espagnet (fl. 1603–1650) "was believed to be Don Janus Espagnet, a senator of the parliament of Toulouse. In 1664, when Borrichius met the son, also a senator of Toulouse, . . . and a chemist wholly devoted to the study of Raymund Lully, he asked him if his father had been an adept, and had published the book. He received no satisfaction as to the first point, . . . but he admitted the second." The *Enchyridion* first appeared in Paris in 1608 and was the first treatise in France to oppose the physics of Aristotle. It is of chemical interest. A rare work, this copy has a distinguished provenance. The first three leaves missing in this copy are not as serious a defect as might be expected, for, according to Duveen, A1 and A2 "are blank save for signatures and . . . the printer's device."

A3 is the missing title page. A1 and A12 are also missing in the Wellcome copy. Not in Bolton, Caillet, Edelstein, Ferchl, Mellon, Partington, Waller, Watt, etc. (Duveen, 196; Ferguson, I, 250 [not in Young Coll.]; Ferguson Coll., 215; Neu, 1323; Pritchard, 446; Smith, 164; Waite, 285; Wellcome, II, 530; Wing, E3258; New Wing, E3276A)

ESPAGNET, Jean d'

Enchyridion Physicae Restitutae, in quo verus naturae concentus exponitur, plurimique antiquae Philosophiae errores per canones & certas demonstrationes dulciter aperiuntur. Tractatus alter inscriptus Arcanum Hermeticae Philosophiae Opus: in quo occulta Naturae & Artis circa Lapidis Philosophorum materiam & operandi modum canonice & ordinate fiunt manifesta. Utrumque opus eiusdem Auctoris anonymi. Spes mea est in agno.

Geneva: Sumpt. Ioannis Ant. & Samuelis de Tournes. 1653.

First de Tournes edition. 8vo., 2 vols. in 1. 9, (1), 179, (1) pp. + 6 leaves, 83, (1) pp. Separate divisional title page to *Arcanum hermeticae philosophiae opus*. Woodcut printer's device on both titles. Few minor water stains; otherwise good copy, in blind-ruled calf antique, spine gilt-lettered and dated.

THE *Enchyridion* was the first work to be printed in France to oppose Aristotelian physics, and the second was the principal alchemical work of Espagnet. Containing details on the preparation and properties of the philosopher's stone, the *Arcanum hermeticae* is commended by Borrichius as the "wisest, most open and free from obscurities and double meanings of all the works he had perused" (Ferguson). The anagram "Spes mea est in agno" is that of Jean d'Espagnet. Edited by Nathan Aubigné de la Fosse (i.e., Albineus, 1601–ca. 1669), the present edition was sold separately (as here), and it was also combined with other alchemical works in sets under the title *Bibliotheca Chemica Contracta* (Geneva, 1653 and 1673). "Ouvrage de grande réputation parmi les Adeptes de la Philosophie Hermétique" (Caillet [3668], describing another edition [Paris, 1642]; he also states that this edition is an "ouvrage fort rare"). (Bolton, 947; Caillet, 147; Duveen, 10; Ferchl, 6; Ferguson, I, 17; Ferguson Coll., 22; Hoover, 58; Krivatsy, 460; Neu, 153; Watt, I, 14x; Wellcome, II, 25)

ESSAYS, AT EXETER

Essays, by a Society of Gentlemen, at Exeter. . . . Exeter: Printed by and for Trewman and Son.

London: Sold by Cadell and Davies, Strand; Robinsons, Pater-noster-Row; and Robson, New Bond-Street. (1796).

First edition. 8vo. viii, 573, (1) pp., 1 leaf (errata). With 5 fine lithograph plates (by J. Swete and S. Alken). Pristine copy with wide margins, in original speckled tan calf, spine gilt-ruled,

dark-blue morocco label. With armorial bookplates of Mathew Wilson and Frances Mary Richardson Currer (1785–1861), a famous book collector who owned a library of over 15,000 volumes (see D.N.B.).

A SERIES OF scholarly essays, by anonymous authors, on various subjects, including some of chemical interest: e.g., the present state of philosophy and science (pp. 271–296); composition and decomposition of the atmosphere (pp. 351–394); and light as a chemical principle (pp. 491–541). According to a contemporary manuscript tipped into this volume, the chemical essays were written by a chemist named Parr, probably Bartholomew Parr (1750–1810), a medical writer (M.D., Edinburgh, 1773) and physician at the Devon and Exeter Hospital (see D.N.B.). Other essays are on physics, archaeology, poetry, literature, etc. These were also read at the meetings of this obscure west country (Devonshire, England) society. The advertisement (dated Exeter, 21 July 1796) states, “Should this volume meet with approbation, another will probably follow.” It is not known if the projected second volume ever appeared. A very rare work, printed in limited number for the dozen or so members of the society and their friends. This copy has a distinguished provenance, having come from the library of F. M. R. Currer. Not in Wellcome or the usual bibliographies. (Blake, 138)

ESSICH, Johann Gottfried

Dissertatio Inauguralis Chymico-Medica de Putredine . . . praeside Ernesto Antonio Nicolai . . . pro gradu doctoris . . . X. Junii MDCCLIX. Publice defendet auctor Joannes Godofredus Essich Augustanus.
Jena: Litteris Felicis Fickelscherrii. (1769).

First edition. 4to. 4 leaves, 44, 12 pp. Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

ESSICH (dates unknown) was a notable Augsburg pharmaceutical chemist and a prolific author. He published a *Chemisches Handbuch* (Augsburg, 1786), *Med.-pharmaceutisches und Therapeutisches Handbuch* (Augsburg, 1778), and many other works. Enslin and Engelmann (*Bibliotheca Medico-Chirurgica et Pharmaceutico-Chemica*, Leipzig, 1838, p. 114) list fifteen titles in addition to the above handbooks, but not this very rare doctoral dissertation on fermentation chemistry. Essich describes all types of putrefaction and fermentation processes of plants and animals, with references to Boerhaave, Henckel, Marggraf, Meyer, Pott, Pringle, Spielmann, et al. Separately paginated at the end (12 pp.), with its own title page, is a brief account of the sixteenth-century physician Janus Cornarius (1500–1558), delivered by the dean, Ernst Gottfried Baldinger (1738–

1804), on the same day. Despite his many publications, Essich appears to be unknown to historians of chemistry, and almost none of the bibliographies list his works. No reference to the present dissertation has been located.

ETTMULLER, Michael

Nouvelle Chymie Raisonnée de Michel Ettmuller, celebre medecin & professeur de l'Université de Leipsik.

Lyons: Chez Thomas Amaultry, rue Merciere, au Mercure Galant. 1693.

First French edition. 12mo. 12 leaves, 443 pp., 30 leaves. Woodcut on title page. Good copy in original calf, gilt.

THE ONLY French translation of *Chymia rationalis ac experimentalis curiosa* (Leyden, 1684). Partington states, “Some contemporary notices say this posthumous work was disowned by Ettmuller’s widow and heirs as by an unnamed ‘gold-digger’ and it is probably compiled from lecture notes.” It is mainly on pharmaceutical chemistry, and a large number of authors are cited. Speaking as one who had tried many of the experiments he describes, Ettmuller opposed the acid-alkali theory of Sylvius and often refers to the work of Boyle. There is a brief discussion of the philosopher’s stone (p. 242) and of transmutation (pp. 441–443), which the author believed to be possible, though very difficult. (Bolton, *First Supplement*, 158; Duveen, 197; Ferguson Coll., 217; Neu, 82; Partington, II, 298; Wellcome, II, 534)

ETTMULLER, Michael

Opera Omnia: nempe, Institutiones Medicinae . . . Collegium Chirurgicum. Notae in . . . Schroederi Pharmacopoeam. Chymia Rationalis . . . cum praefatione D. Georgii Franci . . .
Frankfurt: Sumptibus Johannis Davidis Zunneri. Amsterdam: prostate apud Henricum Wetstenium. 1688.

First edition. Folio, 3 parts in 1 vol. 6 leaves, 718, 628, 270 pp., 26 leaves. Title page in red and black, with large woodcut. Fine copy, in original vellum.

THE COMPLETE works of Ettmuller (1644–1683), professor of botany and medicine at Leipzig, where he also lectured on chemistry. He is reputed to have died at the early age of thirty-nine as the result of a chemical experiment. He studied in Leipzig, Italy, France, Holland, and England, where he is said to have been influenced by Boyle. One of the most important representatives of chemistry and pharmacy in Germany at the time, he enjoyed an immense reputation and was a member of several societies, including the Academia Naturae Curiosorum. Ferguson gives further details on his life, and Partington discusses his importance in chemistry. An incomplete *Opera omnia* appeared at Lyons (1685), but the present massive folio is the first complete

edition. (Krivatsy, 3689; Manget, *Bibliotheca Scriptorum Medicorum* [1731], I, pt. 2, p. 238; Partington, II, 298; Wellcome, II, 534)

ETTMULLER, Michael

Opera Omnia in Compendium Redacta. In quo continentur, I. Institutionum Medicarum Synopsis ab ipso Authore concinnata. II. Pyrotechniae Rationalis seu Collegii Chymici Epitome. III. Commentarius in Schroderi Pharmacopeiam, contractus. IV. Universa Praxis Medica in angustum coacta. Cui in calce adjicitur Chirurgia Medica summatim perstricta. Editio novissima, diligenter recognita, & a mendis expurgate. Venice: Apud Michaellem Hertz. 1704.

First Venice edition. 4to. 8 leaves, 454 pp. Top of spine worn; otherwise very good copy in contemporary vellum.

AN ABBREVIATED version of several works by Etmuller, including a condensation of his *Chymia Rationalis* (Leyden, 1684). "In this edition of the *Collegium Chymicum* the text is difficult to read since it is full of symbols. It appears to be an abbreviation of *Chymia Rationalis* and the two are different works" (Partington). The first edition of this title was published in London, 1701. Another appeared at Amsterdam, 1702, enlarged to contain parts I–IV (as in the present title). An "edition novissima" (Venice, 1727) contains for the first time a thirty-six-page section on opium. Only the 1701 and 1702 editions were known to Ferchl. Rare. Not in Manget, Waller, Wellcome, or the usual bibliographies. (Blake, 139; Partington, II, 298)

ETTNER, Johann Christoph von

Arcana Petri Poterii Andegavensis . . . Inventa Chymica anxie hactenus desiderata, secundum mentem Autoris elaboranda, ex Autoris excellentissimi textu combinata, exhibente editione Francofurtensi Wilhelmi Richardi Stockii, sub anno M.DC.L. Adiuunctis enchirisisibus accuratissimis. Bologna: Typis Iulij Burzagij. 1700.

First Italian edition. 8vo. 40 pp. Two large woodcuts of chemical apparatus on page 12. Fine copy, uncut, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated (Poterius. Arcana Inventa Chymica. 1700).

ON SAL AMMONIAC, oleum antimonii, and other salts, based on the writings of Pierre de la Poterie, or Pierre Potier, with references to Helmont, Kerckring, et al. This Italian translation was made from the German edition of Ettner (*Manes Poterianae . . . Inventa Chymica*, Frankfurt and Leipzig, 1692), on which see Ferguson (I, 252). Although complete by itself, with separate pagination, this work was published with Lemery's *Corso di chimica* (Bologna, G. Borzaghi, 1700). On pages 36–40 there is a letter on "salis armoniaci

martialis," by Ettner, dated 12 November 1689, from Posnan. There is a copy of this edition in the E. F. Smith Collection, University of Pennsylvania, and one in the Wellcome Library, London. Duveen (pp. 197–198) lists another edition of forty pages. (Frankfurt and Leipzig, n.d., but after 1692). Rare. (Smith, 288; Sondheimer, 1278)

ETTNER, Johann Christoph von

Des Getreuen Eckharts entlauffener Chymicus, in weltchem vornemlich der Laboranten und Process-Krämer Bossheit und Betrügerey. Wie dieselben zu erkennen und zu fliehen; hernach bewährteste Artzney-Mittel in allerhand Kranckheiten und Zufällen menschlichen Leibes zu gebrauchen; dann sonderliche philosophische; wie auch eine gründliche Erörterung vieler zweiffelhaffter Vorträge . . .

Augsburg und Leipzig: bey Lorentz Kroniger u. Gottlieb Göbels sel. Erben, Buchhandl. 1696.

First edition. 8vo. 8 leaves, 1120 pp. Engraved allegorical frontispiece. Title page in red and black (shaved at fore-edge). Occasional minor browning; otherwise very good copy, in contemporary speckled calf, gilt, maroon label, blind-stamped initials "F.M.S." on spine. Bookplate: Conventus Viennensis.

ETTNER (1650–1724), a noted physician and chemist of Breslau, often wrote under the pseudonym Getreuer Eckhart. Little is recorded of his life beyond what is said on the title pages of his works. He was "in active conflict with all the medical, pharmaceutical and chemical quackery of his time, and on that account his writings are of some value" (Ferguson). Ettner traveled to England, where he met Boyle, and during one visit Boyle discussed his experiments on colors (pp. 653–655). On another occasion, Ettner met Boyle at Gresham College (pp. 678–681). This work is introduced by a poem praising chemistry, and throughout the book Ettner inveighs against the fraudulent practices of contemporary chemists. The first edition is very rare. Duveen, 198; Fulton, 359; Neu, 1337; Parkinson & Lumb, 782; Rosenthal, 278; and Wellcome, II, 535, list only the 1697 second edition. (Ferchl, 146; Ferguson, I, 252; Hardin, *Ettner Bibliographie*, 1988, p. 85; Kopp, *Die Alchemie*, II, 394)

ETTNER, Johann Christoph von

Rosetum Chymicum, Oder: Chymischer Rosen-Garten, Aus welchem Der vorsichtige Kunst-Beflissene Voll-blühende Rosen, Der Unvorsichtige Laborant aber Dornen und verfaulte Knospen abbrechen wird; In sonderliche Garten-Better abgetheilet und vorgestellet von Hanss Christoph von Ettner . . .

Frankfurt & Leipzig: Bey Michael Rohrlachs Wittib und Erben. 1724.

First edition. 8vo. 6 leaves, 564 pp. Title page in red and black. Woodcut head- and tailpieces. With 6 small woodcut figures in text and numerous small woodcut alchemical symbols throughout. Outer margin of title page with old ink stamp; otherwise fine copy in original speckled calf, spine richly gilt. Bound with: Ettner, J. C., *Vade et occide Cain* (Frankfurt & Leipzig, 1724).

AN OVERVIEW of alchemical and chemical processes, containing numerous recipes and discussions of the philosopher's stone, transmutation of metals, the universal tincture, etc. The author refers to the works of Basil Valentine, Eusebius, Flamel, Hermes, Sendivogius, Tachenius, and others. The preparation of many recognizable inorganic chemicals is described. Ferguson, who quotes Gmelin, states that there was a first edition, published by Johann Friedrich Braun (Leipzig, 1717), but that is a ghost. (Bolton, 981; Caillet, 3702; Duveen, 198; Ferchl, 146–147; Ferguson, I, 253; Gmelin, II, 323; Hardin, *Ettner Bibliographie*, 1988, pp. 124–125; Kopp, *Die Alchemie*, II, 377; Neu, 1340; Wellcome, II, 535)

ETTNER, Johann Christoph von

Vade et Occide Cain, Oder: Gebe und schlage den Cain todt. Frankfurt & Leipzig: Bey Michael Rohrlachs Wittib und Erben. 1724.

First edition. 8vo. 70 pp. Woodcut head- and tailpieces. Fine copy. Bound with: Ettner, J. C., *Rosetum Chymicum* (Frankfurt & Leipzig, 1724).

THE TITLE of this “work is explained by the fact that the letters of the word Cain stand each for a disease. Under 12 ‘Keulen’ (heavy sticks) the writer describes various recipes, mostly of an alchemical nature (compare with the Keys of Basil Valentine of which there were also twelve)” (Duveen). Hardin states that the word “Cain” stands for: C. Cachexia; A. Arthritis; I. Icterus; N. Nephritis. “Ettner shows himself in this work as a person of little progress; he deals with miraculous tinctures and stones with which one can supposedly banish certain diseases” (Hardin). Although the pagination and signatures are separate, this tract was probably published at the same time as the *Rosetum Chymicum* (1724). Copies occur separately and are bound with the *Rosetum*, as here. (Bolton, 981; Duveen, 198; Ferchl, 147; Ferguson, I, 253; Hardin, *Ettner Bibliographie*, 1988, p. 129; Kopp, *Die Alchemie*, II, 377; Neu, 1341; Wellcome, II, 535)

ETZLER, August

Isagoge physico-magico-medica. In qua signaturae non paucorum vegetabilium et animalium tam internae quam externae accuratè depinguntur, ex quibus mundi superioris astralis, cum inferiori elementalium mundo concordantia, & influentia, mirabilisque & occulta sympathia & antipathia rerum manifestè elucescunt. Opusculum luctu jucundum, scitu utilissimum, mysterijs naturae maximis refertissimum, theologis veris aequè ac philosophis medicisque oportunum. Authore Augusto Etzlero Albimontano, philosopho & medico. Argentinae (Strassburg): Sumptibus Caspari Diezelij. 1631.

First edition? 8vo. 3 leaves, 176 pp., 5 leaves (index). Browned throughout (characteristic of paper of this period); otherwise a very good copy in contemporary limp vellum.

THORNDIKE DISCUSSES this work by Etzler, or Ezler (fl. 1600), a German exponent of astrological medicine. Sudhoff (*Iatromathematiker vornehmlich im 15. und 16. Jahrhundert*. In: *Abhandlungen zur Geschichte der Medizin*, vol. II [1902], Breslau, p. 77) states that this work first appeared at Bautzen in 1610, but Thorndike had not seen it. Emphasizing the doctrine of signatures in plants and animals, this book relates sympathy and antipathy with the rule of celestial over inferior terrestrial bodies. A chapter is devoted to each planet and the plants, animals, human types, metals, places, and diseases related to it. Of iatrochemical interest, the works of contemporary chemists are mentioned. Duveen describes this as a “curious work.” Almost nothing appears to have been recorded of Etzler and his life. He published *Brevis tractatus fundamentum medicinae* (Halae Saxonum, 1613) and *Introd. Iatro-math* (1622), both of which are on astrological medicine. A very rare book, which is not in most of the major chemical and medical libraries (e.g., Cushing, Cole, Osler, Reynolds, and Waller). (Duveen, 199; Goldsmith, E375; Joecher, II, 459; Neu, 1342; Thorndike, VII, 134; Wellcome, I, 2076)

EULER, Leonhard

Letters of Euler to a German Princess, on different subjects in physics and philosophy. Translated from the French by Henry Hunter, D.D. With original notes, and a glossary of foreign and scientific terms. In two volumes. Vol. I (II). London: Printed for the Translator, and for H. Murray. 1795.

First edition in English. 2 vols., 8vo. I: lxiii, vii, 515 pp., 6 copperplates. II: 2 leaves, xxviii, viii, 520 pp., 14 copperplates. Blank leaf A1 of volume I missing, but with a late-eighteenth-century engraved portrait of Euler attached to the verso of the flyleaf facing the title page, to serve as a frontispiece. Fine copy in contemporary tree calf, rebaked, with the original gilt spines laid on, and with red and green lettering labels. From

the library of the famous physician Robert Cory (1844–1900), with his bookplate on the front pastedown endpaper of each volume. Cory was famous for his work on vaccination (see *Munk's Roll*, IV, 320–321).

ONE OF the most famous books in the history of the popularization of science. These two volumes by the great Swiss mathematician Euler (1707–1783) are a translation from the *nouvelle édition* of the Marquis De Condorcet and De La Croix (2 vols., 8vo., Paris, 1787–88), according to the preface (p. xiii). The first edition, *Lettres à une princesse d'Allemagne* (St. Petersburg, 1768–72), was in three volumes. The second edition in English appeared seven years later (2 vols., 8vo., London, 1802). The “letters” comprise a masterly exposition of physics, which “for half a century was a standard treatise on the subject” (W. W. R. Ball). There are numerous references to topics of purely chemical interest as well (e.g., acids, alkalis, salts, metals, calcination, gases, dyes, and indicators). The Wheeler Gift catalogue, citing the second edition (London, 1802), states: “The letters were written for the instruction of the Princess of Anhalt-Dessau. There are 17 on magnetic and 16 on electrical subjects.” This translation into English was done by Henry Hunter (1741–1802), a minister, who was secretary to the S.P.C.K. in the highlands and islands of Scotland in 1790 (see D.N.B.). According to *Printing and the Mind of Man* (p. 117), this work “had an immense success and profoundly influenced contemporary philosophy.” The first English edition is very scarce. (Knight, 72; Watt, I, 345z)

EVELYN, John

Memoirs illustrative of the Life and Writings of John Evelyn, Esq., F.R.S. . . . Comprising his diary, from the year 1641 to 1705–06, and a selection of his familiar letters. To which is subjoined, The Private Correspondence between King Charles I. . . . The whole now first published, from the original mss. in two volumes. Edited by William Bray, Esq. . . .

London: Printed for Henry Colburn, Conduit Street; and sold by John and Arthur Arch, Cornhill. 1819.

Second edition. 2 vols., 4to. I: xxviii, 671, (1) pp. II: viii, 342, (2), 336 pp. Frontispiece portraits of Evelyn and Mary Evelyn (by T. Braggi after G. Kneller and H. Meyer after R. Nanteuil), 9 engraved plates (all with original tissues), and folding pedigree. Very fine large paper set, contents in pristine condition, in original half calf, gilt, marbled boards.

EVELYN KEPT a detailed diary from 1641 until within three weeks of his death in 1706. “His Diary, which he kept throughout his life, is his greatest contribution, albeit to letters rather than to science” (D.S.B.). One of the most famous diaries ever published, it covers the formative period of the Royal Society and contains numerous refer-

ences to chemical subjects, as well as reprinting Evelyn’s correspondence with important scientists (e.g., R. Boyle, K. Digby, R. Hooke, R. Lower, C. Merret, and H. Oldenburg). There is a comprehensive index to this rich source-book. The antiquary William Bray (1736–1832) carefully edited the entire work (first edition: 1818), which he augmented and corrected in the second “improved edition” (*Encyclopaedia Britannica*). The present text of this classic work was reprinted as an edition of “Everyman’s Library.” (D.S.B., IV, 497; Partington, II, xiv; Thornton & Tully, 128; Watt, I, 147s; Wellcome, II, 537)

EVELYN, John

A Philosophical Discourse of Earth, Relating to the Culture and Improvement of it for Vegetation, and the Propagation of Plants, &c. as it was presented to the Royal Society, April 29, 1675. . . .

London: Printed for John Martyn, Printer to the Royal Society. 1676.

First edition. 8vo. 182 pp., 1 leaf (blank). Fine unpressed copy, with license leaf, in calf antique, brown leather label. From the library of the astronomer Charles Mason (1728–1786), with his signature on recto of license leaf.

IN THE early 1640s Evelyn studied chemistry under Annibal Barlet in Paris, and in 1647 he took a “course of Chemistrie” under Nicolas Le Fevre (Partington, III, 17). In 1649 he went through yet another course in chemistry at Sayes Court in England. Armed with a sound knowledge of contemporary chemistry, together with his profound interest in horticulture, Evelyn felt qualified to present a “Discourse . . . before the Royal Society [on] the 29th of April, and 13th of May 1675 . . . concerning Agriculture” (license leaf). The Society ordered the lectures to be printed as the present book, which “remained the standard work on soil science for more than a century” (Knight). The chemical and mineralogical composition of various types of soil are described, as are the inorganic salts they contain, with detailed discussions of the suitability of each soil for growing different crops. The relative merits of soil additives (fertilizers, chalk, lime, niter, sand, etc.) are also covered. This work is an early milestone in the literature of agricultural chemistry and “is accounted amongst the best writings of the Royal Society” (Stephen Switzer, 1715 [quoted by Henrey]). This copy has an important provenance, having belonged to Charles Mason, who, with Jeremiah Dixon, settled the boundary (1763–67) between Maryland and Pennsylvania (see D.S.B., IX, 164). (Cushing, E119; D.S.B., IV, 496–497; Henrey, 186; Hunt, 346; Keynes, *Evelyn*, 93; Knight, 114; Ward & Carozzi, 760; Wing, E3507)

EVELYN, John

Sylva, Or a Discourse of Forest-Trees, and the Propagation of Timber in His Majesties Dominions. By J. E. Esq. As it was Deliver'd in the Royal Society the XVth of October, 1662 . . . To which is annexed Pomona or, an Appendix concerning Fruit-Trees in relation to Cider; the Making and several ways of Ordering it. . . . Also Kalendarium Hortense; or Gard'ners Almanac; directing what he is to do Monethly throughout the Year. . . .

London: Printed by Jo. Martyn, and Ja. Allestry, Printers to the Royal Society, and are to be sold at their Shop at the Bell in St. Paul's Church-yard. 1664.

First edition. Folio. 8 leaves, 120, (4), 20, (2), 21–40, (2), 41–50, (2), 55–83, (2) pp. Final leaf with 3 sets of errata. Title page in red and black with engraved arms of the Royal Society (devised by Evelyn), divisional title to *Kalendarium Hortense* in red and black with names of months in this section in red. Instruction to binder intact at foot of inserted leaf, "Sir Paul Neile's second Paper" (usually trimmed off). Fine, tall copy with very wide margins, in original gilt-ruled calf, rebacked, maroon morocco label. Engraved armorial bookplate: William Wentworth.

EVELYN (1620–1706) was versed in many subjects, including architecture, gardening, numismatics, and the sciences. In 1659 he sent Robert Boyle a suggestion for the establishment of a group, which developed into the Royal Society. Evelyn was an original member, instrumental in obtaining royal patronage and the name Royal Society in 1662. His *Sylva* was the first book published by the society. Immediately successful, this work achieved its aim of promoting the reforestation of Great Britain to provide timber for the navy. It includes the first account of Robert Hook's recognition of the cell, elaborated in his *Micrographia* (1665), and documents the first request from the government to find a scientific solution to a problem of national importance. (D.S.B., IV, 495; Henrey, 132; Hunt, 296; Keynes, *Evelyn*, 40; Partington, II, 592; Wing, E3516)

EVELYN, John

Silva: or, a Discourse of Forest-Trees, and the Propagation of Timber in His Majesty's Dominions: as it was delivered in the Royal Society the 15th of October, 1662. . . . Together with . . . Standing Groves. Terra, a Philosophical Essay of Earth . . . Pomona: or an Appendix concerning Fruit-Trees, in relation to Cyder. . . . Also Kalendarium Hortense; or, the Gardener's Almanack. . . .

London: Printed for J. Walthoe, J. Knapton, etc. 1729.

Fifth edition. Folio. 1 leaf, xxviii, 212, 211–(280), 277–329, (1), vi, (4), 235, (5) pp. Title page in red and black. With 12 engraved and woodcut text figures. Fine copy, in original paneled calf, morocco label. Armorial bookplates (eighteenth and nineteenth centuries): R. Baldwin Ludlow and Rev. W. Parker.

CHARLES II thanked Evelyn for writing *Sylva* (1664) and other works by this author (as listed in the above title), which were added to later editions. Evelyn's knowledge of chemistry is evident in his writings, as he had attended the chemical lectures of Annibal Barlet and Nicolas Le Fevre in Paris. "Evelyn speculated on the formation of nitre in the earth from 'pregnant and subtle particles' and 'nitrous spirits' in the air, fermenting with the sulphur and less volatile salts; nitre is 'an indispensable principle in . . . vegetation, and perhaps the first rudiment of life in all things.' A plentiful supply of saltpeter would replace 'other composts to meliorate our ground'" (Partington). (D.S.B., IV, 495; Keynes, *Evelyn*, 44; Partington, II, 592; Wellcome, II, 537)

EWELL, Thomas

Plain Discourses on the Laws or Properties of Matter: containing the Elements or Principles of Modern Chemistry; with more particular details of those practical parts of the science most interesting to mankind, and connected with domestic affairs. . . .

New York: Printed for Brisban & Brannan. 1806.

First edition. 8vo. (in 4s). 469, (1) pp., 1 leaf (advertisements). With 2 engraved plates. Few minor stains on some fore-margins; otherwise good copy in original tree calf, rebacked, original gilt-ruled spine laid on, black morocco label.

EWELL (1785–1826), who received the M.D. (University of Pennsylvania, 1805) for a dissertation on stomach secretions, published this substantial chemical textbook at the age of twenty-one. He was a naval surgeon who descended from a distinguished Virginia family. His father was a friend of President Thomas Jefferson (to whom this book is dedicated) and also a classmate of the president at William and Mary College, where this textbook was used. Jefferson's letter of approbation (dated "Monticello, August 1805") is included in the preface (p. 8). A "refreshing bit of chemical literature . . . The work of Dr. Ewell is popular in its presentation of chemical facts and was read by many with approving interest. It became a favorite" (E. F. Smith, *Old Chemistries* [1927, pp. 50–52]). Scarce. Not in Cushing, D.S.B., Miles, Wellcome, etc. (Bolton, 432; *Dictionary of American Biography*, VI, 230–231; Duveen, *Supplement*, 415; Edelstein, 808; Morgan, 247; Smith, 165)

S Y L V A,
 Or A DISCOURSE OF
FOREST-TREES,
 AND THE
Propagation of Timber
 In His MAJESTIES Dominions.

By *J. E. Esq;*

As it was Deliver'd in the **ROYAL SOCIETY** the xvth of
October, C1612, upon Occasion of certain *Queries*
 Propounded to that *Illustrious Assembly*, by the *Honorable* the Principal
Officers, and Commissioners of the *Navy*.

To which is annexed
POMONA Or, An *Appendix* concerning *Fruit-Trees* in relation to *CIDER*;
 The *Making* and several ways of *Ordering* it.
 Published by express Order of the **ROYAL SOCIETY**.

ALSO
KALENDARIVM HORTENSE; Or, *Gardners Almanac*;
 Directing what he is to do *Monthly* throughout the *Year*.

Tibi res antiquæ laudis & artis
Ingredior, tantos ausus recludere fontes. Virg.



LONDON, Printed by *Jo. Martyn*, and *Ja. Allestry*, Printers to the *Royal Society*, and are to be sold at their Shop at the *Bell* in *S. Paul's Church-yard*,
 MDCLXIV.

EXLEY, Thomas

Principles of Natural Philosophy: or, a New Theory of Physics, founded on Gravitation, and applied in explaining the general properties of matter, the phenomena of chemistry, electricity, galvanism, magnetism, & electro-magnetism. . . . London: Printed for Longman, Rees, Orme, Brown, and Green, . . . and B. Barry, Bristol. 1829.

First edition. 8vo. Xxxii, 478 pp., 1 leaf. With 4 engraved plates. Fine copy, uncut, in original cloth-backed boards, original printed paper label on spine. From the library of the celebrated mathematician and scientific historian William Whewell (1794–1866), with his bookplate and that of Trinity College, Cambridge. Tipped in is a thirteen-line letter (dated 14 December 1835) from the diplomat Sir John Kennaway (1758–1836), presenting this copy to Whewell. On Whewell and Kennaway, see the D.N.B.

IN THE present work Exley (1775–1855) proposed an ingenious theory of the composition of matter, akin to but not identical with that of Boscovitch. “Exley in the *Principles* urged that attraction was the thread to follow in the sciences; and that attraction and repulsion should, if we apply Newton’s Rules of Reasoning, be regarded as primary properties of matter. Both probably follow the same inverse square law. We know nothing of matter, he declared, except ‘the forces which it exerts, and which doubtless constitute its nature.’ The problem for Exley, as for anybody proposing a theory of matter, was to apply these ideas in some detail to the phenomena of physics and chemistry. . . . He defended his hypothetico-deductive approach by an appeal to Newton” (Knight). Not in D.S.B., Partington, Poggendorff, Wellcome, etc. (Knight, 151.160; Ronalds, 164 [not in Coll.]; Sotheran, Cat. 725 [1912], 7734; Wheeler Gift, 848)

FABRE, Pierre Jean

Alchymista Christianus. In quo Deus rerum auctor omnium, & quamplurima Fidei Christianae mysteria, per analogias Chymicas & Figuras explicantur, Christianorumque Orthodoxa, doctrina, vita & probitas non oscitanter ex chymica arte demonstrantur. . . .

Toulouse: Apud Petrum Bosc, Bibliopolam. 1632.

First edition. 8vo. 16 leaves, 236 pp., 2 leaves (index). Large woodcut printer's vignette on title page and small woodcut figure on page 21. Fine, crisp copy, in contemporary vellum. Bound with: Fabre, P. J., *Propugnaculum Alchymiae* (Toulouse, 1645), and 3 other works by Fabre.

AN INTERESTING work on theosophical alchemy, dedicated to Pope Urban VIII, in which Fabre correlates experimental observations he has made in his laboratory with chemical allusions in the Bible. He attempts to prove that chemical discoveries and knowledge come directly from God to man. There are discussions of different types of philosopher's stones and the transmutation of metals into gold and silver. The "transmutation" of human beings into more godlike and Christlike people by studying chemistry and natural phenomena is also covered. Rosenthal describes the book as "rare et curieux." Not in Bolton, Cushing, Osler, Smith, Thorndike, Waller, Watt, etc. (Caillet, 3759; Duveen, 202; Edelstein, 815; Ferchl, 148; Ferguson, I, 260 [not in Young Coll.]; Ferguson Coll., 220; Guaita, 294; Neu, 1355; Partington, II, 181; Rosenthal, 281; Wellcome, I, 2106)

FABRE, Pierre Jean

Die hell-scheinende Sonne am Alchymistischen Firmament des hochteutschen Horizonts. Das ist: D. Petri Joh. Fabri, . . . Manuscriptum, oder Sonderbares noch niemahlen Teutsch herausgegebenes Buch, welches er ehedessen an der Durchleuchtigsten Fürsten und Herrn, Herrn Friederich, Herzog in Holstein, gesendet, und darinnen die dunckelste und schwehrste Sachen der Goldmachenden Kunst, mit einer ungemeynen Deutlichkeit erkläret hat durch Conrad Horlachern, . . . Mit sehr nutzlich- und offit-bewährten Anmerckungen, auch andern dergleichen raren Schrifften vermehret, und zum Druck befördert.

Zu finden bey Wolffgang Moritz Endter, Buchhändlern in Nürnberg. Anno 1705.

First edition in German. 8vo. 33 leaves, 304 pp., 15 leaves (index). Finely engraved frontispiece (Montalegre sc.) and 5 copperplates (1 folding) of chemical furnaces. Very fine, crisp copy, in mottled half calf antique, gilt, marbled boards, maroon morocco label gilt, spine dated.

A VERY RARE and important alchemical work, the first 184 pages of which comprise a translation by Conrad Horlacher

of his epistle on the obscurity of alchemy (1690), addressed to Frederick Duke of Holstein. "L'ouvrage de Fabre se termine à la p. 184; le reste du vol. contient huit à dix courts opuscules, dont les principaux sont Ali Puli; Centrum Naturae; Nosce te ipsum; et Epistola monitoria avec la Responsio par Fred. Alrio" (Caillet). Some of the works have separate divisional title pages. The penultimate section contains descriptions and plates of J. J. Becher's chemical furnaces, taken from his *Tripus Hermeticus Fatidicus* (Frankfurt, 1689). The final section describes a universal furnace designed by Obristens von Schellenberg. Not in Bolton, Cushing, Duveen, Edelstein, Guaita, Mellon, Neu, Osler, Rosenthal, Smith, Thorndike, Waller, etc. (Caillet, 3761; Ferchl, 148; Ferguson, I, 260 [not in Young Coll.]; Ferguson Coll., 220; Partington, II, 181; Wellcome, III, 2)

FABRE, Pierre Jean

Hercules Piochymicus Petri Ioannis Fabri, . . . in quo penitissima, tum moralis philosophiae, tum Chymicae artis arcana, laboribus Herculis, apud Antiquos tanquam velamine obscuro obruta deteguntur, & obvia fiunt & clausa omnia Philo-chymicis reserantur.

Toulouse: Apud Petrum Bosc Bibliopolam. 1634.

First edition. 8vo. 8 leaves, 191, (1) pp. Large woodcut printer's vignette on title page. Historiated capitals. Fine, crisp copy in contemporary vellum. Bound with: Fabre, P. J., *Propugnaculum Alchymiae* (Toulouse, 1645), and 3 other works by Fabre.

A RATHER STRANGE work of thirty chapters on theosophical alchemy, dedicated to Cardinal Richelieu. "In *Hercules piochymicus* not only the twelve labors of Hercules are interpreted alchemically but also his begetting fifty sons from the fifty daughters of Thespius in a single night and his death from the poisoned robe of Nessus. The conclusion of the whole work is an anathema to those who would have alchemy made perfectly plain to fools in words of one syllable, and a request that believers in transmutation await the appearance of his *Panchymicus*" (Thorndike). The *Panchymici seu anatomiae totius universi opus* appeared later (Toulouse, 1646; and Frankfurt, 1651). This work is described by Rosenthal as "rare et curieux." Not in Bolton, Cushing, Edelstein, Ferguson Coll., Goldsmith, Guaita, Osler, Smith, Waller, Watt, etc. Ferguson (I, 260) lists only a German translation (Hamburg, 1713). (Caillet, 3762; Duveen, 202; Ferchl, 148; Neu, 1360; Partington, II, 181; Rosenthal, 282; Thorndike, VII, 194; Wellcome, I, 2108)

FABRE, Pierre Jean

Hydrographum Spagyricum, Petri Ioannis Fabri, . . . In quo de mira fontium essentia, origine, & tractatur.

Toulouse: Apud Petrum Bosc. 1639.

First edition. 8vo. 4 leaves, 260 pp., 6 leaves (index). Large woodcut printer's vignette on title page. Fine, crisp copy in contemporary vellum. Bound with: Fabre, P. J., *Propugnaculum Alchymiae* (Toulouse, 1645), and 3 other works by Fabre.

AN IMPORTANT balneological work divided into three books, the first of which describes different kinds of hot and cold mineral springs, including natural oils (e.g., petroleum, naphtha, and tar). Also covered are the occurrence of gold, silver, and mercury. The mineral waters of France are discussed in the second book, and the third book describes the chemical content of mineral waters, their analysis, petrifying properties, etc. Fabre gives an alchemical explanation to account for the occurrence of gold, silver, mercury, copper, tin, lead, and other metals in mineral waters. Very rare. Not in Bolton, Cushing, Edelstein, Ferguson Coll., Guaita, Osler, Partington, Rosenthal, Smith, Thorndike, Waller, Watt, Wellcome, etc. Ferguson (I, 259–260) lists only later reprints in collected works of Fabre (Frankfurt, 1652; Hamburg, 1713). (Caillet, 3763; Duveen, 203; Ferchl, 148; Goldsmith, F35; Neu, 1361)

FABRE, Pierre Jean

Myrothecium Spagyricum; sive, Pharmacopoea Chymica, occultis naturae arcanis, ex Hermeticorum Medicorum scriniis depromptis abundè illustrata. . . .

Toulouse: Apud Petrum Bosc, Bibliopolam. 1628.

First edition. 8vo. 448 pp., 11 leaves. Large woodcut printer's vignette on title page. Very good copy in contemporary marbled wrappers.

THE FIRST part (pp. 1–352) lists iatrochemical prescriptions for a large number of diseases. The second part (pp. 353–448) has a separate divisional title page: *Insignes Curationes Variorum Morborum quos medicamentis chymicis iucundissima methodo curavit*. The second part is a valuable collection of case histories of diseases, with names of patients (mostly from Castelnau and Toulouse) and dates given. Some psychiatric cases are described. Rare. Not in Bolton, Cushing, Edelstein, Guaita, Osler, Rosenthal, Smith, Thorndike, Watt, etc. (Caillet, 3766; Duveen, 201; Ferchl, 148; Ferguson, I, 260 [not in Young Coll.]; Ferguson Coll., 220; Goldsmith, F36; Neu, 1362; Partington, II, 181; Waller, 2878; Wellcome, I, 2104 [different imprint: N. d'Estey for P. Bosc.]

FABRE, Pierre Jean

Palladium Spagyricum, Petri Joannis Fabri Doctoris Medici Monspeliensis Philochymici Castronovodarensis.

Toulouse: Apud Petrum Bosc. 1624.

First edition. 8vo. 7 leaves (including half title and engraved title), 394 pp., 9 leaves. The finely engraved title contains a portrait of the author at age 32. Few running titles shaved toward the end; otherwise a very good copy in half calf antique, marbled boards, maroon morocco label gilt.

THE VERY rare first edition of the author's first work. Born at Castelnau in Languedoc, Fabre (ca. 1592–1650) was a celebrated physician in Languedoc and Montpellier. He published about seventeen books on alchemy, iatrochemistry, and medicine, and to him chemistry is indebted for some advances. Fabre believed in the transmutation of metals and defined the philosopher's stone as the seed from which gold and silver are generated. He became physician to Louis XIII. Several of his writings were reprinted by Manget (*Bibliotheca Chymica Curiosa*, 1702) and Roth-Scholtz (*Deutsches Theater Chemicum*, 1730). Caillet describes him as a "célèbre médecin spagyrique." Despite Partington's statement that Fabre's works were "little-esteemed," they were in fact highly esteemed at the time they appeared, and some passed through several editions. All of his books are now rare. Caillet (no. 3767) lists only the 1638 edition, and Rosenthal (no. 284) only that of 1632. Not in Bolton, Edelstein, Ferguson, Ferguson Coll., Mellon, Osler, Smith, Thorndike, Waite, Watt, Wellcome, etc. (Duveen, 201; Ferchl, 148; Goldsmith, F37; Neu, 1364; Partington, II, 181; Waller, 11126)

FABRE, Pierre Jean

Palladium Spagyricum, Petri Joannis Fabri Doctoris Medici Monspeliensis Philochymici, ex Tectosagum Provincia nati.

Editio altera ab Autore recognita & aucta.

Toulouse: Apud Petrum Bosc. 1638.

Third edition. 8vo. 7 leaves, 276 pp., 7 leaves (index). Large woodcut printer's vignette on title page. Fine, crisp copy in contemporary vellum. Bound with: Fabre, P. J., *Propugnaculum Alchymiae* (Toulouse, 1645), and 3 other works by Fabre.

THE GREATLY enlarged third edition of this alchemical and iatrochemical work. The first and second editions appeared in 1624 and 1632, respectively. In thirty chapters the author describes all types of chemical operations and processes. Three different kinds of philosopher's stone are discussed on page 109, and on page 112 et seq. the transmutation of metals into gold is described. Very rare. Not in the usual early chemical libraries or the British Library. (Caillet, 3767; Duveen, 203; Neu, 1365)

FABRE, Pierre Jean

Panchymici seu Anatomiae Totius Universi. . . . Opus in quo de omnibus quae in coelo & sub coelo sunt Spagyricae tractatur. Et Author rerum omnium Deus perquiritur, laudatur, glori-ficatur ac benedicitur.

Toulouse: Apud Petrum Bosc. 1646.

First edition. 2 vols., 8vo. I: 32 leaves, 823, (1) pp., 18 leaves (index), 2 blank leaves. II: 8 leaves, 672 pp., 20 leaves (index). Each volume with large woodcut on title, and woodcut figure in volume I (p. 209). Unidentified neat early signatures on titles (M. Cluvier & DeVelly Med. Doct.). Some marginal notes (seventeenth and eighteenth century) in ink and occasional underlining in red in volume II; otherwise very good copy in contemporary calf, spines gilt, maroon morocco labels. Old bookplates of Harvard College Library (1858).

AN ENCYCLOPEDIA treatise in five books, in which Fabre covers the entire universe from the alchemical and chemical point of view. Included are long sections on astronomy, botany, medicine, metals and minerals, natural history, etc., which display Fabre's extensive knowledge of these subjects. The Frankfurt (1651) edition is described by Duveen (pp. 203–204): "Ferguson (I, 259–60) mentions a German edition of the first part of this work. The 'Pugnaculum' was first published at Toulouse in 1645. . . . Both the Bibliothèque Nationale *Catalogue* and the *Biographie Universelle* quote an edition of 1646 of the 'Pan-Chymici' as the earliest." Very rare. Unknown to Ferguson, Krivatsy, and the usual bibliographers. Not in the British Library. (Baumer, 17; Caillet, 3768; Neu, 1366; Thorndike, VII, 194)

FABRE, Pierre Jean

Propugnaculum Alchymiae. Adversus quosdam misochymicos, phisophos umbratiles, naturae humanae larvas, qui se philosophos profiteri audent, dum chymiam stulte rident, nec tamen brutorum genia tenent. Ubi an sit lapis philosophorum, qui sit, & qua methodo, & via ipsum lapidem habuerunt antiqui clarissime tractatur & autoritate, ratione & experientia probatur, adversus mysochymicos illos, ut tandem resipiscant & veritatem noscant.

Toulouse: Apud Petrum Bosc. 1645.

First edition. 8vo. 2 leaves, 128 pp., 2 leaves (index). Large woodcut printer's vignette on title page. Fine, crisp copy in contemporary vellum. Bound with: Fabre, P. J., *Palladium Spagyricum* (Toulouse, 1638), and 3 other works by Fabre.

THE RARE first edition, which was later reprinted in the first volume of the collected edition of Fabre's works (Frankfurt: J. Beyer, 1652). "In his *Propugnaculum alchymiae* of 1645 Fabre inveighed against the opponents of alchemy"

(Thorndike). On page 45 he claims to give directions on how gold and silver can be made from mercury and the philosopher's stone: "One must have a body which is neither mineral nor vegetable nor animal, but in which nature has joined purest sulphur, mercury and salt" (Thorndike). Duveen, Edelstein, Ferguson, and Neu list only the reprint in the collected edition of 1652. Not in Bolton, Cushing, Guaita, Mellon, Smith, Waller, Watt, etc. (Caillet, 3769; Ferchl, 148; Ferguson Coll., 221; Goldsmith, F38 ["missing"]; Osler, 2556; Partington, II, 181; Rosenthal, 286; Thorndike, VII, 194–195; Wellcome, III, 2)

FACHS, Modestin

Probiere-Büchlein, darinne gründlicher Bericht vormeldet, wie man alle Metall, und derselben zugehörnde Metallische Ertze und Getöchte, ein jedes auff seine Eigenschafft und Metall recht probieren soll. . . . (Followed by) Rathsams Bedencken, und Erklärung, auff etlicher Rathen und Angeben, dass die Müntz-Herrn geringere Müntzen sollen schlagen lassen . . .

Leipzig: In Verlegung Johann Grossen und Consorten, druckts Christian Scholvien. 1678.

Sm. 8vo. 11 leaves, 173, (1) pp., 5 leaves; 49, (1) pp.; 142 pp. Title page in red and black. Folding engraved plate (facing p. 4, first part). Very good copy, in later (nineteenth-century) boards, backed in fifteenth-century manuscript vellum.

ONE OF the most successful of the early assaying books, which passed through many editions from the mid-sixteenth century until the late seventeenth century (1689). This important work contains a system of assaying of ores and metals (e.g., copper, lead, mercury, silver, and tin). The book is also significant in the history of monetary systems, as it describes processes for analyzing coins made of gold, silver, and various alloys. The first edition (Leipzig, 1567) was gradually augmented with additional texts. The preface by Modestin Fachs is dated 1567, and the book was updated by his son, Ludwig Wolfgang Fachs, in 1595. The preface alerted Jean Rey (1630) to the fact that on calcination lead increases in weight. The second and third sections each have divisional title pages. Fachs (fl. 1567) was master of the mint of the Prince of Anhalt. All editions are rare. Not in Bolton, Duveen, Hoover, etc. The Wellcome Library copy is imperfect. (Ferchl, 149; Ferguson, I, 261 [not in Young Coll.]; Ferguson Coll., 222; Partington, II, 67; Wellcome, III, 5)

FAIRBAIRN, William

Iron its History, Properties, and Processes of Manufacture.
By William Fairbairn . . .

Edinburgh: Adam and Charles Black. 1861.

First edition. 8vo. xi, (1), 235, (1) pp. + 2 leaves + 12 pp. (advertisements). With 65 figures and 3 folding engraved plates. Fine copy, uncut, in original publisher's dark-blue, blind-stamped cloth, spine gilt-lettered. Inscribed in ink on half title: "George B. Rennie from Geo. Rennie, 1861, May 8th."

A TREATISE IN which the author has "endeavoured . . . to trace the progress of iron manufacture from its earliest beginnings down to the present time, and the various improvements which have been effected in the reduction of the ores, and the subsequent manipulation of the crude iron . . . [with] analyses of ores and fuel [which] will show the reader how much we owe to chemical science" (preface). Of particular interest is chapter VIII, "Mr. Bessemer's Process," in which "an apparently new light has been thrown on the conversion of iron, by a paper read by Mr. H. Bessemer at the last meeting of the British Association for the Advancement of Science . . . in August [1856]." Fairbairn (1789–1874), baronet (1869), a friend of George Stephenson, with whom he superintended the construction of the tubular Menai Straits Bridge, patented his new principle of wrought-iron girders. Weil describes this book as a "standard work." This copy was presented to George B. Rennie by George Rennie (1791–1866), noted civil engineer and son of John Rennie (1761–1821), F.R.S. (1798). John Rennie, civil engineer, was employed by James Watt in 1784, before starting his own business (constructing canals, docks, bridges, etc). George Rennie, in partnership with his brother Sir John Rennie (1794–1874), had "considerable business as a railway engineer" (D.N.B.). (Bolton, 433 [3rd edition, 1869]; Sotheran, Cat. 725 [1912], 7747; Weil, Cat. 6, no. 9)

FALCONER, William

An Account of the Efficacy of the Aqua Mephitica Alkalina; or, Solution of Fixed Alkaline Salt, saturated with Fixible Air, in Calculous Disorders, and other Complaints of the Urinary Passages. . . .

London: Printed for T. Cadell Jun. and W. Davies, . . . and sold also by J. Killick. 1798.

Fifth edition. 8vo. 2 leaves, 208 pp. Very fine copy, in contemporary gilt-ruled green half morocco, marbled boards.

FINAL AND best edition of an interesting example of the application of the latest discoveries in chemistry to medi-

cal use. The preparation of soda water from carbon dioxide was employed by the retired physician Benjamin Colborne to treat successfully his own urinary calculi. The quantitative details of the chemical experiments with which Colborne checked his medical treatment are valuable, and this edition is particularly important for the additions to Falconer's case histories in the years since the first edition (Bath, 1787). Second, third, and fourth editions appeared in rapid succession (London, 1787, 1789, 1792). Partington (III, 248), who does not mention this edition, states that Falconer "proposed 'soda water' as a remedy for calculus." The present edition appears to be the rarest of all and was unknown to Bolton, Duveen, Edelstein, Munk, Smith, Waller, Watt, Wellcome, etc. (Blake, 142)

FALCONER, William

An Essay on the Bath Waters, in Four Parts: containing a Prefatory Introduction on the Study of Mineral Waters in general. Part I. An Account of their possible Impregnations. Part II. The most approved Means to be used for the Discovery of their Contents. Part III. Experiments on the Bath Waters, with an Application of the foregoing Rules to a Discovery of their Contents. Part IV. On the Effects of the Bath Waters on the human Body, and the Propriety of their Use in Medicine, with an Application of the Experiments to Medicine and Pharmacy. . . .

London: Printed for T. Lowndes, . . . and sold by J. Tennent . . . and at Crutwell's Printing-office, Bath. 1772.

First edition. 8vo. iv, 454 pp., 1 leaf (errata). Very good copy in original gilt-ruled calf, red morocco label. With eighteenth-century engraved armorial bookplate of John Rochfort and his neat signature on title page.

FALCONER (1744–1824), M.D., Edinburgh (1766), F.R.S. (1773), was physician at Bath (1784–1819) and a friend of Edmund Burke and Dr. Bartholomew Parr. He attended the lectures of Gaubius and Albinus at Leiden and achieved attainments of the highest order as a scholar, physician, and contributor to the transactions of various learned societies. His "writings . . . are still deservedly esteemed" (Munk). Dedicated to Dr. John Fothergill, the present book is on the chemistry of Bath waters. A shorter volume of similar title appeared (London, 1770; 275 pp.) and is sometimes confused with the present edition. Not in Bolton, Edelstein, Partington, Smith, Waller, etc. (Blake, 142; Blocker, 133; Duveen, 205; Munk, II, 279; Neu, 1381; Waring, 782; Watt, I, 355h; Wellcome, III, 7)

FALCONER, William

Observations and Experiments on the Poison of Copper. . . .
London: Printed for Joseph Johnson. 1774.

First edition. 8vo. 116 pp. Fine copy in early-nineteenth-century dark-blue half morocco, marbled boards, spine gilt-lettered. A presentation copy, inscribed in ink on recto of first flyleaf: "John Percy from R.W.F. Nov: 20th, 1837 Edinburgh."

DEDICATED TO Philip De La Cour (1730–1780), physician at Bath and friend of Falconer, this work on the toxicological effects of ingesting copper and its compounds is almost entirely chemical in content. Sources from which contamination of food and drink by copper are identified (e.g., cooking utensils) and tests for the detection of small amounts of copper are described. An important association copy, which was presented to John Percy (1817–1889), F.R.S., an eminent metallurgist (M.D., Edinburgh, 1838), who invented a process for extracting silver from its ores (see D.N.B. and D.S.B.). "R.W.F." was Randle Wilbraham Falconer (1816–1881), physician at Bath and medical writer, who was a grandson of William Falconer, from whom he probably inherited this copy. Percy and R. W. Falconer (later mayor of Bath) were friends when they were medical students at Edinburgh in 1837. Scarce. Not in Edelstein, Ferchl, Partington, Smith, Waller, Wellcome, etc. (Blake, 142; Bolton, 434; Duveen, 205; Munk, II, 279; Neu, 1383; Waring, 392; Watt, I, 355h)

FARADAY, Michael

Chemical Manipulation; being Instructions to Students in Chemistry, on the Methods of Performing Experiments of Demonstration or of Research, with Accuracy and Success. . . .
London: Printed and Published by W. Phillips . . . 1827.

First edition. 8vo. vii, (1), ix, (1), 11–656 pp. Woodcut text figures. Fine copy in contemporary half calf, gilt, marbled boards. From the library of Lord Dinorben, with armorial bookplate.

THE ONLY monograph written by Faraday (1791–1867), his other books being collections of published papers or edited reports of his lectures, which apparently he gave contemporaneously with the minimum of notes. "It gives a splendid picture of his experimental genius, his ability to turn things to new uses, and also of the laboratory practice of the day" (Knight). Berzelius considered the book a "model of chemical exposition." The clarity of writing and reporting of experimental results could well be emulated by modern chemical researchers. "Faraday ranks with Newton as the greatest of the natural philosophers our country (i.e., England) has produced, and as an experimental scientist he has no equal" (Sir Lawrence Bragg, *Makers of Modern*

Science). One of the great milestones in the development of the chemical textbook. (Bolton, 434; Duveen, 207; Edelstein, 819; Ferchl, 150; Jeffreys, 153; Knight, 141; Morgan, 251; Partington, IV, 103; Poggendorff, I, 719; Smith, 167; Sondheimer, 494; Sotheran, Cat. 666 [1906], 1283 ["Scarce"]; Thornton & Tully, 207; Wellcome, III, 9)

FARADAY, Michael

Chemical Manipulation, being Instructions to Students in Chemistry, on the Methods of Performing Experiments of Demonstration or of Research, with Accuracy and Success. . . .
New Edition.

London: John Murray. 1830.

Second edition. 8vo. xi, (1), 646 pp. Few leaves with minor foxing; otherwise very nice copy in contemporary dark-blue half calf, gilt, cloth sides, dark-maroon label.

A SO-CALLED SECOND issue of the first edition appeared in 1829, recorded by Duveen (p. 207) and Jeffreys (no. 153). In the second edition Faraday "made many corrections and alterations, without enlarging the book" (preface). Not in Duveen, Ferchl, Morgan, Poggendorff, Wellcome, etc. (Bolton, 434; Jeffreys, 153; Partington, IV, 103; Smith, 167; Sondheimer, 495; Thornton & Tully, 207; Waller, 11128)

FARADAY, Michael

Chemical Manipulation, being Instructions to Students in Chemistry, on the methods of performing experiments of demonstration or of research, with accuracy and success. . . .
First American, from the last London edition, edited by
J. K. Mitchell, M.D., Lecturer on Medical Chemistry in
the Philadelphia Medical Institute.

Philadelphia: Carey and Lea. 1831.

First American edition. 8vo. 689, (1) pp., 6 leaves (advertisements). Numerous woodcuts in text. Very good copy in contemporary calf, spine gilt-ruled, dark-blue gilt-lettered label.

DEDICATED TO professors Silliman and Hare, this American edition is a close reprint of the second English edition (London, 1830). The editor, John Kearsley Mitchell (1793–1858), chemist and physician (M.D., Philadelphia, 1819), states in the preface that this book is intended to serve as a manual for students who wish to practice chemistry on their own, because "in the United States there is not a single laboratory devoted to the instruction of students in analytical chemistry." Mitchell has added many notes and appended (pp. 671–672) a woodcut of Hare's apparatus for separating carbonic oxide (i.e., carbon monoxide) from carbonic acid, with a description of the process. For a biography of Mitchell, see Wyndham D. Miles, *American Chemists*

CHEMICAL
MANIPULATION;
BEING
INSTRUCTIONS
TO
STUDENTS IN CHEMISTRY,
ON
THE METHODS OF PERFORMING EXPERIMENTS OF DEMONSTRATION
OR OF RESEARCH, WITH ACCURACY AND SUCCESS.

BY
MICHAEL FARADAY, F.R.S. F.G.S. M.R.I.

CORRESPONDING MEMBER OF THE ROYAL ACADEMY OF SCIENCES OF FRANCE,
AND OF THE MEDICO-CHEMICAL SOCIETY OF PARIS; DIRECTOR OF THE
LABORATORY OF THE ROYAL INSTITUTION OF GREAT BRITAIN; MEMBER
OF THE ASTRONOMICAL SOCIETY OF LONDON; HONORARY MEMBER OF THE
CAMBRIDGE PHILOSOPHICAL SOCIETY, OF THE PHILOSOPHICAL SOCIETY OF
BRISTOL, OF THE CAMBRIAN SOCIETY FOR THE ENCOURAGEMENT OF GEO-
LOGY, MINERALOGY, AND NATURAL HISTORY, AND OF THE WESTMINSTER
MEDICAL SOCIETY, &c.

London:

PRINTED AND PUBLISHED BY W. PHILLIPS, GEORGE-YARD,
LOMBARD-STREET;

SOLD ALSO BY W. TAIT, EDINBURGH;
AND HODGES AND M'ARTHUR, DUBLIN.

1827.

Faraday. Chemical Manipulation. London, 1827.

and *Chemical Engineers* (Washington, D.C., 1976, pp. 340–341). Very scarce. This American edition is not in Cushing, Duveen, Ferchl, Jeffreys, Morgan, Osler, Partington, Poggendorff, Thornton & Tully, Waller, etc. (Bolton, 434; Edelstein, 820; Smith, 167)

FARADAY, Michael

Chemical Manipulation: being Instructions to Students in Chemistry on the Methods of Performing Experiments of Demonstration or Research, with Accuracy and Success. . . . Third Edition, Revised.

London: John Murray. 1842.

Third edition. 8vo, xiii, (1), 664 pp. Woodcuts in text. Fine copy in contemporary blind-stamped and gilt calf, maroon morocco label. From the library of the Royal Agricultural College, with maroon morocco armorial book label, gilt, and armorial bookplate of Yatton Court, Herefordshire.

THE FINAL and best edition of this classic work. “For several years the second edition . . . has been out of print, and I had no intention of reprinting it, . . . however, the acceptable testimony of many to its value . . . resolved [me] to reprint it with little other change than corrections” (preface). Not in Duveen, Edelstein, Morgan, Sondheimer, Waller, etc. (Blocker, 133; Bolton, 434; Ferchl, 150; Jeffreys, 153; Partington, IV, 103; Poggendorff, I, 719; Smith, 167; Thornton & Tully, 207; Wellcome, III, 9)

FARADAY, Michael

A Course of Six Lectures on the Chemical History of a Candle: to which is added a Lecture on Platinum. . . . Edited by William Crookes. . . .

London: Griffin, Bohn, and Company. 1861.

First edition. 8vo. viii, 208 pp. + 8 pp. (advertisements, dated 1861). With 38 text woodcuts. Fine copy, with some leaves uncut, in original blind-stamped red cloth.

ONE OF the classics of popular science, based on the children’s lectures at the Royal Institution delivered by Faraday during the Christmas holidays, 1860–61. A masterpiece of exposition, it deals with the chemical reactions that occur when a candle is burned. The final lecture (pp. 173–204) discusses metals of the platinum group and other metals. Faraday himself had been drawn to chemistry after reading Jane Marcet’s *Conversations on Chemistry*, which was inspired by Sir Humphry Davy’s lectures for the Royal Institution. In 1933 this was the first complete scientific work to be published in basic English. These are probably the best known lessons on science ever to be delivered to children by the great master of experimental demonstration. Numerous translations have appeared: e.g., French

(1865), Italian (1866, 1871, 1872), Russian (1866), and German (1871, 1884). Not in Duveen, Ferchl, Morgan, Smith, etc. (Bolton, 434; Cushing, F36; D.S.B., III, 481; Edelstein, 821; Honeyman, 1270; Knight, 200; Jeffreys, 464; Partington, IV, 103; Sondheimer, 501; Sotheran, Cat. 666 [1906], 1297 [“Scarce”]; Thornton & Tully, 207)

FARADAY, Michael

A Course of Six Lectures on the Various Forces of Matter and their Relations to Each Other. . . . Edited by William Crookes. . . .

London and Glasgow: Richard Griffin and Company. 1860.

First edition. 8vo. 4 leaves, 179, (1) pp., 12 pp. (advertisements). Fine copy, uncut, in the original blind-stamped maroon cloth. A unique association copy from the library of Sir William Crookes, D.Sc., F.R.S. (1832–1919), friend and colleague of Faraday, with his armorial bookplate.

CROOKES’ OWN copy of this important work, which was first “Delivered before a Juvenile Auditory at the Royal Institution of Great Britain during the Christmas Holidays of 1859–60” (title page). The text first appeared in *Chemical News*, 1860, and this is the very scarce first edition in book form. Not in Duveen, Edelstein, Ferchl, Partington, Smith, Thornton & Tully, etc. (Bolton, 434; Jeffreys, 457; Sondheimer, 500)

FARADAY, Michael

Experimental Researches in Chemistry and Physics. . . . Reprinted from the Philosophical Transactions of 1821–1857; the Journal of the Royal Institution; the Philosophical Magazine, and other publications.

London: Richard Taylor and William Francis. 1859.

First edition. 8vo. viii, 496 pp. With 3 engraved plates (1 folding). Woodcuts in text. Pristine copy in mint condition, in original blind-stamped publisher’s green cloth.

THE COLLECTED edition of Faraday’s papers, dealing with his discoveries and researches on new compounds of carbon and chlorine (1821); alloys of steel (1822); hydrocarbons, including the discovery and isolation of benzene (1825); sulphonation of naphthalene (1826); decomposition of hydrocarbons (1827); manufacture of optical glass (1829–30); liquefaction of gases (1831); vibrating surfaces (1831); conservation of energy (1857); etc. One of the milestone books of nineteenth-century science. Not in Ferchl, Poggendorff, Smith, etc. (Bolton, 435; Cushing, F39; D.S.B., IV, 539; Duveen, 208; Edelstein, 822; Honeyman, 1269; Jeffreys, 458; Morgan, 254; Partington, IV, 103; Sotheran, Cat. 666 [1906], 1288 [“Very Scarce”]; Thornton & Tully, 207; Waller, 10800)

FARADAY, Michael

Experimental Researches in Electricity. . . Reprinted from the Philosophical Transactions of 1831–1852. With other Electrical Papers from the Proceedings of the Royal Institution and Philosophical Magazine. . .

London: Richard and John Edward Taylor (vols. 1 and 2); Richard Taylor and William Francis (vol. 3). 1849, 1844, 1855.

First editions of volumes 2 and 3, second edition of volume 1. 3 vols., 8vo. I: viii, 574 pp., 1 leaf (advertisements); 8 folding plates. II: viii, 302 pp., 1 leaf (blank); 5 plates (2 folding). III: viii, 588 pp.; 4 plates (3 folding). An excellent copy, entirely uncut, in the original blind-stamped publisher's green cloth (spines of vols. 1 and 2 repaired in matching cloth).

ONE OF the great classics of chemistry and physics and Faraday's most important work, in which are described his many experiments on the effects of electricity and magnetism on matter. These volumes "contain his discoveries of induced electricity ('Faradia current'), 1831; the electronic state of matter, '31; identity of electricity from different sources, '33; equivalents in electro-chemical decomposition, '34; electrostatic induction, '38; hydro-electricity, '43; diamagnetism, '46; relation of gravity to electricity, '51; atmospheric magnetism, '51, and many others" (Zeitlinger [Sotheran]). Partington discusses the chemical content of this work in detail. The corrected second edition of volume 1 is preferred (as here), because the first edition (London, 1839) contained many errors. Complete sets are rare. Quaritch published a facsimile reprint (ca. 1878), which is now scarce. Not in Bolton, Duveen, Ferchl, Waller, Wellcome, etc. (Dibner, *Heralds of Science*, 64; D.S.B., IV, 539; Edelstein, 823; Gartrell, 708; Harvey, 620; Honeyman, 1267; Horblit, 29; Jeffreys, 297; Knight, 158; Partington, IV, 103; *Printing and the Mind of Man*, 308; Smith, 167; Sondheimer, 498; Sotheran, Cat. 666 [1906], 1289 ["Scarce"]; Sparrow, *Milestones of Science*, 62; Wheeler Gift, 959, 959a)

FARADAY, Michael

Faraday as a Discoverer. By John Tyndall. . . .
London: Longmans, Green, and Co. 1894.

Fifth (last) edition. 8vo. xii, 199, (1) pp. Engraved frontispiece and plate facing page 92 (both are portraits of Faraday). Very good copy in contemporary half calf, gilt, cloth sides, dark-blue morocco label.

THE BEST edition of this well-known biography. Tyndall (1820–1893), natural philosopher, lectured at the Royal Institution and became professor there in 1853. He was a

colleague and good friend of Faraday, whom he succeeded as superintendent in 1867. Tyndall did much to popularize science, and his works were translated into most European and some Eastern languages. (D.S.B., IV, 544; Jeffreys, p. xxvi; Partington, IV, 101)

FARADAY, Michael

Histoire d'une Chandelle par Faraday avec une Notice biographique et des Notes complémentaires sur l'Acide Stéarique, les Lampes, l'Éclairage au Gaz et les Lumières Éblouissantes par M. Henri Sainte-Claire Deville. . . .
Paris: Bibliothèque d'Éducation et de Récréation. N.d. (1865).

First French edition. 12mo. 2 leaves, 310 pp., 1 leaf. With 54 woodcut text illustrations. Very fine copy in contemporary crimson quarter morocco, gilt, crimson pebbled boards.

THE FRENCH translation, by W. Hughes, of this celebrated book, with an interesting biography of Faraday by his friend Henri Sainte-Claire Deville (pp. 1–26). The lecture on platinum in the English edition is omitted; however, Deville has added valuable chapters on stearic acid, lamps of various kinds, gaslighting, and electric arcs (pp. 265–307). Scarce. Not in the usual bibliographies. (Bolton, 435)

FARADAY, Michael

The Life and letters of Faraday. By Dr. Bence Jones, . . .
London: Longmans, Green, and Co. 1870.

Second edition. 2 vols., 8vo. I: viii, (4), 385, (1) pp. II: 6 leaves, 491, (1) pp. With engraved frontispiece portrait of Faraday in volume I and woodcut frontispiece of Faraday in his laboratory at the Royal Institution in volume II. A delightful woodcut of Faraday's study at the Royal Institution is also in volume II. Both volumes contain several text woodcuts. Fine copy in contemporary gilt-ruled calf, tastefully rebaced in matching calf, red and green morocco labels; with large gilt medallions on each front cover (depicting the ancient arms of Saint Andrews University).

THE CAREFULLY revised second and best edition, published the same year as the first, of the standard life, containing copious extracts from Faraday's journals and correspondence. This edition omits fifty pages of inaccurate and controversial matter contained in the first edition. The physician and chemist Henry Bence Jones (1814–1873), secretary of the Royal Institution, was a close friend of Faraday (see D.N.B.). (Bolton, 198; Cushing, J109; D.S.B., IV, 539; Jeffreys, p. xxv; Knight, 225; Morgan, 258; Osler, 7690; Partington, IV, 101; Smith, 257; Thornton & Tully, 208)

FARADAY, Michael

Manipulations Chimiques, par Faraday, . . . Traduit de l'Anglais par M. Maiseau, . . . et revu pour la partie technique par M. Bussy, . . .

Paris: A. Sautelet et Cie. 1827.

First French edition. 2 vols., 8vo. I: xxiv, 428 pp. II: 2 leaves, 364 pp., 1 leaf (errata). Woodcuts in text. Very fine copy in the original gilt-ruled quarter calf, marbled boards.

THE ONLY French translation of this important book, being a faithful version of the first edition (London, 1827), with notes added by the translator, Maiseau, converting English weights and measures into the French (i.e., metric) system. Inevitably, some misprints have occurred, perhaps the most grotesque of which is the reference to "sir Hamprhy Davy" [*sic*] in the preface (p. vii). Faraday's bibliographer, Jeffreys, does not cite translations of his works. A German translation also appeared: *Chemische Manipulation* (Weimar, 1828). Rare. Not in Thornton & Tully, Wellcome, or the usual bibliographies. (Bolton, 434; Ferchl, 150)

FARADAY, Michael

Michael Faraday. By J. H. Gladstone, Ph.D., F.R.S.

London: Macmillan and Co. 1872.

First edition. 8vo. viii, 176 pp. + 48 pp. (publisher's catalogue, dated April 1872). Very good copy in original brown pebbled cloth, spine gilt-lettered.

AN EARLY and valuable biography of Faraday, by one of his friends. In his preface Gladstone says: "In compiling my book I have preferred, where practicable, to illustrate the character of Faraday by documents or incidents hitherto unpublished, or contained in those sketches of the philosopher which are less generally known." John Hall Gladstone (1827–1902) was a lecturer at St. Thomas's Hospital (1850–52) and Fullerian professor of chemistry at the Royal Institution (1874–77). He carried out research on several subjects, on which see Partington (IV, 582–583). "Scarce" (Zeitlinger). (Bolton, 198; Jeffreys, p. xxv; Osler, 1346; Partington, IV, 101; Smith, 195; Sotheran, Cat. 725 [1912], 7796)

FARADAY, Michael

Michael Faraday. By J. H. Gladstone, Ph.D., F.R.S. . . .

London: Macmillan and Co. 1874.

Third edition. 8vo. xii, 179, (1) pp. + 32 pp. (publisher's catalogue, dated September 1874). Very good copy in original brown pebbled cloth, spine gilt-lettered, with frontispiece.

THE FINAL and best edition (first, 1872; second, 1873), containing "some further particulars about Faraday, especially in regard to 'his method of working'; and an engraving from a photograph by Watkins, which best recalls to my recollection the features and the usual expression of the genial philosopher" (preface). Evidently very scarce, Jeffreys (p. xxv) mentions only the first and second editions, and Sotheran's *Bibliotheca Chemico-Mathematica* (Cat. 725 [1912], 7797) states that the second edition (1873) is the last. (Morgan, 256)

FARADAY, Michael

On new compounds of carbon and hydrogen, and on certain other products obtained during the decomposition of oil by heat.

By M. Faraday, F.R.S. . . . Read June 16, 1825.

First edition. 4to. Extract from *Philosophical Transactions of the Royal Society*, vol. 115 (1825), pp. 440–466. Fine copy with wide margins, in modern blue wrappers with printed paper top cover label.

THE FIRST public announcement of the discovery of benzene, the greatest chemical discovery by Faraday. Originally named by him "bicarburet of hydrogen," benzene is the parent substance of all aromatic compounds. It constitutes the basis of thousands of organic compounds, dyes, perfumes, and medicinal products, as well as many polymers and structural materials. The discovery of benzene led to the creation of numerous chemical companies and the manufacture of materials previously unknown. This paper is a thorough study of the physical and chemical properties of benzene. Berzelius described this research as "without doubt one of the most important which has enriched chemistry during 1825." (D.S.B., IV, 531; Jeffreys, No. 116; Kendall, *Michael Faraday*, 101–102; Poggendorff, I, 719; Russell, *Michael Faraday*, 71; Tyndall, *Faraday as a Discoverer*, 16–17; Williams, *Michael Faraday*, 107–108)

FARADAY, Michael

On the Practical Prevention of Dry Rot in Timber; being the substance of a lecture delivered by Professor Faraday, F.R.S., &c. at the Royal Institution, February 22, 1833, With observations, &c.

London: J. and C. Adlard, Printers, Bartholomew Close. 1833.

First separate edition. 8vo. 24 pp. Fine copy in contemporary dark-blue half calf, marbled boards, maroon morocco label, spine gilt. Bound with: Kyan, John H., Copy of a letter to Beilby Thompson [on] Kyan's patent process (London, 1834).

FARADAY'S INAUGURAL lecture to the Royal Institution. "On February 22, 1833, Faraday appeared for the first time as Fullerian Professor of Chemistry, at the Royal Institution. He chose as the subject of his discourse 'The Practical Prevention of Dry Rot in Timber.' The method advocated by him was, as he pointed out, the invention of J. Howard Kyan, and it consisted in treating the timber with corrosive sublimate. The pamphlet containing the account of this lecture is now very scarce—there is no copy either in the British Museum, the Royal Society, the Royal Institution, or the Athenaeum libraries" (Rollo Appleyard, *A Tribute to Michael Faraday* [1931, pp. 139–140]). This lecture was also printed in three journals in 1833: viz. *Phil. Mag.*, 2, 313–14; *Literary Gazette*, 136 (March 2); and *Athenaeum*, 139 (no. 279, March 2). Faraday herein fully supports the claims made in Kyan's patent that wood, cloth, rope, etc., steeped in a solution of corrosive sublimate (mercuric chloride) will withstand the ravages of insects, mildew, fungus, etc., leaving the objects unaffected even after several years' exposure. He refers to his early experiments with Sir Humphry Davy on the use of mercuric chloride to preserve organic materials against dry rot. At the end (pp. 21–24) testimonial letters from the British Admiralty praise the use of Kyan's process for the preservation of wood used in the construction of ships, docks, etc. (Jeffreys, 210)

FARADAY, Michael

On the Practical Prevention of Dry Rot in Timber; being the Substance of a Lecture delivered by Professor Faraday, F.R.S., &c. &c. at The Royal Institution, February 22, 1833. With Observations, &c.

London: John Weale. 1837.

8vo. 30 pp., 1 leaf (advertisement). Very good copy in the original printed yellow wrapper, nineteenth-century pebbled cloth, front cover gilt-lettered. Bound with: Birkbeck, George, *A Lecture on the Preservation of Timber by Kyan's Patent* (London, 1834). From the library of Joseph Warner Henley (1793–1884), conservative politician (M.P. Oxfordshire, 1841–78), and president of the Board of Trade (see D.N.B.), with his signature in ink on the front wrapper.

A REPRINT OF Faraday's inaugural lecture at the Royal Institution, here in its third edition. Jeffreys states that this lecture was printed in three journals in 1833 (viz. *Phil. Mag.*, 2, 313–14; *Literary Gazette*, 136 [March 2]; and *Athenaeum*, 139 [no. 279]). The first edition, of twenty-four pages, was printed by J. and C. Adlard, London, 1833. In 1836 John Weale published the second edition, in thirty pages. The present is evidently the final edition in book form. Faraday here fully endorses the claims made in Kyan's patent, namely, that wood, cloth, rope, etc., steeped in a solution of mercuric

chloride will withstand the ravages of insects, mildew, fungus, etc., leaving the objects untouched even after several years' exposure. He refers to his early experiments with Sir Humphry Davy on the use of mercuric chloride to preserve organic materials against dry rot. Pages 27–30 comprise testimonial letters from the British Admiralty praising the use of Kyan's process for the preservation of wood used in the construction of ships, docks, etc. A very scarce Faraday item. Not in Bolton, Duveen, Morgan, Smith, etc. (Jeffreys, 210)

FARADAY, Michael

On the Practical Prevention of Dry Rot in Timber; being the substance of a lecture delivered by Professor Faraday, F.R.S., &c. &c. at the Royal Institution, February 22, 1833. With observations, &c.

London: Published by John Weale, 59, High Holborn. 1837.

Third edition. 8vo. 30 pp., 1 leaf (advertisement on Kyan's patent). Very good copy in nineteenth-century pebbled cloth, front cover gilt-lettered, with original printed yellow wrappers bound in. Bound with: Birkbeck, George, *A lecture on the preservation of timber by Kyan's patent* (London, 1834). From the library of Joseph Warner Henley (1793–1884), conservative politician (M.P. Oxfordshire, 1841–78) and president of the Board of Trade (see D.N.B.), with his signature in ink on front wrapper.

AN ESSENTIALLY unchanged reprint of Faraday's inaugural lecture to the Royal Institution (first: London, 1833; second, 1836). To this final edition has been added almost two pages of text on the use of Kyan's process in the treatment of timber placed in the fungus pit at Woolwich. The advertisement leaf gives details on the newly formed Anti Dry-Rot Company, constituted by act of Parliament, and its treatment of timber, canvas, and cordage. (Jeffreys, 210)

FARADAY, Michael

The Subject Matter of a Course of Six lectures on the Non-Metallic Elements. . . . Arranged, by permission, from the lecturer's notes, lent for the occasion by J. Scoffern, . . . To which is appended, remarks on the quality and tendencies of chemical philosophy, on allotropism, and ozone; together with manipulative details relating to the performance of experiments indicated by Professor Faraday.

London: Longman, Brown, Green, and Longmans. 1853.

First edition. 8vo. viii, 293, (1) pp., 1 leaf (advertisements). Fine copy, entirely uncut, in original blind-stamped brown cloth.

ONE OF Faraday's scarcest works, containing much historical material; dedicated to William Thomas Brande,

professor of chemistry at the Royal Institution. The non-metallic elements discussed include oxygen, chlorine, bromine, iodine, hydrogen, nitrogen, sulphur, phosphorus, and carbon. These lectures were delivered between 24 April and 5 June 1852, and the manuscript notes of them still exist at the Royal Institution. (Bolton, 435; Duveen, 207; Edelstein, 827; Jeffreys, 399; Partington, IV, 103; Smith, 168; Sondheimer, 496; Sotheran, Cat. 725 [1912], 7789)

FARISH, William

A Plan of a Course of Lectures on Arts and Manufactures, more particularly such as relate to Chemistry. By William Farish, M.A. Fellow of Magdalen College, and Professor of Chemistry in the University of Cambridge.

Cambridge: Printed by J. Burges Printer to the University. 1796.

First edition. 4to. 1 leaf, 36 pp. Fine copy, uncut, in contemporary boards; interleaved throughout, with notes in ink by an unidentified eighteenth-century student in shorthand on several leaves. Bound with: Wollaston, F. J. H., *A Plan of a Course of Chemical Lectures* (Cambridge, 1794). From the library of Professor Franz Sondheimer, with his bookplate on the first free endpaper.

FARISH (1759–1837), Jacksonian professor at Cambridge, became professor of chemistry in 1794 and was professor of natural and experimental philosophy, 1813–36. His course of chemistry was divided into four parts: Metals and Minerals, Animal and Vegetable Substances, Construction of Machines, and Water-Works and Navigation. The sub-headings of each of the sections gives a good idea of the scope of these lectures on the chemical, metallurgical, and mining practices of the period. A rare work that is not mentioned in Bolton, Duveen, Ferchl, Ferguson, Neu, Partington, Poggendorff, Smith, Waller, Watt, Wellcome, etc.

FARISH, William

A Plan of a Course of Lectures on Arts and Manufactures, more particularly such as relate to Chemistry. By William Parish, B.D. Professor of Chemistry in the University of Cambridge.

Cambridge: Printed by J. Smith, Printer to the University. 1821.

Third edition. 8vo. 1 leaf, 35, (1) pp. Fine copy, interleaved with blank pages (a few with contemporary MS notes in ink and pencil), in original blue boards with unlettered calf back. Unidentified signature, dated 1825, on title page.

ESSENTIALLY A reprint of the first edition of 1795 and the second of 1813, with minor changes. Rare. Unrecorded by the usual bibliographers.

FAUJAS DE SAINT-FOND, Barthélemy

Description des Expériences de la Machine Aérostatique de MM. Montgolfier, et de celles auxquelles cette découverte a donné lieu; suivie de recherches sur la hauteur à laquelle est parvenu le ballon du Champ-de-Mars . . . ; d'un mémoire sur le gaz inflammable . . . d'une lettre sur les moyens de diriger ces machines . . . Ouvrage orné de neuf planches . . . représentant les diverses machines qui ont été construites jusqu'à ce jour . . . & celle dans laquelle des hommes ont été enlevés jusqu'à la hauteur de 324 pieds, &c.

Paris: Chez Cuchet. 1783.

First edition. 8vo. xl, 299, (3) pp., 2 leaves (*Supplément*). With 9 copperplates (in first state, including famous frontispiece by De Launay), and 1 folding table. Fine copy in nineteenth-century half morocco, marbled boards and endpapers, spine gilt-lettered, dated, and stamped with 5 small balloons in gilt.

THE FIRST book ever published on ballooning: an epochal work marking the beginning of man's conquest of the air, which led eventually to the invention of the airplane and powered flight. By reading Priestley's book on air, the Montgolfier brothers were stimulated to experiment with paper bags held over fire, which would cause the bags to rise. After many experiments, they made a large linen and paper balloon that they sent into the air at Annonay on 5 June 1783. A hydrogen-filled balloon, made by L. A. C. Charles, ascended from the Champs-de-Mars, Paris, on 27 August 1783, and a fire balloon carrying a living cargo was sent up by J. M. Montgolfier on 19 September 1783. Finally, Pilâtre de Rozier ascended in a "captive" balloon on 19 October 1783. All these events are described herein, as is the process for generating large volumes of hydrogen (by the reaction of sulfuric acid with iron, tin, zinc, etc.). Lavoisier was one of the commissioners of the Académie des Sciences who verified Montgolfier's experiments (pp. 33 ff.). Rare. The second edition (1784) appeared with a supplementary volume. (Dibner, *Heralds*, 179; D.S.B., IX, 493; Duveen, *Lavoisier*, Supplement, 116; Poggendorff, I, 724; P.M.M., 229; Sparrow, *Milestones*, 64; Tissandier, 21)

FAUJAS DE SAINT-FOND, Barthélemy

Description des Expériences de la Machine Aérostatique de MM. Montgolfier, . . .

Paris; & se trouve à Bruxelles, Chez B. Le Francq, Imprimeur-Libraire, . . . 1784.

Third (first Brussels) edition. 8vo. xxix, (1), 204 pp. Folding table (facing p. 106) and 9 copperplates (including frontispiece) printed on pale blue paper. Fine copy, entirely uncut, with wide margins, in quarter calf antique gilt, marbled boards, maroon morocco label gilt.

THE THIRD printing of this celebrated work, following the text of the second French edition (Paris, 1784), with minor variations. The last line of the title has “3000 pieds” (cf. “324 pieds” in first edition); otherwise the wording is identical to that of the first edition. All of the plates have been reengraved. Plate III and the frontispiece are engraved in reverse (i.e., mirror images); the other seven plates are close copies of those in the first edition. A very rare edition, not listed in the usual bibliographies.

FAUJAS DE SAINT-FOND, Barthélemy

Essai sur le Goudron du Charbon de Terre; sur la manière de l'employer pour caréner les Vaisseaux, & celle d'en faire usage dans plusieurs arts; sur les différens produits de ce combustible fossile, tels que le bitume solide, l'huile minérale, le naphthe, l'alkali volatil, l'eau styptique propre à la préparation des cuirs, le noir de fumée, le coaks ou charbon épuré: Précédé de recherches sur l'origine & les différentes sortes de Charbon de terre. Par M. B. Faujas.

Paris: De l'Imprimerie Royale. 1790.

First edition. 8vo. 2 leaves, 134 pp., 1 leaf (blank). Woodcut on title, woodcut head- and tailpieces. Fine unpressed copy, lower edges uncut, in half calf antique, marbled boards, 2 maroon morocco labels gilt, spine dated. Contemporary bookseller's slip (“Chez Goeury”) pasted below date on title page.

A RARE WORK on the distillation of coal, describing the different products obtained (naphtha, mineral oil, tar, ammoniacal liquor, etc.), with experiments and commentary on their practical applications. A significant eighteenth-century precursor of the books that appeared during the early and mid-nineteenth century with the advent of the coal tar and synthetic chemical industries, which were outgrowths of the coal gas industry. Pages 49–98 comprise the French translation of the Earl of Dundonald's *Account of the Qualities and Uses of Coal Tar and Coal Varnish* (London, 1785). Pages 41–48 reprint the *Rapport* by Lavoisier and Berthollet, presented to the Académie Royale des Sciences (dated 13 October 1785), on the tar and oil prepared by Faujas de Saint-Fond. Not in the usual early chemical bibliographies, nor in Blake, D.S.B., Waller, Ward & Carozzi, Wellcome, etc. (Duveen & Klickstein, No. 329; Ferchl, 151; Poggendorff, I, 724)

FAUJAS DE SAINT-FOND, Barthélemy

Essai sur l'Histoire Naturelle des Roches de Trapp, contenant leur analyse, & des recherches sur leurs caractères distinctifs; du tableau systematique de toutes les espèces & variétés de trapps & des roches qui ont pour base cette pierre.

Paris: Rue et Hôtel Serpente. 1788.

First edition. 12mo. 2 leaves, 159, (1) pp. Fine copy, uncut and unpressed, in half calf antique, marbled boards, maroon morocco label gilt, spine richly gilt, with original patterned wrappers bound in. A presentation copy, inscribed in ink by the author on half title: “A M. Verniquet de Lupune de M. Faujas de St. Fond.”

A “MONOGRAPH on the trap-rocks in which he showed how loosely this name had been applied in the literature, so that rocks of many different kinds were embraced in it” (Zittel). Trap rocks include all igneous rocks that are neither granitic nor of recent volcanic formation. The book deals with the locations of trap rocks (Sweden, Scotland, Derbyshire, Castleton, the French Alps, and other French territories), their chemical analyses, and their combinations. Pages 122–125 deal with Lavoisier's experiments on red porphyry. Rare, especially when inscribed by the author. Not in Blake, D.S.B., or the usual chemical bibliographies. (Ferchl, 151; Poggendorff, I, 724; Ward & Carozzi, 782; Watt, I, 358a; Zittel, 122)

FAUJAS DE SAINT-FOND, Barthélemy

Mémoire sur la Manière de Reconnoitre les Différentes Espèces de Pouzzolane, et de les employer dans les Constructions sous l'eau et hors de l'eau; pour servir de suite & de supplément aux recherches sur la pouzzolane de M. Faujas de Saint-Fond.

Amsterdam, et se trouve à Paris: Chez Nyon. 1780.

First edition. 8vo. 52 pp., 2 leaves. With 2 copperplates. Very fine copy. Bound with: Faujas de Saint-Fond, B., *Recherches sur la Pouzzolane* (Paris, 1778); La Faye, P. de, *Recherches sur . . . Chaux* (Paris, 1777); and Lorient, Antoine Joseph, *Mémoire sur . . . Batir* (Paris, 1774).

A SEQUEL TO the author's *Recherches sur la Pouzzolane* (Paris, 1778), describing the different kinds of pozzolana employed in building and construction. On page 3 he defines pozzolana as “un ciment naturel formé par les scories & les laves pulvérulentes des Volcans: cette terre, le ciment par excellence des Romains, a été très-anciennement appelée Pouzzolane, du nom de la Ville de Pouzzole.” Faujas de Saint-Fond carried out a considerable amount of excellent research on volcanic products, which resulted in this and other important works on the subject. “In the course of his journeys in Southern France he found a volcanic tuff identical with the Pozzuolo earth, and established the flourishing industry of the preparation of cement” (Zittel). Rare. Not in D.S.B. or the usual early chemical bibliographies. (Ferchl, 151; Poggendorff, I, 724; Ward & Carozzi, 780; Zittel, 46)

FAUJAS DE SAINT-FOND, Barthélemy

Minéralogie des Volcans, ou Description de toutes les Substances produites ou rejetées par les Feux Souterrains. . .
Paris: Chez Cuchet. 1784.

First edition. 8vo. xiv, (15)–18, 511, (1) pp. With 3 copperplates (Sellier Sculp.). Small woodcut on title, woodcut head- and tailpieces. Very fine, crisp copy, in contemporary half calf gilt, speckled boards, red and green morocco labels gilt.

AN IMPORTANT study describing the types of minerals and chemicals produced by volcanoes. The author, who first recognized the volcanic origin of basalt, discusses the crystallography of the minerals therein, as well as the morphology of basaltic masses. Plates II and III illustrate columnar basalt buttes near Pradelle in the Massif Central. Various analytical chemical tests used by the author in his investigations on basalt, lavas, and other igneous rocks are described. The book is well documented by references to contemporary literature. Very scarce. Not in Blake, Bolton, Duveen, Edelstein, Ferchl, Partington, Smith, Wellcome, etc. (British Museum [Natural History], II, 557; D.S.B., IV, 549; Hoover, 292; Poggendorff, I, 724; Ward & Carozzi, 781; Watt, I, 358a)

FAUJAS DE SAINT-FOND, Barthélemy

Recherches sur la Pouzzolane, sur la Théorie de la Chaux et sur la cause de la dureté du mortier, avec la composition de différens cimens en pouzzolane, & la manière de les employer, tant pour les bassins, aqueducs, réservoirs, citernes & autres ouvrages dans l'eau, que pour les terrasses, bétons & autres constructions en plein air. . .

Grenoble: Chez J. Cuchet . . . ; Paris: Chez Nyon, aîné. 1778.

First edition. 8vo. 4 leaves, 125, (1), 10 pp. Very fine copy in original mottled calf gilt, maroon morocco label gilt. Bound with: Faujas de Saint-Fond, B., *Mémoire sur . . . Pouzzolane* (Paris, 1780); La Faye, P. de, *Recherches sur . . . Chaux* (Paris, 1777); and Lorient, Antoine Joseph, *Mémoire sur . . . Batir* (Paris, 1774).

ORIGINALLY a lawyer, the author (1741–1819) was greatly influenced by Buffon. He abandoned law, and in 1778 he became assistant naturalist at the Musée d'Histoire Naturelle in Paris. Appointed royal commissioner of mines in 1785, he became professor of geology at the museum in 1793, a post he held until his death. The present work is a separate printing of the section on cement from his important *Recherches sur les volcans éteints du Vivarais et du Velay* (Grenoble, 1778). In 1775 he discovered a rich pozzolana mine on Mount Chenavary, which was used by the French government for building the port of Toulon. The use of

pozzolana (a volcanic ash containing silica, alumina, lime, etc.) for the preparation of mortars and hydraulic cements is covered in this work, as is the chemistry of these materials. Not in the usual early chemical bibliographies. (Smith, 169; Sotheran, Cat. 879 [1947], 3162 ["Rare"]; Ward & Carozzi, 778; Zittel, 46)

FAUJAS DE SAINT-FOND, Barthélemy

Système Minéralogique des Volcans, ou Nouvelle Classification de leurs Produits. Par M. Faujas Saint-Fond.
Paris: De l'Imprimerie de Levrault. 1809.

First (only) edition. 8vo. 4 leaves, 266 pp., 1 leaf (blank). With 8 fine copperplates (5 folding). An excellent copy in contemporary quarter calf gilt, tastefully rebaced with original spine laid down, dark-green morocco label gilt, speckled boards.

PUBLISHED IN a strictly limited edition of only sixty copies (see leaf following title, first paragraph), this is the special issue extracted from the *Essais de Géologie* (Paris, 1809, vol. II), one of the author's "main geological works" (D.S.B.). Preceded by a new title and new table of contents, it is on *papier vélin* with specially wide margins for additional annotation. The author states that he had this edition printed for "savans qui s'occupent des mêmes recherches, et qui voudront bien le recevoir comme un faible hommage de ma haute estime pour leurs talens." A novel classification of volcanic minerals is presented, with detailed discussions of their chemical composition and crystallography. The beautiful plates depict views of basaltic formations on the Isle of Staffa in the Hebrides (Fingal's Cave), the Isle of Mull, and various locations in France. Very rare. Unrecorded by Ward & Carozzi and the usual bibliographers.

FAUJAS DE SAINT-FOND, Barthélemy

Voyage en Angleterre, en Écosse et aux îles Hébrides; ayant pour objet les Sciences, les Arts, l'Histoire naturelle et les Moeurs; avec la Description minéralogique du pays de Newcastle, des montagnes du Derbyshire, des environs d'Édinburgh, de Glasgow, de Perth, de S.-Andrews, du duché d'Inverary et de la grotte de Fingal. . . Par B. Faujas-Saint-Fond. . .

Paris: Chez H.J. Jansen, Imprimeur-Libraire, etc. 1797.

First edition. 2 vols., 8vo. I: 430 pp., 1 leaf (errata). II: 434 pp., 1 leaf (errata). With 7 folding copperplates. Lightly embossed stamp on titles (Boston Society of Natural History); otherwise fine copy in original vellum-tipped boards, rebaced in calf antique, spines gilt, each with 2 maroon morocco labels.

IN 1784 the geologist Faujas (1741–1819) traveled through England, Scotland, and the Hebrides. As he understood English, his account contains valuable information on the

application of science (including chemistry) to English industries, as well as the geology of the British Isles. In London he visited Joseph Banks, Tiberius Cavallo, John Lettsom, John Sheldon, the Royal Society, Greenwich Observatory and John Herschel, Kew Gardens, the British Museum, etc. He describes the coal industry at Newcastle. In Manchester he saw the collections of Thomas Henry (who translated Lavoisier). In Birmingham he met James Watt and Joseph Priestley, of whose laboratory he gives a long description. In Edinburgh he visited the university and learned societies and gives a detailed account of his meeting with Dr. Joseph Black. He also visited Josiah Wedgwood and his pottery and the glassworks of Parker. At Prestonpans he saw the alkali and sulphuric acid works, as well as the Carron iron works. His reports on the geology of the Western Isles of Scotland are of great historical interest. (Challinor, 16; D.S.B., IV, 549; Geikie, 256; Partington, III, 561; Poggendorff, I, 724; Ward & Carozzi, 783; Zittel, 114)

FAUJAS DE SAINT-FOND, Barthélemy

Travels in England, Scotland, and the Hebrides; undertaken for the purpose of examining the state of the Arts, the Sciences, Natural History and Manners, in Great Britain: containing Mineralogical Descriptions of the Country round Newcastle; of the Mountains of Derbyshire; of the Environs of Edinburgh, Glasgow, Perth, and St. Andrews; of Inverary, and other Parts of Argyleshire; and of the Cave of Fingal. . . . Translated from the French of B. Faujas Saint-Fond. . . . London: Printed for James Ridgway, York Street, St. James's Square. 1799.

First English edition. 2 vols., 8vo. I: 1 leaf, viii, 361, (1) pp. II: viii, 352 pp. With 7 engraved plates, all but the first and sixth signed "Designed by St. Fond I. King sculpt." Very good copy in original calf, rebacked in morocco, gilt, each spine with 2 maroon labels.

THE FIRST English edition of *Voyage en Angleterre* (Paris, 1797). The anonymous translator has updated the observations of the author and added notes of his own on mineralogical and chemical matters. In volume I (facing p. 134) there is a plate of coal strata in a mine near Newcastle, which was not in the French edition, and two other illustrations of that edition are combined on one plate. The illustrations in volume II are reduced copies of the originals. A revised edition of this translation (limited to 450 copies) was edited with notes and a memoir of the author by Sir Archibald Geikie (Glasgow, 1907, 2 vols.). Not mentioned by Partington, Ward & Carozzi, Zittel, etc. (Challinor, 16; D.S.B., IV, 549; Porter, *Earth Sciences*, 487; Roller & Goodman, I, 387; Watt, II, 826u; Wellcome, III, 12)

FAUKEN, Johann Peter Xavier

Dissertatio Inauguralis Chémico-Médica de Solutione Reguli et Vitri Antimonii in diversis vinis hic loci cognitiss. Vienna: Typ. Joan. Thom. Nob. De Trattnern. 1767.

First edition. 8vo. 44 pp. Woodcut vignette on title page. Woodcut head- and tailpieces. Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

"PURELY PHARMACEUTICAL, containing directions for preparing upwards of sixty different vinous solutions of antimony" (Waring). A dissertation by Fauken, or Faucken (1740–1794), on the dissolution in various wines of regulus of antimony (i.e., metallic antimony) and glass of antimony (i.e., antimony tetroxide, Sb_2O_4 , prepared by roasting the ore stibnite, Sb_2S_3). Although not named on the title page, the praeses was probably Heinrich Johann Nepomuk von Cranz (1722–1799), professor of medicine at Vienna, whom Fauken praises on pages 7–8 of this work (see Partington, III, 148). Rare. Not in the usual chemical and medical bibliographies. (Ferchl, 151; Waring, 237)

FAULHABER, Albert Friedrich

Dissertatio Inauguralis Médica Sistens Theoriam Solutionis Chémicae, . . . praeside . . . Philippo Friderico Gmelin, . . . pro summis in medicina honoribus d. (blank) Aprilis MDCCLXV. Auctor Albertus Fridericus Faulhaber, Ulmensis.

Tübingen: Typis Sigmundianis. (1765).

First edition. 4to. 36 pp. Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

AN IMPORTANT doctoral dissertation in which eighteenth-century theories of chemical solution and solubility are discussed. Faulhaber (dates unknown) completed the work (colophon: "Scripsi e museo meo, D. XX. April. 1765") and presented it to the Faculty of Medicine of the University of Tübingen, with the professor of chemistry and botany Philipp Friedrich Gmelin (1721–1768) presiding. He correctly concluded that on dissolution in a solvent (e.g., water) salts are not chemically changed (as some contemporary scientists believed) and cites the works of many authorities (e.g., Boerhaave, Eller, Homberg, Lemery, and Musschenbroek). On page 12 Faulhaber refers to Newton's *Opticks* and Boyle's *Works* (1744). On pages 11, 17, 18, 21, and 27 there is a discussion of the writings of the Russian chemist Lomonosov. A rare work. Not in the major early chemical libraries. (Bolton, 435; Ferchl, 151)

FAVRE, A. P.

Sulle falsificazioni delle sostanze medicinali e de' mezzi di scoprirle. . . . Traduzione italiana di Luigi Comaschi . . . con aggiunta di nuovi articoli e note tratte dalle opere del chiarissimo Professore Brugnatelli.

Milan: Dalla tipografia di Gio. Silvestri. 1813.

First Italian edition. 8vo. 1 leaf, 242 pp., 1 leaf. Fine copy, unpressed and uncut, in old patterned boards.

AN IMPORTANT work, arranged in the form of a dictionary, in which the impurities in drugs and medicinal preparations are exposed and are detected chemically. The original French edition appeared as *De la sophistication des substances médicamenteuses, et des moyens de la reconnaître* (Paris: D. Colas, 1812). To this translation by Dr. Comaschi, the famous Italian chemist Luigi Brugnatelli has added notes on the chemical composition of drugs used in medicine. In the preface Favre refers to articles by Friedrich Accum (published in *Nicholson's Journal*, 1800, IV, 33, 159) on the adulteration of drugs and chemicals used in pharmacy. Not in the usual chemical and medical bibliographies. (Wellcome, III, 13)

FAXE, Carl Arvid

Chemisk Afhandling om Vitriol-Syrans Egenskaper. Med Ampliss. Fac. Phil. Samtycke Under Doct. Christian Wollins . . . Inseende . . . Den 21 Decembr. MDCCLXXXIV. Af Carl Arvid Faxe Carolicoronens.

Tryct i Lund. (1784).

First edition. 4to. 22 pp. Very good copy with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A COMPREHENSIVE MONOGRAPH on the history, preparation, properties, and chemical reactions of sulphuric acid, with references to Boyle, Dossie, Hoffmann, Macquer, Stahl, et al. Faxe (fl. 1780) presented this excellent dissertation at the University of Lund, under the direction of the professor of chemistry Christian Wollin (1730–1798). Rare. Not in the usual chemical bibliographies, or Blake, Waring, Wellcome, etc. (Ferchl, 588; Poggendorff, II, 1364)

FEHR, Johann Michael

Anchora Sacra, vel Scorzonera, ad normam & formam Academiae Naturae-Curiosorum elaborata à Johann. Michael. Febr, D. Anno salutiferi partus MDCLXVI. accessit Shediasma Curiosum de Unicornu fossili Job. Laurentii Bausch, D. (quotation from Seneca, 5 lines).

Jena: Impensis Viti Jacobi Trescher Bibliopolae Vratislaviensis. Typis Joh. Jacobi Bauhoferi. N.d. (1666).

First edition. Sm. 8vo. 7 leaves + 204 pp. + 6 leaves (index). Title printed in red and black. Engraved frontispiece and 4 engraved plates depicting scorzonera plants. Some natural slight embrowning; otherwise a very good copy in contemporary speckled calf, rebaked. From the library of Professor Franz Sondheimer (1926–1981), with his bookplate on the recto of the first free endpaper.

A TREATISE ON the *Scorzonera Hispanica*, Linn., or black salsify, that is much cultivated in Europe for its root, which somewhat resembles the parsnip. Fehr describes the plant, gives its chemical composition (obtained by means of the analytical tests used in the mid-seventeenth century), and enumerates medicinal preparations of scorzonera. There are many references to the works of earlier and contemporary chemists and pharmacists (e.g., Libavius, De Boodt, Senner, Becher, and Zwelfer). Pages 169–204 comprise an extensive discussion of the virtues of various types of “unicorn” horn, including narwhal horn and other horn-shaped naturally occurring objects (e.g., belemnites, stalactites, and elongated mineral crystals) and the medicines made from them. Both works are of iatrochemical interest. The section on unicorn horns is by Johann Lorentz Bausch (1605–1665) and has a divisional title page. It is listed separately by Ferchl (p. 28) and Wellcome (II, 119). Bausch died from a case of trigeminal neuralgia, and Fehr gave the first authentic description of it in 1671 (see Garrison & Morton, 4512). A rare book. Not in Duveen, Neu, Smith, Waller, etc. (Ferchl, 152; Ferguson, I, 266 [not in Young Coll.]; Waring, 676; Watt, I, 359u; Wellcome, III, 14)

FEHR, Johann Michael

Hiera Picra, vel de Absinthio analecta, ad normam & formam Academiae Naturae Curiosorum selecta, à Joh. Michaele Febr, D. Phys. Svinfurt. Ordin. Anno salutiferi partus MDCLXVII. Quae Deus occulta esse voluit, non sunt scrutanda; Quae verò manifesta fecit, non sunt negligenda, ne & in illicitè-Curiosi & in his damnabiliter inveniamur ingrati. Prosper de vocat. gent.

Leipzig: Impensis Viti Jacobi Tresheri, Bibliopolae Vratislaviensis. Literis Johan-Erici Hahnii. 1668.

First edition. 8vo. 8 leaves, 176 pp., 2 leaves. Title printed in red and black. Small woodcut of an earwig on page 79, large folding woodcut of a leech facing page 124, and 3 copperplates of plants. Fine copy in half vellum, marbled boards. Bound with: A large folding broadside, being an address to the Academia Naturae Curiosorum, by J. M. Fehr, dated November 7, 1666.

FEHR (1610–1688), a noted German physician, received the M.D. degree at Padua, 1641. He settled at Schweinfurt, and with Johann Lorenz Bausch and two other physicians founded the Academia Naturae Curiosorum, the second

learned society in Germany, which is still in existence today. Dating from 1652, it predates both the Cimento and the Royal Society. The present work on the pharmaceutical uses of absinthe is of chemical interest. Fehr describes the various preparations made from wormwood (*Artemisia absinthium*) and their uses in treating epilepsy, fevers, nausea, cholera, hepatitis, intestinal parasites, etc. The folding plate (address to the Academia), dated 1666, was omitted from many copies (e.g., those of Duveen and Wellcome) but is here present, although published two years earlier. A rare book. (Duveen, 209; Ferchl, 152; Ferguson, I, 266; Neu, 1399; Waring, 267; Watt, I, 359u; Wellcome, III, 14)

FEHR, Johann Michael

Viri Nobilissimi, Excellentissimi, Experientissimi & Clarissimi, Patroni, Fautores & Collegae plurimum honorandi. . . . NN. & E.E. V.V. Addictissimus Joh. Michael Fehr, Philosoph. & Medic. Doct. Phys. Svinf. Ordinar. Acad. Nat. Curiosor. Argonauta & Praeses.

Leipzig: Literis Johannis Erii Hahnii. 1666.

First edition. Folio broadside. 1 leaf, printed on one side only. Fine copy. Bound with: Fehr, J. M., *Hiera Picra* (Leipzig, 1668).

THIS EXCEEDINGLY rare broadside by Fehr was published one year after the death of Dr. Lorenz Bausch, the president of the Academia Naturae Curiosorum. Bausch, town physician of Schweinfurt, had studied medicine in Italy and was very impressed with the work of the Accademia dei Lincei. He had a museum of "rarities," had studied chemistry and botany, and in 1651 had proposed to the physicians of Schweinfurt that a scientific academy be formed. This proposal was accepted, and in January 1652 the Academia Naturae Curiosorum, consisting of just four members (including Fehr), was established. The society's aim was the advancement of medicine and pharmaceutical chemistry, by observation and experiment. Fehr succeeded Bausch as president of the Academia in 1666 and worked hard to promote the interests of the society. The present broadside is both a eulogium of Bausch and an appeal to the other physicians of Schweinfurt to rally to the society and promote its growth. A copy of this broadside is bound with Fehr's *Hiera Picra* (Leipzig, 1668) in the Young Collection (Ferguson, I, 266), but is not bound with the copies of Fehr's *Hiera Picra* (1668) in the Duveen Collection or the Wellcome Library. It is interesting to note that the Academia, or Collegium Naturae Curiosorum, is still in existence today. For a detailed account of this society, see Martha Ornstein, *The Role of Scientific Societies in the Seventeenth Century* (London, 1963), pp. 169–175.

FELD, Wolfgang Jacob

Dissertatio Inauguralis Medico-Chymico de Sale Ammoniaci eiusdemque usu medico-chymico ac curioso quam praeside D. Martino Gotthelf Loescheri . . . pro licentia summus in medicina honores . . . Wolfgang Jacobus Feld Campidonensis ad diem (blank) Januar. A.C. MDCCXXVI. . . .

Wittenberg: Literis Schroederianis. (1726)

First edition. 4to. 36 pp. Large woodcut headpiece and initial. Fore-edge of title page shaved (affecting 7 letters), slightly foxed; otherwise good copy, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

AN INTERESTING dissertation on sal ammoniac (ammonium chloride) and its history, preparation, properties, and chemical and medicinal uses, with many references to contemporary chemists. Feld (dates unknown) was a student of Martin Gotthelf Loescher (d. 1735), professor of medicine at Wittenberg. Not in Blake, D.S.B., Cushing, or the usual chemical bibliographies. (Ferchl, 320; Poggendorff, I, 1486; Waller, 5982; Waring, 226)

FERMOND, Charles

Recherches sur la sensibilité comparative des divers réactifs employés concurremment avec l'amidon pour déceler de minimes quantités d'iode dissous dans un liquide. . . .

Paris: Imprimerie de Pillet Fils Aîné. 1859.

First edition. 8vo. 1 leaf, 16 pp., 1 leaf (blank). Fine copy, uncut, in maroon quarter cloth antique, marbled boards, with original plain wrappers bound in.

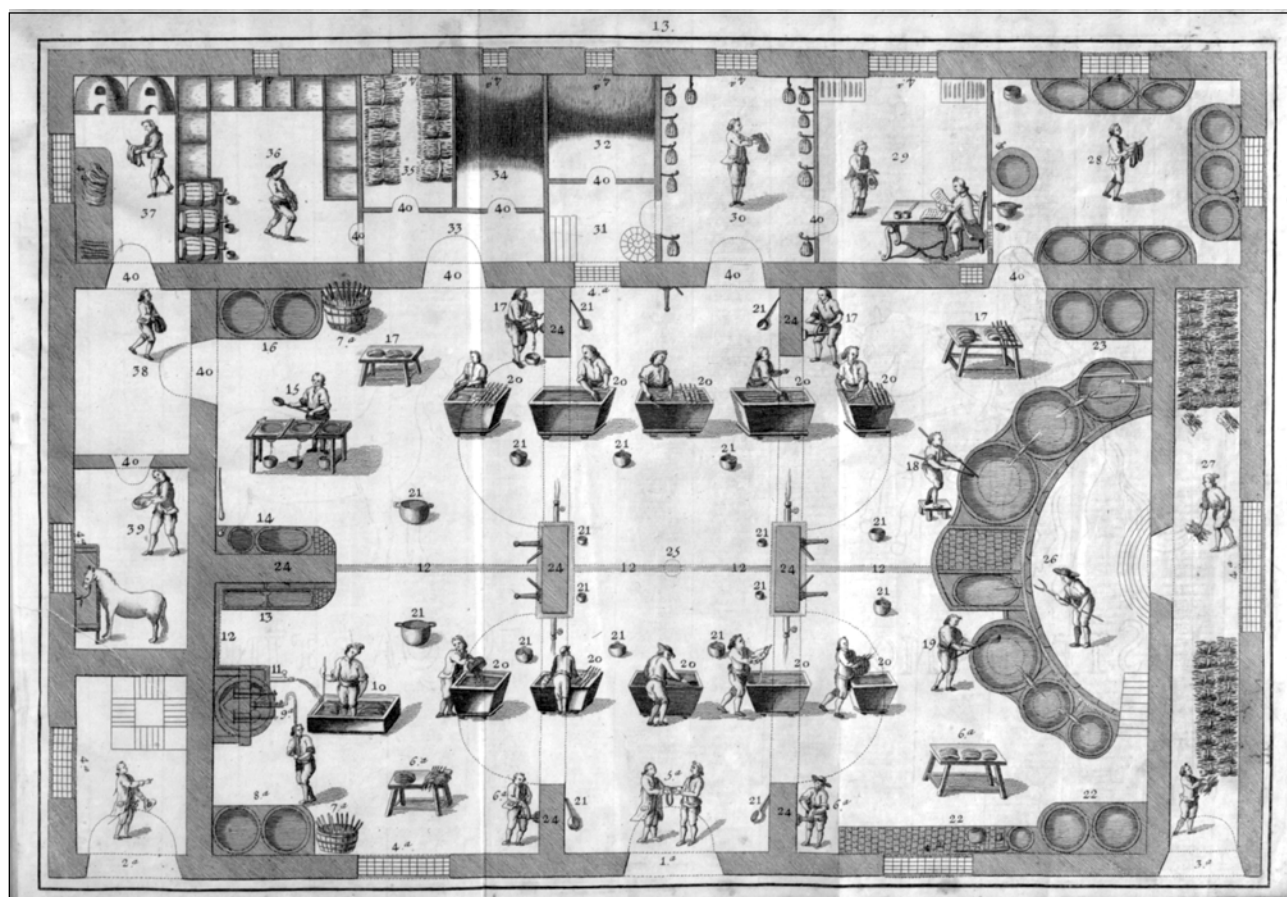
AN OFFPRINT of an important paper in which Fermond reports his investigations on the well-known blue color reaction of starch with traces of iodine in solution. The reaction was first discovered by J. Colin and Gaultier de Claubry in 1814 (see Partington, IV, 90). In addition to determining the limits of detection of iodine by this method, Fermond describes his research on chemicals, which interfere with or alter the color (mainly oxidizing agents) and hence the validity of the reaction. Only about twenty-five offprints were printed for the author before the text appeared in the *Recueil des Travaux de la Société d'Emulation pour les Sciences Pharmaceutiques* (vol. III, 1859).

FERNANDEZ, Luis

Tratado instructivo, y practico sobre el Arts de la Tintura: Reglas experimentadas y metodicadas para tintar Sedas, Lananas, Hilos de todas clases, y Esparto en rama. . . .

Madrid: En la Imprenta de Blas Roman. 1778.

First edition. Folio. xxx, 250 pp. With 13 copperplates (1 folding). Very fine, large paper copy, in original limp vellum.



Fernandez. Tratado Instructivo. Madrid, 1778.

ONE OF the earliest and certainly the most comprehensive and finely produced Spanish books on the theory and practice of dyeing. Handsomely printed in large type, the artistic plates display various phases in the process of dyeing fabrics, with detailed illustrations of dyehouse equipment. The author is described on the title as “Maestro Tintorero, . . . de Toledo, Visitador de los Tintes . . . Director del de la Real Fabrica . . .” A milestone work in the chemical technology of dyeing. Rare. (Edelstein, 3036; Lawrie, 200; Palau, 87929 [wrong collation]; Ron, 371)

FERNBERG, Carolus Petrus

Dissertatio Physica, de Elasticitate Aquae, . . . praeside Mag. Samuele Duraeo, . . . pro gradu, Carolus Petr. Fernberg, Westmannus. . . . XXVI. Maj. Anni MDCCLXIV.
Uppsala. (1764).

First edition. 4to. 10 pp. With large woodcut headpiece and capital. Fine copy. Bound with: Wimermark, Sven, *De Diversa Radiorum* (Uppsala, 1776), and 30 other dissertations (q.v.).

ON THE important subject of the expansibility and compressibility of water, quoting and discussing the work of Robert Boyle and others. Fernberg (dates unknown) also comments on the investigations of the Accademia del Cimento and refers to Euler, Newton, Musschenbroek, Nollet, et al. On page 9 he observes that the voices of three men were higher when submerged in a diving bell than when on land. Fernberg concludes correctly that water exhibits considerable expansibility (e.g., on being heated and vaporized), but is virtually incompressible. No reference to the author or this work has been found.

FERNEL, Jean

Universa Medicina, ab ipso quidem authore ante obitum diligenter recognita, & quator libris nunquam ante editis, ad praxim tamen perquam necessariis aucta. Nunc autem studio & diligentia Guil. Plantii . . . postremum elimata, & in librum Therapeutices septimum doctissimis scholiis illustrata. . . .

Frankfurt: Apud Andreae Wecheli heredes, Claud. Mar-nium, & Joan. Aubrium. 1592.

Fifth edition. Three parts in 1 vol., folio (in 6s). I (*Universa medicina*): 8 leaves, 350 pp., 11 leaves. II (*Therapeutices universalis*): 283, (1) pp., 8 leaves. III (*De abditis*): 142 pp., 5 leaves. Roman letter. Woodcut printer's device on each title, with portrait of Fernel on each verso. Woodcut initials, head- and tailpieces. Fine copy, in original blind-stamped pigskin over oak boards, central panel depicting the four Evangelists, original brass clasps and catches. Neat inscription on title of Weingarten Monastery, dated 1600, and another small royal library stamp.

THE FAMOUS Parisian physician Fernel (1497–1558), the founder of physiology, also established pathology and the study of therapeutics as standard categories of medical inquiry. An influential reformer, he insisted that studies be based on clinical observation more than on ancient writings. His most important work is the *Medicina* and is here followed by his treatise on therapeutics. In the *De abditis*, which is of scientific and iatrochemical interest, Fernel attacks the pseudosciences (astrology, magic, etc). It is extremely rare to find a handsome folio sixteenth-century edition of Fernel's works in the original pigskin in such fine condition as this item. Not in British Library, Blocker, Norman, Reynolds, Waller, Wellcome, etc. (Durling, 1472; Parkinson & Lumb, 819; Sherrington, 70 J 14; Watt, I, 363g)

FERRIS, Samuel

A Dissertation on Milk. In which an attempt is made to ascertain its natural use; to investigate experimentally its general nature and properties; and to explain its effects in the cure of various diseases: likewise to point out the varieties in the food of the animal, from which it is taken; and the circumstances in the mode of life and conduct of those women, who afford it, which more especially tend to change its appearance, and to impair its salutary qualities: and particularly to enforce the cautions and restrictions, which are necessary to be observed by those, whose duty or business it is to suckle an infant race. By Samuel Ferris, M.D. Extraordinary Member, and Late President of the Royal Medical Society, at Edinburgh.

London: John Abraham, and sold by T. Cadell, R. Faulder, and C. Elliot. (1785).

First (only) edition. 4to. 4 leaves, viii, 206 pp., 1 leaf (errata). Engraved vignette of William Harvey on title page. Very good copy, completely unpressed and uncut, in the original boards, rebaked. A presentation copy, inscribed in ink on the verso of the title page: “Mr. White from his very humb: servt. The Author.” The front cover bears the inscription: “Mr. White. Manchester.” The first free endpaper bears the bold inscription in ink: “John Kenyon”(1784–1856), poet and philanthropist (see D.N.B.).

FERRIS (1760–1831), M.D. Edinburgh, wrote the prize essay proposed by the Harveian Society of Edinburgh in 1782, on an experimental inquiry into the nature and properties of milk. The present work is a revised and expanded version of that prize essay. It covers all aspects of the subject of milk: its uses, nature, properties, chemical composition, coagulation, various components, etc. A major portion of the book deals with the chemical changes effected by treating milk and milk products with acids, alkalis, salts, heat, etc. There are numerous references to the works of early and

contemporary chemists: e.g., Boerhaave, Neumann, Hoffman, Lewis, Boyle, Percival, Cullen, Home, Macquer, and Homberg. This work is one of the eighteenth-century classics of biochemistry. The “Mr. White” to whom this copy was presented by Ferris was Charles White (1728–1813), celebrated surgeon, who helped to found Manchester Infirmary (see D.N.B.). On page 193 Ferris states that his “friend Mr. T. White,” son of Charles White, gave him a copy of White’s book on milk. Extremely rare. (Blake, 146; Munk, II, 359; Neu, 1412; Waring, 539; Watt, I, 364j; Wellcome, III, 21)

FIGUEROA, Christoval Suarez de

Plaza universal de todas ciencias, y artes. Parte traduzida de Toscano, y parte compuesta por el doctor Christoval Suarez de Figueroa. A Hieronymo Perarnav cavallero Catalan, señor del Castillo lugar de la Roca de Albera, en el Condado de Rossellon. Año 1630. Con licencia. En la fidelissima villa de Perpiñan, por Luys Roure librero. Y a su costa. (Colophon dated 1629).

4to. 8 leaves + 380 leaves (final leaf blank). Woodcut border and large heraldic woodcut printer’s device on title, historiated and decorated woodcut capitals in text. A few leaves slightly browned; otherwise a very good copy in nineteenth-century quarter sheep, marbled boards, spine gilt. Seventeenth-century monogram in ink on leaf 379 (verso) and signature in ink (“Delamich Dr.”), probably in the same hand, on leaf 380 (recto).

A VERY RARE work on the arts, sciences, professions, occupations, etc., of the world. It is based on the *Piazza universale di tutte le professioni del mondo* of Thomas Garzoni, a much reprinted and very popular work that first appeared in 1579. It was translated into Latin (1624) and German (1626). The approbation of this Spanish edition is dated April and May 1612, which may be the date of the first edition. Kress S448 records an edition of 1615. Folios 6–8 of the first gathering comprise an encomium of the famous Catalan philosopher and alchemist Raymund Lull (*Encomio al Arte del Ilustrado Doctor Raymundo Lull*), and there are whole chapters on professions such as mathematics, botany, astronomy, medicine, and geography. Chapter 12 (pp. 65–68) is of special interest to the chemical historian as it discusses the alchemists, tracing the progress of alchemy from the Arabs through Roger Bacon, Augurellus, Albertus Magnus, Arnaldus de Villanova, et al. There are many other references to chemical subjects throughout the book. No bibliographical account of this very rare Spanish edition has been found in available reference works.

FIORAVANTI, Leonardo

De’ Capricci Medicinali . . . Libri quattro. Nel primo de quali s’insegna a conoscere diverse segni delle cose naturali, con molto secreti nella Medicina, & Cirugia. Nel secondo si mostra il modo di fare varii, & diversi medicamenti utilissimi. Nel terzo si tratta dell’Alchimia dell’huomo, & dell’Alchimia minerale, con molti Capricci à figliuoli dell’Arte. Nel quarto si contengono alcuni belli Discorse Filosofici, & Medicinali. Di nuovo dall’istesso autore in molti luoghi, di secreti importantissimi, ampliati; i quali così a professori di Fisica, come di Cirugia, erano grandemente necessarii. Con molta diligenza revisti, corretti, & ristampati.

Venice: Appresso Michele Bonibelli. 1595.

Sm. 8vo. 20 leaves, 267 folios. Woodcut printer’s device on title page, historiated capitals, and 6 woodcut figures of chemical apparatus (folios 191–194). Italic letter. Lower right-hand corners of folios 243–267 repaired (some loss of text); otherwise good copy in old half calf, gilt, marbled boards, brown morocco label.

POSSIBLY THE eighth edition of this popular book of secrets on the “caprices of medicine” (first: Venice, Lodovico Avanzo, 1561), in which the author discusses medical prescriptions, calculi, surgery, etc. The third book (folios 161–217) covers the “alchemy of man” and the “alchemy of minerals,” with woodcuts of distillation apparatus. The first edition had only three books, but a fourth was added in the second edition of 1565. The British Library, Duveen, Ferchl, Partington, Smith, Waller, Watt, Wellcome, etc., list other editions. The following editions with a Venice imprint are known: 1561, 1565, 1568, 1571, 1573, 1580, 1582, 1595 (present ed.), 1602, 1617, 1647, and 1665. French, German, and English translations also appeared. All editions are now very uncommon. Ferguson (I, 278) mentions the 1595 edition, but it was not in the Young Collection.

FIORAVANTI, Leonardo

De’ Capricci Medicinali . . . Libri quattro. . . .
Venice: Appresso Lucio Spineda. 1602.

First Spineda edition. 8vo. 20 ff., 267, (1) ff. (last blank). Woodcut printer’s device on title, historiated capitals, and 6 woodcut figures of chemical apparatus (ff. 191–194). Roman and italic letter. Small marginal wormhole on several leaves (scarcely affecting text); otherwise fine copy in late-seventeenth-century mottled calf, brown morocco label (partly missing). From the celebrated Hopetoun Library, with engraved armorial bookplate.

POSSIBLY THE ninth edition of this book of medical and chemical secrets; the first to appear in the seventeenth century. It is a close paginary reprint of the previous edition (Venice: Michele Bonibelli, 1595), by the Venetian printer Lucio Spineda. Very rare. Not in British Library, Duveen, Ferguson, Ferguson Coll., Ferguson, *Books of Secrets*, Krivatsy, Waller, Watt, Wellcome, etc. (Manget, *Bibliotheca Scriptorum Medicorum*I, pt. 2, p. 287)

FIORAVANTI, Leonardo

De' Capricci Medicinali . . . Libri quattro. . .
Venice: Per il Spineda. 1629.

Second Spineda edition. 8vo. 20 ff., 252 ff. (last leaf blank). Woodcut printer's device on title, historiated capitals, and 6 woodcut figures of chemical apparatus (ff. 191–194). Roman and italic letter. Minor toning of paper; otherwise good copy in contemporary limp vellum, old ink lettering on spine.

THE SECOND Spineda edition of this popular work (first Spineda: Venice, 1602). The wording of the title is identical to that of the Michele Bonibelli edition (Venice, 1595). "Important pour l'histoire de l'alchimie" (Rosenthal [this edition]). Very rare. Not in the British Library, Duveen, Ferguson Coll., Ferguson, *Books of Secrets*, Krivatsy, Manget, Waller, Watt. (Ferchl, 155; Ferguson, I, 278 [not in Young Coll.]; Rosenthal, 301)

FIORAVANTI, Leonardo

De' Capricci Medicinali . . . Libri quattro. . . Al Molt' Illustrre Signor Antonio De Sgobbis.
Venice: Appresso Valentino Mortali. 1670.

Square 8vo. 16 leaves, 380 pp. Title page within double rules. Woodcut capitals and 6 woodcut figures of chemical apparatus (pp. 272–275). Very good, crisp copy, in original quarter vellum, decorated boards printed in red and blue.

A LATE EXAMPLE of a very long series of editions all bearing a Venice imprint. This edition not traced in available bibliographies.

FIORAVANTI, Leonardo

Del Regimento della Peste, . . . Nel quale si tratta che cosa sia la peste, & da chi procede, & quello che doveriano fare i Principi per conservari suoi popoli da essa, & ultimamente, si mostrano mirabili secreti da curarla, cosa non mai piu scritta da niuno in questo modo. . .
Venice: Appresso Andrea Revenoldo. 1565.

First edition. 8vo. 62 folios + 2 leaves. Large woodcut printer's device on title page. Historiated woodcut capitals. Italic letter. Very fine, crisp copy, in contemporary unlettered pasteboards.

FIORAVANTI (1517–1588), a celebrated iatrochemist and physician of Bologna, was rewarded for his medical talents by receiving a doctor's degree and the title of count. He invented a balsam which went by his name and was in use until the nineteenth century. He also described a number of recognizable chemical compounds. This work on the plague and its cure describes the preparation of several chemicals, the effect of fire on various minerals, chemical processes such as distillation and sublimation, acids and alkalies, etc. The book was frequently reprinted, but the first edition is rare. The earliest edition in the British Library is that of Venice, 1594. Translated into English by T. Hill, it appeared as *A Joyfull Jewell* (London: W. Wright, 1579). "Pièce fort rare et intéressante" (Rosenthal). Not in the usual bibliographies. (Blocker, 137; Durling, 1575; Ferguson, I, 278 [not in Young Coll.]; Rosenthal, 3306; Watt, I, 368g; Wellcome, I, 2297)

FIORAVANTI, Leonardo

Dello Specchio di Scientia Universale. . . Libri tre. Nel primo de quali si tratta di tutte l'arti liberali, & mecaniche, & si mostrano tutti I secreti piu importanti che sono in esse. Nel secondo si tratta di diverse scienze, & di molte belle contemplazioni di filisofi antichi. Nel terzo, si contengono alcune inventioni notabili, utilissime, & necessarie da sapersi. Al Molt' Illustrre Signor Nicolo Coradi.
Venice: Appresso il Zatonni. 1678.

First Zatonni edition. 8vo. 15 leaves, 446 pp. Woodcut ornament on title page. Woodcut capital, head- and tailpieces. Few minor marginal stains; otherwise very good copy, complete with half title, in original vellum.

A LATE ITALIAN edition of this popular book, which first appeared over a century earlier. It is, in effect, a one-volume encyclopedia of science, technology, and medicine. At least eleven editions were published in Venice, as follows: 1564, 1567, 1572, 1583, 1592, 1603, 1609, 1624, 1660, 1678, and 1679. All editions are rare, and this of 1678 is not in the British Library or the usual chemical and medical bibliographies. (Duncan, *Bibliography of Glass*, 4133)



Fiorvanti. Del Regimento della Peste. Venice, 1565.

FIORAVANTI, Leonardo

Miroir Universel, des Arts et Sciences en General, . . . divisé en trois livres. Au premier est traité de tous les arts liberaux & mecaniques, & se monstrent tous les secrets qui sont en iceux de plus grande importance. Au second, de diverses sciences, histoires, & belles contemplations des philosophes anciens. Au troisieme, sont contenus plusieurs secretz & notables inventions, tres-utiles & necessaires à sçavoit. Traduict d'Italien en François par Gabriel Chappuys Tourangeau.

Paris: Chez Pierre Cavellat, rue S. Jacques à l'Escu de Florence. 1584.

First French edition. 8vo. 8 leaves, 680 pp. Woodcut printer's device on title page. Woodcut capitals, head- and tailpieces. Roman letter. Few neat early marginal annotations; otherwise fine copy in nineteenth-century green half morocco, marbled boards, spine gilt-lettered and dated.

THE FRENCH translation, by Gabriel Chappuys, of Fioravanti's *Dello specchio di scientia universale, libre tre* (first: Venice, Vincenzo Valgrisi, 1564, 8vo.; Duveen, *Supplement*, 123). Writing about 1890, Ferguson (*Books of Secrets*, II, pt. 1, p. 29) states: "Chappuys' editions must have been popular, for I have never succeeded in meeting with any of them in good condition." The present copy is in excellent condition. Thorndike (VI, 217) describes this *Mirror of Universal Nature* (but not this edition) as being "in three books, of which the first treats of all the more important secrets of the liberal and mechanical arts, the second of divers sciences and many fine thoughts of the ancient philosophers, the third of notable inventions." The sciences discussed include alchemy, chemistry, pharmacy, metallurgy, and glass-making. Extremely rare. Not in the British Library, which has the second edition (Paris: P. Cavellat, 1586) only. Durling, Neu, and Watt list the 1586 edition, and Duncan and Duveen list the 1586 and 1598 French editions. (Duveen, *Supplement*, 125; Ferchl, 155; Ferguson, I, 278 [not in Young Coll.]; Ferguson Coll., 234)

FIORAVANTI, Leonardo

Il Tesoro della Vita Humana, . . . Diviso in libri Quattro. Nel primo, si tratta delle qualità, & cause di diverse infermità . . . Nel secondo, si descrivono molti esperimenti fatti da lui . . . Nel terzo, vi sono diverse lettere dell'autore . . . dove si discorre così in fisica, come in chirugia. Nel quarto . . . sono rivelati i secreti più importanti di esso autore. . . .
Venice: Appresso gli heredi di Melchior Sessa. 1570.

First edition. 8vo. 32 leaves, 327, (1) folios (last blank). Woodcut printer's device on title page, historiated woodcut capitals, and full-page woodcut portrait of Fioravanti facing folio 1 of

text. Roman and italic letter. Few minor stains; otherwise very good, crisp copy, in contemporary quarter vellum, patterned boards (head and foot of spine slightly gnawed).

A VERY RARE alchemical, iatrochemical, and medical work. "The fourth book . . . deals with the medicinal uses of the philosophers' stone, secrets and magistry of antimony, a discourse on mercury and its great use in the *galliche infermità*, . . . Fioravanti was one of the few followers of Paracelsus in Italy" (Partington). It is also an important source for the early history of plastic surgery. With characteristic ingenuousness and gusto the author reports an adventure in Africa. Strolling with a Spanish gentleman, they encountered a soldier, who drew his sword and cut off the Spaniard's nose, which fell in the sand. Fioravanti picked it up, washed it in his own urine, and attached it to the Spaniard's face. He sewed it on firmly and bandaged it, and after eight days he untied it and found the nose well attached. Fioravanti "was one of the clever, dashing figures of the 16th century whose unconventional, unacademic approach to medicine, together with his lively curiosity in alchemy and unorthodox remedies, has caused him, perhaps unjustly, to be accused of charlatanry" (Webster & Gnudi, *Tagliacozzi* [1950, p. 116 ff.]). (Blocker, 137; Durling, 1578; Ferchl, 155; Ferguson Coll., 234; *Heirs of Hippocrates*, 194; Partington, II, 29; Watt, I, 368h)

FIORAVANTI, Leonardo

Three Exact Pieces of Leonard Phioravant Knight, and Doctor in Physick, viz. His Rationall Secrets, and Chirurgery, Reviewed and Revived. Together with a Book of Excellent Experiments and Secrets, Collected out of the Practises of severall Expert men in both Faculties. Whereunto is Annexed Paracelsus his One hundred and fourteen experiments: with certain Excellent Works of B.G. à Portu Aquitano. Also Isaac Hollandus his Secrets concerning his Vegetall and Animall Work. With Quercetanus his Antidotary for Gun-shot.

London: Printed by G. Dawson, and are to be sold by William Nealand, at his Shop at the Sign of the Crown in Duck-lane. 1652.

First English collected edition, first issue. Four parts in 1 vol., each with divisional title page. 4to. 4 leaves, 16, (2), 180 pp.; 3 leaves, 106 pp.; 5 leaves, "92" (i.e., 72) pp.; 6 leaves, 75, (1) pp. Main title within border (edges repaired, affecting 3 letters), minor browning of some leaves, corner of Ccl missing (affecting few letters), occasional seventeenth-century annotations; otherwise very good copy in unlettered calf antique. Bound with: M., A., *A rich closet of physical secrets* (London, 1652); and Edwards, *A treatise concerning the plague and the pox* (London, 1652).

THE ENGLISH version by John Hester (first, 1582) of *Del compendio de I secreti rationali* (1564) and *La chirugia* (1580).

“The translation differs . . . from the Italian, and it embraces only the medical section of the original” (Ferguson [*Books of Secrets*, I, pt. 1, p. 14]). The preface is signed J. H. and W. J., i.e., John Hester and William Johnson (editor). Hester (d. 1593), a distiller of St. Paul’s Wharf, wrote and translated medical works (see D.N.B.). Johnson (d. 1665), a London chemist, has added preliminary matter addressed to Noah Biggs, Nicholas Culpeper, and the “Courteous Reader.” Johnson published one of the earliest chemical dictionaries, *Lexicon chymicum* (London, 1652–53). The second issue, with differently worded title page, but almost identical pagination, appeared in 1653 (Duveen, 219). Rare. (Blocker, 137; Cushing, F151; Duveen, *Supplement*, 126; Ferchl, 155; Ferguson, I, 278 [not in Young Coll.]; Neu, 1436; Osler, 2593; Wellcome, III, 27; Wing, F953)

FITTON, Elizabeth, and FITTON, Sarah Mary

Conversations on Botany. With Plates.

London: Printed for Longman, Hurst, Rees, Orme, and Brown, Pater-noster-Row. 1817.

First edition. 12mo. xvi, 213, (1) pp. With 20 hand-colored plates (Milton sc.; 1 double page) and several woodcuts in text. Extremely fine copy in contemporary dark-green pebbled cloth, brown morocco label. Small round stamp on verso of title: “Ex Bibliotheca Fideicomm. Ernesti Aug.”

AN INTRODUCTORY work on botany of some chemical interest, written in dialogue form, in which a mother instructs her young son, Edward, in the classification of plants according to the Linnaean system. “It may be due to the author of the admirable ‘Conversations on Chemistry,’ to state, that the title of the present volume was chosen, because it was the only one that seemed to be adapted to the nature of the subject” (preface). The beautiful engraved plates, brightly colored by a careful and sophisticated hand, depict the flowers and leaves of a wide variety of cultivated and wild English plants. Halkett and Laing erroneously attribute this work to Mrs. Jane Marcet. (Freeman, 1194; Partington, III, 708; Wellcome, III, 29)

FITZGERALD, Robert

Salt-Water Sweetned; or, a True Account of the Great Advantages of this New Invention both by Sea and by Land: together with a Full and Satisfactory Answer to all Apparent Difficulties. Also the Approbation of the Colledge of Physicians. Likewise a Letter of the Honourable Robert Boyle to a Friend upon the same Subject.

London: Printed for Will. Cademan, at the Popes-Head in the New-Exchange in the Strand. 1683.

First edition. 4to. 1 leaf, 17, (1) pp. Fine copy, in half morocco antique, cloth, spine gilt-lettered and dated. From the library of Robert B. Honeyman (Sotheby auction, Nov. 5, 1979).

IN THE dedication to Charles II, Fitzgerald (ca. 1638–1698) relates how he, his partners, and Robert Boyle demonstrated to the king the process by which potable water can be made from seawater. He states that the king “was Graciously pleas’d to give us . . . Letters Patents,” and continues, “This experiment is in great degree owing to . . . Mr. Boyle.” The advantages of his invention to sailors on long voyages are discussed, but nowhere is the process clearly described. The text implies that the process involved the distillation of seawater under reduced pressure, using a vacuum pump of the type devised by Boyle and Hooke in their experiments on air. A “Letter of Mr. Boyles, to the Learned Dr. John Beale” is reprinted (p. 13), in which Boyle says that Fitzgerald was “one of my nearest Relations.” The approbation of the Colledge of Physicians states (pp. 9–10) that the “Water is very wholesome, and may be safely us’d.” The approbation is signed by twenty-three physicians, including Edmond Dickinson, Richard Lower, Thomas Sydenham, Nehemiah Grew, and Edward Tyson. Reprinted several times in 1683–84, translations into French and Latin also appeared. It is generally thought that Gauthier, in 1717, was the first to produce potable water from seawater. Very rare. (Ferchl, 157; Fulton, *Boyle*, 236; Honeyman, 1323; Wing, F1087)

FIVE TREATISES

Five Treatises of the Philosophers Stone. Two of Alphonso King of Portugall, as it was written with his own hand, and taken out of his Closset: Translated out of the Portuguez into English. One of John Sawtre a Monke, translated into English. Another written by Florianus Raudorff, a German Philosopher, and translated out of the same Language, into English. Also a Treatise of the names of the Philosophers Stone, by William Gratacolle, translated into English. To which is added the Smaragdine Table. By the Paines and Care of H.P.

London: Printed by Thomas Harper, and are to be sold by John Collins, in Little Brittain, near the Church door. 1652.

First (only) edition. 4to. 4 leaves, 72 pp. Woodcut headpieces and capitals. Inner margin of title leaf very neatly repaired (not affecting text); otherwise very good copy, in old vellum.

A VERY RARE book, which is discussed by Ferguson in the *Journal of the Alchemical Society* (II, pt. 6, p. 7) and is briefly mentioned by Read. A fuller description is given by Duveen and also by Hall. Duveen states that he was unable to identify the editor, “H. P.” Hall, however, describes the book in detail and attributes it to Henry Pinnell, the translator of

Croll and Paracelsus into English under the title *Philosophy Reformed & Improved in Four Profound Tractates* (London, 1657). Not in Ferchl, Krivatsy, Mellon, Thorndike, Watt, etc. Wing lists only two copies in America (Chicago and Yale). (Duveen, 220; Edelstein, 881; Ferguson, I, 24 [not in Young Coll.]; Ferguson Coll., 507; Hall, 3; Neu, 1440; Pritchard, 487; Read, *Prelude to Chemistry*, 1936, pp. 127–128; Wellcome, II, 36; Wing, A2900)

FIZES, Antoine, and GONTARD, J. A.

Cours de Chymie de Montpellier. Par J.A.G.D.M. . . .
N.p., n.d. 1749.

First edition. 12mo. viii, 191, (1) pp. Very good copy in original mottled calf, spine richly gilt, maroon morocco label. From the library of the Montpellier physician N. Delalo, D.M., with his signature on front and rear flyleaves, dated 1788.

FIZES (1690–1765) was an eminent physician who taught chemistry at the University of Montpellier. His assistant, Dr. Gontard, states in the preface that he gathered the material of Fizes' chemical lectures over a period of seven years and summarizes it in the present work. The text is mostly a collection of practical operations with little theory, although phlogiston is mentioned several times and a brief explanation of it is given (p. 96). The book is of historical interest for the inside view it affords of a typical university course of chemistry in Lavoisier's youth. Often listed under Gontard, the first edition is very rare; most authorities list only the second edition (1750), itself a rare book. Not in Blake, D.S.B., Watt, Wellcome, etc. (Caillet, 4642; Duveen, 263; Edelstein, 1027; New, 1716; Partington, III, 59; Smith, 176)

FIZES, Antoine, and GONTARD, J. A.

Leçons de Chymie de l'Université de Montpellier, ou l'on explique les Préparations avec la meilleure Physique, & l'usage de chaque Remède, fondé sur la meilleure Pratique de Médecine.

Paris: Chez Guillaume Cavalier, Pere. 1750.

Second edition. 12mo. viii, (4), 191, (1) pp. Fine copy in original mottled calf, gilt, maroon morocco label.

A CLOSE PAGINARY reprint (not a reissue as is sometimes stated) of the first edition (1749), with differently worded title page and two leaves of privilege added. Minor corrections to the text have been made. The *liste des opérations* gives the headings of the experiments demonstrated during the *cours public de chymie* at Montpellier. The approbation is signed by the celebrated chemist Paul Jacques Malouin (1701–1777). Not in Blake, D.S.B., Duveen, Edelstein, Neu, Smith, etc. (Bolton, 442; Ferchl, 157; Par-

tington, III, 59; Poggendorff, I, 757; Sondheimer, 629; Wellcome, III, 30)

FIZES, Antoine, and GONTARD, J. A.

Chymische Lehrsätze der Hochschule zu Montpellier, darinnen gelehret wird, wie die Artzeneyen, nach denen besten Gründen der Naturlehre bereitet, und wie jede derselben recht gebraucht werden soll. Aus dem Frantzösischen in das Teutsche übersetzt und mit einem Register vermehret von einem Liebhaber der Naturlehre.

Frankfurt: bey Johann Friedrich Fleischer. 1755.

First German edition. 8vo. 8 leaves, 198 pp., 17 leaves. Old pharmaceutical chemical manuscript notes in ink on flyleaves at end; otherwise good copy in unlettered contemporary pasteboards.

THE FIRST German translation of the *Leçons de chymie de . . . Montpellier* (Paris, 1750) of Fizes and Gontard, by an anonymous "Liebhaber der Naturlehre," who has added a comprehensive index. Very rare. Not in Blake, D.S.B., Osler, Waller, Watt, Wellcome, or the usual chemical bibliographies. (Ferchl, 157)

FLINTBERG, Carl Hindrich

Kort Afhandling, om Guld- och Silfver-Skedning, . . . under . . . Joh. Gotschalk Wallerii, . . . 19 Decemb. 1761. Af Carl Hindrich Flintberg, Stockholmsbo.

Uppsala. (1761).

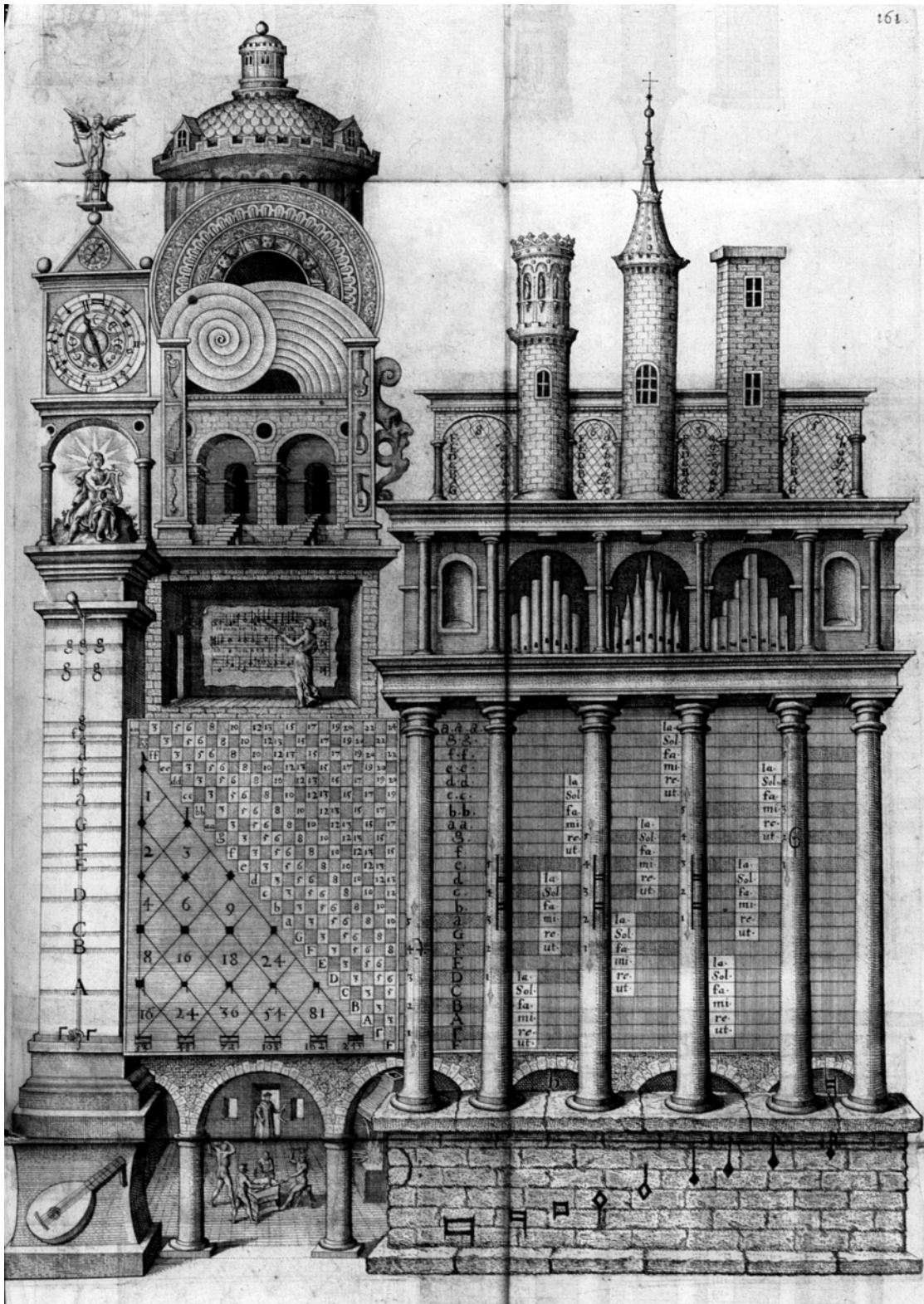
First edition. 4to. 18 pp. Large woodcut capital, head- and tailpiece. Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A DISSERTATION on the techniques and chemical reactions employed to separate gold from silver and the subsequent refining of these metals, with Johann Gottschalk Wallerius presiding. It is not included in the *Disputationum Academicarum* (1780–81) of Wallerius. Rare. Not in Blake, Bolton, Duveen, Edelstein, Ferguson, Ferguson Coll., Hoover, Neu, Partington, Poggendorff, Smith, Waller, Wellcome, etc. (Ferchl, 565)

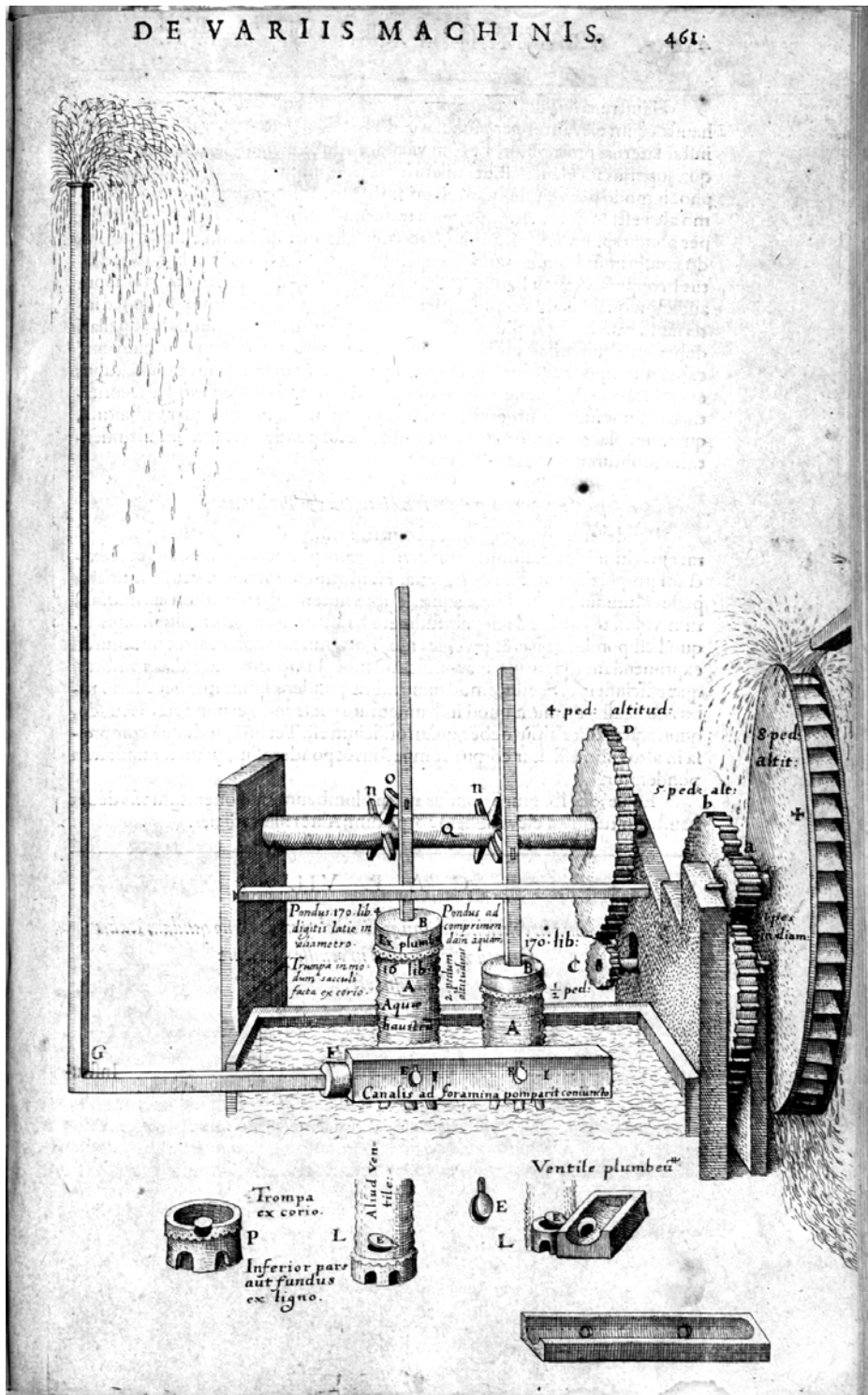
FLUDD, Robert

Utriusque Cosmi Maioris scilicet et Minoris Metaphysica, Physica atque Technica Historia. In duo Valumina secundum Cosmi differentiam divisa. . . . Tomus Primus De Macrocosmi Historia in duos tractatus divisa. . . . Tractatus Secundus De Naturae Simia seu Technica macrocosmi historia in partes undecim divisa. . . .

Oppenheim: Aere Johan Theodori de Bry. Typis Hieronymi Galleri. 1617, 1618.



Fludd. Utrisque Cosmi Maioris. Oppenheim, 1617, 1618.



Fludd. Utrisque Cosmi Maioris. Oppenheim, 1617, 1618.

First edition of both parts. 2 vols., folio, in 1. I: 1 leaf (engraved title), 206 pp. (2 folding plates counted as pp. 3–6 and 9–10, respectively), 3 leaves (index). II: 788 pp. (including engraved title), 5 leaves (index), 1 leaf (blank, lacking). Numerous beautiful copperplates by J. T. de Bry and Merian (some full page), as well as woodcuts in text illustrating a wide variety of subjects; in addition 4 large folding copperplates showing military formations, 6 other large plates, including 1 of an organ and 2 machinery, etc. Some leaves lightly browned (as usual); otherwise a fine and complete copy, in original vellum. Bookplate: John Camp Williams.

THE FIRST volume, complete in itself, of Fludd's collected works, which appeared at Oppenheim and Frankfurt between 1617 and 1638 in six folio volumes. This volume contains the first two works on the macrocosm and the microcosm by the English scientist, physician, alchemist, and Rosicrucian Fludd (1574–1637), whose writings are among the most interesting and curious of the early seventeenth century. The several hundred remarkable engravings are of great artistic merit. Hofer gives an account of the chemical passages. Fludd describes the important first experiments on a gas and illustrates his apparatus, stating that "air nourishes fire and is consumed." Guaita, Osler, and Smith list volume I only; Duveen, Mellon, and Osler list only the second edition (1624) of volume II. (Caillet, 4042; Craven, *Fludd*, 62–85; Cushing, F230, 231; D.S.B., V, 47; Duveen, 222; Edelstein, 888; Ferchl, 158; Ferguson Coll., 238; Guaita, 1380; Hofer, II, 177–182; Krivatsy, 4144; Mellon, 74; Neu, 1453; Osler, 2621; Partington, II, 325; Smith, 177; Thornton & Tully, 115; Wellcome, I, 2324)

FOENANDER, Jacob

Chemisk och Oeconomisk Afhandling om Bränne-Torf . . . under . . . Pehr Adrian Gadd . . . af Jacob Foenander, Tavastensis, i Abo Academiens . . . den 15 December, 1759.

Åbo: Tryckt hos Directeuren och Kongl. Boktryckaren I Stor-Forstendömet Finland, Jacob Merckell. (1759).

First edition. 4to. 4 leaves, 18 pp. Top margin frayed (not affecting text) and title page dusty; otherwise good copy, uncut with wide margins, in maroon quarter cloth antique, marbled boards, spine labeled: Gadd. Nine Dissertations. 1759–1778.

A RARE DISSERTATION on the chemical properties and economical advantages of turf, presented by Foenander, under the direction of the professor of chemistry, physics, and economics Pehr Adrian Gadd, at Åbo, Finland. The history of turf is reviewed, and its various uses in smelting metals from their ores, glassmaking, fermentation, distillation, etc., are discussed. The works of many authors are cited (e.g., Helmont, Henckel, and Kircher). (Partington, III, 179; Watt, I, 394a)

FONTANA, Felice

Analisi delle Ricerche Fisici del Sig. Ab. Felice Fontana . . . intorno all'aria nitrosa, e all'aria deflogisticata.

N.p., n.d.

First edition? 12mo. pp. 83–102. With 1 folding engraved plate. Fine copy in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A PAPER TENTATIVELY dated 1776, from an unidentified Italian journal, describing further researches by Fontana on nitric oxide and oxygen. Reference is made to the author's *Recherches physiques sur la nature de l'air nitreux et de l'air dephlogistique* (Paris, 1776) and to the researches reported by Priestley in volume 2 of his *Experiments and Observations on Different Kinds of Air* (London, 1775). The plate (numbered "vol. XXIX") is a reengraved version of the frontispiece in Priestley's work. Unknown to Ferchl, Poggendorff, or Provenzal.

FONTANA, Felice

Descrizione, e usi di alcuni stromenti per misurare la salubrità dell'aria . . .

Florence: Per Gaetano Cambiagi Stampatore Granducale. 1775.

First edition. 4to. xlii pp., 1 leaf (blank). With 9 folding copperplates of instruments (engraved by Benedetto Eredi). Very fine copy with wide margins, partly uncut, in original decorated colored boards, almost invisibly rebacked.

FONTANA (1730–1805), professor of physics at Pisa, was also famous for his discoveries in anatomy, biology, and chemistry. The present work describes his newly invented, very accurate eudiometer, by means of which he attempted to measure the salubrity of the air at different locations. His method is based on Priestley's discovery of nitric oxide (NO). "The most accurate eudiometer was said to be that of the Abbé Fontana, in which the graduated tube was long and narrow, and provided with a wide-necked funnel through which the air and nitric oxide were rapidly passed. Fontana found little variation in the salubrity of air in different places, and ascribed previous varying results of others to experimental errors. He found that air expelled from water is somewhat richer in dephlogisticated air (oxygen) than atmospheric air" (Partington). A milestone work in the quantitative chemistry of gases. Many bibliographers (presumably copying from one another) give the date of the first edition as 1774, which is erroneous as such an edition does not exist. Not in Duveen, Ferguson, Neu, Smith, Sondheimer, Watt, Wellcome, etc. (Blake, 150; Boffito, *Strumenti della Scienza*, pp. 146–147; Bolton, 445; D.S.B.,

V, 57; Edelstein, 890; Ferchl, 159; Partington, III, 323; Poggendorff, I, 767; Provenzal, *Profili . . . di Chimici Italiani*, pp. 57, 60)

FONTANA, Felice

Opuscoli Scientifici di Felice Fontana . . .

Florence: Per Gaetano Cambiagi Stampator Granducale. 1783.

First edition. 8vo. 4 leaves, 219, (1) pp. Minor water stain on first and last few leaves; otherwise fine copy, in original half calf, gilt, marbled boards, green morocco label. From the library of Bertel Linder, Swedish authority on Torbern Bergman.

A COLLECTION OF papers and letters on scientific subjects which had previously appeared in various journals. Some of the papers are reprinted with slight changes. Only the second letter is new, written to Adolf Murray at Uppsala in October 1781, on the receipt by Fontana of the second volume of Bergman's *Opuscula physica et chemica* (1780; Moström, 150). The letter "gives experiments and arguments critical of the respiration theories of Bergman and Scheele" (Cole). This work contains some of Fontana's most important chemical researches on the calcination of metals, adsorption of gases by charcoal, and the production of inflammable gas (a mixture of carbon monoxide and hydrogen) from steam passed over red-hot charcoal. He demonstrated that weight remains constant in chemical reactions and that different gases obey Boyle's law. Other topics covered include discussions of the structure of crystals, solidity and fusion, latent heat, thermometers, light, and phlogiston. An edition appeared at Naples in 1787. (Blake, 150; Cole, 449; D.S.B., V, 57; Ferchl, 159; Kopp, III, 209; Neu, 1455; Provenzal, 61; Watt, I, 377b)

FONTANA, Felice

Opuscles Physiques et Chymiques de M. F. Fontana . . .

Traduits de l'Italien par M. Gibelin . . .

Paris: Chez Nyon l'aîné, Libraire, rue du Jardinnet, Quartier St-André-des-Arcs. 1784.

First French edition. 8vo. 4 leaves, 264 pp. Small woodcut on title page. Fine unpressed and uncut copy with wide margins, in speckled half calf antique, marbled boards, red morocco label, spine dated, original marbled wrappers bound in. The copy presented to Fontana by the translator, Gibelin; inscribed in ink on the front pastedown endpaper: "Pour L'auteur de la part du traducteur."

THE FRENCH translation of Fontana's *Opuscoli scientifici* (Florence, 1783). His discovery of the adsorption of gases by charcoal (also made independently by Scheele) is described on pages 76 ff. Partington quotes Priestley, who

wrote in 1799: "The absorption [*sic*] of all kinds of air by charcoal is a capital discovery of the Abbé Fontana." Jacques Gibelin (1744–1828) also translated Priestley's *Experiments and Observations on Different Kinds of Air* (1774, 1775, 1777) into French (1775 and 1777–1780). At the end (pp. 222–264) is an added "Lettre apologétique à un Ami, en défense d'un Ouvrage de M. F. Fontana, intitulé: Recherches Philosophiques sur la physique animale." A choice association copy of this important work. (Blake, 150; Bolton, 445; Duveen, 224; Edelstein, 891; Ferchl, 183; Neu, 1456; Partington, III, 296; Poggendorff, I, 893; Roller, 197)

FONTANA, Felice

Recherches Physiques sur la Nature de l'Air Nitreux et de l'Air Déphlogistique . . .

Paris: Chez Nyon l'aîné. 1776.

First edition. 8vo. 2 leaves, 184 pp., 2 leaves. Small woodcut ornament on title page. Very fine copy with wide margins, unpressed and uncut, in half calf antique, marbled boards, maroon morocco label, spine dated.

A SCARCE WORK in which Fontana describes his experiments on dissolving mercury in nitric acid to produce mercuric nitrate and the evolution of oxygen on heating this salt. He showed that nitric oxide does not redden litmus and that there is a quantitative relationship between mercuric oxide and the mercury and gaseous oxygen evolved on heating. Despite this very suggestive experiment, which could have correctly interpreted the phenomenon of combustion, Fontana remained a phlogistonist. This experiment is described on pages 117 ff. of the present book. In the preface to volume III of his *Experiments and Observations* (1777), Priestley describes the above experiment, and Lavoisier, in a memoir of 1776, also describes an experiment, which, Priestley writes, is the same as Fontana's, but "which of them made it first does not appear." Fontana was the foremost Italian researcher on the new gases. Not in D.S.B., Duveen, Neu, Smith, Wellcome, etc. (Blake, 150; Bolton, 445; Edelstein, 892; Ferchl, 159; Partington, III, 323; Poggendorff, I, 767; Provenzal, pp. 57, 60; Sondheimer, 533; Sotheran, Cat. 832 [1932], 5225; Watt, I, 377b)

FORCKE, Philip Heinrich

Dissertation Inauguralis Medica de Martis Transitu in Sanguinem ejusque Virtutibus Medicis. . . Praeside D. Christiano Gothfrido Grunero . . . Pro gradu doctoris . . . Philippus Henricus Forcke Gronovia-Hildesiensis.
Jena: Ex Officina Fiedleriana. (1793).

First edition. 4to. 21, (1) pp., 1 leaf (blank). Fine copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A RARE BIOCHEMICAL and medical dissertation on the enrichment of blood by administering solutions of various soluble iron compounds (including ferruginous mineral waters), with references to the works of earlier and contemporary chemists and physicians. Forcke (dates unknown) presented this thesis under the direction of Christian Gottfried Gruner (1744–1815), professor of medicine at Jena. Not in Blake, Waller, Wellcome, or the usual bibliographies. (Waring, 432)

FORD, James

Dissertation physica inauguralis, de fermentatione. Quam, annuente summo numine, Auctoritate Reverendi admodum Viri, D. Gulielmi Robertson, . . . Academiae Edinburgenae Praefecti; . . . Pro gradu doctoratus, . . . Ad diem 12 Sept. . . . Edinburgh: Apud Balfour et Smellie, Academiae Typographos. 1777.

First edition. Sm. 4to. 2 leaves, 29, (1) pp., 1 leaf (blank). Fine copy in half morocco antique, marbled boards, spine gilt-lettered and dated.

AN INTERESTING doctoral dissertation on the chemical and biological aspects of fermentation, with references to the works of contemporary chemists. Various types of fermentation are covered: e.g., *fermentatio saccharina, f. vinosa, f. acetosa*, and *f. putrida*. James Ford, Jr. (1754–1799), physician at St. George's Hospital, London (1786–93), died after a short illness at Exmouth, Devon. He was the son of Dr. James Ford (1718–1795), physician extraordinary to Queen Charlotte. Rare. Not in the usual chemical and medical bibliographies. (*Munk's Roll*, II, 323–324)

FORDYCE, George

Elements of Agriculture.
(s.l., n.d.; Edinburgh? 1765?)

First edition, first issue. Sm. 4to. 2 leaves, 75, (1) pp., 2 leaves. With 3 engraved plates. Pages 19–42 are oblong, folding to conform with the 8vo. format of the book. Very fine, crisp copy, in original gilt-ruled speckled calf, spine gilt, maroon morocco label. Bookplates: Thomas Mills (eighteenth century) and D. P. Mortlock (twentieth century).

ONE OF the earliest works setting out the principles of eighteenth-century chemistry as they applied to agriculture. It is the second book in English to deal with agricultural chemistry, the first being *The principles of agriculture and vegetation* (Edinburgh, 1757), by Francis Home. The present is a copy of the hitherto unrecorded first issue of the first edition, the title page of which is without the author's name, publisher, place of publication, and date. In the second issue the title page states that the work was pub-

lished in Edinburgh in 1765. Entirely on chemistry, the book contains the material of a course of lectures given to agricultural students in London. Fordyce (1736–1802), a physician (M.D., Edinburgh, 1758) and pupil of Cullen, settled in London in 1759 and “began a course of lectures on chemistry which he continued for 30 years, materia medica and medicine being added in 1764” (Partington). There is no copy of the first issue in Cambridge University Library, the Ministry of Agriculture and Fisheries Library, or the extensive W. F. Perkins Agricultural Library at Southampton University. Very rare. The following bibliographical references are to the second issue of the first edition. (Fussell, *More Old English Farming Books*, 1731–1793, p. 62; Munk, II, 376; Partington, III, 692; Poggendorff, I, 773; Watt, I, 377y)

FORDYCE, George

Elements of Agriculture and Vegetation. By George Fordyce, M.D. Of the Royal College of Physicians; Physician to St. Thomas's Hospital; and Reader on the Practice of Physic, in London.

London: Printed for J. Johnson, No. 72, St. Paul's Church-Yard. 1771.

Second edition. 4to. 2 leaves, 100 pp. With 3 folding engraved plates. Fine copy in original half calf, gilt, boards.

THE GREATLY enlarged second edition of this important work, containing new discoveries in chemistry. Fordyce kept the information current by publishing third (1779), fourth (1789), and fifth (1796) editions. The plates in the second edition are identical to those of the first (1765). (Blake, 150; Ferchl, 160; Partington, III, 692; Perkins, 625; Watt, I, 377y)

FORSELL, Isaac

Dissertation Chemica de Natura Metallorum cujus partem posteriorem . . . praeside Mag. Johanne Gadolin, . . . pro gradu publico examini subjicit Isaacus Forsell, Stip. Reg. Sata-gundensis in audit. Math. Die XX Junii MDCCCXCII, . . . Åbo: Typis Frenckellianis. (1792).

First edition. 4to. 12 pp. Fine, crisp copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated. Bound with: Unonius, Israel, *Dissertation chemica de natura metallorum cujus partem priorem* (Åbo, 1792).

A SEQUEL DISSERTATION on metals presented by Forsell, a pupil of Johan Gadolin, professor of chemistry at the University of Åbo, Finland. The first part was presented by Unonius the previous day (June 19). The dissolution of metals by acids to form salts is discussed, as well as the reduction of salts to the original metals. Contrary to earlier

theories, metals are shown to be elementary substances rather than compounds of their calces and phlogiston. Not in the usual bibliographies. (Bolton, *First Supplement*, 177; Ferchl, 169)

FORSYTH, J.S.

The First Lines of Philosophical and Practical Chemistry as applied to Medicine and the Arts, including the Recent Discoveries and Doctrines of the Science. . . .

London: Sustenance and Stretch. 1828.

First edition. Tall 12mo. Xxxvi, 326 pp., 1 leaf (advertisement). With 3 engraved plates (H. Adlard sc.) depicting 38 figures of chemical apparatus. Fine copy, uncut, in contemporary quarter cloth, boards, printed paper label on spine.

AN INTRODUCTORY textbook, describing the latest discoveries in theoretical, practical, and industrial chemistry, with a useful glossary of chemical terms at the end (pp. 301–326). No reference to Forsyth has been located. He was evidently a physician, as he is described as a “surgeon, &c.” on the title page. The Wellcome catalog lists seven items by him, but not the present. Rare. Not in the usual chemical and medical bibliographies. (Bolton, 446)

FORTESIUS, Franciscus

Paradoxa V.I.D. Francisci Fortesii Scyllensis. Ex sacris Bibliis, ac ex chymicorum Scholae principiis philosophice meditata. Quibus adiunxit computum annorum Mundi, ex eisdem sacris Bibliis elucubratum, ac Cometam anni 1664 Alexandro Septimo Summo Pontifici dicatum. (Naples, 1 April 1670).

Manuscript on paper, in Latin and Italian, written in a neat, cursive hand. Third leaf (recto) dated: “Neap. die P(ri)ma mensis Ap(ri)lis 1670.” 4to. 7 leaves, 232 pages (written on both sides). With title, dedication to Pasquali de Aragonia, and table of contents. Fine copy, with wide margins, in contemporary vellum. Armorial bookplates: Marchese Salsa and the Third Viscount Dudley, William Ward.

APPARENTLY UNPUBLISHED, this fine manuscript comprises thirteen *Paradoxes* on subjects of natural science, including chemistry and alchemy, air, light, fire, heat and cold, the planets, and the moon. There are also several medical sections (e.g., *De bestiarum productione* and *Ubi fiat sanguificatio*). The eleventh *Paradox* (28 pp.) is on the age and structure of the moon. The final fifty-one pages, in Italian, are letters concerning the comet that appeared in 1664. Of particular interest are discussions of vacua, atoms, water, acids, salts, chemical magisteries (solvents), metals and corrosion, putrefaction and fermentation, mixtures and compounds, distillation, calcination, sublimation, precipitation, combustion, alchemy and transmutation, the philosopher’s

stone, etc. There are references to earlier and contemporary chemists. Fortesius relies heavily upon the writings of Pontanus and Sendivogius and quotes from the *Theatrum Chemicum*. Most of this beautiful manuscript deals with topics of interest to the chemical historian. No reference to Fortesius has been located, but from the present manuscript it is obvious that he possessed an inquiring mind. He was probably a monk who lived in Naples.

FOSSOMBRONI, Vittorio

Saggio di Ricerche sull’Intensità del Lume . . .

Arezzo: Presso la Vedova Bellotti, Stampat. Vescov. All’Insegna del Petrarca. 1781.

First edition. 4to. xxviii, 112 pp. Large folding plate containing 13 figures (signed with monogram “DMC,” Arezzo, 1780). Fine, tall copy, with wide margins, in original white pasteboards.

A FORMAL MATHEMATICAL treatment of the measurement of light intensity (i.e., photometry), drawing on the practical work of Bouguer and Lambert. The writings of Bernoulli, Euler, Maclaurin, Newton, Smith, and others are cited. The long introduction comprises a discourse on the progress of mathematics. A superb example of eighteenth-century Italian fine printing. “This work . . . is rare, and was unknown to Riccardi, while Poggendorff only quotes a French translation of 1782” (Zeitlinger). Count Fossombroni (1754–1844), a correspondent of the French National Institute, became minister of war and foreign minister of Tuscany. During the early years of his career he published several works on mathematics and physics. Not in British Library, Gamba, Honeyman, etc. (British Optical Assoc. Library Cat., II, 36; Roller, 199; Roller & Goodman, 410; Sotheran, Cat. 828 [1931], 3262)

FOUET, Claude

Le Secret des Bains et Eaux Minerales de Vichy en Bourbonnois, découvert par Claude Fouet, Docteur en Medecine, natif du mesme lieu. Dans lequel sont contenuës beaucoup de recherches et pensées curieuses utiles et necessaires pour les malades qui ont besoin des Eaux minerales en general. . . .

Paris: Chez la Veuve d’Olivier de Varennes, au Palais, dans la Salle Royale, au Vaze d’or. 1675.

First edition. 12mo. 12 leaves, 148 pp. Fine copy in contemporary calf, rebounded, maroon morocco label gilt, spine dated. Old stamp on title page (Medical Society of London) and withdrawal stamp of the Wellcome Library on verso.

A RARE WORK on the hot and cold mineral waters of Vichy, of chemical importance. Fouet (fl. 1679), a physician of Vichy, analyzed the waters and found them to contain sulphur, blue and green vitriols, alum, iron, and niter. A long

discussion on the properties of niter is given (pp. 64–80), in which the niter of the ancients (i.e., naturally occurring sodium carbonate) and saltpeter (potassium nitrate) are compared. This work covers the possible sources of heat for these waters, with references to earlier and contemporary authors (e.g., Agricola, Cardan, Bacci, Billich, and Sebitz). Another edition appeared (Paris: Laurent d'Houry, 1686, 12mo. See Goldsmith, F399). Fouet also published *Nouveau système des bains et aux minérales de Vichy* (Paris: R. Pepie, 1686). (See Wellcome, III, 46.)

FOUGEROUX DE BONDAROY, Auguste Denis

Mémoire sur un Moyen proposé pour détruire le Méphitisme des Fosses d'aisance.
(Paris, 1785).

First separate edition. 4to. 8 pp. Fine copy, uncut, with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated. From the library of Denis I. Duveen.

FOUGEROUX DE BONDAROY (1732–1789), nephew of Duhamel du Monceau and heir of his estate, was a friend and collaborator of Lavoisier. This report deals with the inadequate method suggested by Jean Janin de Combe-Blanche (1730–1790) of sprinkling Parisian cesspits with vinegar to destroy the toxicity of the gases they emitted. The paper originally appeared in the *Mémoires* of the Royal Academy of Sciences (March 1782, pp. 197–204; published 1785). The author acted on behalf of the society's committee (La Rochefoucauld, Macquer, Le Roy, Lavoisier, and Fougereux de Bondaroy). It is noteworthy as being one of the few instances in which Lavoisier was a member of a technical committee without drawing up the report. Poggenдорff (I, 782) lists many chemical publications by Fougereux but not the present title. (Duveen & Klickstein, pp. 246–247)

FOUQUET, Marie de Maupeou, Vicomtesse de Vaux

Segretti ovvero Rimedi di Madama Fochetti. Per sanare con poca spesa ogni sorte di Infirmità Interne, & Esterne, Invecchiate, e passate fino al presente per incurabili. Sperimentati dalla medesima Dama, et in questa nuove impressione aggiuntori la Terza Parte. Che in essa Opera si contiene: Tradotti dal Francese da Ludovico Castellini.
Venice: Per il Prodocolimo. 1717.

12mo. 339 (recte 336), 20 pp., 12 leaves. Woodcut vignettes on main title and title to *Parte Terza*. Woodcut of Roman emperor's head on page 20 (*Parte Terza*). Some leaves embrowned owing to quality of paper; otherwise fine copy with 2 blank leaves at the end. Original vellum, lettered in ink on spine.

VERY RARE Italian translation of this well-known French book of secrets. The mother of Nicolas Fouquet, Louis XIV's disgraced minister of finance, Mme. Fouquet (1590–1681) was a woman of great piety and a leading patron of St. Vincent de Paul. She devoted her life to assisting the poor, for whose benefit this book was written. She published this work in 1665 in two parts. It includes sections on chemistry, pharmacy, materia medica, the powder of sympathy, treatment of snakebite, toothache, migraine, epilepsy, melancholy, etc. In this edition there is an additional third part, translated from the French edition (Dijon, 1689), on the mercurial treatment of syphilis. Caillet (4123 and 4124) lists several French editions. Osler, Waller, and Wellcome list other editions. Not in Cushing, Duveen, Edelstein, Ferchl, Ferguson (*Books of Secrets*), Neu, Partington, Smith, Watt, etc. Very rare. (Blake, 153, the only copy located by N.U.C.; Ferguson Coll., 240)

FOURCROY, Antoine François de

Bibliothèque Universelle des Dames. Principes de Chimie . . .
Paris: Rue et Hôtel Serpente. 1787.

First edition, first issue. 2 vols., 12mo. I: xxiii, (1), 212 pp., 3 leaves (last blank). II: 2 leaves, 214 pp., 2 leaves (last blank). Fine copy in original mottled calf, spines gilt, dark-blue morocco labels, all edges gilt.

THE "FIRST textbook written entirely according to the anti-phlogistic theory" (D.S.B.). A "charming little edition" (Duveen) made by Fourcroy from his *Éléments d'histoire naturelle et de chimie* for the collection *Bibliothèque Universelle des Dames*. "It was the custom in France for ladies to attend courses on literary and scientific subjects. Chemistry was among their interests, and in 1787 Fourcroy wrote a *Principes de Chimie* in two slim duodecimo volumes. . . . This little work is of considerable interest, for it was the first textbook of chemistry to be written entirely according to the anti-phlogistic theory. Phlogiston was not even mentioned, only the new nomenclature was used" (Smeaton, *Fourcroy*, p. 183). Rare. Not in Blake, Bolton, Edelstein, Ferchl, Poggenдорff, Smith, Wellcome, etc. (D.S.B., V, 90; Duveen, 225; Neu, 1484; Partington, III, 537; Smeaton, No. 26; Thornton & Tully, 170; Watt, I, 381w)

FOURCROY, Antoine François de

Catalogue des Livres de la Bibliothèque de feu M. A. F. de Fourcroy, . . . Avec la table des auteurs, et celle des anonymes.
Paris: Tilliard Frères. Juin 1810.

First edition. 8vo. 2 leaves, xx, 338 pp. Joints cracked; otherwise very good copy in original gilt-ruled quarter calf, plain boards, maroon label. With an early-nineteenth-century engraved portrait of Fourcroy (Ferdinand sc.) inserted as frontispiece.

THE SALES catalogue of Fourcroy's extensive personal library. The sale took place from 19 November to 22 December 1810 (29 sessions), and the catalogue lists 2,781 lots, of which about 1,800 are works on science and medicine. Many rare chemical books are included. The catalogue is preceded by a biographical note and a list of Fourcroy's publications. There is a comprehensive index. According to Peignot (*Rép. Bibliogr. Univ.*, p. 99), the compiler of the catalogue was François Henri Stanislas de l'Aulnay (1739–1831), who wrote a book on Pilâtre de Rozier's antimephitic respirator, which he improved upon (1786). Very scarce. Not in Bolton, D.S.B., Duveen, Ferguson, Poggendorff, Watt, Wellcome, etc. (Edelstein, 910; Partington, III, 537; Smeaton, p. 212; Smith, 179)

FOURCROY, Antoine François de

Convention Nationale. Opinion de Fourcroy, député du Département de Paris, sur le projet d'éducation nationale de Michel Le Pelletier, prononcée dans la séance du 30 juillet 1793. Imprimée par ordre de la Convention nationale. (Paris: de l'Imprimerie Nationale. 1793).

First edition. 8vo. 10 pp. Fine copy in maroon quarter morocco antique, plain boards, spine gilt-lettered.

FOURCROY WAS not successful in his attempt to remain a private citizen, and after the assassination of Marat (13 July 1793), he took his seat in the Convention on 25 July. Five days later Fourcroy made this speech on proposals for the reform of education. The "Convention was trying to set up a national system of education, and on 13 July it had begun to debate the plan of Michel Pelletier, who had proposed that elementary education, from the age of five, should be given in boarding schools run by the state. Education was a subject in which Fourcroy naturally had a great interest, and he was a member of the Commission of Public Instruction of Paris. He spoke in the debate on 30 July, supporting Pelletier's general principles, but claiming that boarding schools would be too expensive for the state to run. He therefore suggested that children should continue to live at home, but that the elementary schools should be open nearly all day, as they were in ancient Athens. . . . Various aspects of these plans were repeatedly discussed by the Convention, but they led to nothing; the country was so weakened by revolution and war" (Smeaton, *Fourcroy*, p. 44). Very rare. Smeaton locates only two copies (British Library, Bibliothèque Nationale). Not in N.U.C. (Martin & Walter, II, 13708; Smeaton, N. 255)

FOURCROY, Antoine François de

Convention Nationale. Rapport sur les mesures prises par le comité de salut public pour l'établissement de l'école centrale des travaux publics, décrétée par la Convention nationale, le 21 ventôse dernier; et projet de décret pour l'ouverture de cette école, et l'admission des élèves; présentés . . . par Fourcroy, à la séance du 3 vendémiaire de l'an 3 de la République Français, . . . Imprimés par ordre de la Convention Nationale. (Colophon:) De l'Imprimerie Nationale. (1794).

First edition. 8vo. Caption title. Fine copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

THE REPORT to the Convention Nationale of Fourcroy's program for the establishment of the national system of vocational training schools for which he was responsible. He first reviews the situation prevailing in civil and military engineering, chemistry, mining, and the applied physical sciences before suggesting his own solutions to many long-standing problems. He then makes specific proposals for levels of enrollment, equipment, duties of instructors, scholarships, discipline, etc. These are summarized in the seventeen articles that conclude his report. The proposals made by Fourcroy resulted in the organization of a new college, which opened in December 1794 as the École Centrale des Travaux Publics and became famous under its later name of École Polytechnique. Another report of thirty-one pages was issued with similar title on 24 September 1794 (Smeaton, 257). The present extremely rare work is not mentioned by Smeaton in his bibliography of Fourcroy.

FOURCROY, Antoine François de

Éléments d'Histoire Naturelle et de Chimie. Deuxième Édition des Leçons Élémentaires sur ces deux Sciences, publiées en 1782. . . . Paris: Chez Cuchet. 1786.

Second edition. 4 vols., 8vo. I: 50 leaves (wrongly numbered), 426 pp. II: 2 leaves, 523, (1) pp., 1 leaf (errata). III: 2 leaves, 547, (1) pp., 1 leaf (errata). IV: 2 leaves, 537, (1) pp. With 8 large folding tables. Fine, crisp set, in original mottled calf, spines richly gilt, maroon and olive morocco labels.

THE GREATLY enlarged second edition, volume I of which contains a long preliminary discourse that is antiphlogistic. In "the main part of the book, which was evidently written before July 1784, Fourcroy presented both the phlogistic and anti-phlogistic theories but favoured Macquer's opinion that during combustion and calcination vital air (oxygen) was absorbed at the same time as phlogiston was emitted" (Smeaton, *Fourcroy* [1962, p. 14]). Scarce. Not in Waller, Watt, Wellcome, or the usual chemical bibliographies. (Blake, 153; Caillet, 4125; D.S.B., V, 90; Ferchl,

161; Partington, III, 537; Smeaton, No. 2; Thornton & Tully, 170)

FOURCROY, Antoine François de

Éléments d'Histoire Naturelle et de Chimie. Troisième Édition . . .

Paris: Chez Cuchet. 1789.

Third edition. 5 vols., 8vo, in 6. I: xxxii, 506 pp., 1 leaf (errata for vols. I and II). II: 2 leaves, 496 pp. III: 2 leaves, 468 pp. IV: 2 leaves, 495, (1) pp. V: 2 leaves, 438 pp., 1 leaf (errata). VI: 10 folding tables (several printed on heavy paper). Very fine copy, complete with the errata leaves (not mentioned by Smeaton), in original mottled calf, spines richly gilt, tan morocco labels. The sixth volume, containing the tables of volume V, is bound in quarter calf, gilt (uniform with the other volumes), marbled boards.

THE FIRST edition of this great textbook to be based entirely on the New Chemistry of Lavoisier. Volume V (pp. 218–346) contains a long list of the old and new nomenclature, and the tables are especially important. The large table of chemical nomenclature is from the *Méthode de nomenclature chimique* (1787). The text has been updated since the edition of 1786. “The second edition of *Éléments* was almost sold out by the end of 1787, and Fourcroy had little time to prepare the third, which appeared in December 1788, though it was dated 1789. He made few additions, but rewrote the text where necessary to show that he now adopted the anti-phlogistic theory without reservation” (Smeaton, *Fourcroy*, p. 181). Duveen (p. 225), who did not own a copy of this edition, states erroneously that it is in “5 vols., 12mo.” Smeaton indicates that only volumes III and V are in the Bibliothèque Nationale. Not in D.S.B., Edelstein, Ferguson, Neu, Smith, etc. (Blake, 153; Ferchl, 161; Partington, III, 537; Poggendorff, I, 782; Smeaton, No. 4; Sondheimer, 536; Wellcome, III, 47)

FOURCROY, Antoine François de

Éléments d'Histoire Naturelle et de Chimie. Quatrième Édition . . .

Paris: Chez Cuchet. 1791.

Fourth edition. 5 vols., 8vo. I: xxxiv (misnumbered xxxii), 506 pp. II: 2 leaves, 496 pp. III: 2 leaves, 474 pp. IV: 2 leaves, 502 pp. V: 2 leaves, 454 pp., 1 leaf (errata). With 10 folding tables (several printed on heavy paper). Fine, crisp copy, complete with errata leaf (not mentioned by Smeaton), in original gilt-ruled tree calf, gilt, green morocco labels. Signature of Auguste de Montferrand, 1818, and old library stamp on title pages.

“A FOURTH EDITION was needed in 1791, but it contained only a few changes” (Smeaton, *Fourcroy*, p. 15). The Wellcome copy is imperfect, lacking all the tables except the

first. Scarce. Not in the usual chemical bibliographies. (Blake, 153; Ferchl, 161; Partington, III, 537; Poggendorff, I, 782; Smeaton, No. 5; Wellcome, III, 47)

FOURCROY, Antoine François de

Éléments d'Histoire Naturelle et de Chimie. Cinquième Édition . . .

Paris: Chez Cuchet. L'An II de la République, une et indivisible. (1793).

Fifth edition. 5 vols., 8vo. I: xxxiv, 506 pp. II: 2 leaves, 496 pp. III: 2 leaves, 474 pp. IV: 2 leaves, 502 pp. V: 2 leaves, 454 pp., 1 leaf (errata). With 10 folding tables (several printed on heavy paper). Very fine, crisp copy, complete with errata leaf (not mentioned by Smeaton), in original gilt-ruled speckled half calf, boards, orange and black morocco labels. Old signature (Emanuel Zimmermann) in ink on half titles.

THE FINAL edition of this celebrated textbook. “There are two versions of the *cinquième édition*, printed from different type. Both have the imprint of Cuchet.” (See Smeaton [*Fourcroy*, pp. 213–214] for details.) The text is identical to that of the fourth edition, except that the words “quatrième édition” have been altered to “cinquième édition” wherever they occur in the preface. Scarce. Not in Caillet, D.S.B., Poggendorff, Wellcome, or the usual bibliographies. (Blake, 153; Bolton, 447; Neu, 1477; Partington, III, 537; Smeaton, No. 6B; Thornton & Tully, 170; Watt, I, 381w)

FOURCROY, Antoine François de

Elements of Chemistry, and Natural History. To which is prefixed The Philosophy of Chemistry. By A. F. Fourcroy. Translated from the fourth and last edition of the original French work, by R. Heron. . . .

London: Printed for J. Murray and S. Highley, J. Cuthell, and G. Mudie and Son, Edinburgh. 1796.

Second English edition translated by Heron. 4 vols., 8vo. I: 1 leaf, vi, (2), v–xix, (1), 110 + 472, (1) pp. II: vii, (1), 495, (1) pp. III: v, (1), 494 pp. IV: v, (1), 410 pp. With 10 large folding printed tables in volume IV. Occasional very light browning, and joints of volumes II and III cracked (but firm); otherwise good copy in original calf, maroon morocco labels.

THE SECOND and final English translation, by Robert Heron (1764–1807), of the fourth French edition of *Éléments d'histoire naturelle et de chimie* (Paris, 1791). Heron had earlier translated into English the third French edition of the *Éléments* (Paris, 1789). To the present translation Heron has added some notes, and first includes a new translation of the *Philosophie chimique*. This edition is dedicated to Dr. Joseph Black, who (said Heron) had recommended Fourcroy's *Éléments* to his students at the University of Edinburgh. (Blake, 153; Bolton, 447–448; Cole, 466; Duveen

& Klickstein, p. 136; Partington, III, 537, Smeaton, No. 13; Smith, 179; Sotheran, Cat. 725 [1912], 8059 ["Rare"]; Watt, I, 489g)

FOURCROY, Antoine François de

Elements of Chemistry and Natural History. To which is prefixed, the Philosophy of Chemistry. By A. F. Fourcroy. Fifth edition, with notes, by John Thomson, Surgeon, Edinburgh. . . .

Edinburgh: Printed by Mundell & Son, . . . for Longman & Rees, and J. Johnson, London; and for Mundell & Son, Edinburgh. 1800.

Fifth English edition. 3 vols., 8vo. I: xix, (1), 498 pp. II: vi, 540 pp. III: viii, (2), 543, (1) pp. With 9 folding tables. Occasional minor foxing on a few leaves (owing to quality of paper); otherwise fine copy, complete with the advertisement leaf (not mentioned by Smeaton), in tan half calf antique, marbled boards, maroon morocco labels, spines dated.

THE FINAL English edition and the first to be edited with copious notes by John Thomson (1765–1846), celebrated physician at Edinburgh (see D.N.B.). It contains the *Philosophy of Chemistry* (vol. I, pp. 1–77), an exact reprint of the text of the London (1795) edition (Smeaton, *Fourcroy*, No. 44). In the advertisement (dated 23 July 1798) Thomson states that he has “adhered rigidly to the translation of Mr. Nicholson.” His notes, however, are entirely original. Smeaton (p. 215) indicates that there are two versions of the title page of this edition printed from the same type, differing only in the publishers and dates of publication. Not in D.S.B., Thornton & Tully, or the usual bibliographies. (Blake, 153; Bolton, 448; Partington, III, 537; Smeaton, No. 14B; Sondheimer, 542; Sotheran, Cat. 907 [1954], 192 ["Rare"]; Watt, II, 905k; Wellcome, III, 47)

FOURCROY, Antoine François de

Elements of Natural History, and of Chemistry: being the second edition of the elementary lectures on those sciences, first published in 1782, and now greatly enlarged and improved, by the author, M. de Fourcroy, . . . Translated into English. With occasional notes, and an historical preface, by the translator. . . .

London: Printed for G. G. J. and J. Robinson. 1788.

First English edition translated by Nicholson. 4 vols., 8vo. I: xcvi, 395, (1) pp. II: iv, 461, (1) pp. III: iv, 506 pp. IV: vi, 464 pp. With 8 folding tables. Fine, crisp copy, in original tree calf, rebaked with original gilt spines laid on, maroon morocco labels. Armorial bookplates in each volume: Evelyn J. Shirley, Ealington Park, Warwickshire.

THE ENGLISH translation of the second edition of *Éléments d'Histoire Naturelle et de Chimie* (Paris, 1786), by the chemist William Nicholson, with important notes added. In the historical preface (p. xvii) Nicholson indicates that he is not completely convinced of the validity of Lavoisier's antiphlogistic theory, as “the deductions respecting the existence or non-existence of phlogiston in the sense of Stahl, are very far from being conclusive, because decisive experiments are wanting.” The preface is dated 13 December 1787. A *Supplément*, extracted from the third edition of the *Éléments* (Paris, 1789) appeared later (London, 1789). Not in Duveen, Edelstein, Ferguson, etc. (Blake, 153; Bolton, 447; Neu, 1478; Partington, III, 537; Smeaton, No. 10; Smith, 179; Sondheimer, 537; Sotheran, Cat. 832 [1932], 5228; Watt, I, 381w; Wellcome, III, 47)

FOURCROY, Antoine François de

Leçons Élémentaires d'Histoire Naturelle et de Chimie; dans lesquelles on s'est proposé, 1e, de donner un ensemble méthodique des connoissances chimique acquises jusqu'à ce jour; 2e, d'offrir un tableau comparé de la doctrine de Stahl & de celle de quelques Modernes: pour servir de résumé à un Cours complet sur ces deux Sciences. . . .
Paris: Rue et Hotel Serpente. 1782.

First edition. 2vols., 8vo. I: 2 leaves, lxxxviii, 584 pp. II: 2 leaves, 848 pp., 1 leaf. With folding engraved plate of apparatus (by Sellier) and 4 folding tables. Very fine set in original mottled calf, spines richly gilt, maroon morocco labels.

THE FIRST major publication by Fourcroy (1755–1809), comprising a résumé of his course of seventy lectures given each winter in his laboratory. A comprehensive account of all parts of chemistry is presented, including important recent work on gases. In this edition Fourcroy had not yet completely adopted Lavoisier's theory of combustion, and it was only in the preliminary discourse to the second edition (1786) that he renounced the theory of phlogiston. The book became very popular, with many other editions and translations. “Fourcroy's complete conversion to Lavoisier's theory . . . some time before July 1786 . . . was an event of major importance . . . for with his large audiences and his books Fourcroy contributed more than anyone else to its rapid spread” (Smeaton, *Fourcroy* [1962, p. 14]). The second and later editions were retitled *Éléments d'Histoire Naturelle et de Chimie*. A pupil of Macquer and Bucquet, Fourcroy was a brilliant chemist who collaborated (from 1787) with Lavoisier, Guyton de Morveau, and Berthollet. (Blake, 153; D.S.B., V, 90; Duveen, 224–225; Edelstein, 900; Ferchl, 161; Honeyman, 1354; Neu, 1476; Partington, III, 537; Poggendorff, I, 782; Smeaton, No. 1; Sondheimer, 535; Thornton & Tully, 170; Watt, I, 381w, II; Wellcome, III, 47)

FOURCROY, Antoine François de

Elementary Lectures on Chemistry and Natural History. Containing a methodical abridgement of all the chemical knowledge acquired to the present time; with a comparative view of the doctrine of Stahl, and that of several modern chemists: the whole forming a complete course of those two sciences. Translated from the French of M. Fourcroy, . . . By Thomas Elliot. With many additions, notes, and illustrations, by the translator. . . .

Edinburgh: Printed for C. Elliot; G. Robinson, London; and W. Gilbert, Dublin. 1785.

First English edition. 2 vols., 8vo. I: viii, xvii–xxviii (badly numbered, but complete), (29)–520 pp. II: viii, (9)–495 pp. Extremely fine copy in essentially pristine condition, in original tree calf, gilt, dark-blue morocco labels, gilt fillets on covers.

THE FIRST English translation of *Leçons élémentaires d'histoire naturelle et de chimie* (Paris, 1782), augmented with valuable notes by Thomas Elliot, who paid “the strictest attention to the true meaning of the author. . . . The addition of Notes was made with a view to amplify and illustrate the original text” (advertisement). A long footnote by Elliot describes Lavoisier’s antiphlogistic theory of combustion and calcination (pp. 91–93). Not in Duveen, Edelstein, Ferguson, Neu, Wellcome, etc. (Blake, 153; Bolton, 447; Partington, III, 537; Smeaton, No. 9; Smith, 179; Sondheimer, 541; Sotheran, Cat. 725 [1912], 8055 [“Rare”]; Watt, I, 333w)

FOURCROY, Antoine François de

Lezioni Elementari d'Istoria Naturale e di Chimica; nelle quali si propone 1 di presentare un'unione metodica delle cognizioni chimiche acquistate sino al giorno d'oggi 2 di offrire una tavola comparata della dottrina dello Stahl con quella di alcuni moderni: opera che contiene in ristretto un corso completo di queste due scienze, del Signor Fourcroy, . . . Venice: Presso Lorenzo Baseggio. 1785.

First Italian edition. 3 vols., 8vo. I: viii, 321, (1) pp. II: 2 leaves, 406, (1) pp. III: 2 leaves, 347, (1) pp. With 4 folding tables. Occasional (mostly minor marginal) worming; otherwise good, crisp copy, in original vellum, spines gilt-lettered.

THE ITALIAN version, by an anonymous translator, of *Leçons Élémentaires d'Histoire Naturelle et de Chimie* (Paris, 1782). Although the three volumes are dated 1785, the approbation at the end of volume I is dated 8 March 1784. Smeaton, who had never seen a copy, gives no pagination and states that there are four volumes. In fact, the fourth volume (here present) was published later in 1785 and is the Italian translation of *Mémoires et observations de chimie* (Paris, 1784). Blake (p. 153) lists only a later edition (Venice, 1800–1802,

5 vols.). Very rare. Not in D.S.B., Watt, Wellcome, or the usual bibliographies. (Bolton, *First Supplement*, 170; Smeaton, No. 15)

FOURCROY, Antoine François de

La Médecine éclairée par les sciences physiques, ou Journal des Découvertes relatives aux différentes parties de l'art de guérir; rédigé par M. Fourcroy. . . .

Paris: Chez Buisson. 1791–1792.

First (only) edition. 4 vols., 8vo. I: 396 pp. II: 400 + 40 pp. III: 391, (1) pp. + pp. 41–88 (continued from vol. II). IV: 359, (1) pp. + pp. 89–136 (continued from vol. III). Very fine set in contemporary half calf, marbled boards, spines richly gilt, maroon and tan morocco labels.

A COMPLETE SET of this important journal of the healing arts, especially as related to chemistry. It appeared fortnightly for two years and was founded and edited by Fourcroy. “The application of chemistry to medicine greatly interested Fourcroy. . . . [He] felt that it was difficult for practising doctors to benefit from the latest scientific knowledge, because they were unable to keep up to date in many branches of science that affected medicine. . . . In January 1791 Fourcroy therefore began to publish a new journal . . . [on] physics, minerology, chemistry, botany, zoology, anatomy, . . . pathology . . . materia medica, pharmacy, . . . occupational diseases. . . . He . . . was aided in his choice of material by a group of doctors, surgeons and pharmacists, who met every fortnight” (Smeaton, *Fourcroy*, pp. 36–37). A translation of part of this work into German by C. W. Hufeland and J. F. A. Götting appeared as *Aufklärungen der Arzneywissenschaft aus den neuesten Entdeckungen der Physick* (Weimar, 1793–1794). Complete sets in pristine condition (as here) are very rare. Not in Blocker, Cushing, Osler, Wellcome, or the usual chemical bibliographies. (Blake, Caillet, 4126; D.S.B., V, 90; Ferchl, 161; Smeaton, No. 111; Waller, 3151; Watt, I, 381x)

FOURCROY, Antoine François de

Philosophie Chimique, ou vérités fondamentales de la chimie moderne, disposées dans un nouvel ordre. . . .

Paris: (Cl. Simon). 1792.

First edition. Sm. 8vo. 128 pp. Small floral bouquet woodcut on title page. Fine, crisp copy, in contemporary half vellum, marbled boards, tan morocco label. Unobtrusive, neat early signature in faded brown ink on title.

THE GENUINE first edition of Fourcroy’s remarkably lucid exposition of the new antiphlogistic system of chemistry. “As a guide for the student attending a course of lectures, or for the older chemist who was, perhaps, uncertain of the

anti-phlogistic theory, *Philosophie chimique* was without a rival" (Smeaton, *Fourcroy*, p. 194). The book was immediately successful, and a pirated reprint quickly appeared (see *Annales de Chimie*, 1793, 16, 224). In the present genuine edition, all pages are correctly numbered, and the colophon is printed perfectly. The pirated edition has errors in pagination, and the colophon is poorly printed. Most bibliographies do not distinguish between the two printings. The international importance of this work is proven by the many translations and editions that followed during the next two decades (i.e., editions in Danish, Dutch, English, German, Greek, Italian, Polish, Portuguese, Russian, Spanish, and Swedish). Not in Caillet, Duveen, Ferguson Coll., Morgan, Smith, etc. (Blake, 153; Bolton, 448; D.S.B., V, 90; Edelstein, 902; Ferchl, 161; Ferguson, I, 287; [not in Young Coll.]; Neu, 1481; Partington, III, 538; Poggendorff, I, 783; Smeaton, No. 32A; Sondheimer, 543; Sotheran, Cat. 825 [1931], 5234 ["Very rare"]; Thornton & Tully, 170; Waller, 11132; Watt, I, 381x; Wellcome, III, 48)

FOURCROY, Antoine François de

Philosophie Chimique, ou vérités fondamentales de la chimie moderne, disposées dans un nouvel ordre. . .

Paris: (Cl. Simon). 1792.

Pirated reprint of first edition. Sm. 8vo. 128 pp. Small floral bouquet woodcut on title page. Minor marginal water stain on title and first few leaves; otherwise very good copy in early-nineteenth-century maroon quarter morocco, gilt, marbled boards. Printed partly on white and partly on pale blue paper.

THE HASTILY printed pirated edition, in which pages 41, 121, and 126 are wrongly numbered 4, 12, and 226, respectively. The abbreviation "No." in the colophon is badly printed. The title woodcut and woodcut headpiece on page 5 are different from those in the genuine first edition. Otherwise this is a paginary reprint. Rare. (Smeaton, No. 32B; Wellcome, III, 48)

FOURCROY, Antoine François de

Philosophie Chimique, ou vérités fondamentales de la chimie moderne, disposées dans un nouvel ordre. . . Seconde édition.

Paris: Chez Du Pont Imprimeur-Libraire. L'An III de la République. (1794–95).

Second edition. 8vo. 174 pp. With signature of Fourcroy, in ink, on verso of title leaf. Very fine copy, uncut and unpressed, with wide margins, in marbled boards antique, original brown wrappers bound in.

TO CERTIFY the authenticity of the second edition, Fourcroy signed every copy. "It was practically identical with the first, the only significant difference being the addition of arsen-

ites to the list of salts" (Smeaton, *Fourcroy*, p. 194). Printed by Pierre Du Pont (1739–1817), this edition is set in larger type on better paper than the first of 1792. (Blake, 153; Duveen, 225; Edelstein, 903; Ferchl, 161; Ferguson, I, 287 [not in Young Coll.]; Neu, 1482; Partington, III, 538; Poggendorff, I, 783; Smeaton, No. 33; Smith, 180; Sondheimer, 544; Thornton & Tully, 170; Wellcome, III, 48)

FOURCROY, Antoine François de

Philosophie Chimique, ou vérités fondamentales de la chimie moderne, destinées a servir d'éléments pour l'étude de cette science. . . Troisième édition.

Paris: Chez Tourneisen Fils. 1806.

"Third" edition. 8vo. ix, (1), 376 pp. Fine, wide-margined copy, top edge gilt, in half calf antique, spine gilt, marbled boards, crimson morocco label (by Henry Sotheran Ltd.).

THE SO-CALLED third edition (actually the fourth). "The text is the same as that of [Smeaton No.] 37, but it has been completely reset; the title-page, apart from the name of the publisher, has the same setting as [Smeaton No.] 37B. This was probably the second printing of the octavo edition, for the title-pages of *Annales du Muséum d'Histoire Naturelle*, which was published at no. 12, rue de Seine, show that in 1806 Tourneisen fils succeeded Levrault Schoell et Cie" (Smeaton, *Fourcroy*, p. 222). Not in Duveen, Ferguson, Sondheimer, Wellcome, etc. (Smeaton, No. 38)

FOURCROY, Antoine François de

Philosophie Chimique, ou vérités fondamentales de la chimie moderne, destinées a servir d'éléments pour l'étude de cette science. . . Troisième édition.

Paris: Chez Levrault, Schoell et Cie. 1806.

Third edition. 8vo. ix, (1), 376 pp. Fine, crisp copy, in original plain boards.

"AFTER 1797 many considerable discoveries were made. It was not until 1806 that the third edition appeared. The contents were arranged under the same twelve headings as before, but more substances were discussed and more details given, and Fourcroy wrote a long introductory account of chemical affinity and the chief experimental methods of the subject" (Smeaton, *Fourcroy*, p. 194). Three different printings (two 8vo. and one 12mo.) of the third edition are known, and at least two of them were issued in versions with different title pages. The present is a copy with the title in what Smeaton terms the second state. (Partington, III, 538; Smeaton, No. 37B; Sondheimer, 545; Wellcome, III, 48)

FOURCROY, Antoine François de

Philosophie Chimique, ou vérités fondamentales de la chimie moderne, destinées a servir d'éléments pour l'étude de cette science . . . Troisième édition.

Paris: Chez Bernard. 1806.

"Third" edition. 12mo. 2 leaves, vi, 449, (1) pp. Very fine copy with wide margins, entirely uncut and unpressed, in speckled calf antique, spine richly gilt and dated, crimson morocco label.

THE FINAL Paris printing of this famous work. Issued by three different publishers (viz. F. Schoell et Cie, Tourneison fils, and Bernard), with different half titles and title pages, it is the first edition in duodecimo. On the verso of the half title there is printed a nineteen-line notice of books sold by Bernard. Attached to the bottom of the half title (verso) is a seven-line, separately printed notice stating that J. Klostermann Fils had acquired the "Fonds de madame veuve Bernard." Not in Duveen, Ferguson, Sondheimer, Wellcome, etc. (Morgan, 272; Smeaton, No. 40C)

FOURCROY, Antoine François de

Philosophia Chemica eller Grund-Sanningar af den nya chemien. Uti en ny ordnung framstälte af A. F. Fourcroy, . . . Til nyattjande vid enskilda föreläsningar fran Fransyskan öfversatt och med Chem. Nomenclat. &c. tilökt af Anders Sparrman, . . .

Stockholm: Tryckt hos Henrik A. Nordström. 1795.

First Swedish edition. 8vo. xiv, 170 pp. With folding engraved plate of chemical symbols illustrating the new chemical nomenclature. Fine copy, uncut with wide margins, in original blue boards. Old stamp on title page (not affecting text) and on verso of title.

THE TRANSLATOR of this Swedish version of the *Philosophie Chimique* (Paris, 1792) was Dr. Anders Sparrman (1748–1820) of the Royal Academy, Stockholm. A Swedish chemical nomenclature is included. The important folding plate of chemical symbols and nomenclature is not mentioned by Smeaton, who indicates that he had never seen this edition and cites only the copy in the Royal Library, Stockholm. Not in Waller, Watt, Wellcome, or the usual bibliographies. (Blake, 153; Bolton, 449; Ferchl, 161; Partington, III, 539; Smeaton, No. 63)

FOURCROY, Antoine François de

Filosofia Chimica o Verità Fondamentali della Chimica Moderna disposte in un nuovo ordine dal Sig. Fourcroy medico e professore e tradotte dal francese.

Venice: (Domenico Fracasso). 1794.

Second Italian edition. 8vo. 147, (1) pp. Very good copy in contemporary quarter calf gilt, marbled boards.

THE SECOND translation into Italian (first: Pavia, 1793) of the *Philosophie chimique*, by an anonymous translator. The last page is dated 21 December 1793. Rare. Smeaton, who located a copy in the Biblioteca Nazionale Centrale (Rome), had never examined this edition. Not in Blake, Waller, Watt, Wellcome, or the usual early chemical bibliographies. (Bolton, 449; Smeaton, *Fourcroy*, No. 52)

FOURCROY, Antoine François de

Filosofia Chimica o Verità Fondamentali della Chimica Moderna disposte in un nuovo ordine, di A. F. Fourcroy. Aumentata di assiomi ed annotazioni tratte dall'ultime scoperte di G.B. Can-Mons. Trasportata dal francese nell'italiano idioma da V. Dandolo con alcune annotazioni dello stesso.

Venice: Presso Giustino Pasquali q. Mario. Anno primo della libertà italiana. 1797.

Fifth Italian edition. 8vo. 255, (1) pp. Fine copy, uncut with wide margins, in maroon quarter morocco antique, gilt, marbled boards, original wrappers bound in.

PRECEDED BY four earlier editions in Italian, the present translation is the most complete to date of the *Philosophie chimique* and is the only one translated by Vincenzo Dandolo (1758–1819), who also translated Lavoisier's *Traité de Chimie* into Italian. Dandolo used the edition printed at Brussels, An 3 (1794–95), with annotations by J. B. Van Mons. Dandolo added a preface and many footnotes to the present translation and a long subject index at the end. Rare. Smeaton located a copy in the Biblioteca Nazionale Centrale (Rome) but had never personally examined this edition. Not in Waller, Watt, Wellcome, or the usual bibliographies. (Blake, 153; Smeaton, *Fourcroy*, No. 55)

FOURCROY, Antoine François de

The Philosophy of Chemistry, or Fundamental Truths of Modern Chemical Science, arranged in a new order . . . Translated from the French of the second edition, signed by the author.

London: Printed for J. Johnson, St. Paul's Church-Yard. 1795.

First English edition. 8vo. viii, 192 pp. Very fine copy in near mint condition, in speckled half calf antique, marbled boards, spine gilt-lettered and dated.

"THE FIRST edition of *Philosophie chimique* was not translated into English, but there were two translations of the second edition, and one of the third" (Smeaton). The translator of the present first English edition is not named. On the half title the price (in 1795) is printed "Three Shillings and Sixpence." Many thousands of students were introduced

to chemistry through this work, which was more influential than any other in spreading the antiphlogistic theory of Lavoisier. Rare. Not in Duveen, Ferguson, Ferguson Coll., Neu, etc. (Blake, 153; Bolton, 448; Edelstein, 905; Partington, III, 538–539; Smeaton, No. 42; Smith, 180; Sondheimer, 546; Watt, I, 381x; Wellcome, III, 48)

FOURCROY, Antoine François de

Chemische Philosophie oder Grundwahrheiten der neuen Chemie auf eine neue Art geordnet . . . Aus dem Französischen übersetzt von D. Johann Samuel Traugott Gehler, . . . Leipzig: bey Siegfried Lebrecht Crusius. 1796.

First German edition. 8vo. viii, 182 pp., 1 leaf (blank). Very fine copy in pristine condition, in original half sheep, citron boards, spine gilt, maroon morocco label.

THE FIRST translation into German, made from the second French edition (Paris, 1794–95), signed by Fourcroy. The translator, Gehler (1751–1795), a celebrated physicist and senator at Leipzig, also translated works by Adams, Deluc, Faujas de Saint-Fond, Gregory, et al. Rare. Smeaton cites only the copy in the Nationalbibliothek, Vienna. Not in Blake, Duveen, Edelstein, Neu, Poggendorff, Wellcome, etc. (Bolton, 449; Ferchl, 161; Ferguson, I, 287; Partington, III, 539; Smeaton, No. 49; Smith, 179)

FOURCROY, Antoine François de

Die Grundwahrheiten der neuern Chemie nach Fourcroy's Philosophie chimique herausgegeben mit vielen Zusätzen von Dr. H. F. Link, . . . Zweite sehr verbesserte und vermehrte Auflage.

Leipzig, Rostock und Schwerin: in der Stillerschen Buchhandlung. 1815.

Third German edition (the second by Link). 8vo. 2 leaves, 348 pp. Fine, crisp copy in original marbled boards, paper label on spine. Old stamp on verso of title page (Z. Bibl. D. Berl. Naturf. Gesellsch.).

THE FIRST German edition translated by Gehler (Leipzig, 1796) was not annotated and employed Girtanner's German nomenclature, which had become obsolete. Heinrich Friedrich Link (1767–1851), professor of chemistry and natural history at Rostock, therefore decided to publish his own translation accompanied by a commentary, for use in his lectures. The first edition of the Link translation of *Philosophie chimique* (Paris, 1794–95) appeared in 1806 (see D.S.B., VIII, 373; Ferchl, 319). The present greatly superior edition is based on the third and final edition of *Philosophie chimique* (Paris, 1806), which was extensively revised and enlarged by Fourcroy. Partington does not mention that

the book contains a translation of Fourcroy's work. Even Smeaton, Fourcroy's bibliographer, was unaware of Link's translation in either the edition of 1806 or the present of 1815. Not in the usual chemical bibliographies. (Bolton, 634; Partington, III, 688; Poggendorff, I, 1469)

FOURCROY, Antoine François de

Système des Connaissances Chimiques, et de leurs applications aux phénomènes de la nature et de l'art . . .

Paris: Baudouin. An IX–X (1800–1802).

First edition, complete. 11 vols., 8vo., in 10 (i.e., 10 vols. text, 1 vol. *Table . . . par Mme. Dupiery*). I: 2 leaves, clxxvi, 219, (1) pp. II: 2 leaves, 352 pp., 1 leaf. III: 2 leaves, 344 pp., 1 leaf. IV: 2 leaves, 323, (1) pp. V: 2 leaves, 396 pp., 1 leaf. VI: 2 leaves, 341, (1) pp. VII: 2 leaves, 377, (1) pp. VIII: 2 leaves, 330 pp., 1 leaf. IX: 2 leaves, 447, (1) pp. X: 2 leaves, 420 pp., 1 leaf. XI: 2 leaves, 192, "183–195," (1) pp., 1 leaf (N.B. Smeaton gives incorrect pagination). Printed signatures of Fourcroy and Baudouin are on the versos of title pages of the first 10 volumes. Pristine set in contemporary half vellum, marbled boards. Title page of volume I inscribed in ink: "Donné par Monsieur Mayor d'Auteur." From the library of the Société de Lecteur de Geneve, with woodcut stamp on half titles.

FOURCROY'S MAGNUM OPUS and the most complete textbook on chemistry that had yet appeared. His aim was to present more facts and to divest them of historical background and in a new order. An advanced work, these impressive volumes contain virtually all of Fourcroy's brilliant lectures. Published in November 1800 in editions of ten octavo and five quarto volumes; the index (often lacking) appeared in February 1802 (8vo.) and March 1802 (4to.), completing the work. Translations were made into English by William Nicholson (1804), into German by Friedrich Wolff (1801–1803), and into Spanish by Pedro Maria Olive and Gregorio González Ozaola (1803–1809). (Blake, 153; Blocker, 142; Caillet, 4128; D.S.B., V, 92; Duveen, *Supplement*, 129; Edelstein, 907; Ferchl, 160; Ferguson, I, 288 [not in Young Coll.]; Partington, III, 538; Poggendorff, I, 782–783; Smeaton, Nos. 64 & 66; Smith, 180; Thornton & Tully, 170; Waller, 11133; Watt, I, 381y; Wellcome, III, 48)

FOURCROY, Antoine François de

Système des Connaissances Chimiques, et de leurs applications aux phénomènes de la nature et de l'art . . .

Paris: Baudouin. An IX–X (1800–1802).

First 4to edition, complete. 6 vols (i.e., 5 vols. text, 1 vol. *Table . . . par Mme. Dupiery*). I: 2 leaves, cxi, 474 pp. II: 2 leaves, 576 pp. III: 2 leaves, 700 pp. IV: 2 leaves, 593, (1) pp. V: 2 leaves, 686 pp. VI: 2 leaves, 170 pp. Printed signatures of Fourcroy and

Baudouin are on the versos of title pages of the first 5 volumes. Superb set in virtually pristine condition, uncut and unpressed with wide margins, in original blue boards, contemporary hand-lettered paper spine labels.

THE ONLY quarto edition of Fourcroy's chief work, published simultaneously with the eleven-volume octavo edition. The index (vol. VI) appeared in 1802. Inspired by the spirit of the *Encyclopédie*, the importance of this work lies in its detailed codification of the new post-Lavoisier chemical sciences. A monument to eighteenth-century chemical knowledge, the quarto edition is rarer than that in octavo format. Not in Blake, Caillet, Ferguson, Smith, Waller, Watt, Wellcome, etc. (Bolton, 449; Duveen 226; Edelstein, 908; Ferchl, 160; Partington, III, 538; Poggendorff, I, 783; Smeaton, Nos. 65 & 67; Sondheimer, 548; Thornton & Tully, 170)

FOURCROY, Antoine François de

A General System of Chemical Knowledge; and its application to the phenomena of nature and art. By A. F. Fourcroy, . . . Translated from the original French, by William Nicholson. . .

London: Printed for Cadell and Davies, etc. 1804.

First English edition. 11 vols., 8vo. I: xxxv, (1), 198 pp. II: viii, 471, (1) pp. III: xii, 472 pp. IV: viii, 432 pp. V: xii, 550 pp. VI: viii, 604 pp. VII: viii, 508 pp. VIII: viii, 436 pp. IX: xi, (1), 561, (1) pp. X: xi, (1), 582 pp. XI: 2 leaves, 187, (1) pp. An immaculate set in mint condition, in original gilt-ruled diced half calf boards.

THE ONLY English edition of *Système des connaissances chimiques* (Paris, 1800–1802), containing a long and interesting preface by the translator, William Nicholson, on the history of the antiphlogistic theory. “I now present the scientific world with a translation of the most extensive Chemical Treatise at present in being” (preface). (Bolton, 449; D.S.B., X, 109; Duveen, 226; Edelstein, 899; Partington, III, 538; Smeaton, No. 68; Smith, 179; Sondheimer, 552; Thornton & Tully, 170; Watt, I, 381y, II, 705a; Wellcome, III, 48)

FOURCROY, Antoine François de

Tableaux Synoptiques de Chimie, pour servir de résumé aux leçons données sur cette science dans les écoles de Paris. . .
Paris: Baudouin. An VIII (1800).

First edition. Large folio. 11, (1) pp. + 12 folding tables (versos blank). Very fine copy, partially uncut with wide margins, in original mottled blue boards, contemporary paper label on spine lettered in ink.

“*Connaissances chimiques* contained too much detail for the beginner, and *Philosophie chimique* not enough; in order to fill the gap, Fourcroy published in 1800 the *Tableaux synoptiques de chimie*. In the preface . . . he explained that in *Philosophie chimique*, ‘it was my intention to offer . . . the first abstract elements of chemistry; and it is nearly independent of each individual . . . body that those . . . elementary notions were . . . drawn up.’ He now offered succinct accounts of the individual substances, presented in tabular form so that the relations between them could be clearly seen” (Smeaton, *Fourcroy*, p. 197). It “really formed a summary of his *Connaissances chimiques*, then in the press. Fourcroy stated . . . that these tables were based on the course which he had given at the *École de Médecine* for the last four years” (Smeaton, p. 77). Few copies of this important work have survived, as it was intended to be dismembered and the tables stuck onto cardboard or attached to the walls of chemical lecture rooms. Translations into English, Danish, German, and Portuguese were published. (Bolton, 51; Cole, 483; Duveen, 226; Edelstein, 909; Ferguson, I, 287; Partington, III, 539; Smeaton, No. 72; Smith, 180; Watt, I, 381y; Wellcome, III, 48)

FOURCROY, Antoine François de

Tableaux Synoptiques de Chimie, pour servir de résumé aux leçons données sur cette science Dans les Écoles de Paris. . .
Paris: C. F. Patris. An XIV (1805).

Second edition. Large folio. 8 pp. + 12 folding tables printed on both sides of 6 very large folio sheets. Minor damp stain on lower margin of first 4 leaves and sheet 6 (tables 11 and 12) torn (no loss); otherwise very good copy, uncut with wide margins, in original marbled brown boards, spine unlettered.

THE SECOND edition of the *Tableaux* “differed from the first only in some slight corrections and alterations in the order of classification, and in a few additions incorporating substances discovered since 1800. This second edition was available in two forms, either bound, with the twelve tables printed on both sides of six sheets, or unbound, with the tables separately printed on one side only so that they could be mounted on card” (Smeaton, *Fourcroy*, pp. 200–201). The second edition is even rarer than the first (Paris, 1800). Not in British Library, Bolton, Duveen, Partington, Wellcome, etc. (Cole, 484; Smeaton, No. 73)

FOURCROY, Antoine François de, and DELAPORTE, Jean Jacques

Analyse Chimique de l'Eau sulfureuse d'Enghien, pour servir à l'Histoire des Eaux Sulfureuses en général. . . .

Paris: Chez Cuchet. 1788.

First edition, first issue. 8vo. 9 leaves (misnumbered xx), 385, (1) pp. Fine, crisp, wide-margined copy, in original mottled calf, spine gilt, tan morocco label.

“THE EXAMINATION and control of mineral waters was one of the important duties of the Royal Society [of Medicine], and this was a subject in which Fourcroy became interested” (Smeaton). With the collaboration of Delaporte (of the Royal Society of Medicine), Fourcroy made very detailed analyses of the waters of Enghien, in the valley of Montmorency, and a large quantity was brought to Paris for further study. A full account of these waters was read by Fourcroy at ten successive meetings of the society and subsequently published in the present book. At the end there are two additional memoirs: 1) “Sur l’analyse & les propriétés de l’Eau minérale de Saint-Germain-en-Laye, . . . par M. Chappon” (pp. 339–365); and 2) “Rapport sur l’Eau Vaugirard, . . . par MM. Poullietier de la Salle, Macquart et de Fourcroy” (pp. 366–382). A balneological and analytical chemical classic, which is “entirely chemical in content” (Duveen). The privilege states that this book was approved by the Academy of Sciences, based on the report by Lavoisier and Berthollet, who examined it. A second issue appeared in 1792, identical to the first apart from the title page, which replaces the half title and title of the present issue. Not in Bolton, Caillet, D.S.B., Ferguson, Smith, etc. (Blake, 153; Duveen, 225; Edelstein, 896; Ferchl, 161; Neu, 1475; Partington, III, 539; Poggendorff, I, 783; Smeaton, No. 30; Sondheimer, 539; Thornton & Tully, 170; Watt, I, 381x; Wellcome, III, 48)

FOURCROY DE GUILLERVILLE, Jean Louis de

Les Enfants élevés dans l'ordre de la nature, ou abrégé de l'histoire naturelle des enfans du premier âge. A l'usage des peres & meres de famille. . . .

Liège: Chez J. J. Tutot. 1781.

First Liège edition. 12mo. 323, (1) pp. Very good copy in early-nineteenth-century pebbled cloth, spine gilt-lettered. Unobtrusive old stamp on title leaf (recto and verso).

A PEDIATRIC WORK (first edition: Paris, 1774) on the care and raising of children in health and sickness, of pharmaceutical chemical interest. Fourcroy de Guiller ville (1717–1799) was a cousin of the great chemist Antoine François de Fourcroy. On the title page the author is described as “Conseiller du Roi au Baillage de Clermont en Beauvoisis.”

The approbation is dated 12 April 1774. Blake (p. 153) lists Paris editions of 1775 and 1783, also an Italian translation (Naples, 1779). Not in Blocker, Eales, Reynolds, Waller, Watt, Wellcome, etc.

FOURCY, François de

Analyse des Eaux Alkalino-Martiales de Trye-le-Chateau, avec l'Exposition de leurs Propriétés; faite par M. Fourcy. . . . sous les yeux de M. Raulin. . . . Publiée par M. Pelvilain. . . .

Amsterdam & Paris: Chez J. Fr. Valade, Libraire, rue Saint-Jacques. 1779.

First edition. 12mo. viii, 9–35, (1) pp. With 2 woodcut headpieces. Very fine copy, in modern marbled boards, dated maroon morocco label.

A DETAILED ANALYSIS of the mildly alkaline mineral waters at Trye-le-Chateau, a village near Gisors and Chaumont. The spring was owned by M. Pelvilain, who sold the waters and published this book. Fourcy (or de Fourcy, dates unknown), an apothecary in the army and inspector-general of the mineral waters of France, was a member of several scientific societies, including (he claims) the Royal Society of London. He collaborated with Joseph Raulin, an expert on the analysis of mineral waters. Fourcy is mentioned by Partington (III, 55, 388), who refers to his “extensions of Geoffroy’s tables” (1773) and his comments on acidium pingue. Fourteen experiments on the mineral waters at Trye-le-Chateau are described. Fourcy concludes that they are ferruginous and that the iron is held in solution by other salts. He describes the formation of a little Prussian blue, indicating the presence of traces of iron in solution. Very rare. Unknown to the usual bibliographers. (Wellcome, III, 48)

FOURMY, Charles

Essai sur les Chaux a Batir et sur les Mortiers Calcaires. . . .
Paris: Janet et Cotelle, Libraires. 1827.

First edition. 8vo. 2 leaves, 44 pp. Fine copy, in maroon quarter cloth, marbled boards antique, spine gilt-lettered and dated.

A DETAILED ACCOUNT of the chemical processes involved in the preparation of various types of calcareous cements and mortars. Fourmy (dates unknown), a manufacturer of ceramics, describes the many experiments he carried out in formulating cements from various materials, with an account of the physical properties of the products. He also published a treatise (Paris, 1804) on glass articles colored by metals (see Duncan, 4373). Rare. Not traced in the usual bibliographies.

FOURNIER, Joseph Leopold

Dissertatio Inauguralis Chémico-Médica de Metallis . . . pro doctoratus . . . in medicina .. disquisitioni submittit Josephus Leopoldus Fournier Moravus Tribóviensis . . . Die Mensis Septembris MDCCLXXVII.

Vienna: Typis Joan. Th. Nob. De Trattner, Typographi et Bibliopolae Aulici. (1777).

First edition. 8vo. 4 leaves, 81, (3) pp. (last blank). Copperplate vignette on page 1. Fine, crisp copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated, with original decorated wrappers bound in.

THE DOCTORAL dissertation of the Moravian physician Fournier (dates unknown), in which he discusses the chemistry of the metals and their salts, with the medicinal applications. Gold, silver, copper, lead, iron, tin, and platinum are numbered among the true metals. The so-called semi-metals (bismuth, zinc, nickel, cobalt, mercury, and antimony) are not discussed. This work is important for the author's description of the physical and chemical properties of platinum (pp. 33–37), which Fournier was one of the earliest to recognize as a separate metal. The reaction of ammonium hydroxide with solutions of copper salts to form deep-blue cuprammonium complexes is also of historical interest. Rare. Not in Blake, Hoover, Waring, Wellcome, or the usual chemical bibliographies. (Partington, III, 176)

FOWNES, George

Chemistry, as Exemplifying the Wisdom and Beneficence of God. By George Fownes, Ph.D. . . .

London: John Churchill, Princes Street, Soho. 1844.

First edition. 12mo. 6 leaves, 184 pp., 8 pp. (J. Churchill catalogue, bound in front). Fine copy, uncut, in original blind-stamped crimson cloth, spine gilt-lettered.

THE ACTONIAN Prize Essay adjudicated by, and dedicated to, the Royal Institution. Fownes was the first recipient of the prize, receiving it in April 1844. Beautifully written, the book is divided into five sections covering the chemical history of the earth and its atmosphere, organic materials, plants, the relationship between plants and animals, and an appendix. An American edition quickly followed (Philadelphia, 1844), and a second English edition was published in 1849. (Bolton, 450; D.S.B., V, 104; Ferchl, 162 [wrong date: 1843]; Partington, IV, 270; Poggendorff, I, 785 [wrong date: 1843]; Sondheimer, 554)

FOWNES, George

An Essay on the Food of Plants, to which a prize was awarded by the Royal Agricultural Society of England in December, 1842. By George Fownes, Ph.D. . . .

London: Printed by William Clowes and Sons, Stamford Street. 1843.

First book edition. 8vo. 61, (1) pp. Very good copy in contemporary gilt-ruled calf. With presentation inscription in ink on title page by Fownes: "Henry Fownes Esq. with the author's resp." Also inscribed on flyleaf: "John Davidson 1858 from Henry Fownes."

FOWNES (1815–1849) was a pupil of Liebig at Giessen in 1839, graduating Ph.D., and was elected F.R.S. in 1845. He had poor health and died of pulmonary disease at age thirty-three. Fownes received a prize from the Royal Agricultural Society for this essay on the nature of chemical nutrients for plants, which first appeared in the *Journal of the Royal Agricultural Society* (1843), vol. 4, pp. 198–556; *Royal Society Catalogue*, Fownes, No. 8. Reprinted in small number from the *Journal* for private distribution (as here), the work is divided into three sections: 1. The history of soils, their origin and chemical nature; 2. The structure and composition of plants; and 3. The nature of the materials furnished to them as food by the earth and the atmosphere, and the modifications of these supplies by the agency of man. In addition to several books, Fownes published many scientific papers, of which this is one of the most important. (*Annals of Science* [1950], vol. 6, p. 426; D.N.B., 20, 90)

FOWNES, George

A Manual of Elementary Chemistry, Theoretical and Practical. By George Fownes, Ph.D. . . .

London: John Churchill, Princes Street, Soho. 1844.

First edition. 8vo. xiii, (1), 566 pp. With 162 woodcuts in text, errata slip preceding page 1, and 8 pages. (J. Churchill catalogue, dated March 1846, bound in front). Fine copy, uncut, in original blind-stamped dark cloth, rebacked with original gilt-lettered spine laid on.

THE *Manual of Elementary Chemistry* became very popular and went through at least fourteen editions. It was translated into Italian (Milan, 1871). Ferchl and Poggendorff give the wrong date (1845). (*Annals of Science*, 1950, 6, 425; Bolton, 450; D.S.B., V, 104; Ferchl, 162; Partington, IV, 270; Poggendorff, I, 785; Smith, 180; Thornton & Tully, 220; Wellcome, III, 50)

FOWNES, George

A Manual of Elementary Chemistry, Theoretical and Practical. By George Fownes, F.R.S. . . .

London: John Churchill, Princes Street, Soho. 1848.

Second edition. 8vo. xiii, (3), 596 pp. With 161 woodcuts. Very good copy in contemporary gilt-ruled, dark-blue half morocco, marbled boards.

The expanded second edition of this excellent work. (Bolton, 450; Partington, IV, 270)

FRACASTORO, Girolamo

Liber I, De Sympathia & Antipathia rerum. De Contagione, & Contagiosis Morbis, & eorum curatione, Libri Tres. . . .

Lyons: Apud Nicolaum Bacquenoy. 1550.

Second (first French) edition. 16mo. 558 pp., 1 leaf (Colophon). Woodcut printer's device on title page. Decorative woodcut capitals and 2 small woodcut figures in text (pp. 74–75). Edges of title somewhat discolored; otherwise good copy in early unlettered vellum, rebaked.

FRACASTORO (1478–1553), the first to state the germ theory of infection, recognized typhus and suggested the contagiousness of tuberculosis. He believed that disease is spread by airborne seeds (*seminaria*). “The idea comes from Lucretius, who had spoken of ‘seeds of death,’ and Fracastoro used the corpuscular theory to explain chemical actions” (Partington, II, 333). “A landmark in the development of our knowledge of infectious disease” (Garrison-Morton). The first edition of this great classic appeared in quarto format (Venice, 1546). The second (first 8vo.) edition was the first to appear in France. This copy has the imprint “Lugduni, Apud Nicolaum Bacquenoy.” All other copies traced have the imprint “Lugduni, Apud Gulielmum Gazeium.” The colophon has “Lugduni, Excudebat Nicolaus Bacquenoy,” as in copies with the Gazeium imprint. A third (second 8vo.) edition appeared (Lyons, Apud Joan. Tornaesium, & Guil. Gazeium, 1554). The second edition is much rarer than the first of 1546 and is not in the British Library, which has only the 1546 and 1554 editions. (Blocker, 144; Cushing, F276; Durling, 1637; Ferguson, I, 288 [not in Young Coll.]; Waller, 3164; Wellcome, I, 2394)

FRACASTORO, Girolamo

Opera Omnia quorum nomina sequens pagina plenius indicat. Accessit index locupletissimus. Ex Tertia Editione. Venice: Apud Juntas. 1584.

Third edition. 4to. 22 leaves, 213 numbered folios, 1 leaf. Roman and italic letter. Woodcut printer's device on title page (repeated on final leaf), historiated woodcut capitals, diagrams

in text, and portrait of Fracastoro (verso of eighth prelim.). Title page repaired (owing to minor marginal worming), affecting one letter, few very minor stains; otherwise good copy in original limp vellum (spine and lower front cover worn and repaired).

THE COMPLETELY reset third edition of the collected works of Fracastoro, with the same contents as the first (Venice, 1555) and second (Venice, 1574) editions but omitting the thirty-two leaves of the writings of Navagero. Several tracts are included that had not been printed before 1555, together with a biography of Fracastoro by Adam Fumani. The *Opera* includes all of the author's principal writings, of which the most famous is his poem “Syphilis sive de morbus Gallicus,” which established the name of the disease and proposed an intelligent theory of infection. He was the first to state the germ theory of infection, in *De contagione*, and is regarded as the founder of scientific epidemiology. In *Homocentrica* he discusses problems of astronomy and suggests the principle of the telescope, probably the earliest such consideration in print. Both the *De causis criticorum dierum libellus* and *Homocentrica* examine the relation of experience to knowledge in the search for scientific truth, rejecting transcendentalism and occultism. Other works included in the *Opera* deal with botany, geology, the doctrine of sympathy, etc. (Blocker, 144; British Library, *S.T.C. Italian Books, 1465–1600*, p. 275; Camerini, 885; Durling, 1633; Fulton-Baumgartner, 34; Neu, 1490; Waller, 3169; Wellcome, I1, 2398)

FRAENCKEL, Johann Caspar

Dissertatio Inauguralis Chemica sistens Novum Systema Solutionis Immersivae . . . pro gradu doctoris . . . publico eruditorum examini submittit Job. Casparus Fraenckel Franco Fürthensis. Die 27 Maji 1777. . . .

Frankfurt: Typis Emanuelis Thurneysen. (1777).

First edition. 4to. 1 leaf, 16 pp. Fine, crisp copy, uncut, with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A CURIOUS AND historically interesting doctoral dissertation by Fraenckel, of whose life and accomplishments nothing appears to have been recorded. The praeses is not named. The author presents his theories on the liberation of gases when various solutions are mixed. For example, when a solution of an alkali is mixed with a solution of an ammonium salt, gaseous ammonia is evolved. Other examples cited are the evolution of hydrogen sulfide from aqueous sulfides, carbon dioxide from carbonates, etc., when mixed with acids. Fraenckel also attempts to explain why some salts are deliquescent. The combustibility of some liquids (e.g., alcohol and naphtha) is accounted for by the amount

of phlogiston in the particular substance. An extremely rare work, which advances some ingenious chemical hypotheses. Not located in the usual bibliographies.

FRAGOSO DE SIQUEIRA, Joaquim Pedro

Description Abrégé de tous les Travaux, tant d'Amalgamation, que des Fonderies qui sont actuellement en usage dans les ateliers d'Amalgamation et des Fonderies de Halsbrück, près de Freyberg. Pour servir de Guide aux Étangers qui voudront visiter ces Etablissements, et aux Jeunes-Gens qui voudront étudier cette Partie à Freyberg. . . . Par Mr. J. P. Fragoso de Siqueira . . .

Dresden: 1800.

First edition. 4to. 99, (1) pp., 2 leaves. With 2 large folding engraved plates (Seiffert sc.). Fine copy in early mottled calf, gilt, covers ruled in gilt, 2 maroon morocco labels.

A BEAUTIFULLY PRINTED book, with texts in French and German on facing pages, describing the famous mining center and complex metallurgical operations at Halsbrück, near Freiberg, Saxony, with copperplate illustrations of amalgamation machinery. The author, a Portuguese scientist, went to Germany by command of the queen of Portugal, studied at the famous Mining Academy of Freiberg under A. G. Werner, and then worked at the Halsbrück foundries. The supplement includes notes on the literature dealing with the foundries and mines of Saxony. The method of extracting silver by amalgamation "was taken to Peru in 1570 when the Spaniards were beginning to exploit the mercury in the area of Huancavelica. The amalgamation method was introduced into Hungary in 1786, and thence carried to Saxony, when it was found that some Freiberg ores could be treated similarly to those of Oaxaca" (Singer, *History of Technology*, IV, 139). An important book on chemistry and metallurgy. From its format and style it appears to have been privately printed, probably for the author. Hoover and Wellcome list this very rare book under its German title. (Hoover, 320; Wellcome, III, 51)

FRANCIS, George William

Chemical Experiments; illustrating the theory, practice, and application of the science of chemistry, and containing the properties, uses, manufacture, purification, and analysis of all inorganic substances. With numerous engravings of apparatus, &c. By G. Francis, F.L.S. . . .

London: G. Berger. 1842.

First edition. 8vo. (in 4s). 1 leaf, 250 pp., 1 leaf. Many woodcut figures in text. Very good copy in contemporary dark-blue half roan, marbled boards, spine gilt, dark-maroon morocco label gilt. Bound with: Francis, G. W., *Electrical Experiments* (London, 1844).

MAINLY REMEMBERED as a botanical writer, Francis (1800–1865) emigrated to Australia in 1849 and became director of the Adelaide garden. He published *Catalogue of British Plants and Ferns* (1835) and other scientific works. This excellent chemical textbook, written to appeal to the widest audience, gives an interesting glimpse into the practical processes used in the 1840s. Rare. Not in the usual early chemical bibliographies. Bolton (p. 451) lists only the fifth edition (London, 1849). (Smith, 181; Sondheimer, 557; Sotheran, Cat. 725 [1912], 8092)

FRANCIS, George William

The Dictionary of Practical Receipts; containing the arcana of trade and manufacture; domestic economy; artistic, ornamental & scientific processes; pharmaceutical and chemical preparations, &c. &c. &c. By G. Francis, F.L.S. . . .

London: D. Francis, . . . W. Strange. 1848.

First edition. 8vo. (in 4s). 2 leaves, 348 pp. Good copy in contemporary gilt-ruled half calf, marbled boards, black morocco label gilt.

AN IMPORTANT book of secrets on the chemical technology, pharmacology, and related sciences of the mid-nineteenth century. "I have prepared this work as one of general reference . . . useful to the Tradesman . . . Artist . . . Chemist . . . Druggist . . . Amateur . . . and . . . Family" (preface). Approximately five thousand receipts are given. Among the numerous chemical topics covered are the preparation of photographic papers by the methods of Fox Talbot, Cooper, Daguerre, and other pioneers of photography. Not in Laurie or Edelstein, despite many references to dyes and pigments. Not mentioned by Duncan, although there are directions for preparing various types of glass, including colored glasses. Bolton, Smith, and Wellcome mention other titles by Francis, but not this. Not in the usual bibliographies of early chemistry. Rare. (Sotheran, Cat. 725 [1912], 8093 ["New edition", 1854]; Goldsmith, 35583)

FRANCIS, George William

Electrical Experiments; illustrating the theory, practice, and application of the science of free or frictional electricity: containing the methods of making and managing electrical apparatus of every description, with numerous illustrative engravings. By G. Francis, F.L.S. . . .

London: D. Francis, and G. Berger. 1844.

First edition. 8vo. (in 4s). 2 leaves, 91, (1) pp. Many woodcut figures in text. Very good copy. Bound with: Francis, G. W., *Chemical Experiments* (London, 1842).

A COMPANION WORK to the author's *Chemical Experiments*, on frictional electricity, or electrostatics. Many chemical

subjects are covered, including acid and alkaline effects, amalgams, the dry pile (of alternating zinc and silver), batteries, electrical discharges through rarified gases, and electricity generated by the burning of carbon. The first edition is rare. Sotheran (Cat. 725 [1912], 8094) lists a later edition (undated, "ca. 1850"), and the Wheeler Gift Catalogue (no. 1174) describes the fifth edition only (London, 1850).

FRANKLIN, Benjamin

Experiments and Observations On Electricity, made at Philadelphia in America. . . . To which are added, Letters and Papers on Philosophical Subjects. The Whole corrected, methodized, improved, and now collected into one Volume, and illustrated with Copper Plates. . . .

London: Printed for F. Newberry, at the Corner of St. Paul's Church-Yard. 1774.

Fifth edition. 4to. 1 leaf, vi, 514 pp., 8 leaves (index). With 7 engraved plates (2 folding) and several text woodcuts. Very fine copy with wide margins, in original gilt-ruled calf, crimson morocco label. Armorial bookplate: Westport House.

BENJAMIN FRANKLIN (1706–1790) was the "first American to win an international reputation in pure science and the first man of science to gain fame for work done wholly in electricity. His principal achievement was the formulation of a widely used theory of general electrical 'action' . . . He advanced the concept of a single 'fluid' of electricity, was responsible for the principle of conservation of charge, and analyzed the distribution of charges in the Leyden jar, a capacitor. He introduced into the language of scientific discourse relating to electricity such technical words as 'plus' and 'minus,' 'positive' and 'negative,' 'charge' and 'battery.' By experiment he showed that the lightning discharge is an electrical phenomenon, and upon this demonstration . . . he based his invention of the lightning rod" (D.S.B.). The present is the final, most complete, and best edition (first: London, 1751–53; Dibner, 57; Horblit, 31a; Partington, IV, 4). It comprises sixty-one letters written by (and to) Franklin. The letters are addressed to many famous American, British, and European scientists (e.g., Giovanni Battista Beccaria, John Cantor, Peter Collinson, and John Pringle) and span the period from 28 March 1747 to 10 May 1768. "The most important scientific book of eighteenth century America" (P.M.M.). Some of the letters are of chemical interest. (Blake, 160; D.S.B., V, 138; Ekelöf, 324; Gartrell, 176; Mottelay, 198; Poggendorff, I, 793; P.M.M., 199; Wheeler Gift, 367c)

FRANTZE, Wolfgang

Animalium Historia Sacra, in qua plerorumque Animalium praecipuae proprietates in gratiam Studiosorum Theologiae, & Ministrorum Verbi, ad usum . . . breviter accommodantur. In Academia Wittebergensi ante annos aliquot dictata . . . Iam denuo emendatius & correctius edita . . .

Amsterdam: Apud Joannem Janssonium. 1643.

Fifth edition. 12mo. Engraved title page, 12 leaves, 638 pp., 23 leaves (index). Small piece missing from corner of engraved title; otherwise very good copy in original overlapping vellum.

FRANTZE (1564–1628), a Lutheran divine, was born at Plawen, in the circle of Voightland. Watt lists his numerous publications, which were mainly on theological subjects. *The Historia animalium sacra* (first: Wittenberg, 1612) was by far his most popular work, passing through at least ten editions in the seventeenth century. The last edition appeared in four volumes, quarto. (Frankfurt, 1712). There is also an English translation: *The History of Brutes* (London, 1670; Wing, F2094). Of interest to the chemical historian, the book describes various products derived from animals (e.g., dyes, pigments, and materia medica). Harvey (*History of Luminescence*) discusses this work in connection with the bioluminescence of fireflies and other insects. (Eales, 360; Harvey, 539; Thorndike, VIII, 265–266; Watt, I, 385u; Wellcome, III, 64)

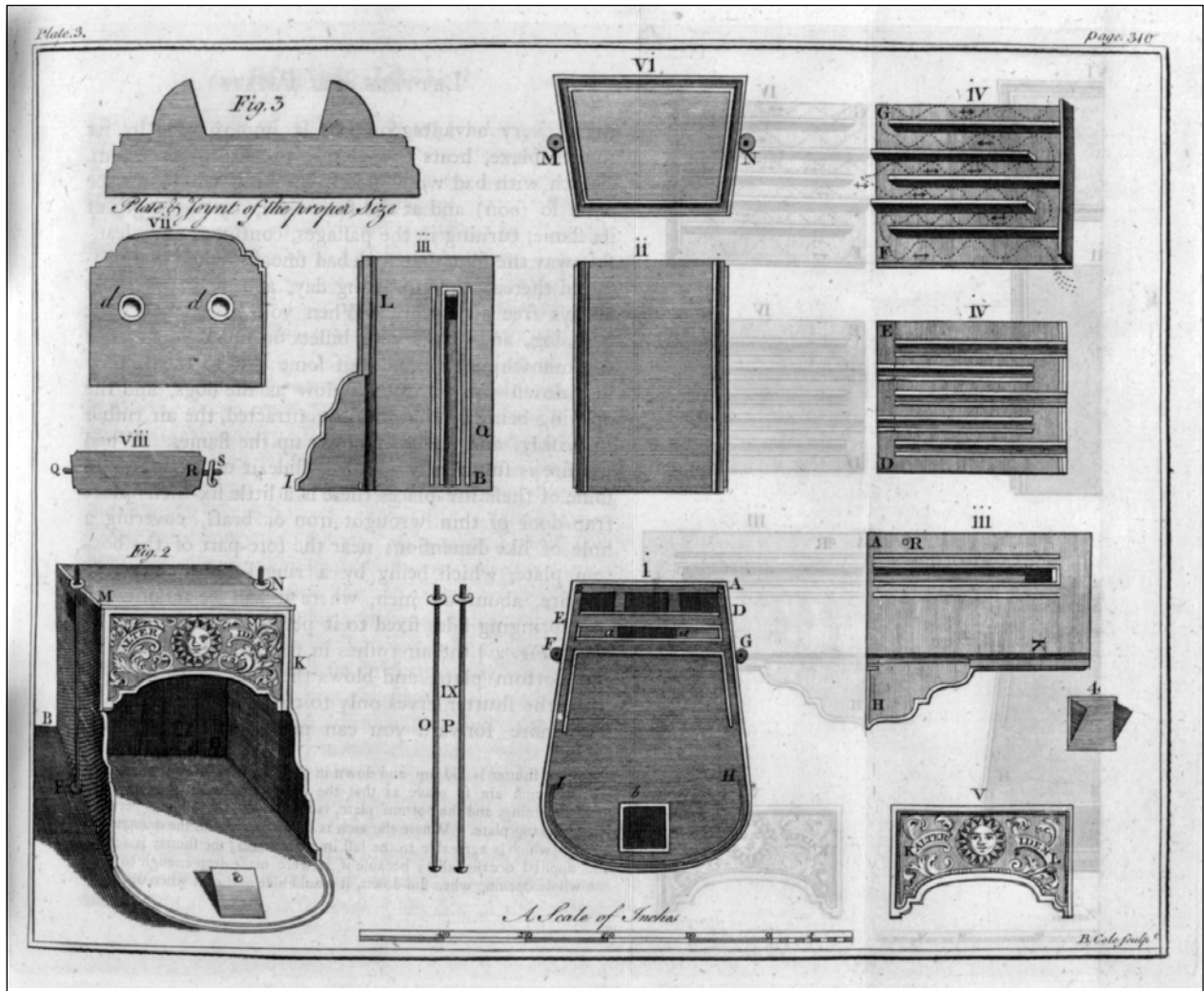
FRATTA ET MONTALBANO, Marco Antonio della

Pratica Minerale Trattato del March. Marco Antonio della Fratta et Montalbano, All'Altezza Serenissima di Ranuccio Farnese Duca di Parma, di Piacenza, &c.

Bologna: Per li Manolessi. 1678.

First edition. 4to. 5 leaves, 183 pp., 1 leaf (blank). With beautiful engraved title in compartments depicting 14 small views of mining and metallurgical operations, 28 fine engraved plates in text (mostly full page), and very large woodcut on letterpress title page. Very fine, crisp copy, in contemporary calf, rebacked, spine gilt-lettered.

BORN IN Bologna, a member of a famous Bolognese family, the Marquis Marco Antonio della Fratta et Montalbano (1630 or 1635–1695) traveled extensively in Germany, Hungary, Poland, and the Adriatic coast, studying mineralogy and mining processes. Updating the earlier works of Agricola, Biringuccio, and Ercker, the present work describes the amalgamation method for extracting silver, the use of nitric acid for parting silver from gold, the separation of silver from copper by the use of lead, the purification and crystallization of vitriol (ferrous sulfate), improved furnaces for cupellation, processes for assaying metals, and



Franklin. Experiments and Observations on Electricity. London, 1774.

other subjects of metallurgical and chemical importance. The author supports the opinion of Agricola that ores and metals did not spring spontaneously into being at the moment of creation of the earth, and this was a significant step in the correct understanding of the origin of ore deposits. "The plates are of very unusual quality, they are not signed" (Duveen). Two other works were published by this author: *Catascopia minerale* (1676; Ferguson Coll., 243) and *Dell'acque minerale* (1687; Krivatsy, 4330). (Annan, 10; Duveen, 229; Ferchl, 366; Hoover, 322; Neu, 1506; Partington, II, 103; Singer, *A History of Technology*, 1957, III, 50; Watt, 1, 386k)

FRAUNDORFFER, Philipp

Tabula Smaragdina Medico-Pharmaceutica; in qua Octingentorum . . . Medicamentorum, in nullo Dispensatorio obviatorum . . . fidelis & accurata Descriptio, ordine, ut vocant, alphabetico, insculpta legitur. . . . Revidit, emendavit, auxit Joh. Abraham Mercklinus . . .

Nuremberg; Apud Johannem Fridericum Rudigerum. Typis Leonhardi Singeri. 1726.

Second Mercklin edition. 12mo. 1 leaf (title), 10 leaves, 468 pp., 24 leaves (index). Folding title page in red and black. Some leaves with minor foxing; otherwise good copy in original vellum with contemporary ink lettering on spine. Printed ticket on front flyleaf: "Franz Franta, Oberarzt."

THIS "MEDICAL-PHARMACEUTICAL emerald table" (first: Nuremberg, 1699) is the most important work by Fraundorffer (ca. 1650–1702), a physician of Mähron, who also published books on gynecology and the medicinal uses of millipedes. It was corrected, revised, and enlarged by the physician Johann Abraham Mercklin (1674–ca. 1720) and published at Nuremberg in 1713. This volume is a reprint of the 1713 edition, with a few additions. The composition of eight hundred prescriptions is given. There is a comprehensive index of diseases with references to pages listing the appropriate cures. The first edition (1699) is in the Ferguson Collection (p. 243), Neu (no. 1507), and Wellcome (III, 64). Manget (*Bibliotheca Scriptorum Medicorum*, I, pt. 2, 338) lists the 1699 and 1713 editions. Waller (no. 3236) lists the 1713 edition only. The present 1726 edition is rare. (Blake, 160; Ferchl, 163)

FREIND, John

Chymical lectures: in which almost all the operations of chymistry are reduced to their true principles, and the laws of nature. Read in the Museum at Oxford, 1704. By John Freind, M.D. Student of Christ-Church, and Professor of Chymistry. Englished by J. M. To which is added, an appendix, containing the account given of this book in the Lipsick Acts, together with the author's remarks thereon. London: Printed by Philip Gwillim, for Jonah Bowyer at the Rose in Ludgate-street, 1712.

First edition in English. 8vo. 8 leaves, 200 pp. Fine, crisp copy, in the original paneled calf.

THE RARE first translation in English, of the *Praelectiones Chymicae* (London, n.d. [1709]), by a certain "J. M.," whose identity has not been established. The Amsterdam edition (1710) of the *Praelectiones* was criticized by Le Mort in the *Leipzig Transactions*, and Freind's reply was published in the *Philosophical Transactions*, No. 331, pp. 310–342, for July, August, and September 1711, and reprinted (with divisional title page) in this English edition of 1712. The author attempts to explain chemical reactions mathematically on "mechanical" principles, following the precepts of Sir Isaac Newton, in nine lectures: 1. The principles and operations of chymistry, 2. Calcination, 3. Distillation, 4. Sublimation, 5. Fermentation, 6. Digestion, 7. Extraction, 8. Precipitation, and 9. Crystallization. Pages 151–158 comprise tables of the rarefaction, boiling points, capillary properties, specific gravity, etc., of acids, alkalies, salts, organic compounds, minerals, vegetables, etc. Partington (II, 480–482) discusses the merits of Freind's work and in particular the present book, which, although it was "ahead of its time" and had a disappointingly small effect on contemporary chemical thinking, is nevertheless historically important for having attempted to put chemistry on a mathematical basis. Another issue appeared in 1729, and a so-called second edition (although in fact a reprint of the first edition) in 1737. Not in Bolton, Duveen, Neu, Poggendorff, Smith, Waller, etc. (D.S.B., V, 157; Ferchl, 163; Ferguson, I, 291 [not in Young Coll.]; Ferguson Coll., 244; Knight, 81; Osler, 2667; Partington, II, 480; Sotheran, Cat. 725 [1912], 8135 ["Rare"]; Watt, I, 387p; Wellcome, III, 66)

FREIND, John

Chymical Lectures: In which almost all the Operations of Chymistry are Reduced to their True Principles, and the Laws of Nature. Read in the Museum at Oxford, 1704. . . . To which is added, an Appendix, containing the Account given of this Book in the Lipsick Acts; together with the Author's Remarks thereon. The Second Edition.

London: Printed for Aaron Ward at the King's Arms in Little Britain, and Thomas Longman at the Ship in Pater-Noster-Row. 1737.

Second edition. 8vo. 8 leaves, 200 pp., 1 leaf (advertisements). Last leaf with minor soiling; otherwise very good copy in early boards, modern calf gilt-lettered spine, and corners.

A CLOSE PAGINARY reprint of the first English edition (London, 1712). The appendix (with separate divisional title page) bears the imprint "London: Printed for Christian Bowyer at the Rose in Pater-noster Row. 1729." (Blake, 161; Cole, 491; Partington, II, 480; Watt, I, 387p; Wellcome, III, 66)

FREIND, John

Emmenologia: Written, in Latin, by the late Learned Dr. John Freind. Translated into English. By Thomas Dale, M.D.

London: Printed for T. Cox at the Lamb under the Royal-Exchange, Cornhill. 1729.

First English edition. 8vo. 8 leaves, 216 pp., 3 leaves (index), 1 leaf (advertisements). Engraved title vignette (T. Pine sculpt.), woodcut illustration in text (p. 29), and advertisement leaf before title. Fine copy in contemporary calf, re-backed, maroon morocco label, spine dated.

THE ENGLISH translation, by Thomas Dale (fl. 1728), of Freind's first notable book. The "*Emmenologia* deserves a special mention. He proved by a calculation that the amount of blood passing through the umbilical cord would be sufficient for the needs of the embryo. This is a parallel to Harvey's famous calculation about the circulation of the blood. He also quotes some experiments by Rayger and Gayant, who injected a blue dye into the foetal circulation and found it again in the maternal" (Needham, *History of Embryology* [1934, pp. 159–160]). Numerous chemical experiments are described on the effects produced by mixing blood with acids, alkalis, salts, mineral sulphides, etc. Of pharmaceutical chemical interest are remedies and prescriptions for curing female disorders. There are many references to the works of Boyle, Charleton, Etmuller, Sennert, Sylvius, Willis, and others. (Blake, 161; Blocker, 146; D.S.B., V, 157; Osler, 2676; Partington, II, 479; Reynolds, 1538; Wellcome, III, 66)

FREIND, John

Emmenologia in qua Fluxus Muliebris Menstrui Phas-nomena, Periodi, Vitia, cum Medendi Methodo, ad Rationes Mechanicas exiguntur. . . . Huic Editioni accedunt ejusdem Authoris Praelectiones Chymicae.

Paris: Apud Guillelmum Cavelier filium, viâ Jacobea, prope fontem Sancti Severini, ad insigne Liliæ aurei. 1727.

First French edition (3 parts in 1 vol.). 12mo. 7 leaves, 238, xii pp. (dedication to Isaac Newton and preface), 11 leaves; 2 leaves, 102 pp. (*Praelectiones chymicae*); 31, (1) pp. (*Appendix*). Small early wax stain on title page; otherwise very fine copy, in original speckled calf, spine richly gilt, brown morocco label.

WHILE STILL a bachelor of medicine at Oxford, Freind published his first medical work, *Emmenologia* (Oxford, 1703). In this classic book on menstruation he describes many experiments and observations on the chemical properties of human blood. "This work, as its title implies, is based on the mechanical doctrines then so much in vogue; and though at first it met with some opposition [it] has always been regarded as a masterly essay" (Munk, II, 49–50). The second part (with divisional title) is a reprint of *Praelectiones Chymicae*. The third part, *Appendix* (with divisional title), is a Latin translation of Freind's defense of the *Praelectiones Chymicae*, taken from the English edition (London, 1712), the original of which appeared in the *Philosophical Transactions of the Royal Society*. (Blake, 161; Blocker, 146; D.S.B., V, 157; Duveen, 230; Neu, 1511; Partington, II, 479; Watt, I, 387p)

FREIND, John

Praelectiones Chymicae, in quibus omnes fere Operationes Chymicae ad Vera Principia et ipsius Naturae Leges rediguntur, Oxonii habitae. . . .

Amsterdam: Apud Janssonio-Waesbergios. 1710.

First Continental edition. 8vo. 8 leaves, 93, (3) pp. Title in red and black, with woodcut ornament. Some leaves with minor foxing; otherwise fine copy in original vellum, crimson label.

EDUCATED AT Westminster and Oxford (M.D., 1707), Freind (1675–1728), F.R.S. (1712), F.R.C.P. (1716), became M.P. (1722) for Launceston. Appointed reader in chemistry (1704) at Oxford, he gave lectures in which he attempted to explain chemical reactions on the basis of Newtonian mechanical principles (first edition: London, 1709; Cole, 489). Dedicated to Isaac Newton, several Latin editions appeared, as well as an English translation (London, 1712). For an excellent biography of Freind, see Munk (II, 48–56). A monument to him was erected in Westminster Abbey, although Freind was buried at Hitcham, in Berkshire. (Blake, 161; Bolton, 453; D.S.B., V, 156; Duveen,

230; Ferchl, 163; Ferguson, I, 290; Ferguson Coll., 243; Neu, 95; Partington, II, 480; Poggendorff, I, 797; Wellcome, III, 66)

FREITAG, Johann

Aurora Medicorum Galeno-Chymicorum: seu, de recta purgandi methodo è priscae sapientiae decretis postliminiò in lucem reducta, & medicamentis purgantibus simplicibus, compositisque tam veterum, quam neotericorum & chymiatricorum libri IV. selectis observationibus et ad omnes pene morbos remediis, ad instar dispensatorii universalis, propria experientia comprobatis, & secretioribus, multifariam refert, auctore Johanne Freitagio M.D. . . .

Frankfurt: Impensis Joannis Theobaldi Schönwetteri. 1630.

First edition. 4to. 8 leaves, 642 pp., 16 leaves (last blank). Beautiful engraved title page by M. Merian. Fine, crisp copy, in half vellum antique, marbled boards, with maroon gilt-lettered label.

FREITAG (1581–1641), born at Niederwesel in the duchy of Cleves, studied at Helmstädt, was professor of medicine, and was physician to the Bishop of Osnabrück. He went to Groningen in 1631 for religious reasons, was appointed professor of medicine, and lived there until he died. Freitag was a very learned physician who strongly opposed the teachings of Paracelsus and engaged in a spirited controversy with Sennert about them. The engraved title of this important pharmaceutical chemical work contains small, full-length portraits of Hermes, Geber, Morienus, Lully, Roger Bacon, and Paracelsus, with pictures of a mining scene at the top and a pharmacy at the bottom. Ferguson, Partington, and Thorndike discuss Freitag but do not mention this rare work. Not in Bolton, Caillet, Duveen, Edelstein, Ferguson, Neu, Osler, Smith, Waller, etc. (Ferchl, 165; Ferguson Coll., 244; Watt, I, 387w; Wellcome, I, 2415)

FREKE, John

A Treatise on the Nature and Property of Fire. In Three Essays. I. Shewing the Cause of Vitality, and Muscular Motion; with many other Phaenomena. II. On Electricity. III. Shewing the Mechanical Cause of Magnetism; and why the Compass varies in the Manner it does. . . .

London: Printed for W. Innys, and J. Richardson, in Pater-noster Row. 1752.

First edition. 8vo. viii, 196 pp. Fine, crisp copy in original gilt-ruled sheep, strongly rebacked, green morocco label.

FREKE (1688–1756), F.R.S., a surgeon at St. Bartholomew's Hospital, London, was greatly interested in electricity, magnetism, and related phenomena and wrote *An essay to shew the cause of electricity and why some things are non-electricable*

(London, 1746), which was republished in its third edition in the present book. The whole work is of considerable chemical interest and discusses the electrical and electro-chemical properties of various materials, combustion, inflammable gases in mines ("damps"), effects of electric charges on the chemistry of plants, etc. Freke believed that "fire is the instrument or cause . . . not only of magnetism, but of all the phaenomena in the universe" (pp. 65, 145). He refers frequently to the works of Boerhaave, Helmont, Newton, Stahl, et al. The second essay is addressed to William Watson, F.R.S. Freke also published *Essay on the art of healing* (London, 1748). Not in D.S.B., Ekelöf, Poggendorff, Waller, Wellcome, or the usual chemical bibliographies. (Blake, 161; Mottelay, 201; Neu, 1518; Sotheran, Cat. 725 [1912], 8139 ["Rare"]; Thornton & Tully, 150; Watt, I, 387y; Wheeler Gift, 371)

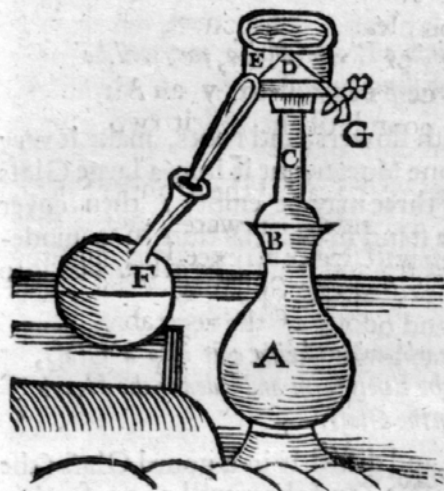
FRENCH, John

The Art of Distillation, or a treatise of the choisest spagyricall preparations performed by way of distillation, being partly taken out of the most select chymicall authors of severall languages, and partly out of the authors manuell experience; together with the description of the chiefest furnaces and vessels used by ancient, and moderne chymists: also, a discourse of divers spagyricall experiments and curiosities, and of the anatomy of gold and silver with the chiefest preparations, and curiosities thereof, and vertues of them all. All which are contained in six books, composed by John French, Dr. of Physick. London: Printed by Richard Cotes and are to be sold by Thomas Williams at the Bible in Little-Britain without Aldersgate. 1651.

First edition. 4to. 12 leaves, 199, (1) pp., 8 leaves. Title in red and black, with woodcut and ornamental border. Many woodcut text illustrations, headpieces, and initials. Fine copy in original unlettered polished ruled calf. Bookplate: Sidney Herbert Williams.

ONE OF the classic English books on distillation, which passed through four editions between 1651 and 1669. French (1616–1657), a physician in Cromwell's Parliamentary army (M.A. Oxford, 1640; M.D., 1648), wrote this work because "there is a glut of Chymicall books, but a scarcity of chymicall truthes." Well versed in the literature of the period, he published a translation of Glauber's *Furni novi philosophici* (London, 1651–52). Many of the woodcuts in the present book, also used in the Glauber translation, were copied from the original edition of Glauber (1646–49). Ferguson notes that sections of the preface and text of the two works are strikingly similar. Although the general title page of the *Philosophical Furnaces* is dated 1651, the sectional titles are dated 1652. It is likely, therefore, that French worked on the two books simultaneously, with

The Form of an Alembick



A, Signifies the vessell which must be of Copper, in which the matter is contained, and which must be set over a naked fire.

B, Signifies the Belly that is fastened to the Neck, that the Neck may the more commodiously be applied to the large mouth of the vessell. But it may be so ordered that the mouth of the upper vessell and lower vessell may be so fitted that they shall not neede this Belly.

C, The long Neck of the upper vessell where by the Spirit or water passing is somewhat cooled.

D, the Head. E, The vessell that compasseth the Head, into which cold water is continually poured after the heating. F, The long receiver. G, The top or Cock letting out the water when it is hot.

The Spirit of any vegetable may sodainly, at any time of the year be made thus.

Take of what Hearb, Flower, Seeds, or Roots you please. Fill the head of the Still therewith, then cover the mouth thereof with a course Canvas and set it on the Still, having first put into it Sack, or low Wines. Then give it fire.

If at any time thou wouldst have the Spirit be of the colour of its Vegetable, then put of the flowers thereof dried a good quantity in the nose of the Still.

To make any Vegetable yeeld its Spirit quickly.

Take of what Vegetables you please, whether it be the Seed, flower, root, fruit, or leaves thereof, cut or brnise them small, then

his own appearing first. It thus represents the first appearance in England of Glauber's figures. (Bolton, 454; Cushing, F327; Duveen, 230; Edelstein, 929; Ferchl, 164; Ferguson, I, 293 [not in Young Coll.]; Forbes, 163; Neu, 1519; Partington, II, 559; Wellcome, III, 67; Wing, F2169)

FRENCH, John

The Art of Distillation: or, a treatise of the choicest spagyricall preparations performed by way of distillation. Together with the description of the chiefest furnaces & vessels used by ancient and moderne chymists. Also, a discourse of divers spagyricall experiments, and curiosities: and the anatomy of gold and silver, with the chiefest preparations and curiosities thereof; together with their vertues. All which are contained in VI. bookes: composed by John French Dr. of Physick. The second edition. To which is added, the London-distiller: exactly and truly shewing the way (in words at length, and not in mysterious characters and figures) to draw all sorts of spirits and strong-waters: to which is added their vertues: with the additions of other excellent waters.

London: Printed by E. Cotes, for Thomas Williams at the Sign of the Bible in Little-britain without Alderagate. 1653.

Second edition. 4to. 8 leaves, 191, (1), 64 pp., 8 leaves. Title in red and black. Numerous woodcut text figures, headpieces, and initials. Fine copy in original blind-ruled calf, dark-green morocco label gilt, spine dated. Bookplate: Tess M. Hope.

THE FIRST edition to contain *The London Distiller*, separately paginated and with its own title page dated 1652. This is based on *The Distiller of London* (London, 1639). Otherwise a reprint of the first edition of 1651, the book contains many curious and interesting receipts, including several for the philosopher's stone; to make perpetual motion in a glass; to "fortifie a Loadstone that it shall be able to draw a Nail out of a peece of Wood"; and to make "Luminous Water to give light by night" (by distilling the "tailes of Glo-wormes"). Not in Bolton, Ferchl, Forbes, Partington, Poggendorff, Waller, etc. (Cushing, F328; Duveen, 231; Edelstein, 930; Ferguson, I, 293 [not in Young Coll.]; Ferguson Coll., 245; Mellon, 103; Neu, 1520; Smith, 183; Sotheran, Cat. 666 [1906], 1411 ["Rare"]; Watt, I, 388c; Wellcome, III, 67; Wing, F2170)

FRENCH, John

The Art of Distillation: or, a treatise of the choicest spagyricall preparations, experiments, and curiosities, performed by way of distillation. Together with the description of the choicest furnaces and vessels used by ancient and modern chymists. And the anatomy of gold and silver; with the chiefest preparations and curiosities thereof; together with their virtues. In six books. By John French Dr. in Physick. To which is added in this fourth impression. Sublimation and calcination: in two books. As also, the London-distiller exactly and truly shewing the way (in words at length, and not in mysterious characters and figures) to draw all sorts of spirits and strong-waters; together with their virtues, and other excellent waters.

London: Printed by E. Cotes for T. Williams at the Bible in Little-Britain. 1667.

Fourth edition. 4to. 8 leaves, 250 pp., 12 leaves, 43, (1) pp., 1 leaf. Woodcut illustrations. Few marginal repairs; otherwise fine copy in contemporary blind-ruled, unlettered, calf, rebaked to match. Signature in ink on verso of title page ("Richard Tom his book April 5th 1742"), repeated on page 1 ("Richard Tom 1742").

THE FOURTH, final, and most complete edition of this classic work, augmented by the addition of books VII and VIII, "Of Sublimation" (pp. 215–234) and "Of Calcination" (pp. 235–250), respectively. "The Calcination of Metals" (pp. 242–250) covers gold, silver, copper, iron, lead, tin, and mercury. Not in Bolton, Cushing, Edelstein, Forbes, Mellon, Partington, Poggendorff, Waller, etc. (Duveen, 231; Ferchl, 164; Ferguson, I, 292; Ferguson Coll., 245; Neu, 1522; Smith, 183–184; Sondheimer, 563; Sotheran, Cat. 773 [1919], 2503 ["Rare"]; Watt, I, 388c; Wellcome, III, 67; Wing, F2172)

FRENCH, John

The York-shire Spaw, or a Treatise of four Famous Medicinal Wells, viz. the Spaw, or Vitrioline-Well; the stinking, or Sulphur-Well; the Dropping, or Petrifying-Well; and St. Mugnus-Well, near Knaresborow in York-shire. Together with the causes, vertues, and use thereof. Composed by John French, Dr. of Physick.

London: Printed for E. Dod, and N. Ekins, and are to be sold at the Gun, in Ivy-Lane. 1652.

First edition. 12mo. (in 4s). 4 leaves, 124 pp., 2 leaves (last blank). Fine copy in old polished calf, double gilt fillets on covers, spine gilt-lettered and dated.

IN 1651 FRENCH visited the famous medicinal waters of Knaresborough and carried out chemical experiments on them, the results of which are reported in this work. He

refers to earlier writers on mineral waters (e.g., Edmund Deane, Albertus Magnus, Georgius Agricola, Fludd, Helmont, and Jorden) and discusses the analytical tests used to determine the composition of the Knaresborough waters. On page 28 the author advances the hypothesis that hot springs are due to the subterranean combustion of bitumen. Of great interest in the history of analytical chemistry, another edition appeared in 1654. J. Wood of Bradford claimed that he had received such benefit by using the waters according to the rules laid down in this treatise that he republished it as *A Pocket Companion to Harrogate Spaw* (Halifax, 1760). Rare. Not in Cushing, Edelstein, Ferchl, Partington, Smith, Waller, etc. (Bolton, 454; Duveen, 231 [mistakenly gives 128 pp.]; Ferguson, I, 293 [not in Young Coll.]; Ferguson Coll., 245; Neu, 1523; Poggendorff, I, 798; Waring, 791; Watt, I, 388c; Wellcome, III, 67; Wing, F2175)

FRESENIUS, Carl Remigius

A System of Instruction in Qualitative Chemical Analysis.
By Dr. C. Remigius Fresenius, . . . Sixth Edition. Edited
by T. Lloyd Bullock, F.C.S.

London: John Churchill & Sons, New Burlington Street.
1864.

Sixth English edition. 8vo. xiii, (1), 355, (1) pp. + (2), 32 pp. (publisher's catalogue, dated October 1863). Colored frontispiece (spectra) and numerous woodcuts in text. Fine copy, uncut, in original publisher's blind-stamped cloth.

TO THIS sixth English edition (first: London, 1843) the translator, J. L. Bullock, has added analytical methods for "all the known elements" and a section on "Spectrum Analysis, the most interesting, beautiful, and important acquisition which Analytical Chemistry has ever received" (preface). This classic work first appeared as *Anleitung zur qualitativen chemischen Analyse* (Bonn, 1841). Fresenius (1818–1897) was awarded his doctorate in July 1842 for the second edition (1842) with a preface by Liebig. Liebig made him an assistant, and further editions until the end of the century were "an unprecedented success" (D.S.B.). Fresenius devised the familiar system of the six group separations of qualitative analytical chemistry, which have been employed until modern times in teaching this subject. The first part of the book covers chemical principles and operations, and the second comprises the "Systematic Course of Qualitative Chemical Analysis." An appendix discusses the analysis of alkaloids. Ten English editions appeared until 1887: Bolton (pp. 456–457) lists them all, except the present very scarce sixth edition. (Sotheran, Cat. 666 [1906], 1416)

FRESENIUS, Carl Remigius

A System of Instruction in Quantitative Chemical Analysis.
By Dr. C. Remigius Fresenius, . . . Second Edition. Edited by
J. Lloyd Bullock, F.C.S.

London: John Churchill, New Burlington Street. 1854.

Second English edition. 8vo. xvi, 624 pp. + (2), 32 pp. (publisher's catalogue, dated July 1858). Numerous woodcut figures and diagrams in text. Fine copy, uncut, in original publisher's blind-stamped brown cloth.

THE SECOND English edition (first: London, 1846; Duveen, 232) of the celebrated *Anleitung zur quantitativen chemischen Analyse* (Braunschweig, 1846; D.S.B., V, 165), which is a sequel to the author's important work on qualitative analysis. The translator, Bullock, has added "the volumetric methods of determining the constituents of commercial articles, as being particularly valuable for economising time and assisting in every way the practical chemist" (preface). The first part covers "Methods of performing analytical operations," and the second comprises the analysis of specific substances (e.g., mineral waters, acids, bases, salts, ores and minerals, and soils). At the end are "Tables for the calculation of analyses" (i.e., equivalents of the elements, based on oxygen = 100, hydrogen = 1). Six German editions of this well-organized and popular book appeared through 1877, with English translations through 1909. (Bolton, 459)

FRESENIUS, Carl Remigius, and WILL, Heinrich

New Methods of Alkalimetry, and of determining the commercial value of acids and manganese. By Drs. C. R. Fresenius and H. Will, chemical assistants in the University of Giessen. Edited by J. Lloyd Bullock, late of the Giessen and Paris Laboratories.

London: Taylor and Walton. 1843.

First English edition. 12mo. viii, 152 pp., 4 leaves (advertisements). Fine copy, uncut, in original green cloth, printed label on front cover, spine unlettered.

DEDICATED by the authors "To Dr. Justus Liebig . . . their friend and preceptor," this work first appeared as *Neue Verfahrungsweisen zur prüfung Potassche und Soda* . . . (Heidelberg, 1843). One of the classic early books on alkalimetry, acidimetry, and the analysis of manganese, describing methods still in use. The strengths of alkalies and acids are listed in nine tables (pp. 138–152). Heinrich Will (1812–1890) succeeded Liebig in the famous Giessen laboratory. The French translation by C. W. Bichon, from the original German edition, appeared two years later (Paris, 1845). Ferchl (p. 581) and Poggendorff (II, 1329) refer only to the German edition (1843). This important English edition is very

scarce. Not in D.S.B., Duveen, Edelstein, Ferguson Coll., Morgan, Partington, Smith, Szabadvary, Wellcome, etc. (Bolton, 460; Sondheimer, 568)

FRIEDERIC, Johann Christian

Disputatio Inauguralis Medica de Renum et Vesicae Calculo, . . . Sub praesidio . . . Gueneri Rolfinckii, . . . Pro licentia supremos in arte medica Doctorales honores . . . offert Johannes Christianus Friederici, Vratislavia-Silesius . . . d. XVIII Januarii . . .

Jena: Typis Johannis Nisii. (1663).

First edition. 4to. 50 leaves (unpaginated). Characteristic minor browning; otherwise fine copy, in contemporary unlettered vellum. Bound with: works by W. Rolfinck, L. Strauss, and G. W. Wedel.

THE DOCTORAL dissertation of Friederic (or Friederici, dates unknown), presented under the direction of the celebrated professor of chemistry, anatomy, surgery, and botany at the University of Jena, Werner Rolfinck (1599–1673). As well as its medical content, this dissertation is of biochemical and chemical interest. The author discusses the history and formation of stones in the kidneys and bladder and describes the types of diet that produce calculi. Chemical medicines are suggested to minimize or alleviate the distress caused by these stones, with references to the writings of Fernel, Horst, Lemnius, Rolfinck, Sennert, et al. (Wellcome, III, 70)

FRIGELIUS, Anders

Dissertatio Physica, sistens Observationes quasdam circa Motus Corporum ex Percussione, . . . praeside Mag. Samuels Duraeo, . . . submittet Andreas Frigelius Calmariensis, . . . XXVI. Junii MDCCLXXV. . .

Uppsala. (1775).

First edition. 4to. 14 pp. Large woodcut headpiece. Fine copy. Bound with: Wimermark, Sven, *De Diversa Radiorum* (Uppsala, 1776), and 30 other dissertations (q.v.).

ON THE physics and mathematics of the vibration and oscillation of elastic and rigid bodies when plucked or struck, with references to Bernoulli, Euler, s'Gravesande, Leibnitz, Maupertuis, Newton, et al. Frigelius (1746–1828), lecturer in mathematics at the Calmar Gymnasium, wrote a number of papers that are listed by Poggendorff. This is his first publication. (Poggendorff, I, 805)

FRIZIMELICA, Francesco

De Balneis Metallicis Artificio Parandis, liber postumus novi argumenti e Bibliotheca Joannis Rhodii. Patavii primum, nunc autem impressus.

Nuremberg: Impensis Johannis Ziegeri. 1679.

Second (first Nuremberg) edition. 8vo. 44 pp., 2 leaves (last blank). Small release stamps of Munich University on verso of title page; otherwise fine copy in mid-nineteenth-century pebbled brown cloth, gilt-lettered spine.

A RARE WORK on the preparation, properties, and medicinal virtues of natural and artificially prepared mineral waters containing the salts of various metals. Frizimelica (or Frigimelica, 1491–1559) was a professor of medicine at the University of Padua. The present work (first: Padua, Sebastianum Elpidium, 1659) was edited by the physician Joannes Rhodius (1587–1659) from a manuscript by Frizimelica in the library of Rhodius. The dedication to Job. Pompilio Scoto, professor in the celebrated Padua Lyceum of Medicine, is dated 12 April 1659 and signed by the publisher of the original edition, Sebastianus Elpidium. The following subjects of chemical interest are discussed: the generation of metals in ores and their dissolution in natural waters, soluble salts of metals (e.g., copper, gold, iron, lead, mercury, silver, and tin), various soluble salts (e.g., alum, niter, and sea salt), bituminous and sulphurous waters, etc. The book provides a valuable insight into the opinions of sixteenth- and seventeenth-century physicians on the benefits and curative properties of different types of mineral-containing baths. (Duveen, 232; Hirsch, II, 447; Krivatsy, 4427; Neu, 1525)

FROEDING, Magnus

Dissertatio Chemica de Acido Gallaceo, . . . in Academia Carolina eruditorum censurae die XII Junii A. MDCCCII modeste subjiunt praeses Ulrik Job. Aberg, . . . et respondens Magnus Froeding, Vermelandi.

Lund: Literis Berlingianis. (1802).

First edition. 4to. 18 pp. Fine copy in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A DISSERTATION ON the occurrence, preparation, and chemical reactions of gallic acid, presented by Froeding under the direction of Ulrik Johann Aberg at the University of Lund. A valuable early monograph on the organic chemistry of gallic acid, its salts, and the industrial uses to which it is put in the manufacture of inks, the tanning of leather, etc. Unknown to the usual bibliographers.

FRONMUELLER, Johann Christoph

Dissertatio Inauguralis de Zinci singulari indole chemica. . . . Pro gradu doctoris medicinae et chirurgiae . . . XI Oct. MDCCCII. Publice defendet Jo. Christoph. Fronmüller . . .
Erlangen: Typis Hilpertianis. (1802).

First edition. 8vo. 38 pp. Fine copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

AN INTERESTING doctoral dissertation on zinc and its compounds, presented at the University of Erlangen. The praeses is not named. Fronmueller discusses Galvanic phenomena, the reaction of metallic zinc with absolute alcohol (to form zinc ethoxide), the preparation and medicinal properties of various zinc compounds, etc. The works of many contemporary chemists are cited. Unknown to the usual chemical and medical bibliographers. (Waring, 751)

FRONSPERGER, Leonhard

Fünff Bücher vonn Kriegs Regiment und Ordnung, . . . Item was die Arckelley und Munition belangt . . . Item von belägerungen und besatzungen der Stett, Schlösser . . . und wie man die feürkuglen bereitten, werffen und schiessen soll . . .
Frankfurt: Getruckt . . . durch Davidem Zephelium zum eysern Huth. 1558.

Second edition. Folio, in 6s. (6), 131 leaves. Gothic letter. With large woodcut on title page and 19 large woodcuts in text, partly after Virgil Solis. Early repair to upper-rear hinge; otherwise fine copy in original blind-stamped pigskin over oak boards, by the Master C. H. (Haebler, I, 166), with 2 brass clasps. Engraved bookplate (twentieth century): Military Collection, Anne S. K. Brown.

A FAMOUS TREATISE on military science (first edition, 1555), which also represents the first codification of military law. Of applied chemical interest are detailed sections on formulations of gunpowder for different purposes and the making of fireworks for use in war and for display in festivals. The excellent woodcuts are a valuable source of information on contemporary military costume, depicting a herald with trumpet, a general, a paymaster, a drummer, various types of artillery, etc. Later editions appeared (under different titles) of this “most important work on military science published during the XVIth century” (Zeitlinger, describing the fourth and final edition [Frankfurt, 1596]). The text was partly reprinted, with modernized spelling (Berlin, 1819). A native of Ulm, the author, Fronspurger, Baron von Mindelheim (d. 1575), served in several military campaigns before his death in Ulm, caused by a rifle accident. Very rare. Not in British Library, Brock, Durling, Philip, Rosenthal, Waller, Watt, etc. (Becker, Amman, 28; Cockle, 531 [note]; Jähns, 549; Sotheran, Cat. 850 [1936], 21007)

FRYXELL, Axel

Dissertatio Chemica de Baroselenite in Suecia Reperto, cujus partem primam, venia ampliss. ord. philos. Praeside Johanne Afzelio, Chem. Profess. Reg. et Ord. Pro gradu philosophico publice ventilandam sistit stipend. regius Axelius Fryxell, Vermelandus. In audit. gust. maj. d. X Jun. MDCCCLXXXVIII.

Uppsala: Typis direct. Johan. Edman. 1788.

First edition. 4to. 20 pp. Fine copy, in maroon half morocco, marbled boards, spine gilt-lettered and dated. With corrections in ink by the author on page 15. Small stamp on title page: “Gadolin.”

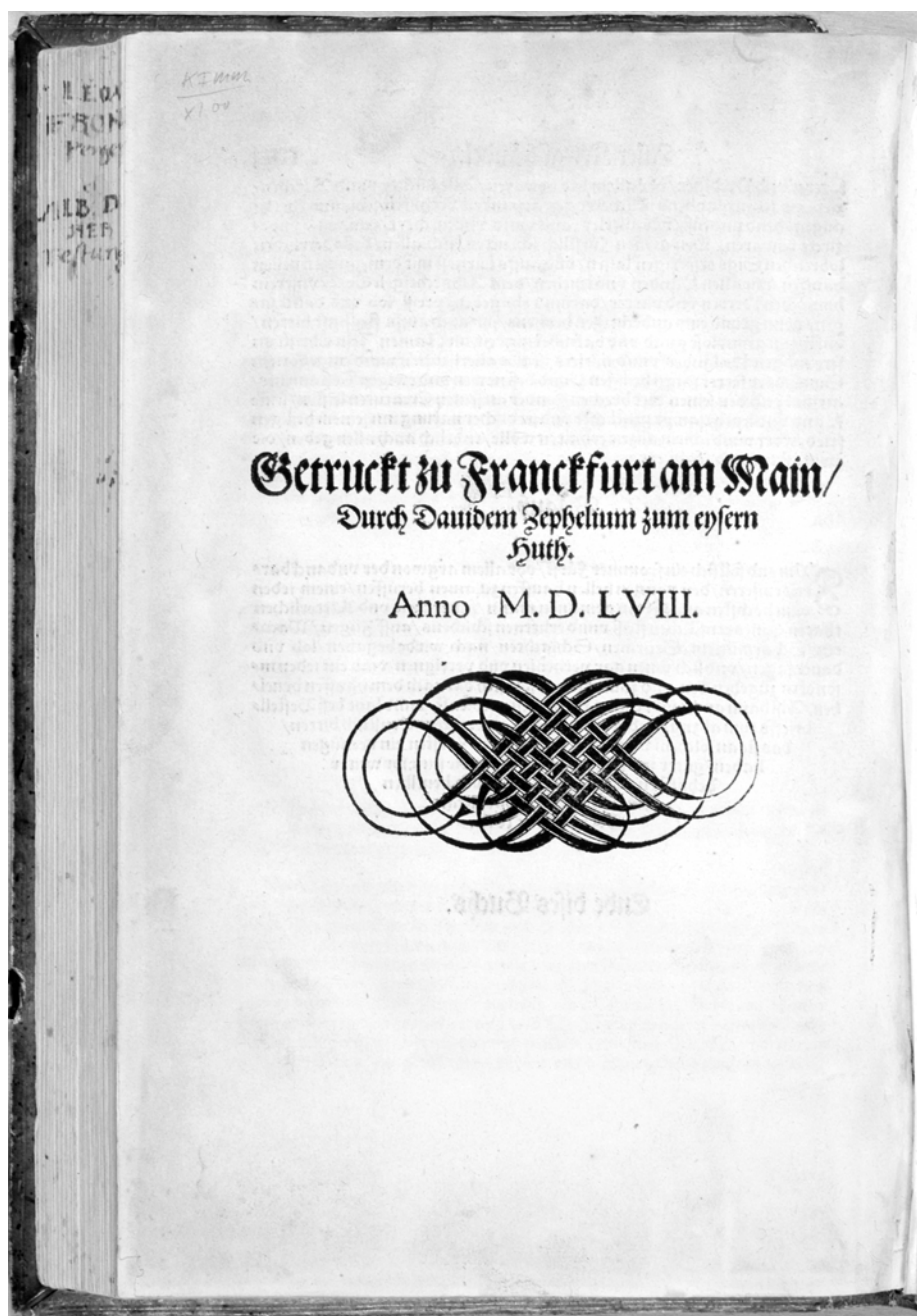
FRYXELL WAS a student of the great Swedish professor of chemistry Johann Afzelius (1753–1837). The subject of this dissertation is the mineral baroselenite, or barytes (i.e., native barium sulphate, BaSO₄). After briefly covering the history of barytes, with references to the works of Lemery, Marggraf, Cronstedt, Scheele, Bergman, Kirwan, et al., Fryxell describes chemical experiments he carried out on specimens of the mineral from various parts of Sweden. On page 19 he comments on *Lapide Bononiensi* (i.e., the Bolognian phosphor, made by calcining impure barytes). A rare work, to which no bibliographical reference has been found.

FUENTES, Alonso de

Somma della Natural Filosofia di Alfonso di Fonte divisa in Dialoghe Sei, ne' quali, oltra le cose fisiche, s'ha piena cognitione delle scienze, astronomia, et astrologia, dell'anima, et della notomia del corpo humano, novellamente tradotta di Spagnuolo in volgare da Alfonso di Ulloa. . . .
Venice: Per Plinio Pietrasanta. 1557.

First Italian edition. 4to. 4 leaves, 161, (1) pp., 7 leaves (index). Woodcut printer's device on title, historiated woodcut capitals and decorative headpieces. Roman letter. Few early marginal annotations; otherwise fine, crisp copy with wide fore- and lower margins, in contemporary unlettered limp vellum with remains of ties. Neat sixteenth-century inscription in top margin of title page: “Tiberij Delphini Parmensis liber”; and seventeenth-century inscription in bottom margin: “Ant(onio) di Broz di Brianzon Swizzero.” Bound with: Mexia, Pedro, *Dialoghi . . . tradotti . . . da Alfonso D'Ulloa* (Venice, 1557).

THE ITALIAN edition of the *Summa de philosophia natural* (Seville, 1547), translated by the famous Venetian author Alfonso de Ulloa (d. ca. 1580). Fuentes (1515–ca. 1590), the Spanish poet and Platonist best known for his *Libro de cuarenta cantos*, here presents his discussion of the sciences, including astronomy, biology, chemistry, geology, mineralogy, medicine, natural history, and physics. Written in dialogue form between an Italian and a Spanish knight, the



Fronspenger. Fünff Bücher vonn Kriegs Regiment. Frankfurt, 1558.

theme of the book is an attempt to reconcile the teachings of Plato with those of the Holy Gospel, an effort that can be traced back through Ficino and Pico della Mirandola to the twelfth-century School of Chartres. Fuentes “constantly professes to seek a physical explanation (*Ragione fisica*) of the phenomena discussed” (Thorndike, who cites this edition). The Wellcome copy is bound with a work by Domenico Delfino, probably a relative of Tiberius Delfino, who owned this copy. (British Library, *S.T.C. Italian Books*, 282; Palau, 95384; Thorndike, VI, 390; Wellcome, I, 2470)

FULHAME, Elizabeth

An Essay on Combustion, with a View to a New Art of Dying and Painting. Wherein the Phlogistic and Antiphlogistic Hypotheses are Proved Erroneous. By Mrs. Fulhame. London: Printed for the Author, by J. Cooper. 1794.

First edition. 8vo. xiii, (1) pp., 1 leaf, 182 pp., 1 leaf (blank). With the rare errata slip. Very good copy in quarter tan morocco, marbled boards, spine gilt-lettered and dated.

“MRS. ELIZABETH FULHAME, of whom nothing seems to be known except that she was the wife of a doctor, was an early convert to Lavoisier’s theory. In 1794 she published a very interesting *Essay on Combustion* (now very scarce), which attracted general attention. She was elected an honorary member of the Philadelphia Chemical Society, her book being reprinted there in 1810” (Partington). On page 8 she states: “I shall endeavour to show, that the hydrogen of water is the only substance, that restores oxygenated bodies to their combustible state; and that water is the only source of the oxygen, which oxygenates combustible bodies. Want of simplicity is not the only defect in Mr. Lavoisier’s hypothesis: for he supposes, that the increase of weight, which bodies acquire during combustion, depends on the absorption of the oxygenous principle alone.” She is thus not wholly convinced by Lavoisier’s theory. In nine chapters (pp. 13–160) she describes her experiments on the reduction of metallic salts to metals by hydrogen, phosphorus, sulfur, hydrogen sulfide, phosphine, carbon, light, and acids. On pages 161–177 oxidation reactions are covered. The author concludes (pp. 178–180) that “neither the Phlogistians, nor Antiphlogistians, account in a satisfactory manner for the increase of weight, which bodies acquire during combustion.” Very rare. Not in Blake, Duveen, Ferguson, Ferguson Coll., Neu, Poggendorff, Smith, Sondheimer, Waller, etc. (Bolton, *First Supplement*, 175; Edelstein, 940; Ferchl, 168; Lawrie, 210, Morgan, 291; Partington, III, 708; Sotheran, Cat. 725 [1912], 8177 [“Rare”]; Watt, I, 391c; Wellcome, III, 75)

FULHAME, Elizabeth

An Essay on Combustion, with a View to a New Art of Dying and Painting. Wherein the Phlogistic and Antiphlogistic Hypotheses are Proved Erroneous. By Mrs. Fulhame. *The First American Edition.*

Philadelphia: Printed and sold by James Humphreys. 1810.

First American edition. 12mo. Pp. xxiv, (25)–248. Very good copy in the original tree calf, maroon morocco label gilt, spine gilt-ruled. Bookplate: “The property of Cullen Lamb, Cumberland, (R.I.) A.D. 18—.”

AN EXACT reprint of the London (1794) edition, apart from the anonymous six-page advertisement (dated Philadelphia, 14 February 1810). It is probable that the advertisement was written by James Woodhouse, professor of chemistry in Philadelphia, as he earlier called the author “the celebrated Mrs. Fulhame” (in *Transactions of the American Philosophical Society.*, 1799, IV, 465) and here “the very ingenious Mrs. Fulhame” (p. iii). Very rare. Not in Duveen, Ferchl, Ferguson, Ferguson Coll., Lawrie, Morgan, Sondheimer, Watt, etc. (Bolton, 464; Edelstein, 941; Miles, *Chymia*, 3, 108 [1950]; Partington, III, 709; Smith, 185)

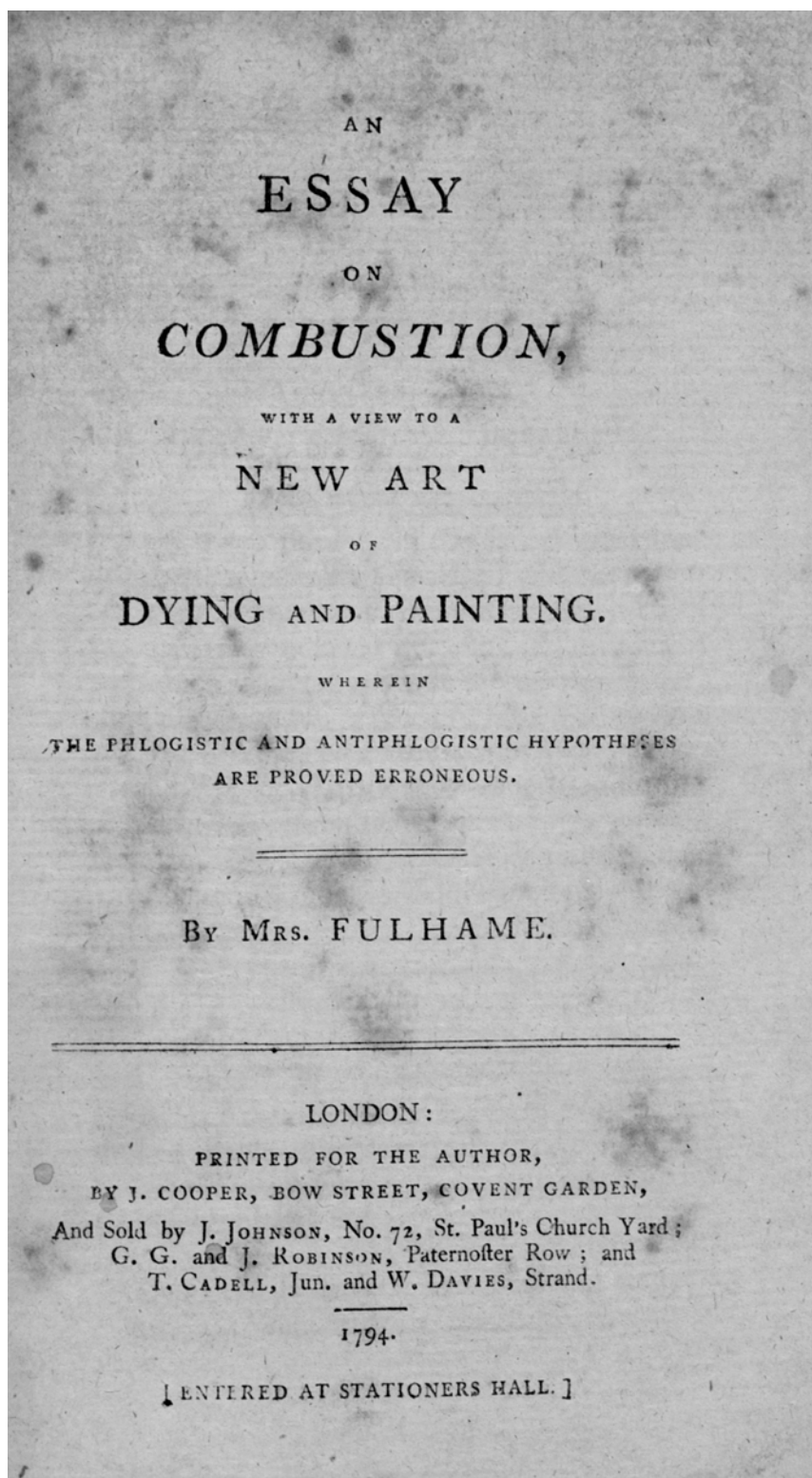
FULKE, William

Meteors; or, A plain Description of all kind of Meteors, as well Fiery and Ayrie, as Watry and Earthy: briefly Manifesting the Causes of all Blazing-Stars, Shooting-Stars, Flames in the Aire, Thunder, Lightning, Earthquakes, Rain, Dew, Snow, Clouds, Springs, Stones, and Metals. By W. F. *Doctor in Divinity.*

London: Printed for William Leake, at the Crown in Fleetstreet, between the two Temple Gates. 1670.

Final edition. 8vo. 4 leaves, 174 pp., 1 leaf. Very good, crisp copy, in quarter calf antique, crimson boards.

A WORK ON meteorology, geology, metallurgy, and related subjects, of considerable chemical interest. Originally published over a century earlier under the title *A Goodly Gallerye, with a most pleasaunt prospect into the garden of Naturall contemplation, to behold the naturall causes of all Kynde of Meteors* (London: W. Griffith, 1563), this is one of the not very numerous books which exhibit mid-sixteenth-century views on scientific matters. At the end (pp. 157–174) is an appendix including a divisional title page: *Observations on Dr. F. his Book of Meteors.* By F. W., which is entirely on metals, their ores, extraction, etc. The book was very popular and was reprinted in 1571, 1601, 1602, 1634, 1635, 1640, 1654, and 1655, as well as the present and final edition. For further details, see Harvey (*A History of Luminescence*, pp. 83–84) and Kocher (*Science and Religion in Elizabethan England*, 1953, pp. 163–165). Fulke (1538–1589) was a wealthy



Fulhame. Essay on Combustion. London, 1794.

puritan divine who originally studied law. His taste for law decreased as his interest in natural phenomena increased, and he proceeded to Cambridge to study Latin, mathematics, and theology. A vigorous character, he held views rather in advance of his time (see D.N.B.). Rare. Not in Krivatsy, Thorndike, Watt, etc. (Wellcome, III, 75; Wing, F2261)

FULLER, Thomas

The History of the Worthies of England. . . .
London: Printed by J.G.W.L. and W.G. 1662.

First edition. Folio, 4 parts in 1 vol. 4 leaves, 368 + 354 + 232 pp., 2 leaves, 60 pp. Frontispiece portrait of Fuller by David Loggan (fine impression), and blank leaf before title page. Very fine copy, in original speckled calf, double-ruled gilt fillets on each cover, tan morocco label, spine gilt in compartments. Bookplate: Walter Ambrose Harding.

THE THEOLOGIAN Fuller (1608–1661) graduated M.A. (1628) from Queens College, Cambridge. He held several positions during the Cromwellian Rebellion, and, after the Restoration of Charles II, he became chaplain in ordinary to the king. He published many theological works. The *Worthies*, by far his most important book, is dedicated to Charles II and was published posthumously by his son, John Fuller. This compendious and carefully researched work contains much of scientific (including chemical) interest. Each of the counties in England is described, and the “natural rarities” therein are discussed. The biographical information is valuable. Under “Warwickshire” (p. 126) there is an interesting notice of Shakespeare, which is important as being the first biographical account of the poet. Under “Essex” (p. 332) there is a paragraph on William Gilbert and his *De Magnete* (London, 1600). Fuller says that Gilbert “addicted himself to Chemistry, attaining to great exactness therein.” The *Worthies* is the earliest attempt at a general dictionary of English biography. At the end (60 pp.) is a brief section, “The Principality of Wales,” with separate divisional title page. An index to this great and useful book was published by Gough many years later in the eighteenth century; it is not present here, as in most copies. (Wing, F2440)

FULLER, Thomas

Pharmacopoeia Extemporanea sive Praescriptorum Chilibias, in qua Remediorum Elegantium, et Efficacium Paradigmata, ad omnes ferè Medendi Intentiones accommodata, candidè proponuntur. . . . Per Tho. Fuller, M.D. . . .
London: Impensis Guil. Innys, ad Insignia Principis in Coemeterio D. Pauli. 1714.

Fifth edition. 12mo. 18 leaves, 340 pp., 26 leaves (index) + 2 leaves (advertisements). Very good copy in contemporary quarter vellum, blue boards, spine lettered in ink.

BORN IN SUSSEX and educated at Queen’s College, Cambridge (M.D., 1681), Fuller (1654–1734) settled at Sevenoaks, Kent, where he was greatly esteemed by his patients. His very popular *Pharmacopoeia* (first: London, 1701) passed through many editions, the last (“editio decima et ultima”) appearing over half a century later (Amsterdam, 1761). Translations into English, French, and German were published. Fuller was admitted an extra-licentiate of the Royal College of Physicians in 1678. Newton owned a copy of this exact edition, and the ink title on the spine bears a slight similarity to his lettering (e.g., epsilon letter “e”), but there is no other indication of his ownership. Harrison (no. 646) records this title as one of the now “lost” books owned by Newton. (Blake, 163; Ferchl, 168; Matthews, *History of Pharmacy in Britain*, 1962, p. 79; Munk, I, 400; Neu, 1541; Schelenz, 565; Watt, I, 391y; Wellcome, III, 75)

FULLER, Thomas

Pharmacopoeia Extemporanea: or, a Body of Medicines, containing A Thousand Select Prescripts, answering Most Intentions of Cure. To which are added, Useful Scholia, a Catalogue of Remedies and Copious Index. . . . By Thomas Fuller, M.D. . . .

London: Printed for W. Innys, at the West End of St. Paul’s Church-yard. 1730.

Fourth English edition. 8vo. 22 leaves, 13, (1), 528 pp., 16 leaves (index). With engraved frontispiece portrait of Fuller (by G. Vertue after I. Tymewell), woodcut capitals, head- and tailpieces. Very good copy in original paneled calf, rebounded, black morocco label, spine gilt-ruled. From the library of William Gardner (fl. 1715–1735), with his name in ink on fore-edge of volume.

THE TRANSLATION of Fuller’s well-known *Pharmacopoeia Extemporanea* (first English: London, 1710). This fourth edition is the first to contain George Vertue’s portrait of Fuller. Valuable for its long “Catalogue of Medicines” and for the large number of recipes and prescriptions derived from chemical and botanical sources, mostly with comments concerning them. Directions are given for the making of thirty ales, fourteen wines, and twenty-two syrups (including “Mr. Boyle’s”). This edition contains a four-page “Postscript” added as an afterthought, in which the author takes John Quincy to task for having plagiarized “Many of the Extemporaneous Prescriptions” from Fuller’s *Pharmacopoeia*. (Blake, 163; Ferchl, 168; Neu, 1549; Waring, 76; Watt, I, 391y; Wellcome, III, 75)

FULMAN, William

Notitia Oxoniensis Academiae.

London: Typis T.R. Impensis Ric. Davis. 1675.

Second (best) edition. 4to. 2 leaves, 112 pp. Two woodcut crests on title page. Woodcut headpieces. Very good, crisp copy, in contemporary paneled calf, rebacked, maroon morocco label.

AN INTERESTING account of Oxford University, followed by a description of its officers, institutions, and professorships, with the names of staff. For each college and hall there is a brief description of its history, numbers, and distinguished alumni, and finally a list of great men who have passed through the university. Among the many famous scientists and physicians listed are Elias Ashmole, Roger Bacon, George Bate, Robert Boyle, Thomas Browne, Kenelm Digby, Leonard Digges, Robert Fludd, William Harvey, and Thomas Vaughan. The first edition, entitled *Academiae Oxoniensis notitia* (Oxford, 1665), was a much smaller work, and the present edition is so enlarged (double the size) that it is almost a new work. The eminent antiquary Fulman (1632–1688), who was educated at Magdalen College and Corpus Christi, Oxford, published several other books (see D.N.B.). (Madan, 3036; Watt, I, 392f; Wing, F2524)

FUNKE, Otto

Atlas of Physiological Chemistry, being a supplement to Lehmann's Physiological Chemistry. . . .

London: Printed for the Cavendish Society. 1853.

First edition. 4to. 1 leaf, xii, 29, (1) pp., 1 leaf (blank). With 15 plates (each with 6 figures, some colored), loose as issued, with tissues. Fine copy, unbound, contained in a modern clothboards folder, with original printed label on front cover.

A SUPPLEMENTARY VOLUME to the *Physiological Chemistry* (London, 1851, 1853, 1854, 3 vols.) of Carl Gotthelf Lehmann. Originally appearing as *Atlas der physiologischen Chemie* (Leipzig, 1853, 4to.), the translator of this English edition is not named but was possibly George E. Day, who translated Lehmann's *Lehrbuch der physiologischen Chemie* (Leipzig, 1850–52, 3 vols.). The excellent plates depict microscopic views of crystalline compounds obtained from biological sources. Funke (1828–1879), professor of physiological chemistry and medicine at the University of Leipzig, is famous for the discovery of hemoglobin (see Garrison-Morton, 866). The German edition of the *Atlas* is listed by Garrison-Morton (no. 684) and by Poggendorff (I, 819), but not the English translation. Scarce. Not in the usual chemical bibliographies. (Blocker, 148; Bolton, 465; Sotheran, Cat. 676 [1907], 2529)

FUNKE, Otto

Atlas of Physiological Chemistry. Being a Supplement to Lehmann's Physiological Chemistry. . . .

London: Printed for the Cavendish Society. 1853.

First edition. 4to. 1 leaf, xii, 29, (1) pp. With 15 fine lithograph plates, each with 6 figures, many hand colored (i.e., total of 90 figures), by Emil Wilhelmi of Leipzig. Good copy in original boards, rebacked in gilt-lettered and dated maroon morocco antique, original printed paper label on front cover. Armorial bookplate: Sidney Sussex College, Cambridge.

FUNKE (1828–1879), professor extraordinary of medicine in the University of Leipzig, was an outstanding pioneer of biochemistry, then called physiological chemistry. His researches on the chemistry of substances found in both healthy and sick people were of fundamental importance. He stressed the use of the microscope in examining the chemical reactions and products of cells. "A physiological laboratory without a microscope is as great an anomaly as a chemical laboratory without a balance" (preface). All ninety figures depict objects as seen through the microscope. Although subtitled a "supplement" to Lehmann's great work on biochemistry, this is a completely independent treatise, being "the graphic representation of all those substances whose microscopic and microchemical investigation is of importance to physiological chemistry, comprehending in this term all that has received the sanction of Lehmann's work" (preface). It was published in German the same year as *Atlas der physiologischen Chemie* (Leipzig: W. Engelmann, 1853). Owing to this being a portfolio of loose plates (here firmly attached), complete copies are rare. A milestone book in the history of biochemistry. For the German edition, see Garrison-Morton, 684; Poggendorff, I, 819. (Bolton, 465; Blocker, 148; Sotheran, Cat. 676 [1907], 2529)

FÜRNROHR, August Emil

Lehrbuch der technischen Chemie, für den ersten Unterricht an Gewerbschulen. . . .

Regensburg: Verlag von G. Joseph Manz. 1842.

First edition. 8vo. xii, 320 pp., 1 leaf (errata). Crisp copy in original mottled boards, paper label on spine.

AN IMPORTANT introductory work covering almost every aspect of industrial chemistry, with sections on inorganic chemicals (e.g., metals, nonmetals, acids, alkalies, and salts), organic chemicals (e.g., hydrocarbons, acids, bases, and esters), and the manufacture of other useful products (e.g., chocolate, beer, wine, and brandy). There are also descriptions of the making of glass, porcelain, dyes, bleaches, cement, candles, margarine, butter, matches, potash, quicklime, etc. The book gives a good survey of the chemical



Furttenbach. Büchsenmeisterei-Schul. Augsburg, 1643.

technology of the period, and several later editions appeared. Fürnrohr (1804–1861) was a professor in the Lyceum at Regensburg. Rare. Not in D.S.B., Lawrie, Wellcome, or the usual bibliographies. (Bolton, 465; Ferchl, 167)

FURTTENBACH, Joseph

Büchsenmeisterey-Schul, darinnen die New angehende Büchsenmeister und Feurwercker, nicht weniger die Zeugwartten, in den Fundamenten und rechten grund der Büchsenmeisterey, auch allerhand Feurwercken, zu Schimpff und Ernst, zu Wasser and Land, vom geringsten, biss zum höchsten, dieselbige in kurtzer Zeit, beneben guter Vorsichtigkeit, auch ohn einige Leibs Gefahr, mit geringer Mühe, und Ersparung viler Unkosten, zu erlernen, getrewlich und auffrichtig, underweisen, und gelehrt werden. Alles aus eigener Erfahrenheit, gantz vertrewlich beschriben . . . Augsburg: Gedruckt . . . bey Johann Schultes. 1643.

First edition thus. Folio (in 4s). 7 leaves, 151, (1) pp. Title in red and black, within elaborate woodcut border. Splendid engraved double-page title and double-page portrait of Furttenbach (both by M. Rembold); full-page copperplate of the German monk Berthold Schwarz (reputed inventor of gunpowder), and 44 engraved double-page plates. Fine copy, in unlettered eighteenth-century half vellum, marbled boards.

ONE OF the great books on the manufacture of fireworks and gunnery of the seventeenth century, this superbly illustrated treatise is a revised and enlarged edition of the author's *Halinitro-Pyrobolia* (Ulm, J. Saur, 1627; Poggenдорff, I, 819). The same plates are used in the present edition. Furttenbach (1591–1667), an expert in mathematics, surveying, astronomy, navigation, gunnery, and pyrotechny, as well as civil and military architecture, published several

works on these subjects. All his books are now very rare. The well-known portrait of Berthold Schwarz is reproduced by John Read (*Humour and Humanism in Chemistry*, London, 1947, plate 57). Unknown to the usual chemical bibliographers. (Philip, F130.3; Sotheran, Cat. 8466 [1936], 21013)

FYFE, Andrew

Elements of Chemistry. . . . The third edition, comprehending all the recent discoveries.

Edinburgh: Adam & Charles Black, . . . and Longman, Rees, Orme, Brown, and Green, London. 1833.

Third edition. 8vo. xxiv, 1072 pp. Many woodcut figures in text. Excellent, crisp copy, in gilt-ruled half calf antique, marbled boards, maroon morocco label, spine dated.

THE FINAL and best edition of this important textbook, containing numerous additions, together with discussions of caloric, light, electricity, and galvanism. Fyfe (1792–1861), who graduated M.D. (Edinburgh, 1814) and was elected F.R.S. (1823), lectured on chemistry and chemical pharmacy at Edinburgh and was assistant to Thomas Charles Hope, to whom the book is dedicated. From 1846 to 1861 Fyfe was professor of chemistry and medicine at Aberdeen University. He published a small *Manual of Chemistry* (Edinburgh, 1826), followed by his *Elements of Chemistry* (2 vols., Edinburgh, 1827; 2nd ed. 1830). Bolton, Ferchl, Poggenдорff, Sondheimer, Wellcome, etc., list only the first edition, an American edition of which appeared (Boston, 1827) with additions by J. W. Webster. Very scarce. No edition in Duveen, Ferguson Coll., Smith, Waller, etc. (Partington, III, 724)

GABRIELE A SANCTO VINCENTIO

Physica Fr. Gabrielis a Sancto Vincentio Carmelitae . . . Continens etiam materiam de Mundo, de Caelo, & de Meteoris. Opus perquam utile cunctis studiosis, & philosophiae arcana scire cupientibus. . .

Rome: Ex Typographia Philippi Mariae Mancini. 1670.

First edition. 4to. 10 leaves, 448 pp., 12 leaves (index). Title in red and black, with woodcut. Many historiated woodcut initials, head- and tailpieces. Fine copy, in original vellum. Bookplate: Royal Meteorological Society, Symons Bequest, 1900 (sold 1973).

A COMPREHENSIVE SURVEY of contemporary knowledge on physics, chemistry, meteorology, and related sciences, based on Aristotle's works *De Mundo*, *De Caelo*, and *De Meteoris*. The first section covers natural philosophy, its origins, and later developments. The physical phenomena of the entire universe are covered, and the book is important in the history of many modern scientific disciplines. The discussions of atoms, metals, salts, mineral and sea waters, acids, alkalies, and related subjects are of interest to chemical historians. There are also sections on magnetism, physical forces, vacua, astronomy, sunspots, moon, stars, planets, meteors, etc. In the discussion on the nature of light, the author states that light is not corporeal but is a property of bodies (a surprisingly modern viewpoint). The author sometimes agrees with Aristotle and often disagrees with him, tending more toward modern concepts. Of Gabriele nothing appears to have been recorded. That he was a Carmelite monk who lived during the first half of the seventeenth century in Ferrara and Rome can be ascertained from the license leaves at the beginning of the book. An extremely rare work, which is not in the British Library or the usual bibliographies. N.U.C. records only one copy (Columbia University, New York).

GADD, Peter Adrian

Inledning til Sten-Rikets Kännig. Efter samlade Academiske Ungdomen til Tjenst. Författad och utgifwen af Pehr Adr. Gadd. Chemie Professor wid Kongl. Akademien i Åbo . . .
Åbo: Tryckt I Frenckellska Boktryckeriet . . . 1787.

First edition. 8vo. 146 pp., 1 leaf (errata). Fine copy in maroon half morocco antique, marbled boards, gilt-lettered and dated on spine.

GADD (1727–1797) was professor of chemistry, physics, and economics at the University of Åbo, Finland. Many of his publications are in the form of dissertations by his students, covering a wide variety of topics in mineralogy, metallurgy, chemistry, physics, and related subjects. Published when he was about seventy years old, this book summa-

rizes Gadd's mature views on the chemical composition and classification of minerals, with numerous references to works by contemporary scientists (e.g., Bergman, D'Arcet, Kirwan, Pott, Priestley, Rinman, Scheele, and Wenzel). Rare. Not in Bolton, Duveen, Ferchl, Ferguson, Neu, Partington, Poggendorff, Smith, Waller, Watt, Wellcome, etc.

GADOLIN, Johan

Dissertatio Chemica de Analyti Ferri, quam . . . praeside Mag. Torb. Bergman, . . . publice ventilandam sistit Johannes Gadolin, Aboae-Fenno. . . D. 9 Jun. Anno 1781.
Uppsala: Apud Job. Edman. (1781).

First edition. 4to. 1 leaf, 74 pp. Fine copy in maroon quarter morocco, marbled boards, spine gilt-lettered and dated.

THE DOCTORAL dissertation of Gadolin (1760–1852), with Torbern Bergman presiding, on the analysis of iron and its ores. Gadolin studied under Bergman (1778–81) and later became an outstanding professor of chemistry in Åbo (1785–1822). This, his earliest publication, demonstrates the thoroughness with which he examined every aspect of the subject. He presents his analyses, comparing them with those of earlier chemists. A revised and enlarged version of this important work appeared in Bergman's *Opuscula Physica et Chemica* (Uppsala, 1783, vol. 3). Very rare. Not mentioned by Poggendorff or Ferchl in their lists of Gadolin's works. Not in Blake, Bolton, D.S.B., Duveen, Edelstein, Ferguson, Ferguson Coll., Hoover, Neu, Smith, Sondheimer, Waller, Watt, Wellcome, etc. (Möstrom, 176; Partington, III, 183)

GADOLIN, Johan

Dissertatio Chemica de Cupro Albo Sinensi, cujus Partem Primam (Secundum, Tertiam). Cons. Ampliss. Facult. Philos. Praeside Mag. Johanne Gadolin, Chemiae Professore Publico et Ordinario, . . .
Aboae: Typis Frenckellianis. 1810.

First editions. 3 parts, 4to., in 1. 1 leaf, pp. 1–34, 1 leaf, (35)–64, 1 leaf, (65)–83. Very good copy, entirely uncut with wide margins, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

THREE INAUGURAL dissertations on paktong and other alloys of copper. Paktong is Chinese nickel-silver, an alloy of copper, zinc, and nickel resembling silver. As was the custom in Scandinavia, the three dissertations that make up this work, published under the names of the students Carolus Jacobus a Tengström, Laurentius Johannes Prytz, and Nicolaus Abrahamus Ursin, were written by the praeses, the Finnish chemist Gadolin, who was professor of chemistry at Åbo (Turku). Rare. Not in Bolton, Duveen, Ferguson, Partington, Poggendorff, Smith, Waller, Wellcome, etc. (Sondheimer, 580)

GADOLIN, Johan

Inledning til Chemien, af Johan Gadolin, Chemiae Professor i Åbo.

Åbo: Tryckt i Frenckellska Boktryckeriet, 1798.

First edition. 8vo. 2 leaves, 150 pp., 1 leaf (errata). Few small holes in upper blank margin of title page (caused by erasure); otherwise a very good copy, uncut, in the original limp boards (rebacked). From the library of Professor Franz Sondheimer, with his bookplate on the front pastedown endpaper.

GADOLIN (1760–1852) studied under Bergman in Uppsala (1778) and was a distinguished professor of chemistry in Åbo (Finnish Turku) from 1785 to 1822. He traveled in Germany, Holland, England, and Ireland and became acquainted with Crell, Kirwan, and Crawford. His theory of combustion, researches on heat, and discovery of the yttria earths in a mineral later called gadolinite are his best-known contributions to science. He taught the antiphlogistic theory from 1789, and the present small textbook is important as the first in Swedish to teach the new system and did much to procure its adoption. He often encountered the opposition of Berzelius. The D.S.B. states that this book is “Gadolin’s most significant publication.” Not in Duveen, Ferguson, Ferguson Coll., Morgan, Neu, Watt, Wellcome, etc. (Bolton, 466; D.S.B., V, 216; Ferchl, 169; Partington, III, 235; Poggendorff, I, 827; Smith, 186; Waller, 11135)

GADOLIN, Johan, et al.

Dissertatio Academica Historiam Doctrinae de Affinitatibus Chemicis Exhibens . . . Praeside Mag. Johanne Gadolin, . . .

Åbo: Typis Frenckellianis. 1815–1819.

First editions. 2 vols., 4to., containing parts 1–5 (1815) and parts 9–15 (1818–1819). I: 1 leaf, 12 pp.; 1 leaf, pp. 13–26; 1 leaf, pp. 27–42; 1 leaf, pp. 43–58; 1 leaf, pp. 59–76. II: 1 leaf, pp. 125–136; 1 leaf, pp. 137–148; 1 leaf, 149–160, 1 leaf, pp. 161–172; 1 leaf, pp. 173–180; 1 leaf, pp. 181–192; 1 leaf, pp. 193–204. Divisional title pages to each part. Mint copies throughout, uncut with wide margins, in maroon quarter cloth antique, marbled boards, spines gilt-lettered.

BETWEEN 1815 AND 1819, Gadolin and his students published fifteen dissertations on the development of knowledge of chemical affinity, in which the theories of chemical combination are critically discussed. The researches of all the important chemists are cited, from Becher and Stahl to Thenard. Apart from lacking parts 6, 7, and 8, this is a complete set of this rare and important work. The students who contributed to these dissertations were (in order) Matthias Baeck, Petrus Adolphus Bonsdorff, Carolus Dan. von Haartman, Carolus Evert Eklund, Gustavus Julius Costiander, Gustavus Ringvall, Gustavus Adolphus Heldaan,

Gustavus Wilhelmus Ekquist, Jacobus Alg. Gadolin, Jacobus Gustavus Chydenius, Augustus Wilh. Wallenius, Joh. Joseph. Pippingskjold. Unknown to the usual bibliographers. (D.S.B., V, 216; Partington, III, 235)

GADOLIN, Johan, and MACONIUS, Nicolaus

Dissertatio Chemico-Physica, de Theoria Caloris Corporum Specifici, . . . publico examini subjiciunt Johannes Gadolin, . . . et Nicolaus Maconius, Rossia-Wiburgensis. In Audit. Majori d. XXIII Octob. MDCCLXXXIV.

Åbo: Apud Viduam Reg. Acad. Typogr. J.C. Frenckell. (1784).

First edition. 4to. 1 leaf, 30 pp. Fine, crisp copy, in maroon quarter cloth antique, marbled boards, spine lettered in gilt: Gadolin. Dissertations 1784–1801. Bound with: Dissertations by Bremer, Harfvelin, and Montin.

GADOLIN HAD “spent four years at Uppsala studying with Torbern Bergman, during which time he began his work on mineralogy and specific heats” (D.S.B., V, 215). In this important dissertation on the theory of specific heat, presented by Gadolin and his student Maconius at the University of Åbo, Finland, the phenomena of specific heat and latent heat (using mathematical formulae) are discussed. The researches of Bergman, Black, Crawford, Kirwan, Newton, Scheele, et al., are cited. Values for the specific heat of ninety-one chemicals are given (pp. 13–16), including metals, acids, bases, and salts. “His theory of combustion, his researches on heat, and his discovery of the yttria earths . . . are his best-known contributions to science. . . . Gadolin . . . made accurate determinations of the specific heat (0.5315) and latent heat of fusion (81.1) of ice” (Partington). Very rare. (Ferchl, 169; Partington, III, 235; Poggendorff, I, 827)

GAFFAREL, Jacques

Unheard-of Curiosities: Concerning the Talismanical Sculpture of the Persians; The Horoscope of the Patriarkes; And the Reading of the Stars. Written in French, by James Gaffarel, and Englished by Edmund Chilmead, Mr. of Arts, and Chaplaine of Christ-Church Oxon.

London: Printed by G. D. for Humphrey Moseley, and are to be sold at his Shop, at the Princes Armes in St. Paul’s Church-Yard. 1650.

First English edition. 8vo. 20 leaves, 433, (1) pp., 4 leaves (advertisements). With 2 large woodcut folding plates (astrological constellations expressed in Hebrew characters). Woodcut text figures (Hebrew characters, cabalistic letters and symbols). Fine, crisp copy, in contemporary unlettered calf, rebacked, with original spine laid down.

A WORK OF chemical interest, as it mentions Agricola, Albertus Magnus, Croll, Du Chesne, Paracelsus, et al. Partington describes some of its chemical contents, and Thorndike devotes several pages to the work. Originally published as *Curiositez inouyes sur la sculpture talismanique des Persans* (Paris, 1629), a number of French editions appeared. Gaffarel (1601–1681), well-known cabalist, Hebrew scholar, and orientalist, was librarian to Cardinal Richelieu, who sent him to Rome to purchase rare books and manuscripts. During his travels in the Near East, Gaffarel also acquired precious art objects. Upon its publication, the first edition (1629) was condemned by the theological faculty of Paris. Gaffarel was denounced by the Sorbonne, and he was forced to sign retractions. Newton owned a copy of this English edition, the present location of which is unknown. Not in Caillet, Duveen, Edelstein, Ferguson, Guaita, Krivatsy, Mellon, etc. (Ferguson Coll., 251; Harrison, *Library of Isaac Newton*, 647; Neu, 1554; Partington, II, 170; Thorndike, VII, 304; Watt, I, 394j; Wellcome, III, 80; Wing, G105)

GAGO, João Nunes

Tratado Physico-Chymico-Medico das Aguas das Caldas Da Rainha. No qual se incorporou a relação da epidemia que pelos fins do anno de 1775, e todo o de 1766 se padeceo no sitio do Seixal, dedicado ao . . . Senhor Marquez. De Anjeja do Concelho de Sua Magestade, . . . por João Nunes Gago, . . . Lisbon: Na Typografia Rollandiana. 1779.

First edition. 8vo. 8 leaves, 289 pp., 3 leaves. Very good copy in contemporary mottled calf.

A PORTUGUESE TREATISE on the physical, chemical, and medicinal properties of the mineral waters of Caldas Da Rainha, a well-known spa about fifty miles north of Lisbon. Gago was an eminent physician at the Hospital de S. Joze in Lisbon. His book is important for the descriptions of chemical analyses of these waters, with references to the works of Baumé, Boerhaave, Geoffroy, Hoffmann, Lewis, Monnet, et al. Very rare. Not in Duveen, Edelstein, Ferchl, Ferguson, Ferguson Coll., Neu, Osler, Partington, Smith, Waller, Watt, Wellcome, etc. (Blake, 164; Bolton, *First Supplement*, 314)

GAIRDNER, Meredith

Essay on the Natural History, Origin, Composition, and Medicinal Effects, of Mineral and Thermal Springs. By Meredith Gairdner, M.D. . . .

Edinburgh: William Blackwood; and London: T. Cadell. 1832.

First edition. 12mo. xii, 420 pp. Very good copy in contemporary half calf gilt, marbled boards, rebaked, brown morocco

label, gilt. A presentation copy to an unnamed recipient, with "From the Author" in ink on recto of second flyleaf. Small stamp on title page ("Royal Society of Edinburgh").

AN IMPORTANT and comprehensive work on the chemical analysis, origin, location, and medicinal properties of hot and cold mineral waters of Great Britain, Ireland, and other European countries. "Contains the best English view of the whole theory of mineral waters, supplying also much information about English springs" (Dr. J. Macpherson, *Our Baths and Wells* [London, 1871]). Dedicated by Gairdner (d. 1837) to the great Scottish mineralogist Robert Jameson (1774–1854), professor of natural history at Edinburgh. The book contains much on chemical analysis. Very scarce. Not in Bolton, Duveen, Edelstein, Ferchl, Ferguson Coll., Partington, Smith, Sondheimer, Waller, etc. (Waring, 778; Wellcome, III, 81)

GALE, T.

Electricity, or Ethereal Fire, considered: 1st. Naturally, as the Agent of Animal and Vegetable Life: 2d. Astronomically, or as the Agent of Gravitation and Motion: 3d. Medically, or its artificial Use in Diseases. Comprehending both the Theory and Practice of Medical Electricity; and demonstrated to be an infallible Cure of Fever, Inflammation, and many other Diseases: constituting the best Family Physician ever extant. By T. Gale, M.D. Published according to Act of Congress. Troy (New York): Printed by Moffitt & Lyon. 1802.

First (only) edition. 12mo. (in 6s). 285 + 3 pp. Very good copy in the original calf, with gilt-lettered maroon morocco label on spine.

ACCORDING to the Wheeler Gift catalogue, "This book is among the first works on electricity printed in America. The author considers electricity to be the main cause of animal and vegetable life." It is a very curious work, interspersed with quotations from the Bible exhorting Christians toward a better life. The author claims on the title page to have an M.D. degree, though from which university he graduated I have not been able to ascertain, nor have I found any biographical references to Gale. In the preface (p. 5) the author states that he has conducted a practice of medical electricity for almost twenty years. He says that patients may be cured rapidly by giving them electric shocks, and in the text he describes numerous conditions and diseases that he has cured. The book is of some peripheral chemical interest, as it deals with the conduction of electrostatic electricity by various metals and nonmetallic materials. The Wheeler Gift catalogue describes their copy as having 276 pages + 2 leaves. Page 276 in the present copy certainly looks like the final page; however, this is followed by a gathering of six leaves (signed Aa), and page 277 is

headed "Thoughts on the Times," which extends to page 285. Pages 286–288 comprise the index. At the bottom of page 285 there is a seven-line errata. A very rare book. (Wheeler Gift, 636)

GALEN

Claudii Galeni Pergameni, Medicorum Principis, De Compositione Medicamentorum . . . Lib. VII. Per Joannem Guinterium Andernacum iamprimum latinitate donati. Eiusdem de ponderibus & mensuris liber, D. Andrea Alciati interprete. Adiecimus brevem . . . in qua cuique quantum quaelibet mensura capiat, clarè patebit.

Basel: (Andreas Cratander). 1530.

First Basel edition, edited by Andreas Cratander. Folio. 4 leaves, 99 folios (numbered on recto only), 3 leaves. Large woodcut, repeated on verso of final leaf. Several fine woodcut headpieces, and historiated capitals. Signature A1 recto bears the famous "Fox hunting" and "Peasant dance" woodcut borders by Holbein. Colophon dated 16 April 1530. Fine, wide-margined copy in later half vellum, marbled boards.

BORN IN Pergamos, Galen (ca. A.D. 130–200) was well educated in mathematics and philosophy. He began the study of medicine at age seventeen and traveled extensively to complete his education. In 163–164 he went to Rome, where he became court physician to Marcus Aurelius. Galen wrote many works on philosophy and medicine. He combined the Hippocratic theory of the four humours, the Aristotelian hypothesis of the four elements, and the Stoic pneuma theory. He opposed atomism. Galen's pharmacology, which is of chemical importance, is mostly contained in the *De compositione medicamentorum*. Partington (I, 192–200) discusses Galen's theories in detail. This edition is edited by Andreas Cratander (d. ca. 1540) and includes *De ponderibus et mensuris*, interpreted by Andrea Alciati (1492–1550), which, in fact, is an extract from *De asse et partibus ejus* of Guillaume Budé (1468–1540) and is certainly not by Galen. Stillwell (p. 117) mentions another edition of the same year (Paris, 1530). Galen's life and works are discussed in the D.S.B. (V, 227–237). Ferguson (I, 298) says that "Galen paid special attention to materia medica and pharmacy," and his position "as the greatest physician of classical antiquity after Hippocrates and the most influential during the Middle Ages" is unquestioned. An extremely rare edition, only one other copy of which could be traced in the National Library of Medicine. (Durling, 1785)

GALLISCH, Friedrich Andreas

De Acido Salis ejusque Dephlogisticatione ut Orationem . . . IV Septembr. MDCCLXXXII habendam indiceret. Scripsit D. Fridericus Andreae Gallisch Medicinæ Professor Extraordinarius.

Leipzig: Ex Officina Breitkopfia. (1782).

First edition. 4to. 1 leaf, 25, (1) pp. Fine copy with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

AN IMPORTANT lecture on hydrochloric acid, its salts, and chlorine, by Gallisch (1754–1783), professor of medicine at the University of Leipzig. The history of hydrochloric acid is traced, with references to the researches of Becher, Scheele, Bergman, Priestley, Lavoisier, et al. The reaction of the acid with metals and the properties of the resulting chlorides are covered. Gallisch claims that phlogiston (i.e., hydrogen) is liberated when almost all metals are dissolved by hydrochloric acid. Scheele's famous discovery of gaseous chlorine in 1774, by the reaction of hydrochloric acid with pyrolusite (manganese dioxide), is discussed in detail. Chlorides of the following elements are described: arsenic, gold, platinum, silver, lead, mercury, tin, copper, cobalt, antimony, iron, bismuth, and zinc. Gallisch, who died in his twenty-ninth year, translated some of Richard Watson's *Chemical Essays* into German as *Dr. Watson's chemische Versuche*, parts I and II (Leipzig, 1782; all published). Poggendorff erroneously gives his middle name as Anton. Very rare. Not in the usual chemical libraries. (Blake, 165; Partington, II, 767; Poggendorff, I, 836)

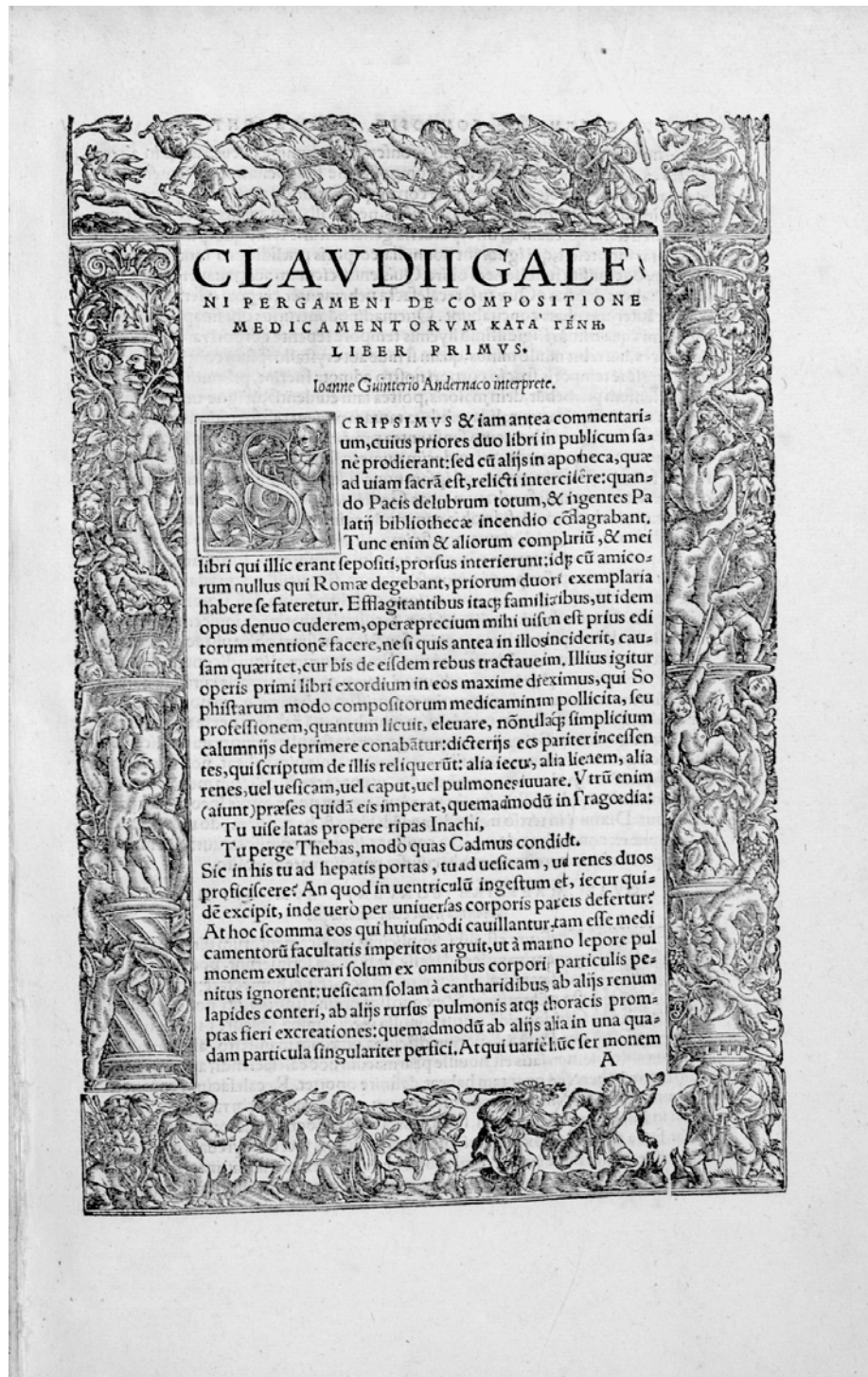
GALVANI, Camillo

Della Pietra Fosforica Bolognese.

(Colophon): Bologna, nella Stamperia del Longhi. (1780).

First edition. 8vo. 91, (1) pp. With 3 folding copperplates. Good unpressed and uncut copy, in original white pasteboards.

AN IMPORTANT account of contemporary knowledge on the luminescent Bolognian stone (calcined native barium sulphate), the first phosphorescent material ever discovered. The history, color, shape, internal structure, analysis, and other properties of the Bolognian stone are described in detail in thirteen chapters, and a comparison is made with other phosphors. Beccari and his coworkers are particularly referred to, and ten pages of experiments reported. E. N. Harvey gives an excellent description of the Bolognian stone, stating that "the Bolognian phosphor, after more than three hundred years, through invention of the fluorescent lamp, finally revolutionized the lighting industry and made



Galen. Claudii Galeni Pergameni. Basel, 1530.

the development of television possible." A "rare and interesting little work" (Duveen). Not in Blake, D.S.B., Waller, Watt, Wellcome, etc. (Bolton, *First Supplement*, 178; Duveen, 235; Edelstein, 950; E. N. Harvey, *A History of Luminescence*, p. 333; Neu, 1567; Smith, 187)

GANS, Johann Ludwig

Corallorum Historia, qua mirabilis eorum ortus, locus natalis, varia genera, praeparationes Chymicae quamplurimae, viresque eximiae proponuntur.

Frankfurt: Sumptibus Lucae Jennisi. 1630.

First edition. 8vo. 8 leaves, 174 pp., 1 leaf (blank). Woodcut vignette on title page, and copperplate engraving of coral (facing p. 1). Characteristic light embrowning of paper; otherwise very good copy in contemporary vellum. From the library of the zoologist Charles Atwood Kofoid (1865–1947), with his bookplate. Bound with: Censorinus, *De Die Natali* (Leyden, 1642).

GANS (fl. 1630) was a physician at Frankfurt, and this comprehensive work on coral is largely chemical and medical in content. At this period, coral was believed to be of mineral origin and was usually grouped with stones. Gans was well read in chemistry and quotes works by Beguin, Croll, Libavius, Paracelsus, Sala, Wecker, et al. The reactions of coral with acids and alkalies are discussed clearly, and the preparation of calcium acetate—by dissolving coral (calcium carbonate) in vinegar (dilute acetic acid)—is described. Of interest to the historian of organic chemistry is the clear description of the preparation of acetone (spiritus corallium) by the pyrolysis of anhydrous calcium acetate (pp. 48–49). Thorndike (VII, 253–254) describes and quotes from this work, stating that "the demand for Gans' book was sufficient to induce an enlarged edition" (Frankfurt, 1669; Eales, 402). (Duveen, 235; Ferchl, 171; Neu, 1568; Watt, I, 399n; Wellcome, I, 2676)

GARNETT, Thomas

Observations on a Tour through the Highlands and Part of the Western Isles of Scotland, particularly Staffa and Icolmkill: to which are added, a description of the Falls of the Clyde, of the country round Moffat, and an analysis of its mineral waters. . . .

London: Printed by Luke Hansard, . . . for T. Cadell, Junior, & W. Davies. 1800.

First edition. 2 vols., 4to., in 1. I: x, 338 pp. II: (ii), 275, (1) pp., 6 leaves. Large folding map of Scotland (strengthened at the folds), map of Loch Lomond, and 52 oval aquatint plates by W. H. Watts. Very good copy in contemporary half calf, marbled boards, spine gilt in compartments, maroon label.

A PUPIL OF Joseph Black, Garnett graduated M.D. at Edinburgh (1788) and lectured on chemistry at Manchester, Glasgow, and elsewhere. He practiced at Harrogate, where he analyzed the waters and in 1798 became professor in Anderson's College, Glasgow. His lectures were very successful, but after his wife died in childbirth in 1798 his spirit was broken, and at the Royal Institution in 1799 his lectures were a failure. He died of typhus contracted in his duties at Marylebone Dispensary. Dedicated to Benjamin, Count Rumford, the present work describes Garnett's tour in Scotland and is of considerable chemical and mineralogical interest. A description of the aims, plans, and modus operandi of Anderson's College is given. "A valuable work . . . interesting even now as an index to subsequent changes" (D.N.B.). The beautiful oval plates, reminiscent of Gilpin's in his books on picturesque landscape, add great charm to the book. Despite its chemical content and interest, this work does not appear in the catalogues of the major early chemical libraries. (Abbey, 482; D.S.B., V, 276; Poggendorff, I, 846; Watt, I, 401k; Wellcome, III, 90)

GARNETT, Thomas

Outlines of a Course of Lectures on Chemistry. By T. Garnett, M.D. . . .

Liverpool: Printed by J. M'Creery, and sold by Cadell and Davis, London. 1797.

First edition. 8vo. 2 leaves, 176 pp. Fine copy in modern boards, crimson gilt-lettered label. From the library of Sir Stephen Love Hammick (1777–1867), with his inscription in ink on the recto of leaf following title: "Stephen Hammick Junr. Assistant Surgeon, Royal Hospital, Plymouth." Bookplate: Professor Franz Sondheimer.

GARNETT (1766–1802) was originally a physician but changed to chemistry when he was invited to lecture on that subject in Liverpool. His course of chemistry was so successful that he repeated it in Manchester and Glasgow. In 1799 he was appointed the first professor of chemistry in the newly founded Royal Institution. The present publication contains the outlines of the thirty lectures he gave at Liverpool. This is a particularly interesting association copy, as it belonged to Sir Stephen Love Hammick when he was a young assistant surgeon. He became surgeon to the Naval Hospital, Plymouth, in 1803. Later made baronet, he was surgeon extraordinary to George IV and William IV. He was an original member of the University of London senate. For further details on Hammick, see the D.N.B. A very scarce book. Not in Blake, Cushing, Duveen, Edelstein, Ferguson, Ferguson Coll., Morgan, Neu, Osler, Partington, Smith, Waller, Wellcome, etc. (Bolton, 468; Ferchl, 172; Munk, III, 4; Poggendorff, I, 846; Sondheimer, 583)

GARNETT, Thomas

Popular Lectures on Zoonomia, or the Laws of Animal Life, in Health and Disease. . . .

London: From the Press of the Royal Institution . . . published for the benefit of the Author's Children by his Executors . . . 1804.

First edition. 4to. 2 leaves, xxii, 325, (1) pp. Fine engraved frontispiece portrait of Garnett (by Lenney, dated 1 January 1805). Diagrams in text. Occasional minor foxing; otherwise fine copy with wide margins, in contemporary gilt-ruled tree calf, maroon morocco label gilt.

ESSENTIALLY CONCERNING what is now termed biochemistry and biophysics, this interesting work contains an eighteen-page biography of Garnett. Dedicated to the managers of the Royal Institution by the trustees of the subscription in favor of the author's small children, there is a long list of subscribers at the end, including many famous scientists and physicians (e.g., Accum, Bostock, Cavendish, Davy, Hatchett, Higgins, Nicholson, Wedgwood, and Young). The fourteen lectures concern respiration, circulation and chemical function of the blood, digestion, nutrition, taste, smell, chemical action of light, biological oxidation, electricity, etc. Not in Cushing, Osler, Waller, or the usual early chemical bibliographies. (D.S.B., V, 276; Freeman, 1309; Munk, III, 4; Partington, IV, 32; Watt, I, 401m; Wellcome, III, 90)

GARNETT, Thomas

A Treatise on the Mineral Waters of Harrogate: containing the history of these waters, their chymical analysis, medicinal properties, and plain directions for their use. By T. Garnett, M.D. . . . With an appendix by J. Jaques, M.D., Physician at Harrogate, . . .

Snaresbrough: Printed by Hargrove and Sons . . . 1810.

Fifth edition. 12mo. 225, (1) pp. Very good copy in contemporary gilt-ruled half calf, marbled boards, maroon morocco label gilt. From the library of Apley Castle, with name in ink on front pastedown endpaper.

ORIGINALLY PUBLISHED at Bradforth (1792), the present edition is the first to contain the additions by Garnett's friend John Jaques (d. 1832), who gives (in the appendix) thirteen case histories of his patients who were cured by drinking these mineral waters. The historical part discusses the works of Edmund Deane, Michael Stanhope, John French, George Neale, William Simpson, Thomas Short, et al. The seventh (and presumably final) edition appeared at Knaresborough in 1822. The fifth edition is not cited by Partington, Poggendorff, Waring, Watt, or Wellcome, all of whom mention other editions. (Duveen, 236)

**GARNETT, Thomas, AIKIN, Charles
Rochemont, and AIKIN, Arthur**

Annals of Philosophy, Natural History, Chemistry, Literature, Agriculture, and the Mechanical and Fine Arts. For the Year 1800 (1801). . . .

London: Printed for T. Cadell, Jun. and W. Davies. 1801, 1802.

First edition. 2 vols., 8vo. I: 1 leaf, iv pp., 1 leaf, 488 pp. Engraved frontispiece of electrochemical apparatus (Lowry sculp.). II: viii, 432 pp., 4 leaves. With the half title (not required in vol. I). Magnificent copy, crisp and in mint condition, from the celebrated library of Prince Starhemberg, with his bold signature (G. Starhemberg) in ink on front pastedown endpaper of each volume. Bound in the characteristic gilt-ruled green half morocco, marbled boards, pink morocco labels gilt, of this famous library.

THE RARE first two volumes of this short-lived journal. A third and final volume was published in 1803. Garnett edited the first volume, and, upon his death in 1802, C. R. and A. Aikin edited the second and third volumes. Concise accounts are given of the latest discoveries in chemistry and other sciences, with references to British and foreign journals. Not in the usual early chemical bibliographies. (D.S.B., V, 276; Ferchl, 172; Partington, IV, 31; Poggendorff, I, 846; Watt, I, 401k)

GAROFALO, Biagio

De Antiquis Auri, Argenti, Stanni, Aeris, Ferri, Plumbique Fodinis, Blasii Caryophili Opusculum.

Viennae, Pragae et Tergesti, Typis et Sumtibus Joannis Thomae Trattner, Caes. Reg. Mai. Aulae Typographi & Bibliopolae. 1757.

First edition. 4to. xx, 152 pp., 1 leaf (errata). Title page in red and black. Woodcut on title and page 1. Small copperplate on page 56. Slightly browned; otherwise a fine, large paper copy, in contemporary quarter vellum, speckled boards.

AN INTERESTING and very scarce work on the metallurgy of the ancients, with references to the writings of Pliny, Strabo, Dioscorides, Plutarch, Xenophon, et al. There are also references to more recent authors, for example, Barba, Edward Brown, Homberg, and others. Garofalo (1677–1762) was born in Naples and died in Vienna. His other works include *De antiquis Marmoribus opusculum* (Traj. ad Rhen, 1743, 4to.) and *De veterum Clypeis opusculum* (Leyden, 1751, 4to.), which, like the present, were published under the pseudonym Blasius Caryophilus. Not in Blake, Bolton, Caillet, Edelstein, Ferguson, Hoover, Morgan, Osler, Partington, Smith, Waller, etc. (Duveen, 119; Ferchl, 172; Ferguson Coll., 255; Neu, 1570; Poggendorff, I, 847; Watt, I, 199k; Wellcome, III, 91)

GAS LIGHT & COKE COMPANY

In Parliament. Remarks upon the Bill for Incorporating the Gas Light and Coke Company.

London: Printed by George Sidney, Northumberland-Street, Strand. 1809.

Sole edition. 8vo. 2 leaves, 19, (1) pp. Mint copy in modern marbled boards, maroon morocco label, gilt.

THE FIRST attempt to justify the formation of a company for manufacturing coal gas, containing a brief history of the preparation of gas from the rudimentary experiments of Van Helmont and Clayton (before 1664), to those of Richard Watson, Joseph Priestley, and especially William Murdock (1754–1839). The anonymous author makes a convincing case for lighting the center of London and urges those in the government who oppose such a useful invention to reconsider their position and vote in favor of the Gas Light and Coke Company. The costs of lighting with whale oil and with coal gas are compared, and it is shown that much more “clear profit” can be made with gas. The Gas Light and Coke Company received its charter in 1812. Very rare. (Sotheran, Cat. 741 [1913], 12297)

GAS LIGHT ESTABLISHMENTS

Observations on such parts of a report lately submitted to the House of Commons, on Gas Light Establishments, as relate to the dangers of explosion.

London: Printed for Rivingtons and Cochran. 1823.

Sole edition. 8vo. 24 pp. Good copy in gilt-lettered quarter cloth antique, marbled boards.

A COGENT REBUTTAL to an earlier report (possibly by Sir William Congreve) questioning the safety of gas lighting recently installed in London. The anonymous author contends that the manufacture and distribution of coal gas is safe, provided the proper precautions are taken to exclude air from the gasholders (“gasometers”) and gas mains. He discusses various accidents and explosions that occurred in earlier years but maintains that now “not only is the light considered safer than all others, but the inhabitants of neighbourhoods thickly populated in the vicinity of the largest gas light stations consider themselves perfectly secure” (p. 19). A very rare and interesting document in the history of coal-gas technology. Unrecorded in available bibliographies.

GASSENDI, Pierre

Abbrégé de la Philosophie de Mr. Gassendi. Par F. Bernier . . .

Paris: Chez Estienne Michallet, rue S. Jacques, à l'Image S. Paul, proche la Fontaine Saint Severin. 1677.

First Michallet edition, second issue. 12mo. 5 leaves, 509, (1) pp.; 1 blank leaf, lxxi, (1) pp. With 4 woodcut figures in text. Few leaves lightly browned; otherwise fine copy in original speckled calf, spine gilt.

GASSENDI'S *Opera Omnia* (Lyons, 1658) was published in Latin in six massive folio volumes, which were accessible to a limited number of scholars. Only when Gassendi's friend, secretary, and champion, the Montpellier physician François Bernier (1620–1688), undertook to publish the essence of Gassendi's ideas in the French language did his influence begin to grow and impress such great scientists as Boyle and Newton. This rare second Michallet issue, with reset title page, comprises the sheets of the first Michallet issue, which itself is made up of the sheets of the very rare Langlois first edition (Paris: J. & E.. Langlois, fils, 1674). There is a copy of the first Michallet issue in the British Library (Goldsmith, G179), but not of this issue. Bernier later greatly expanded his edition of Gassendi's works in French (Lyons, 1678, 8 vols., 12mo.; Lyons, 1684, 7 vols.; D.S.B., V, 290). No copy of the present issue has been located in the usual bibliographies.

GASSENDI, Pierre

Philosophiae Epicuri Syntagma, Continens Canonicam, Physicam, & Ethicam. . . .

London: Ex Officina Rogeri Danielis. 1660.

First English edition. 12mo. 8 leaves, 256 pp. Ornamental woodcut on title page. Very good copy in original mottled calf, spine gilt, dark maroon morocco label.

A PROFESSOR OF mathematics, Gassendi (1592–1655) studied and taught at Aix, was ordained in 1617, and revolted against scholastic philosophy. More a philosopher than a scientist, his interest in the atomic constitution of matter came from his study of Epicurus, whose theory he published in 1649 in the form of an edition of the tenth book of Diogenes Laertios. The present is Gassendi's chief philosophical work, described by B. Rochot (D.S.B., V, 289) as his “masterpiece.” In it he revived the atomic theory of Epicurus, which is extensively discussed (pp. 21–66). Boyle greatly approved the work of Gassendi. The atomic theory as it is described herein is covered by Partington. A later duodecimo edition appeared (London: Johannes Redmayne, 1668). (Partington, II, 459; Wing, G296)

GASSMANN, Franz

Bifolium Metallicum, seu Medicina duplex, pro metallic & hominibus infirmis, a Proceribus Artis Hermeticae, sub Titulo Lapidis Philosophici, inventa, elaborata & posteritati transmissa, jam vero denuo recognita, cum omnibus circumstantiis, requisitis & manipulationibus, sine dolo, methodice tradita, & hujus divinae Scientiae amatoribus proposita a Pantaleone, Hermeticae Sophiae perito.

Nuremberg: Apud Pauli Fürstii, Bibliopolae b. m. viduam & haeredes. 1676.

First edition. 8vo. 55, (1) pp. Fine copy in modern maroon cloth, spine gilt-lettered and dated.

A NATIVE OF Silesia, Gassmann (fl. seventeenth century) was a physician at Passau and Vienna and also a practicing alchemist who wrote under the pseudonym Pantaleone. Much esteemed at the time, this work was reprinted in the *Ginaecium Chemicum* (1679, p. 453) and by Manget in his *Bibliotheca Chemica Curiosa* (1702, vol. 2, p. 718). Ferguson states that Gassmann "claimed to have made mercury 'magnetic,' so that it followed gold as a needle the magnet. He acquired considerable reputation by his operations with mercury, and by some he was believed. He certainly believed in himself, as can be seen by his title pages. Becher, however, regarded him as a cheat, and with this conviction wrote *Pantaleon delarvatus*. Becher does not name him in this tract, but refers to him constantly under the initial of G." Not in Bolton, Caillet, Edelstein, Guaita, Mellon, etc. (Duveen, 448; Ferchl, 393; Ferguson, II, 164 [not in Young Coll.]; Ferguson Coll., 256; Krivatsy, 4578; Neu, 1571; Partington, II, 241; Thorndike, VIII, 378; Waite, 296)

GASSMANN, Franz

Examen Alchymisticum, quo, ceu Lydio lapide, Adeptus à Sophista & verus Philosophus ab Impostore dignoscuntur, institutum in gratiam Magnatum & eorum, qui, ex defectu multae lectionis & Vulcanicae experientiae, punctum Chymicum plenarie non intelligunt; ne tam turpiter a perditissimis istis fumivendulis ac impostoribus Thrasonicis, in opprobrium artis mere divinae, decipiantur. . . .

Nuremberg: Apud Pauli Fürstii, bibliopolae b. m. viduam & haeredes. 1676.

First edition. 8vo. 44 pp. Fine copy, in marbled boards antique, maroon morocco label, gilt.

IN THIS work Gassman critically examines the principles of the alchemists and condemns those who reject them. To support his beliefs he cites the writings of Agricola, Roger Bacon, Basil Valentine, Geber, Paracelsus, Philaletha, Ripley, Sendivogius, et al. Rare. (Duveen, 448; Ferchl, 393; Fer-

guson, II, 165; Ferguson Coll., 256; Krivatsy, 4579 [imperf.]; Neu, 1573; Partington, II, 642; Verginelli, 238)

GAUB, Jerome David

Oratio Inauguralis qua ostenditur Chemiam Artibus Academicis Jure esse inserendam. Habita XXI. Maji MDCCXXXI. Quum publicum Chemiam praelegendi munus in Academia Ligduno-Batavà auspicaretur.

Leyden: Apud Conradum Wishoff. 1731.

First edition. 4to. 48 pp. Large woodcut on title. Very good copy, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

GAUB (1705–1780) studied at Halle, Amsterdam, Harderwyk, and Leiden (M.D., 1726) under Boerhaave. In 1729 he succeeded Boerhaave, and this is his inaugural lecture after his appointment as professor of chemistry. The great importance of chemistry in every aspect of human life is stressed, and Gaub points out its use in pharmacy and the practice of medicine. He praises Boyle and Newton (p. 24) and his great teacher, Boerhaave (p. 45). He also acknowledges his debt to s'Gravesande (p. 44) for teaching him mathematics and philosophy. Gaub was the author of a number of standard works on pharmaceutical chemistry and materia medica. Very scarce. Not in Bolton, Duveen, Edelstein, Ferguson, Ferguson Coll., Neu, Poggendorff, Smith, Waller, Watt, Wellcome, etc. (Blake, 168; Ferchl, 172; Partington, II, 759)

GAUSSEN, Jean

Dissertation sur le Thermometre de Réaumur, . . .

Beziers: De l'Imprimerie de Jean-Joseph Fuzier, Avocat, Imprimeur du Roi. 1789.

First edition. 8vo. 279, (1) pp., 1 leaf (errata). Folding table (facing p. 128). Woodcut on title page. Fine, crisp copy, unpressed and uncut, in modern boards, printed paper label on spine.

AN INTERESTING and historically significant work on the Réaumur thermometer, by Gausсен (1737–1809), a scientist of Montpellier. After considering the several thermometric scales then in use, Gausсен concludes that a choice should be made between the Deluc scale (0°–80°) and the centigrade scale (0°–100°) of Christin. He rejects the centigrade scale of Celsius as being illogical, because Celsius had set the boiling point of water at 0° and the melting point of ice at 100° (i.e., upside down). Gausсен believed that in France it would be difficult to adopt the centigrade scale, as the Réaumur thermometer (0°–80°) had been so long in use. The book appeared just before the revolution,

and the decision to adopt the centigrade scale was made on 1 April 1794. There are numerous references to subjects of chemical interest. Pages 129–279 comprise Réaumur's own writing on the thermometer taken from the *Memoirs of the Paris Académie des Sciences* and other sources, as well as extracts from other authors. The book is rare and is not included in the considerable bibliography in Torlais' *Réaumur*. Unknown to the usual bibliographers. (Middleton, *A History of the Thermometer*, 1966, pp. 120–121)

GAY-LUSSAC, Joseph Louis

Cours de Chimie, par M. Gay-Lussac, comprenant l'histoire des sels, la chimie végétale et animale. . . .

Paris: Pichon et Didier. 1828.

First edition. 2 vols., 8vo. I: 2 leaves, ii, v–xix, (1), 56 pp. (table), leçons 1–17 separately paginated. II: 2 leaves, leçons 18–33 separately paginated. Old stamp of the École de Physique et de Chimie, Paris, on title pages (inked out, not affecting text). Fine copy in contemporary quarter calf, marbled blue boards, rebacked with original gilt-ruled spines laid on.

ALTHOUGH ONE of the greatest chemists of his time, Gay-Lussac (1778–1850), professor of chemistry at the École Polytechnique and of physics at the Sorbonne, never wrote any textbooks. The present work was published from shorthand notes by one of his students, Marmet, and revised by Gaultier de Claubry. The thirty-three lectures, each separately paginated, were delivered between 11 April and 1 August 1828. They are preceded by an excellent index of subjects (56 pp.). Gay-Lussac gave his permission for publication but derived no financial benefit from the book. "In his lectures he defines 'équivalens chimiques ou proportions,' but also explains the atomic theory, 'confirmé par un tres grand nombre d'expériences'" (Partington). "The work is of special interest in connexion with the author's teaching on the constitution of salts" (Sotheran). Wellcome describes a copy with a different imprint (Brussels: H. Tarlier, 1828). A second edition appeared in 1833. (Bolton, 471; Cushing, G172; D.S.B., V, 327; Duveen, *Supplement*, 139; Edelstein, 958; Ferchl, 174; Honeyman, 1459; Partington, IV, 82; Poggendorff, I, 861; Sondheimer, 590; Sotheran, Cat. 832 [1932], 5271; Wellcome, III, 98)

GAY-LUSSAC, Joseph Louis

Instruction pour l'usage de l'Alcoomètre Centésimal et des tables qui l'accompagnent; . . .

Paris: Chez M. Collardeau. 1824.

First edition. 12mo. 22 pp., 17 leaves, pp. 55–59, (1) pp., 5 leaves, 6 pp., 17 leaves (i.e., total of 56 leaves). Very good copy in original simulated tree-calf boards.

AN IMPORTANT work containing directions and tables for the use of the centesimal alcoholometer invented by Gay-Lussac. His researches formed the legal basis for determining the alcoholic strength of beverages in France. He also invented several different thermometers, including a maximum and minimum thermometer for use at sea, an air thermometer, a portable barometer, a steam-injector pump, and other instruments. The present work and Gay-Lussac's contributions to alcoholometry are discussed by Crosland. Very scarce. Not in D.S.B., Duveen, Waller, Wellcome, etc. (Bolton, 471; M. Crosland, *Gay-Lussac*, 1978, pp. 190–193, 303; Darmstaedter, *Handbuch*, 355; Edelstein, 959; Ferchl, 174; Partington, IV, 85; Poggendorff, I, 861; Smith, 189; Sondheimer, 588)

GAY-LUSSAC, Joseph Louis

Instruction sur l'Essai des Matières d'Argent par la voie humide; . . . Publiée par la Commission des Monnaies et Médailles.

Paris: De l'Imprimerie Royale. 1832.

First edition. 4to. 88 pp. With 6 large folding plates of apparatus (engraved by LeBlanc). Fine copy, entirely uncut, in contemporary embossed purple cloth, with original printed paper label on front cover.

"GAY-LUSSAC MADE a major contribution to chemical analysis in 1832 when he introduced a volumetric method of estimating silver, which he justly claimed was much more accurate than the centuries old method of cupellation. He proposed two parallel procedures for this method, one gravimetric, which he said was the more accurate, and one volumetric, which had the advantage of simplicity. The principle of both methods was the precipitation of silver chloride" (D.S.B.). The quantity of silver chloride was determined by titration with the use of standard solutions. Gay-Lussac was appointed assayer to the French mint in 1829. The precipitation-titration method for analyzing silver is still used today, "and its precision is not inferior to any of the indicator methods" (Szabadvary). In the mid-nineteenth century Jean Servais Stas (1813–1891) employed Gay-Lussac's gravimetric analysis of silver (by precipitation of AgCl) as the starting point of his classic researches on the determination of the atomic weights of the elements (see Partington, IV, pp. 876–878). One of the most important books published by Gay-Lussac. Not in Duveen, Thornton & Tully, Wellcome, etc. (Bolton, 471; M. Crosland, *Gay-Lussac*, 1978, pp. 188–190, 219–222; D.S.B., V, 325, 327; Edelstein, 960; Ferchl, 174; Partington, IV, 85; Poggendorff, I, 861; Smith, 189; Sondheimer, 589; Sotheran, Cat. 672 [1907], 1497 ["Scarce"]; F. Szabadvary, *History of Analytical Chemistry*, 1966, pp. 224–225, 273)

GAY-LUSSAC, Joseph Louis*Recherches sur l'Acide Prussique.*

Paris: Imprimerie de Mme. Ve. Perronneau. Novembre 1815.

First edition. 8vo. 103, (1) pp. Fine copy, uncut, with wide margins, in quarter calf antique, marbled boards, spine gilt-lettered and dated, with original blue wrappers bound in. Author's presentation copy to Nicolas Deyeux, with inscription in ink by Gay-Lussac on half title: "Mr. Deyeux de la part de l'auteur." Bookplate: Franz Sondheimer.

THE FIRST separate edition of the research carried out by Gay-Lussac on prussic acid (hydrocyanic acid, HCN). It first appeared in the *Annales de Chimie* (August 1815) and describes the preparation, chemical reactions, and determination of the physical properties (including vapor density) of prussic acid. "Gay-Lussac's analysis of prussic acid in 1815 is particularly important because he drew attention to the existence of a radical (-CN) that is fully analogous to the chlorine in hydrochloric acid and the iodine in iodic acid, the essential difference being that 'this radical is compound.'" This was the first example of the analysis of a carbon-containing radical. If this had been generally considered as an organic radical, it might have anticipated the radical theory of organic chemistry of the 1830s. In 1815 Gay-Lussac referred to prussic acid as a "true hydracid in which carbon and nitrogen replace chlorine in hydrochloric acid" (D.S.B.). Partington discusses Gay-Lussac's "outstanding research on cyanogen," which he discovered. Deyeux (1745–1837), the recipient of this copy, was pharmacist to Napoleon and professor of chemistry and pharmacy at the École Centrale (see Partington, III, 106). This separate edition is extremely rare. The following authorities cite only the original article in the *Annales de Chimie* (1815): D.S.B., V, 324; Ferchl, 174; Partington, IV, 85, 253). (Sondheimer, 587)

GAY-LUSSAC, Joseph Louis*Recherches sur l'Acide Prussique; Par M. Gay-Lussac.*

Paris: Imprimerie de Mme. Ve. Perronneau. Novembre 1815.

First edition. 8vo. 103, (1) pp. Fine copy in contemporary gilt-lettered green quarter sheep, marbled boards. Author's presentation copy to the great chemist Louis Bernard Guyton de Morveau (1737–1816), with inscription in ink by Gay-Lussac on half title: "Mr. Guyton de la part de l'auteur." Bookplate: H. F. Norman, M.D.

ANOTHER COPY of this important work, presented to Guyton de Morveau barely two months before he died on 2 January 1816. Guyton collaborated with Lavoisier, Berthollet, and Fourcroy in the founding of modern chemical

nomenclature. This copy has a distinguished provenance, having come from the library of Haskell Norman, psychiatrist and celebrated bibliophile, whose collection of early medical and scientific books was world famous. (Norman, 885)

**GAY-LUSSAC, Joseph Louis, and
POUILLET, Claude Servais Mathias***Leçons de Physique de la Faculté des Sciences de Paris, recueillies et rédigées par M. Grosselin, . . . Première partie, professée par M. Gay-Lussac. Deuxième partie professée par M. Pouillet.*

Paris: Chez Grosselin, Papinot, Hachette, Gautier. 1828.

First edition. 2 vols., 8vo. I: 4 leaves, 562 pp. II: 4 leaves, pp. 563–1047, (1) pp. With 21 folding engraved plates. Very fine, crisp set, in original quarter calf, gilt, brown marbled boards.

THE FIRST volume contains "Gay-Lussac's lectures on physics . . . published without his permission from shorthand notes by Grosselin" (Partington [who gives wrong pagination]). Many aspects of physics are covered, including topics of chemical importance (e.g., gaseous phenomena, distillation, deliquescence, and freezing). "Contains his own accounts of all his physical discoveries" (Smith). The thirty-six lectures were presented from 6 November 1827 to 18 March 1828. The second volume contains lectures 37–69, on magnetism, electricity, acoustics, and optics, given by Pouillet (1790–1868) from 22 March to 29 July 1828. These lectures contain topics of chemical interest (e.g., voltaic piles, galvanism, and electrochemistry). In 1826 Pouillet became assistant professor of physics, first under Gay-Lussac and later under Dulong. He helped to make Ohm's law of resistance (1827) more widely known, and "his lectures were widely read" (D.S.B.). Very rare. Smith and Wellcome list only volume I, the Wellcome copy being imperfect. (D.S.B., V, 327, XI, 111; Partington, IV, 82; Poggendorff, I, 861; Smith, 188; Wellcome, III, 98)

**GAY-LUSSAC, Joseph Louis, and
THENARD, Louis Jacques***Recherches Physico-Chimiques, faites sur la pile; sur la préparation chimique et les propriétés du potassium et du sodium; sur la décomposition de l'acide boracique; sur les acides fluorique, muriatique et muriatique oxigénée; sur l'action chimique de la lumière; sur l'analyse végétale et animale, etc. . . .*

Paris: Chez Deterville. 1811.

First edition. 2 vols., 8vo. I: xv, (1), 405, (1) pp. II: 2 leaves, 443, (1) pp. With 6 folding plates (engraved by Adam). Near-mint set in contemporary marbled boards, backed in modern gilt-ruled calf, maroon morocco labels, spines dated.

A CLASSIC BOOK in the history of chemistry. Davy's isolation of metallic sodium and potassium, by passing electric current from a voltaic pile through fused sodium (or potassium) hydroxide, stimulated Gay-Lussac and Thenard to pursue similar researches using a large voltaic pile (six hundred pairs of plates) given to the École Polytechnique by Napoleon. As only small amounts of sodium and potassium were produced electrolytically, Gay-Lussac and Thenard devised a chemical process for preparing these metals by fusing the hydroxides with red-hot iron filings. These important researches are described herein, as are their discovery of boron (by fusing boric acid with potassium), investigations on oxymuriatic acid (chlorine) and fluoric acid (boron trifluoride), Gay-Lussac's law of combining volumes of gases, photochemical experiments (e.g., action of sunlight on chlorine and ethylene mixtures), new methods of analyzing inorganic and organic compounds, etc. "The most important of Gay-Lussac's larger publications" (Duveen). (Bolton, 472; M. Crosland, *Gay-Lussac*, 1978, pp. 75–80, 314; D.S.B., V, 320, 326; Duveen, 237; Edelstein, 961; Ferchl, 174; Honeyman, 1460; Kopp, *Geschichte der Chemie*, I, 373; Morgan, 304; Mottelay, 388; Partington, IV, 80; Poggendorff, I, 861; Smith, 189; Sondheimer, 586; Thornton & Tully, 215; Weeks, *Discovery of the Elements*, 1960, pp. 576–580; Wellcome, III, 98)

GAZ HYDROGÈNE

Extrait du Rapport Général sur les Travaux du Conseil de Salubrité, pendant l'année 1822, avec des notes et observations pour servir de réponse aux critiques publiées contre l'Eclairage par le Gaz Hydrogène. . . .
Paris: Chez L'advocat, Libraire, etc. 1823.

First edition. 8vo. 35, (1) pp. Fine copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A SPIRITED DEFENSE of the newly invented coal-gas industry and the use of gas for lighting streets, houses, and public buildings in France. The anonymous author gives a brief history of the development of the industry, citing the successful work of Murdock and Winsor in England and several chemists and engineers in France. Despite a devastating explosion at a gasworks in London in 1822, the author states that by carefully containing the gas in properly constructed gasholders, the further development of the gas industry in France should be encouraged. Rare. Not traced in the usual bibliographies.

GAZZERI, Giuseppe

Compendio d'un Trattato Elementare di Chimica Generale ed Applicata, specialmente alla Farmacia del Prof. G. Gazzeri.

Florence: nella Stamperia Piatti. 1819.

First edition. 2 vols., 8vo. I: 2 leaves, viii, 338 pp., 1 leaf (errata). II: 1 leaf, 347, (1) pp. Very good copy in contemporary dark-green half calf, marbled boards, spines gilt-ruled.

AN IMPORTANT course of a hundred lectures on general and industrial chemistry, with references to the latest discoveries. The Italian chemist Gazzeri (1771–1847) dedicated the book to Maria Luisa di Borbone, queen of Charles IV of Spain, and wrote an interesting preface. Among the author's other works is the treatise *Degl'Ingrassi* (Florence, 1819), in which he first pointed out that soil is capable of extracting certain substances from manure. He also translated the works of Berzelius into Italian. Provenzal (*Profili Bio-Bibliografici di Chimici Italiani*, 1938, pp. 99–102) gives a detailed biography of Gazzeri. The first edition is very rare. Bolton (p. 472) lists only the second edition, giving the wrong date (1728), and the same edition is cited by Duveen (p. 237). The *National Union Catalogue* (N.U.C.) lists only the third edition of 1833, with one copy in American libraries (Library of Congress). Not in D.S.B., Edelstein, Ferchl, Morgan, Partington, Poggendorff, Smith, Sondheimer, Waller, Wellcome, etc. (Provenzal, 100)

GAZZERI, Giuseppe

Due Lezioni del Prof. Giuseppe Gazzeri colle quali egli ha cominciato i suoi pubblici corsi negli anni scolastici 1840–41, 1841–42.

Florence: Dalla Tipografia di Luigi Pezzati. 1841.

First edition. 8vo. 55, (1) pp. Fine copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

TWO LECTURES on chemistry given by Gazzeri during the academic years 1840–42. He lists a large number of newly discovered organic compounds (pp. 14–16), mentioning the researches of Berzelius, Dumas, and Liebig, and pleads for a systematic nomenclature for inorganic and organic compounds. Not in Provenzal or the usual bibliographies.

GEBAUER, Georg Christian

De Aqua Calda, occasione Legis et Gemmae. Praeside Euchario Gottlieb Rink, . . . MDCCXIV. XXII Septembr. solemniter disputabit auctor Georgius Christianus Gebauerus, Vratislaviensis.

Altdorf: Typis Meyerianis. (1714).

First edition. 4to. 32 pp. Copperplate title-vignette. Historiated woodcut capital, head- and tailpieces. Very good copy, uncut, with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A DISSERTATION OF some chemical interest, on the ancient Greek and Roman hot mineral baths and their laws. In addition to many classical writers, the author refers to the works of Andrea Bacci, Francis Bacon, et al. Gebauer (1690–1773) presented this dissertation at the University of Altdorf, under the direction of the professor of law Euchario Gottlieb Rink. Even in the early eighteenth century, Manget (*Bibliotheca Scriptorum Medicorum*, 1731, vol. I, pt. 2, pp. 441–442), who gives a detailed biography of Gebauer, did not know the present extremely rare work, which was later enlarged as *De caldae et caldi arpuv veteres potu liber singularis* (Leipzig, 1721, 96 pp.: see Blake, 170; Wellcome, III, 98). Not traced in the usual bibliographies.

GEBER

Alchemiae Gebri Arabis philosophi solertissimi, Libri, cum Reliquis, ut versa pagella indicabit. . . .

Berne: Mathiam Apiarium, Sumptu & expensis Honesti viri, Ioannis Petrei, Norinbergensis Typographi. Mense Augusti. 1545.

Second Petreus edition. 4to. 8 leaves, 302 pp., 1 leaf. Title within elaborate woodcut border, 16 large woodcuts (furnaces and apparatus), and woodcut device at the end. Italic and roman letter. Several pages with neat contemporary underlining, and lower blank corners of a few early leaves damp stained; otherwise, remarkably fine, crisp copy, in modern half calf, marbled boards, with gilt masonic symbols on spine, blue morocco label. Rosicrucian engraved bookplate, dated 1900, on front pastedown endpaper.

A REPRINT OF the edition published in Nuremberg (1541), edited by Chrysogonus Polydorus (see Ferguson, I, 18). Illustrated with sixteen superb woodcuts of chemical operations. The four works by Geber (pp. 1–207) are I) *De investigationis perfectionis metallorum*, II) *Summa perfectionis metallorum*, III) *De inventione veritatis seu perfectionis metallorum*, and IV) *De fornacibus construendis*. Additionally, there are six famous alchemical works: Roger Bacon, *Speculum alchemiae*; Richard the Englishman (of Wendover, died 1252), *Correctorium alchemiae*; unknown author, *Rosarius minor, de alchemia*; Khalid ibn Yazid, *Liber secretorum alchemiae*; Hermes Trismegistus, *Tabula Smaragdina de alchemia*; and Hortulanus, *Tabulam Smaragdinam Hermetis*. A beautifully printed book and “scarce edition” (Duveen). Geber’s works are very important as they contain the main chemical knowledge of medieval Christendom. (British Library, *S.T.C. German Books, 1455–1600*,

p. 434; Duveen, *Supplement*, 141; Edelstein, 964; Ferchl, 175; Ferguson, I, 302 [not in Young Coll.]; Ferguson Coll., 344; Hoover, 445; Partington, II, 30; Smith, 249; Thorndike, V, 537; Wellcome, I, 2716)

GEBER

Geberi Arabis chimia sive traditio summae perfectionis et investigatio magisterii innumeris locis emendata, à Caspare Hornio medico Reip. Noribergensis. Accessit ejusdem medulla alchimiae Gebricae omnia edita à Georgio Hornio.

Lugduni Batavorum (i.e., Leyden): Arnoldo Doude. 1668.

First edition by Horn. 12mo. 10 leaves, 279 pp. With the beautiful engraved title page depicting a dark-skinned man holding a shield on his left arm, a lance in his right hand, and with a palm tree behind him with a crouching leopard at its base. Pages 241–279 are misnumbered 141–179. Very good copy in contemporary vellum.

THE PRESENT edition of Geber’s works was edited by Caspar Horn (1583–1653), a pupil of Sennert and M.D. of Basel, 1616. He practiced medicine in Freiberg most of his life, and his only literary work was apparently this edition of Geber, which, at his death, was still in manuscript. The manuscript was then taken over by Georg Horn (1620–1670), professor of history at Leiden, and after suitable revision it was published in the present edition. The eight leaves following the title page comprise a dissertation on alchemy and its truth (*Dissertatio de alchimia ejusque veritate*) by Georg Horn, in which the antiquity of alchemy is established. References to ancient, medieval, and contemporary alchemists are made (e.g., Lully, Flamel, and Helvetius), and the apparent transmutation of lead into gold by Helvetius in 1667, just one year before the publication of this work, is described. Geber’s *Summa perfectionis magisterii* occupies pages 1–214 and is followed by *Gebri Arabis philosophi et alchimistae* (pp. 215–234), and finally *Alchymiae veteris medulla ex Gebri Arabis philosophi antiquissimi & consummatissimi libris extracta, et in aphorismos centum contracta* (pp. 235–279). This final section, divided into a hundred paragraphs, presents a digest of Geber’s methods and procedures for effecting the transmutation of lead and mercury into gold. According to Ferguson the medulla appears here for the first time. (Bolton, 985; Caillet, 4419; Duveen, 239; Ferchl, 175; Ferguson, I, 299; Neu, 2046 Osler, 2715; Rosenthal, 339; Smith, 249; Wellcome, III 98)

GEBERI PHILOSOPHI
AC ALCHIMISTAE
MAXIMI, DE ALCHIMIA
LIBRI TRES.

Eiusdem liber inuestigationis perfecti magisterij, artis Alchimicae.

Iis additus liber trium verborum.

Epistola item Alexandri imperatoris, qui primus regnavit in Graecia,
Persarum quoque extitit imperator: Super eadem re.



Borbonius -

Geber. Geberi Philosophi ac Alchimistae Maximi. Strassburg, 1531.

GEBER

Geberis Philosophi ac Alchymistae Maximi, de Alchimia Libri Tres. Ejusdem liber investigationis perfecti magisterii, artis Alchymicae. Iis additus liber trium verborum. Epistola item Alexandri imperatoris, qui primus regnavit in Graecia, Persarum quoque extitit imperator: Super eadem re. (Colophon:) Strassburg: Johannis Grieneringer. 29 August, 1531.

Second Strassburg edition. Folio (in 6s). 60 leaves. Roman letter, double column. Large woodcut figure on title and 10 woodcuts in text. Woodcut capitals and tailpiece. Neat early signature (C. Borbonius) on title, few insignificant inner-marginal wormholes; otherwise fine copy in contemporary calf.

A VALUABLE ALCHEMICAL treatise that was originally attributed to the Arab Al-Tarasusi Jabir ibn Haiyan, a chemist known as Geber (fl. eighth–ninth century). Recent research has shown that this work was written by an anonymous thirteenth- or fourteenth-century author (pseudo-Geber), who possessed more advanced chemical knowledge but who chose to have his writings accepted as translations into Latin from Arabic. The author was probably a Spaniard versed in Arabian chemistry, and this Latin treatise exerted an epochal influence upon alchemists of the later Middle Ages and Renaissance. The contents of this work were printed from a manuscript in the Vatican (ca. 1470) in an undated incunable edition (Rome: Eucharius Silber, ca. 1480), and this was followed by another undated edition (Rome: Marcellus Silber, ca. 1513–20). The first Strassburg edition in Latin, printed by Johann Grueneringer, appeared in 1529 (reissued 1530). The present second edition, including additional material, is the most complete of the Strassburg printings and is the earliest in the British Library. The edition of 1528 mentioned by Ferguson is a ghost. Very rare. Bolton (p. 985) and Mellon (no. 10) describe the 1529 edition only. (British Library, *S.T.C. German Books, 1455–1600*, p. 434; Duveen, 238; Ferguson, I, 302 [not in Young Coll.]; Ferguson Coll., 343; Hirsch, *Chymia*, 3, 132; Thorndike, *Ambix*, 2, 29; Thorndike, V, 537; Watt, I, 465; Wellcome, I, 2714)

GEBER

Geberis Philosophi perspicacissimi Summa Perfectionis magisterii in sua natura ex bibliothecae Vaticanae exemplari undecunq̄ emendatissimo nuper edita, cum quorundam Capitulorum, Vasorum, & Fornacum, in volumine alias mendosissime impresso omissorum. Librique investigatione magisterii, & Testamenti ejusdem Geberis, ac Aurei Trium verborum Libelli, et Avicennae summi medici & acutissimi philosophi Mineralium additione castigatissima. (Colophon:) Venice: Apud Dominum Joannem Baptistam Pederzanum Brixiensem. 1542.

First Venice edition. 8vo. 8 leaves (last blank), 126 folios, 2 leaves. Full-page woodcut of furnace on verso of title page, and woodcuts of furnaces and alembics on 8 pages. Woodcut device on verso of final leaf. Italic letter. Old repair to blank bottom margin of title page, few minor stains; otherwise fine, crisp copy in contemporary vellum.

THE FIRST edition in octavo format of this classic alchemical work, and the first to contain the *Testamentum*. "It was unknown to Schmieder, who mistakenly states that the *Testamentum* first appeared in the edition of Berne, 1545" (Duveen). This edition, also unknown to Brunet and Graesse, first includes Avicenna's *Mineralia* and his *Interpretatio epistolae Alexandri Regis*. Other works in this important volume are Authoris Ignoti, *Philosophici lapidis secreta metaphorice describentis, opusculum*; Merlini, *Allegorica*; Rachaidibi, *De materia philosophia lapidis* and his *Fragmentum*. The penultimate leaf has a second colophon: *Venetiis apud Petrum Schoeffer: Germanum, Maguntinum. Anno 1542*. Geber gives clear directions for the preparation of many chemical compounds and describes calcination, cupellation, furnaces for distillation, etc. Geber's importance in the history of science has not been sufficiently examined. Very rare. Not in British Library, Durling, Mellon, etc. (Bolton, 985; Duveen, 238; Ferguson, I, 302 [not in Young Coll.]; Ferguson Coll., 344; Neu, 2044; Smith, 250; Thorndike, *Ambix*, 2, 29; Wellcome, I, 2717)

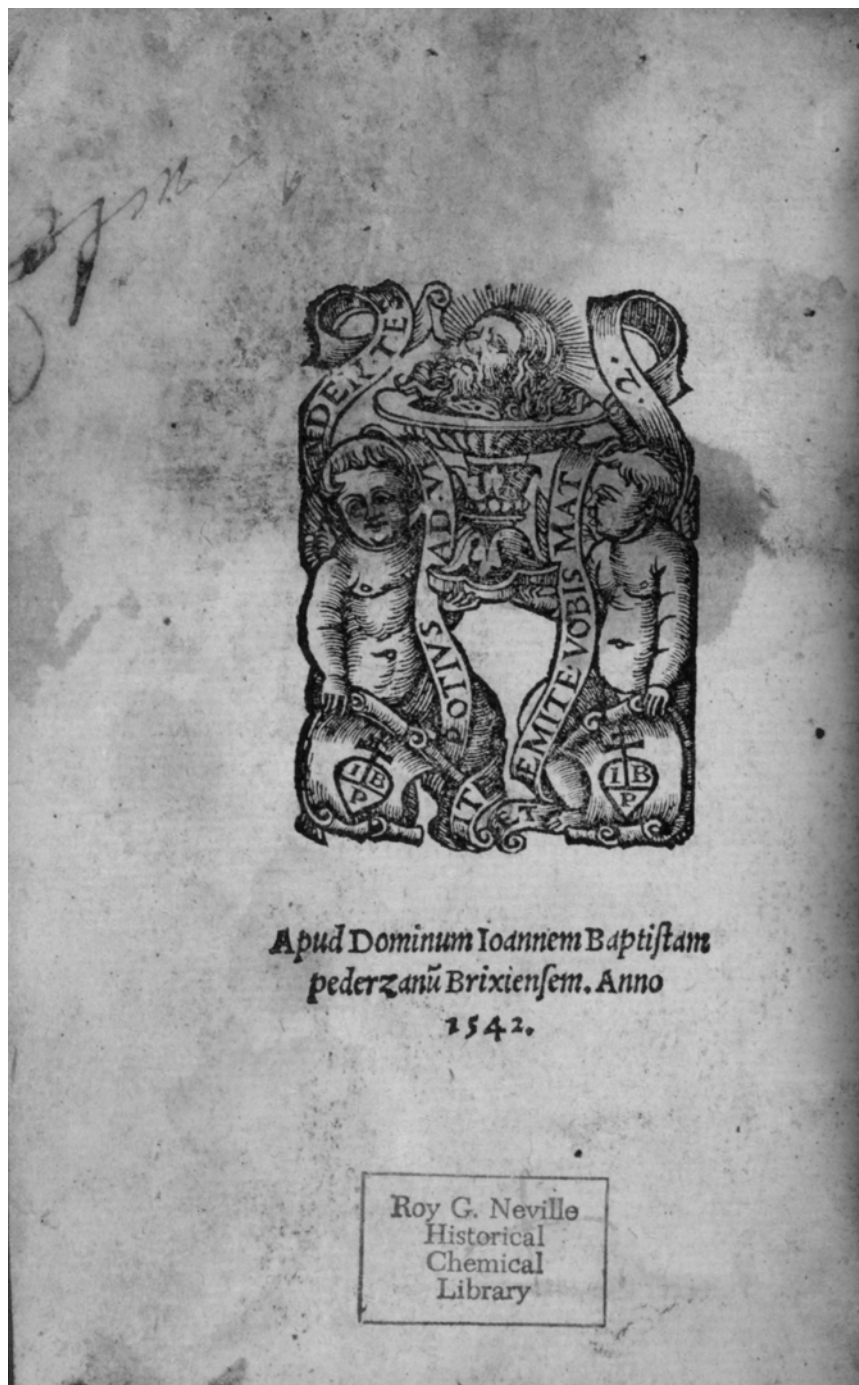
GEHEMA, Janusz Abraham à

Diaetetica Rationalis das ist: auff unläugbahren festen principiis, gesunder Vernunft und wahren experience wolgegründete Lebens Ordnung, wodurch ein jeder Mensch in seinem Stande, seine Gesundheit bewahren, und ein von mancherley beschweren befreytes Leben hie auff Erden führen könne. Beschrieben von Jano Abrahamo à Gehema, Equite Med. Doct. . . .

Bremen: Gedruckt bey Herman Brauer, . . . 1688.

First edition. 12mo. 96 pp. Very fine copy in contemporary vellum. From the Prince Furstemberg library, Donaueschingen. Bound with: Glaser, C., *Chimischer Wegweiser* (1684); Gehema, J. A., à. *Der . . . Feld-Medicus* (1689); and Zobel, F., *Tartarologia Spagirica* (1684).

AN EARLY BOOK on dietetics, of biochemical interest for its discussion of the physiological effects produced by drinking beer, wine, tea, coffee, etc. There is also a section on the circulation of the blood. Gehema (1647–1715), Polish knight, doctor of medicine, and physician to the Duke of Mecklenburg, was councillor to the king of Poland. He was an ardent disciple of Descartes and the author of many books and dissertations on medical subjects. Gehema was one of the first to point out that fresh fruit and vegetables should be part of the diet to achieve and maintain good health. He thus anticipated the discovery of vitamins over



Geber. Geberis Philosophi perspicacissimi Summa Perfectionis magisterii. Venice, 1542.

two centuries later. Ferchl, Waller, and Wellcome list several titles by Gehema, but not this. Even Manget, writing before 1731 in his *Bibliotheca Scriptorum Medicorum* (I, part 2, p. 443), does not mention this title in his list of books by Gehema. An extremely rare work, to which no bibliographical reference has been found.

GEHEMA, Janusz Abraham à

Der Wohlversuchte Feld-Medicus, anweisende die Miszbräuche, welche biszhero bey Anstellung der Feld-Medicorum und Regiments-Feldscherer, als auch bey Einrichtung der Feld-Apothecken und Feld-Kasten eingeschlichen, sambt einem Ohnmaaszgeblichen Project, wie und auff was Weise alles könne remediret, und die Feld-Apothecken und Feld-Kasten nach denen besten Medicinischen principiis auff eine viel zuträglichere und compendieuse manier eingerichtet werden. Fürgestellt von Jano Abrahamo à Gehema, . . . Rostock: gedruckt bey Jacob Riecheln. 1689.

First edition. 12mo. 14 leaves, 68 pp. Very fine copy in contemporary vellum. From the Prince Furstemberg library, Donausingen. Bound with: Glaser, C., *Chimischer Wegweiser* (1684); Gehema, J. A., à. *Diaetetica rationalis* (1688); and Zobel, F., *Tartarologia Spagirica* (1684).

A FIRST-AID BOOK for use on the battlefield and in other situations, which is of considerable pharmaceutical and chemical interest. Gehema lists the chemicals and preparations that a physician must have for treating soldiers or other patients in emergencies. Ferguson says that the *Feld-Apothecke* is interesting, referring to a work of 1690 in which it is included. The *Wohleingerichtete Feldapotheker* appeared in 1688 (see Ferchl, 176) and was included in several of the author's works. Ferchl, Manget, Waller, and Wellcome list several titles by Gehema, but not this. An extremely rare book, to which no bibliographical reference has been found.

GEIGER, David

Disputatio Inauguralis Medica de Antimonio . . . praeside Dn. Alexandro Camerario . . . pro licentia . . . doctorales publico submittit auctor Davides Geiger, Althem. Ulmensis ad d. XXVI Septembr. . . Ann: MDCCXXXV.

Tübingen: Litteris Roebelianis. (1735).

First edition. 4to. 32 pp. Large woodcut headpiece and initial. Stain on fore-edge of first 4 leaves; otherwise very good copy, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

THE DOCTORAL dissertation of Geiger (dates unknown), presented under the direction of Alexander Camerarius (1696–1736), professor of botany and director of the botanical gardens at Tübingen. The author traces the history

and chemistry of antimony, its ores and compounds, their medicinal uses, etc., with references to Basil Valentine, Bohn, Glauber, Stahl, Tachenius, et al. Rare. Not in Blake, Cushing, Osler, Waller, Wellcome, or the usual early chemical bibliographies. (Ferchl, 82; Hoover, 338; Poggendorff, I, 365; Waring, 237)

GEIJER, Bengt Reinhold

Dissertatio Chemica de Mineris Zinci, quam . . . praeside Mag. Torb. Bergman, . . . Publice ventilandam sistit Benedictus Reinh. Geijer, Vermelandus. . . Die 20 Martii, Anni 1779.

Uppsala: Apud Joh. Edman. (1779).

First edition. 4to. 1 leaf, 30 pp. Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A DISSERTATION ON zinc ores, with details of their analysis by wet and dry methods, presented by Geijer (1758–1815), with Torbern Bergman presiding. Geijer's description of the phosphorescent properties of zinc sulphide (pp. 27–29) was unknown to E. N. Harvey. A revised version of this, Geijer's earliest publication, appeared in Bergman's *Opuscula Physica et Chemica* (Uppsala, 1780, vol. 2). French, German, and English translations also appeared, on which see Möstrom. Geijer was analyst at the College of Mines and later director of the Royal Controlworks in Stockholm. He published the first description of gadolinite in *Crell's Annalen* in 1788 (see Weeks, *Discovery of the Elements*, 1956, p. 696); also several papers on the production of high temperatures using an oxygen blowpipe, a year before Lavoisier announced his work on this subject (see Partington, III, 458). Rare. Not mentioned by Poggendorff in his list of Geijer's works. Not in the usual early chemical bibliographies. (Möstrom, 137; Partington, III, 183)

GELLERT, Christlieb Ehregott

Anfangsgründe zur Metallurgischen Chimie, in einem theoretischen und practischen Theile nach einer in der Natur gegründeten Ordnung abgefasst von C. E. Gellert, der Kayserl. Academie der Wissenschaften zu S. Petersburg Mitglieder. Mit Kupfern.

Leipzig: bey Johann Wendler. 1750.

First edition, first issue. 8vo. 8 leaves (including frontispiece), 339, (1) pp., 10 leaves. The beautiful frontispiece, engraved by J. C. G. Fritsch, is conjugate with the title page. Large folding engraved plate of chemical symbols facing page 172, and 4 folding copperplates of chemical and metallurgical apparatus at the end. Unidentified bookplate with alchemical symbols on verso of title page. Fine, crisp copy in the original citron boards, with printed orange paper label on spine. From the library of Professor Franz Sondheimer, with his bookplate on the front pastedown endpaper.

THE VERY rare first issue of the first edition of this important work on metallurgical chemistry. The second issue, dated 1751, has an errata leaf but is otherwise identical. Gellert (1713–1795), brother of the poet, studied at Meissen and Leipzig. He was professor (1736–47) in St. Petersburg (Leningrad), returned to Germany in 1747, and became inspector of mines and smelting in Saxony. Later he was named professor of metallurgical chemistry of the famous Freiberg Bergakademie on its foundation in 1765. Gellert introduced the process of cold extraction of precious metals by amalgamation with mercury, a works being established at Halsbruck in 1790. Besides translating Cramer's *Elementa Artis Docimasticae*, he wrote the present book, which became very popular and was translated into French and English. For a discussion of the contents, see Partington. A companion volume on analytical chemistry appeared in 1755. The second edition was published in 1776. Not in Blake, D.S.B., Duveen, Edelstein, Ferguson, Hoover, Neu, Waller, etc. (Bolton, 473; Ferchl, 178; Partington, II, 710; Poggendorff, I, 870; Smith, 190; Wellcome, III, 101)

GELLERT, Christlieb Ehregott

Chimie Métallurgique, dans laquelle on trouvera la théorie & la pratique de cet art. Avec des expériences sur la densité des alliages des métaux, & des demi-métaux, & un abrégé de docimastique. Avec figures. Par M. C. E. Gellert, . . . Ouvrages traduits de l'Allemand.
Paris: Chez Briasson. 1758.

First French edition. 2 vols., 12mo. I: 1 leaf, x (last page mis-numbered xii), 296 pp. 4 folding copperplates of apparatus, 1 folding copperplate of chemical symbols, and 1 folding table of alloys. II: xvii, (1), 351, (1) pp. Fine copy in contemporary mottled calf, gilt, with maroon morocco labels.

THE TRANSLATION, by Baron d'Holbach, of the *Anfangsgründe zur metallurgischen Chemie* (Leipzig, 1750) and the *Anfangsgründe zur Probierekunst . . . der praktischen metallurgischen Chemie* (Leipzig, 1755). In these works Gellert made a significant modification of Geoffroy's table of affinities, on which see Partington. Twenty-one experiments are described in volume I (pp. 251–280) on the densities of various alloys, originally published in Latin in volume 13 of the *Commentaires de l'Académie Impériale de S. Petersbourg*. An important section that sheds much light on eighteenth-century analytical chemistry appears in volume II (pp. 243–338) based on Gellert's translation of Cramer's *Elementa artis docimasticae*. Scarce. Not in Blake, Bolton, D.S.B., Edelstein, Ferguson, Ferguson Coll., Hoover, Smith, Waller, Watt, etc. (Duveen, 242; Ferchl, 178; Morgan, 305; Neu, 1601; Partington, II, 710; Poggendorff, I, 870; Sondheimer, 597; Wellcome, III, 101)

GELLERT, Christlieb Ehregott

Metallurgic Chymistry. Being a system of mineralogy in general, and of all the arts arising from this science. To the great improvement of manufactures, and the most capital branches of trade and commerce. Theoretical and practical. In two parts. Translated from the original German of C. E. Gellert, by I. S. With plates.
London: Printed for T. Becket. 1776.

First English edition. 8vo. 12 leaves, 416 pp. 4 folding copperplates of apparatus, and 1 folding copperplate comprising 2 tables of chemical affinities. Very good copy in contemporary calf, tastefully rebacked, with original gilt-lettered maroon morocco label preserved.

DEDICATED TO the president and members of the Royal Society by the translator, John Seiferth, who says in the section headed "To the Reader": "The merits of the present Treatise are such as to need no recommendation of the translator: The Reader will find it the most concise assemblage of useful knowledge that ever has been presented in so small a compass by any author. . . . One undeniable merit of this work is, that it is the first by which this Science is brought into a regular System." Seiferth evidently had many interruptions during his translation from the German, as the "To the Reader" is dated "London, the 4th of June, 1776," whereas the dedication to the Royal Society is dated "London, Aug. 20, 1766." Seiferth begs the reader to "Accept this small Present, which has long been withheld from the British Library." Not in Blake, D.S.B., Edelstein, Ferguson, Hoover, Morgan, Poggendorff, Waller, etc. (Bolton, 473; Duveen, 242–243 [only 3 plates]; Ferchl, 178; Ferguson Coll., 258; Neu, 1600; Partington, II, 710; Smith, 190; Sondheimer, 598; Watt, II, 843g; Wellcome, III, 101)

GEMMA, Cornelius

De Naturae Divinis Characterismis; seu Raris & admirandis spectaculis, causis, indicis, proprietatibus rerum in partibus singulis universi, Libri II. . . . Peculiarem partis utriusque materiem vel argumentum sequens pagina planius explicabit.
Antwerp: Ex officina Christophori Plantini, Architypographi Regii. 1575.

First edition. 2 vols., 8vo., in 1. I: 229, (1) pp., 5 leaves. II: 284 pp., 18 leaves. Woodcut printer's device on both title pages, and many woodcut figures in text (some full page). Roman and italic letter. Fine, crisp copy in original limp vellum, spine lettered in ink in contemporary characters. From the celebrated library of Harrison D. Horblit, auctioned in 1974.

GEMMA (1535–1579), son of the famous Gemma Frisius, was professor of medicine at Louvain. "His writings chiefly relate to medical, mathematical and philosophical subjects"

(Watt). The present encyclopedic work is a curious mixture of contemporary medicine, pharmacology, botany, physics, astronomy, astrology, magic, etc. There are many discussions of topics of chemical importance (e.g., minerals, metals, acids, alkalies, salts, oils, and fire). Gemma also refers to the properties of magnets and “supposed invisible lines to stretch from the magnet to the attracted body, a conception which . . . reminds us of Faraday’s lines of force” (Mottelay). One of his “principal books” (Ferguson). (British Library, *S.T.C. Netherlands, etc., 1470–1600*, p. 82; Caillet, 4450; Durling, 2042; Ferchl, 178; Ferguson, I, 308–309; Ferguson Coll., 258; Houzeau & Lancaster, I, 4922; Mottelay, 517; Thorndike, VI, 406–409; Watt, I, 406z; Wellcome, I, 2735)

GENRET-PERROTTE

Rapport sur la Culture de la Vigne et la Vinification dans la Côte-d’Or, présenté, le 2 octobre 1853, au Comité central d’Agriculture de Dijon . . .

Dijon: Presses mécaniques de Loireau-Feuchot. 1854.

First edition. 8vo. 46 pp., 1 leaf (blank). Fine copy, bound with 6 other works on the chemistry of winemaking.

A RARE WORK on the chemistry, horticulture, and technology of winemaking in Southern France, written in the form of fifty-six questions and answers. Based on an article that appeared in the *Journal d’Agriculture*, published by the Central Committee for agriculture of the Côte-d’Or, the book contains a short discussion on the diseases of grapes and grapevines (pp. 44–46). Not found in available bibliographies.

GEOFFROY, Étienne François

A Treatise of the Fossil, Vegetable, and Animal Substances, that are made use of in Physick. Containing the history and description of them; with an account of their several virtues and preparations. To which is prefixed, an enquiry into the constituent principles of mixed bodies, and the proper methods of discovering the nature of medicines. By the late Steph. Fr. Geoffroy, M.D. . . . Translated from a manuscript copy of the author’s lectures, read at Paris. By G. Douglas, M.D.

London: Printed for W. Innys and R. Manby, T. Woodward, and C. Davis. 1736.

First edition. 8vo. xxiv, 387, (13) pp. Ornamental woodcut capitals, head- and tailpieces. Very fine, crisp copy, in original paneled speckled calf, maroon morocco label, gilt.

“THE FIRST book presenting pharmacognosy in a systematic way” (Kremers & Urdang, *History of Pharmacy* [1963,

p. 413]). “Geoffroy’s pharmaceutical lectures were posthumously published, first in English” (Partington). An important work because it gives accurate descriptions of the many inorganic and organic compounds that were used in the medicines of the period, with historical details. The preface (pp. iii–xii) contains biographical information on Geoffroy. By applying qualitative and quantitative analysis to the study of vegetable remedies, Geoffroy endeavored to relate the medicinal properties to the products of analysis. This English edition “contains a short account of the animal kingdom, which is not in the Latin and French editions” (D.S.B.). The son of a wealthy pharmacist, Geoffroy (1672–1731) originally trained as a pharmacist but later became a physician (M.D., Paris, 1704). “In 1707 he took charge of the lectures in chemistry at the Jardin du Roi, . . . in 1709 he followed Tournefort as professor of medicine at the Collège Royal. In 1726 he was dean of the medical faculty in Paris” (Partington). (Blake, 172; D.S.B., V, 354; Edelstein, 970; Neu, 1603; Partington, III, 50; Smith, 191; Watt, I, 408p; Wellcome, III, 105)

GEOFFROY, Étienne François

Tractatus de Materia Medica, sive de medicamentorum simplicium historiâ, virtute, delectu & usu. . . . Tomus primus. De fossilibus. Tomus secundus. De vegetabilibus exoticis. Tomus tertius. De vegetabilibus indigenis.

Paris: Sumptibus & impensis Joannis Desaint & Caroli Saillant. 1741.

First edition. 3 vols., 8vo. I: 2 leaves, 318 pp., 3 leaves. II: 2 leaves, 794 pp., 3 leaves. III: 2 leaves, 836 pp. With folding engraved plate (“Table des différents rapports”). Some marginal damp stains; otherwise good copy in original mottled calf, spines richly gilt, maroon morocco labels.

THE FIRST complete edition of Geoffroy’s treatise on materia medica, edited by Étienne Chardon de Courcelles, with an *éloge* by Bernard le Bouyer de Fontenelle. The first volume includes Geoffroy’s collected papers (pp. 19–197), mainly on chemistry, and contains the first tables of chemical affinity to appear in book form. “The first attempt to compare and summarize a large number of chemical facts in a concise tabular form was made in the table of affinities by . . . Geoffroy. It had a considerable effect upon the development of the ideas of affinity and was much used in a more or less revised form during the eighteenth century. Geoffroy’s original memoir . . . was presented to the Academy of Sciences at Paris on August 27, 1718, and published in the *Mémoires* for that year” (H. M. Leicester and H. S. Klickstein, *A Source Book in Chemistry* [1952, p. 67]). The lectures on pharmacy, listed by Urdang as being among

the most important of the period, were unfinished. They were completed in later editions by A. Bergier and were translated into French as *Traité de matière médicale* (Paris, 1743, 7 vols.). Not in Bolton, Duveen, Edelstein, Ferguson, Neu, Smith, Waller, etc. (Blake, 172; D.S.B., V, 352, 354; Ferchl, 178–179; Hirsch, *Biographisches Lexicon*, II, 524; Kremers & Urdang, *History of Pharmacy*, 1963, p. 413; LaWall, *Four Thousand Years of Pharmacy*, 1927, p. 364; Partington, III, 50; Poggendorff, I, 874; Sondheimer, 599; Watt, I, 408n; Wellcome, III, 105)

GEOFFROY, Étienne François

A Treatise on Foreign Vegetables. Containing an account of such as are now commonly used in the practice of physick. With their descriptions, chemical analyses, virtues, doses, and various effects. Chiefly taken from the Materia Medica of Steph. Fran. Geoffroy, M.D. . . . By Ralph Thicknesse, M.D. London: Printed for J. Clarke, C. Davis, J. Whiston, and S. Baker. 1749.

First edition. 8vo. xii, 458 pp., 5 leaves. Very good, crisp copy, in original calf, rebacked, maroon morocco label, gilt. From the library of Thomas Ewbank (1792–1870), writer on practical mechanics (see D.N.B.), with his signature in ink on front pastedown endpaper.

DERIVED FROM Geoffroy's *Tractatus de materia medica* (Paris, 1741), Thicknesse (1719–1790) abridged the original and added relevant English material in the present translation. "Geoffroy's treatment of the vegetable kingdom was interesting. Exotic plants were not usually imported whole, so he classified them under such headings as roots, barks, and leaves, since these were the parts used in medicine. . . . Almost always he included the results of qualitative and quantitative analysis by distillation . . . and he endeavored to relate the medicinal properties to the products of analysis" (D.S.B. [V, 352], without mentioning the present work). The so-called second edition (i.e., issue) with the title *A new treatise on British and foreign vegetables* (London: W. Owen, 1751) is identical to the 1749 issue, except for a leaf containing books "Just published" by W. Owen and a cancel title page bearing no reference to Ralph Thicknesse. Very scarce. Not in the usual chemical and medical bibliographies. (Blake, 172; Blanche Henry, III, p. 47 [no. 746]; Wellcome, III, 105)

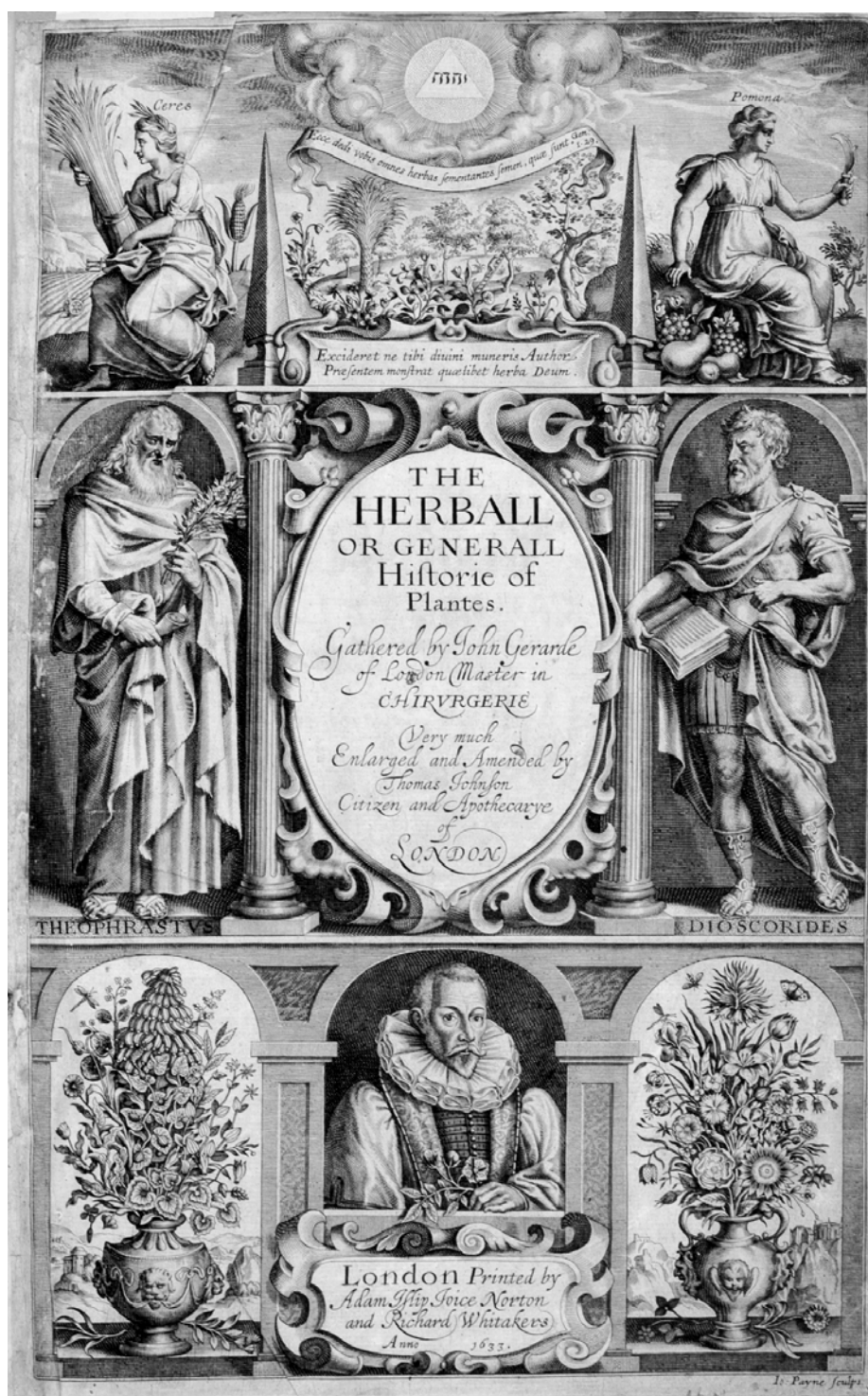
GERARD, John

The Herball or Generall Historie of Plantes. Gathered by John Gerarde of London Master in Chirurgerie. Very much Enlarged and Amended by Thomas Johnson Citizen and Apothecarye of London.

London: Printed by Adam Islip Joice Norton and Richard Whitakers. 1633.

First Johnson edition. Folio. 20 leaves, 1630 pp., 24 leaves. Fine engraved title by John Payne and 2,765 large woodcuts of plants. Lacks first and final blank leaves (as usual), margins of last five leaves of index frayed (with loss of few words); otherwise fine, unsophisticated copy, in original unlettered paneled calf. From the library of Christopher Pitt (1699–1748), poet, with signature dated 1727 on final leaf (see D.N.B.).

THE *Herball* FIRST appeared in 1597 and is one of the best-known English botanical books. It was assembled by Gerard (1545–1612) from the works of Turner, Dodoens, Tabernaemontanus, Pena, and L'Obel, et al. The text follows closely the *Stirpium historiae* (1583) of Dodoens, with numerous observations on the dietetic and medicinal properties of plants. As the 1597 edition contained many typographical and factual errors, Thomas Johnson published the present edition in 1633, in which the errors were corrected and a great deal of new information was added. Illustrated with Plantin's woodcuts, details on over eight hundred new species and about seven hundred figures were added by Johnson. Apart from its purely botanical content, the book is of chemical and pharmacological interest (e.g., the use of plants as sources of drugs, dyes, glues, and chemicals). The book was reissued in 1636 with a new title page. Gerard "laid the foundations of botany and pharmacology as sciences" (T. I. Williams). Apart from his corrections and additions, Johnson (d. 1644) gives a history of botany from Solomon to Parkinson, which is the first survey of the subject published in England. For details on Gerard and his great *Herball*, see A. Arber, *Herbals* (1953, pp. 129–135). The engraved title page includes a portrait of Gerard. (Blocker, 156; Blunt, 72; Cushing, G195; D.S.B., V, 362; Eales, 358; Ferchl, 180; Freeman, 1328; Garrison-Morton, 1820; Henrey, 45; Neu, 1605; S.T.C. 11751; Waller, 11513; Wellcome, I, 2753)



Gerard. The Herball. London, 1633.

GERHARDT, Charles Frédéric

Aide-Mémoire pour l'Analyse Chimique contenant les caractères des acides et des bases, la marche de l'analyse qualitative, les essais au chalumeau, l'analyse des mélanges gazeux, et les principales méthodes de dosage et de séparation, à l'usage des élèves des laboratoires de chimie, par M. Charles Gerhardt.

Paris: Victor Masson, Libraire-Éditeur, Place de l'École-de-Médecine. 1852.

First edition. 12mo. 4 leaves, 178 pp. Fine copy in contemporary gilt-ruled quarter calf, marbled boards. Bound with: Laurent, Auguste, *Précis de Cristallographie* (Paris, 1847). Bookplate: Franz Sondheimer.

GERHARDT WAS a master analyst, and this book was written primarily for his own students. Divided into three parts, the first (pp. 1–76) describes the reactions of metals (cations) and radicals (anions). Part II (pp. 77–121) covers qualitative inorganic analysis, with an early version of the familiar group separation tables (pp. 86–87). Part III (pp. 122–178) on quantitative analysis describes methods used to determine the exact chemical composition and formulae of inorganic compounds. Of particular interest are the calculations used to establish the formulae of selected compounds (pp. 166–178), and there is a table of the atomic weights of the elements then known (p. 167), with H = 1 and O = 8. At that time water was still formulated as HO, with a molecular weight of 9. An important and rare milestone in the development of analytical chemical texts. Polish (Warsaw, 1854) and Russian (St. Petersburg, 1865) translations appeared. (Bolton, 475)

GERHARDT, Charles Frédéric

Introduction à l'Étude de la Chimie par le Système Unitaire. . . .

Paris: Chamerot, Libraire-Éditeur. 1848.

First edition. 8vo. xix, (1), 388 pp. With folding plate of crystal forms (facing p. 385) and 11 small woodcut figures (p. 58). Very fine, crisp copy, uncut and unpressed, in contemporary quarter calf, gilt, marbled boards, maroon morocco label, with original printed wrappers bound in.

AN IMPORTANT work in which Gerhardt expounded his unitary theory, as opposed to the dualist approach to organic chemistry. It is dedicated to Auguste Laurent, whose ideas strongly influenced Gerhardt (see Clara de Milt, "Auguste Laurent—Guide and Inspiration of Gerhardt," in *Select Readings in the History of Chemistry*, 1965, pp. 222–228). Partington describes this as a "student's book, containing a good survey of elementary chemistry and information on qualitative analysis. . . . He uses the correct

name 'unibasic' instead of the hybrid 'monobasic' and suggests that gas densities should be referred to hydrogen instead of air." Copies also exist with the following imprint: Montpellier, Boehm, et Masson, Paris, 1848. Very scarce. Not in Bolton, Duveen, Ferchl, Poggendorff, Smith, etc. (D.S.B., V, 374; Edelstein, 973; Partington, IV, 408; Sondheimer, 602; Wellcome, III, 108)

GERHARDT, Charles Frédéric

Précis de Chimie Organique par M. Charles Gerhardt. . . . 2 volumes in 8°. Le tome Ier est en vente. Prix: 8 francs. Le tome II paraîtra en avril 1845.
(Paris: Librairie de Fortin, Masson et Cie. 1844).

First edition. 8vo. 4 pp. Very good copy. Bound with: Dumas, J. B. A., *Leçons sur la philosophie chimique* (Paris, 1837).

THE TWO-LEAF prospectus announcing the publication of Gerhardt's *Précis de chimie organique* (Paris, 1844–45, 2 vols.). Rare. Not recorded by the usual bibliographers.

GERHARDT, Charles Frédéric

Précis de Chimie Organique. . . .
Paris: Chez Fortin, Masson et Cie. 1844–45.

First edition. 2 vols., 8vo. I: xvi, 635, (1) pp. II: 2 leaves, 592 pp. Fine set in contemporary green quarter morocco, marbled boards, spines gilt. Volume I contains a copy of the 4-page prospectus announcing the publication of this work (Paris, 1844), and volume II is bound with: Liebig, Justus von, *Instruction sur l'analyse des corps organiques. . . . traduit de l'allemand, par Auguste Schmersahl* (Paris, 1838). From the library of Professor Franz Sondheimer, with his bookplate in each volume.

ONE OF the leading chemists of the first half of the nineteenth century, Gerhardt (1816–1856) studied under Liebig, Persoz, Dumas, and Chevreul. He met Laurent in 1843, and they became friends for the rest of their lives, collaborating on much of their research on organic compounds. Gerhardt made an outstanding contribution to organic chemistry by his theory of types and, with Laurent, set organic chemistry on the correct course. He published "three important books on organic chemistry, the style of which is correct, concise, and elegant" (Partington). The first was the present *Précis*, which Wurtz translated into German (2 vols., Strasbourg, 1844–46). This work "had a poor reception in France and Germany but was praised by Gregory in Edinburgh" (Partington). The second and third important books by Gerhardt are his *Introduction à l'étude de la chimie* (1848) and the *Traité de chimie organique* (1853–56). Dumas favorably reviewed the present work (see *Compt. Rend.*, 1844, 18, 809), in which organic compounds are first

classified into families and homologous series (e.g., hydrocarbons, alcohols, aldehydes, acids, amides, esters, and ethers). Scarce. (Bolton, 475; D.S.B., V, 374; Duveen, 243; Edelstein, 974; Ferchl, 181; Partington, IV, 408; Poggendorff, I, 882; Smith, 191; Sondheimer, 601; Thornton & Tully, 220)

GERHARDT, Charles Frédéric

Traité de Chimie Organique, . . .

Paris: Chez Firmin Didot Frères. 1853, 1854, 1854, 1856.

First edition. 4 vols., 8vo. I: 2 leaves, iii, (1), 848 pp. II: 2 leaves, 976 pp., 1 leaf (errata). III: 2 leaves, 1008 pp. IV: 2 leaves, 1110 pp. Few leaves with minor foxing; otherwise an excellent set in original gilt-ruled quarter calf, marbled boards.

GERHARDT'S MAGNUM OPUS and a monumental work in the history of organic chemistry. Adopting Laurent's unitary (or nucleus) theory, Gerhardt combined it with his own theory of types (the basis of structural chemistry). All of Gerhardt's theories and discoveries are contained in this work, the most important volume of which is the fourth, published after the author's untimely death from a sudden illness. In volume IV he for the first time wrote formulae in terms of concepts developed by Laurent and himself. "A very detailed and systematic book . . . it was used by Will in Giessen and its author was 'honoured as a reformer of organic chemistry.' A fifth part, 'documents physiologiques' and vegetable and animal chemistry, was not written at the time of Gerhardt's death" (Partington, who discusses Gerhardt's accomplishments in depth). "A meritorious work once regarded as indispensable" (Sotheran). Not in Duveen, Morgan, Poggenдорff, Waller, etc. (Bolton, 475; D.S.B., V, 374; Edelstein, 975; Ferchl, 181; Ihde, 207; Leicester & Klickstein, 351; Partington, IV, 408; Smith, 191; Sondheimer, 603; Sotheran, Cat. 672 [1907], 1509 ["Scarce"]; Thornton & Tully, 220)

GERMAIN, Claude

Icon Philosophiae Occultae, sive vera methodus componendi magnum antiquorum Philosophorum Lapidem. . . .

Paris: Apud Edmundum Couterot, via Jacobaea, ad insigne boni Pastoris. 1672.

First edition. 8vo. 26 leaves, 98 pp., 1 leaf. Woodcut ornament on title page. Fine copy, with wide margins, in original calf, rebounded, spine gilt.

AN ALCHEMICAL treatise on the correct procedures to be used in the preparation of the true philosopher's stone. Germain (fl. 1652–1672) was doctor of medicine at the

University of Paris and physician to Queen Marie Louise of Poland. In his dedication to John Casimir, king of Poland, Germain speaks "of having been a rather unwilling and sceptical witness of 'that great and truly royal work . . . undertaken at your Sarmatian court by order of . . . Queen Ludovica . . . and under your august auspices happily accomplished in its first and more important part,' under the guidance of Sendivogius, a Polish knight" (Thorndike). It is not clear from the text whether Germain actually worked under the guidance of the famous alchemist Michael Sendivogius (1566–1636) or merely followed the directions given in Sendivogius's books published earlier in the century. The text of this work was reprinted (Rotterdam, 1678) and was included in Manget's *Bibliotheca Chemica Curiosa* (1702). Germain also published *Orthodoxe, ou de l'abus de l'antimoine* (Paris, 1652), a voluminous treatise on the abuse by physicians of antimonial medicines. (Duveen, 243; Ferchl, 182; Ferguson, I, 313; Ferguson Coll., 259; Kopp, *Die Alchemie*, II, 344, 353; Neu, 1607; Partington, III, 2; Thorndike, VII, 530; Wellcome, III, 109)

GERTZ, P.

Neu-eröffnete Kunstammer oder Teophrastische Gebeimnisse insonderheit vor Weinhändler, Goldschmiede, Mahler und ZobelFürber . . . I. Von Eschen, Gold-Farbe, Cimeten, allerley Ertz-Proben . . . II. Von Kunstreicher Zubereitung aller Farben . . . III. Von zierlicher Zubereitung und Färbung etlicher Wild-Wahren . . . IV. Wie man die guten Weine wohl erhalten . . . Zum Drucke befördert von dem Hochgelahrten P. Gertz . . . Deme noch beygefüget P. Kertzenmachers Alchimia und eines Anonymi Tractat Sol Sine Veste & Sol Non Sine Veste.

Constantinopel. 1720.

First edition, 5 parts in one volume. 8vo. 2 leaves (title printed in red and black over 2 pages), 4 leaves, 190 pp., 13 leaves (index). Good copy in original vellum, rebounded in vellum antique. Bound with: Kertzenmacher, P., *Alchimia* (1720); Orschall, J. C., *Sol sine veste* (1720); Orschall, J. C., *Apelles* (1720); and Grummet, C., *Sol non sine veste* (1720).

A BOOK OF secrets of great chemical interest for its technical recipes for colors, dyeing, assaying metals, and the preservation of wines. Duveen gives the full title and describes the work as "unrecorded." The tracts bound with it are catalogued separately under the name of the appropriate author, although they were all published together. "These five tracts really form one book as the signatures run on, though they have all separate title pages and pagination" (Duveen). The imprint of this extremely rare book is obviously fictitious (Leipzig). Of the author, Gertz, who paid to have the

book published, nothing appears to have been recorded. He was an admirer of Paracelsus, to whose memory he dedicated the work. (Duveen, 244–245; Ferchl, 182; Neu, 1613; Partington, II, 68; Sudhoff, 438)

GESNER, Conrad

De Raris & admirandis Herbis, quae, sine quod noctu luceant, sive alias ob causas, lunariae nominantur, & obiter de aliis etiam rebus, quae in tenebris lucent, commentariolus. Editione hac secunda emendatio. Cum iconibus quibusdam herbarum novis.

Copenhagen: Typis Matthiae Godicchenii, impensis Petri Hauboldi. 1669.

Second (first Bartholin) edition. 8vo. 82 pp., 11 leaves (index). Woodcut figures of plants in text. Paper very slightly embrowned (as usual); otherwise very good, crisp copy in contemporary vellum. Bound with: Bartholin, Thomas, *De luce hominum & brutorum* (Copenhagen, 1669).

A REPRINT, WITH revisions, of Gesner's *De lunariis* (Zurich, 1555), by the famous Danish physician Thomas Bartholin (1616–1680). The preface is dated 14 December 1668, and the book is usually found bound with Bartholin's *De luce*, as here. Of some chemical interest, as the luminescence of plants and various minerals is discussed. Rare. (E. N. Harvey, *History of Luminescence*, p. 108; Watt, I, 80e; Wellcome, III, 110)

GESNER, Conrad

Do Omni Rerum Fossilium Genere, Gemmis, Lapidibus, Metallis, et huiusmodi, libri aliquot, plerique nunc primum editi. Opera Conradi Gesneri . . .

Zurich: excubat J. Gesnerus. 1565–1566.

First edition. 8 parts in 1 vol. 8vo. I: 8 leaves, 96 ff. II: 7 leaves, 169 ff. III: 2 leaves, 22 ff. IV: 3 leaves, 31 ff. V: 2 leaves, 30 ff, 5 leaves. VI: 3 leaves, 37 ff. VII: 4 leaves, 28 ff. VIII: 2 leaves, 85 ff. With 2 portraits of Johann Kentmann, numerous woodcuts of crystals, minerals, and fossils. Clasps gone; otherwise fine copy in original blind-stamped vellum over oak boards. Bookplate: J. A. Freilich.

A FAMOUS COLLECTION, of chemical interest, comprising one of the most important contributions to sixteenth-century mineralogy and geology. It was edited by Gesner, whose book on fossils is the first part. Each with a separate title page, the eight works by seven authors are I) Kentmann, Johann, *Nomenclaturae Rerum fossilium*, containing over 1,600 specimens and the first published catalogue of a geological collection; II) Kentmann, J., *Calculorum in Corpora*, on gall- and kidney-stones; III) Fabricius, Georg, *De Metallicis rebus*; IV) Goebel, Severin, *De Succino*, on amber,

etc.; and Gesner on bitumen, naphtha, etc.; V) Cordus, Valerius, *De Halosantho seu Sperma Ceti*, title dated 1566; VI) Epiphanius, *De XII Gemmi*, on gemstones in Aaron's shield; VII) Rue, Francois, *De Gemmis aliquot*, on gems in the Book of Revelation; and VIII) Gesner, Conrad, *De Rerum Fossilium*, the earliest scientific attempt to classify minerals and fossils, based on their form, with the first illustration of a lead pencil, and mariners' compass made from magnetic iron ore. A milestone treatise in crystallography, mineralogy, and inorganic chemistry. A complete set is of great rarity. (Adams, *Birth . . . of Geological Sciences*, 178–183; D.S.B., V, 379; Hoover, 347; Partington, II, 81; Poggendorff, I, 888; Sinkankas, 2366; Sparrow, *Milestones of Science*, 10; Wellcome, I, 2804)

GESNER, Conrad

The newe Iewell of Health, wherein is containd the most excellent Secretes of Phisicke and Philosophie, devided into fower Bookes. In the which are the best approved remedies for the diseases as well inwarde as outwarde, of all the partes of mans bodie: treating very amplye of all Dystillations of Waters, of Oyles, Balmes, Quintessences, with the extraction of artificiall Saltes, the use and preparation of Antimonie, and potable Gold. Gathered out of the best and most approved Authors, by that excellent Doctor Gesnerus. Also the Pictures, and maner to make the Vessels, Furnaces, and other Instruments thereunto belonging. Faithfully corrected and published in Englishe, by George Baker, Chirurgian.

London: Printed by Henrie Denham. 1576.

First English edition. 4to. 12 leaves, ff. 1–200, 211–219, 210–258 (foliation erratic, text complete; f. 191 as 190). Black letter. Woodcut on title (and verso), woodcut on 3 divisional titles, and numerous text woodcuts. Water stains on last few leaves, minor stains elsewhere; otherwise good copy in contemporary sheep.

THE SECOND part of *Euonymus . . . de remediis secretis* (Zurich, 1569), by the great Swiss scientist Gesner (1516–1565), is here translated by Baker (1540–1600), surgeon to Queen Elizabeth. In the dedication to the Countess of Oxford, Baker says: "I doe rejoyce, that this worke of Dystillation is nowe finished to the profite of my countrie." In the preface he praises chemical methods of preparing medicines, claiming that they are better and more effective than galenical mixtures. In England "it was Gesner, not Paracelsus, who was the prime mover of . . . chemical medicine . . . [this book] . . . was the most advanced and complete work on chemistry [of] the sixteenth century" (Kocher, *Journal of Historical Medecine*, August 1947). (Cole, 520; Durling, 2088; Duveen, 247–248; Edelstein, 976; Ferguson, I, 316 [not in Young Coll.]; Ferguson, Books of Secrets, I,

12; Forbes, 121; Partington, II, 82; S.T.C. 11798; Wellcome, I, 2801)

GESNER, Conrad

Quatre Livres des Secrets de Medecine et de la Philosophie Chimique. Faicts Francois par M. Iean Liebault Dijonnois, Docteur Medecin à Paris. Esquels sont descrites plusieurs remedes singuliers pour toutes maladies tant interieures qu'exterieures du corps humain: traictees bien amplement les manieres de destiller eaux, huyles, & quintes essences de toute sorte de matieres: faire les extractions, les sels artificiels, & l'or potable.

Paris: Chez Iacques du-Puys. 1573.

First French translation. 8vo. 7 leaves, 298 folios, 18 leaves. Woodcut on title, ornamental and historiated woodcut initials, head- and tailpieces, and numerous woodcuts of chemical and distillation apparatus, furnaces, etc. Fine, crisp copy, in late-seventeenth-century vellum.

THE FIRST French edition of the second part of Gesner's *Euonymus . . . de remediis secretis liber* (Zurich: C. Froschover, 1569), which was edited and posthumously published by Caspar Wolff. The translator, Jean Liebault (1535–1596), has “paraphrased and supplemented it for the use of apothecaries, so that they might make their distillations better. Comparison, however, with the original Latin shows that Liebaut has not departed materially from Gesner's text” (Ferguson). The colophon reads: “Imprimé à Paris, par Iean Sevestre, pour Iacques Du-Puys. 1572.” A close paginary reprint appeared six years later (Paris: J. du-Puys, 1579), set in different type and with different ornaments but with the same woodcut illustrations as the 1573 edition. Subsequent editions in French appeared. Of the greatest rarity. Not in the Bibliothèque Nationale or the British Library. Not in the usual chemical and medical bibliographies. (Ferguson, *Books of Secrets*, II, 3rd suppl., pp. 22–23; Partington, II, 82; Wellcome, I, 2793)

GESNER, Conrad

Sancti Patris Epiphanius Episcopi Cypri ad Diodorum Tyri episcopum, de XII. Gemmis, quae erant in veste Aaronis, liber Graecus, & à regione Latinus, Iola Hierotarantino interprete: cum corollario Conradi Gesneri.

Tiguri (Zurich). 1565.

First edition. 8vo. 4 leaves, 28 folios. Woodcut printer's device on title. Greek and Latin texts on facing pages. Fine, crisp copy, in modern overlapping vellum.

A DISCUSSION, OF chemical interest, on the twelve precious stones supposedly in the breastplate worn by Aaron, with

descriptions of agate, amethyst, beryl, carbuncle, chrysolite, diamond, emerald, hyacinth, jasper, onyx, sapphire, topaz, and other gems. This work was published separately but was also bound up with seven other parts, and with a slightly modified title, in Gesner's *De omni rerum fossilium genere, gemmis, lapidibus, metallis, . . .* (Zurich, 1565–66). Not in Bolton, D.S.B., Durling, Duveen, Edelstein, Ferguson, Smith, etc. (Caillet, 4507; Cushing, G210; Ferchl, 182; Ferguson Coll., 260; Hoover, 347; Neu, 1614; Osler, 646; Partington, II, 81; Poggendorff, I, 888; Thornton & Tully, 83; Waller, 12137; Watt, I, 411h; Wellcome, I, 2804)

GESNER, Conrad

Thesaurus Euonymi Philiatris, de Remediis Secretis. Liber Physicus, Medicus, & partim etiam Chymicus, & oeconomicus in vinorum diversi saporis apparatu, medicis & pharmacopolis omnibus praecipue necessarius. . . .


Venice: n.p. 1556.

First Venice edition. 16mo. 567, (1) pp., 20 leaves (index). Historiated woodcut initials and many woodcuts of plants and distillation apparatus in text. Title and following leaf re-edged at bottom (not affecting text); otherwise very good copy in blind-ruled brown morocco antique, spine gilt-lettered.

AN EARLY Latin edition of this important work based on Brunshwig and Ulstadt (first: Zurich, 1552). Composed by Gesner (1516–1565), the great naturalist and “father of bibliography,” who first published it under the pseudonym Euonymus Philiatrus, the book comprises a collection of directions for preparing medicines, the distillation of essential oils from plants, winemaking, etc. Gesner at first thought that the book was not up to his usual standards (hence the pseudonymous authorship), but in the Zurich edition of 1569 he admitted being its author. It became his most popular work, and translations into French (1555), German (1555), Italian (1556), and English (1559) attest to its importance. Numerous editions confirm the great demand that existed in the sixteenth and seventeenth centuries for this work. Of this particular edition Ferguson (*Books of Secrets*) says: “I have some doubt about the date . . . , and a very great deal about the place . . . the book seems to have been produced at Lyons . . . it has all the look of a surreptitiously-printed edition.” Very rare. Not in the British Library, Forbes, Watt, etc. (Durling, 2078; Ferguson, I, 315 [not in Young Coll.]; Ferguson, *Books of Secrets*, II, 3rd suppl., pp. 21–22; Ferguson Coll., 261; Partington, II, 82; Wellcome, I, 2781)

 The Treasure of
EVONYMVS,

conteyninge the vvonderfull hid se-
cretes of nature, touchinge the most apte formes
to prepare and destyl Medicines, for the conser-
uation of helth: as Quintessēce, Aurum Potabile,
Hippocras, Aromatical wyues, Balines, Oyles
Perfumes, garnishyng waters, and other mani-
fold excellent confections. Wherunto are ioyned
the formes of sondry apt Fornaces, and ve-
sels, required in this art. Translated
(with great diligence, & labour)
out of Latin, by Peter Mors
vvyng felow of Magdas
line Colledge in
Oxford.

 Imprinted at London
by Iohn Daie, dwelling ouer
Aldersgate, beneath Saint
Martines.

Cum priuilegio ad imprimendum
solum,

GESNER, Conrad

The Treasure of Euonymus, conteyninge the wonderfull hid secretes of nature, touchinge the most apte formes to prepare and destyl Medicines, for the conservation of helth: as Quintessence, Aurum Potabile, Hippocras, Aromatical wynes, Balmes, Oyles Perfumes, garnishyng waters, and other manifold excellent confections. Whereunto are ioyned the formes of sondry apt Fornaces, and vessels, required in this art. Translated (with great diligence, & laboure) out of Latin, by Peter Morwyng fellow of Magdaline Colledge in Oxford. London: Imprinted . . . by John Daie, dwelling over Aldersgate, beneath Saint Martines. (1559).

First English edition. 4to. 10 leaves, 408 pp. Black letter. Full-page woodcut of stationer's arms (B4 verso), historiated woodcut capitals, and 58 woodcuts of plants and distillation apparatus in text. Title leaf laid down, minor repairs to edges of a few leaves, insignificant water stains on some leaves; otherwise a remarkably good, crisp copy, in full blind-stamped brown morocco antique, spine gilt-lettered and dated.

FIRST ENGLISH edition of the *Thesaurus Euonymi*, one of the most important works on chemistry and distillation of the sixteenth century. Translated by Peter Morwinge (ca. 1530–ca. 1573), prebendary of Lichfield (see D.N.B.), the book provides a fascinating view of the chemical knowledge of Shakespeare's time and is a forerunner of the works of Glauber and French. Details are given (with illustrations) of materials to be distilled, furnaces and other apparatus to be used, and methods of extracting chemicals from animals, plants, and minerals. The first edition is "of very great rarity" (Ferguson), and the second, almost identical to the first, appeared as *A new booke of destillatyon of waters* (London: J. Day, 1565, 4to.). (Cushing, G224; Durling, 2082; Edelstein, 979; Ferchl, 182; Ferguson, I, 315 [not in Young Coll.]; Ferguson Coll., 261; Ferguson, *Books of Secrets*, I, pt. V, 29–30; Forbes, 121, 377; Neu, 1619; Osler, 640; Partington, II, 82; S.T.C., 11800; Sondheimer, 606; Sotheran, Cat. 672 [1907], 1514 ["Excessively Rare"]; Wellcome, I, 2799)

GESNER, Johann

Dissertatio Philosophica de Principiis Corporum . . . Zurich: Ex Officina Gessneriana. 1743.

Bound with: *ibid. Pars altera*. 1744. Bound with: *ibid. Pars tertia et ultima*. 1744. Bound with: *De Corporum Motu et Viribus*. 1746. Bound with: *De Effectibus, qui a Virium Compositione producuntur*. 1747. Bound with: *De Motibus Variatis*. 1749. Bound with: *ibid. Supplementum*. 1750. Bound with: *De Natura et Viribus Fluidorum*. 1751. Bound with: *De*

Hydroscopiis Constantis Mesurae. 1754. Bound with: *De Variis Annonae Conservandae Methodis earumque Delectu*. 1761. Bound with: *Theses Physicas Miscellaneas*. 1771.

First editions. 4to. I: 1 leaf, 26 pp. II: 1 leaf, 28 pp. III: 1 leaf, 46 pp. IV: 55, (1) pp., folding copperplate. V: 1 leaf, 22 pp., folding copperplate. VI: 1 leaf, 34 pp., folding copperplate. VII: 1 leaf, 14 pp. VIII: 1 leaf, 26 pp. IX: 1 leaf, 14 pp., copperplate. X: 1 leaf, 37, (1) pp., copperplate. XI: 7, (1) pp. Fine, crisp copies (some uncut), varying slightly in size, in speckled quarter calf antique, marbled boards, maroon morocco label gilt.

ELEVEN DISSERTATIONS by numerous doctoral candidates, with Gesner (1709–1790) presiding. All were published at Zurich: Ex Officina Gesneriana, and they comprise most of Gesner's works according to the list given by Poggendorff. Gesner was doctor of medicine (1729) but in 1733 became professor of mathematics at Zurich and later (1738) professor of physics. These dissertations cover many topics of interest in chemistry, physics, mathematics, etc. Most of the titles are listed by Poggendorff (I, 888). A very desirable set of these rare works.

GHERLI, Fulvio

Il Proteo Metallico o sia delle trasformazioni superficiali de' Metalli, e delle differenti preparazioni de medesimi molto proprie per debellare i mali più atroci, che il Corpo Umano affliggono, e per iscoprire gl'inganni de' falsi Chimici. Opera Filosofico-Medico-Chimica di Fulvio Gherli Cittadino Modanese Dottore di Filosofia, e Medicina, ed al presente Medico di Scandiano.

Venice: Per Giuseppe Corona. 1721.

First edition. 8vo. 8 leaves, 262 pp., 1 leaf (errata). Fine copy in contemporary speckled boards.

"A VERY RARE and highly interesting work which contains much practical chemistry" (Duveen). The seven chapters treat sequentially, mercury, gold and the philosopher's stone, silver, copper, tin, iron, and lead. Salts of these metals are also discussed, and the book has an alchemical flavor, as aurum potabile and similar subjects are covered. Gherli (1670–1735) was physician to the Prince d'Este, and later to the Duke of Guastalla. Not in Bolton, Cushing, Edelstein, Ferguson, Hoover, Osler, Partington, Sondheimer, Waite, Waller, Watt, etc. Poggendorff and Ferchl give the wrong date (1722). (Blake, 174; Duveen, 248; Ferchl, 183; Ferguson Coll., 264; Kopp, *Alchemie*, II, 368; Neu, 1629; Poggendorff, I, 890; Smith, 193; Wellcome, III, 112)

GHIZZONI, Angelo

Questioni di Chimica Agraria e Fisiologica svolte in sunto dal Dott. Angelo Ghizzoni . . .

Reggio-Emilia: Tipografia Fratelli Degani e Gasparini. 1875.

First edition. 8vo. 86 pp., 1 leaf (index). Very good copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated, with original green printed wrappers bound in. A presentation copy, inscribed in faded ink by the author on printed wrapper.

AN INTERESTING Italian work on agricultural chemistry and plant biochemistry, in which the common and trace chemical elements necessary for optimal crop yields are described. The author cites the researches of Boussingault, Davy, Grandeau, Liebig, Saussure, Wolff, et al. Ghizzoni was professor of agronomy in Fabriano, but no reference to him or to this rare work has been located in the usual bibliographies.

GILBERT, François Hilaire

Instruction sur le Claveau des Moutons, publiée par le Conseil d'Agriculture, rédigée par le Citoyen F. H. Gilbert, Membre du Conseil de l'Institut national, et Professeur-Directeur adjoint de l'École vétérinaire d'Alfort.

(Colophon: A Paris, de l'Imprimerie de la République.) N.d. (ca. 1792).

First edition. 8vo. 47, (1) pp. Fine copy in contemporary half calf, boards, gilt-lettered crimson label, spine gilt-ruled. Bound with Gohier, J. B., *Observations et expériences faites à l'École Impériale Vétérinaire de Lyon* (Lyon, 1807), and 3 other works.

AN INTERESTING early biochemical work describing attempts to cure sheep of bacterial and viral diseases by treating them with various chemicals (e.g., niter, alum, sulphuric acid, and acetic acid). These attempts were unsuccessful, although some improvements in the sheep were observed. Published by the Ministry of the Interior, 4th Division, Bureau of Agriculture, this tract is signed on page 47 by Gilbert, Cels, Tessier, Vilmorin, and J. B. Dubois, and approved by the minister of the interior, Benezech. Very rare. Blake (p. 175) lists a reprinted version of fifty-one pages, with identical title, published in 1798. No bibliographical reference to the present edition of 1792 has been found.

GILBERT, William

De Magnete, Magneticisque Corporibus, et de magno magnete tellure; Physiologia nova, plurimis & argumentis, & experimentis demonstrata.

London: Excudebat Petrus Short. 1600.

First edition. Folio. 8 leaves, 240 pp. With 1 folding plate (facing p. 200). Woodcut device on title, arms of Gilbert on verso. Numerous text woodcuts (several full page), elaborate woodcut headpieces and initials. Occasional minor foxing (as usual); otherwise a near-fine, crisp copy, with wide margins, in contemporary Italian vellum, ink lettering on spine. Bound with: Paduanus, F., *Tractatus duo . . .* (Bologna, 1601).

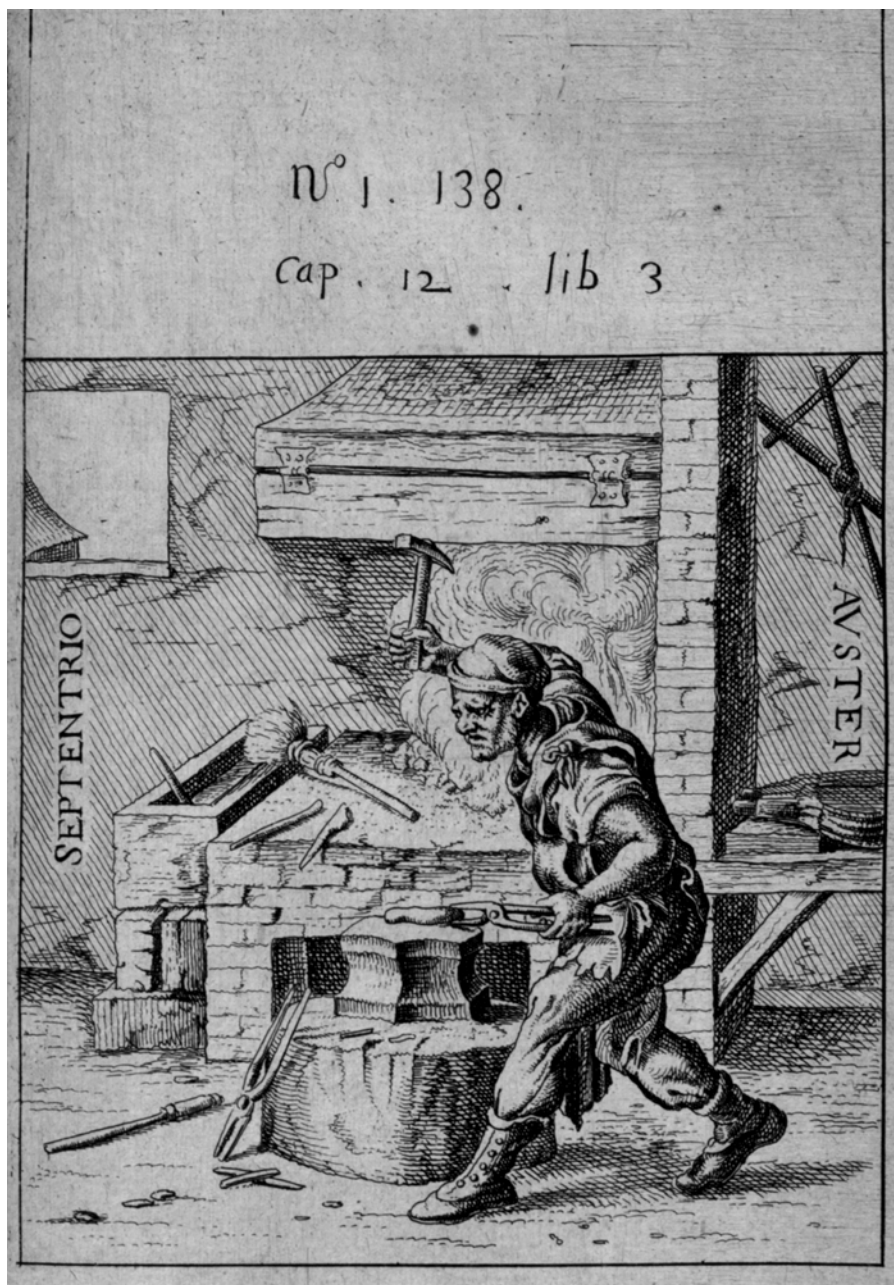
ONE OF the classics in the history of science, by Gilbert (1540–1603), physician to Queen Elizabeth and James I, and president of the College of Physicians. Written as the result of eighteen years of study and experimentation by Gilbert, this is the first great scientific book to be published in England. All known copies have emendations in ink, which suggests that Gilbert saw the edition through the press. The present copy has manuscript corrections on pages 11, 22, and 47, but not on page 63 as in other copies, showing that it is in an early state. Gilbert was an accomplished chemist, and he discusses the chemical properties of iron, magnetic ores, and other materials, referring to the works of Agricola, Cardan, Geber, Porta, Scaliger, et al. This book was studied by Kepler, Bacon, Boyle, Newton, and especially Galileo, who used Gilbert's theories as support for his own defense of Copernican cosmology. (Dibner, 54; D.S.B., V, 397; Durling, 2099; Ekelöf, 3; Ferguson Coll., 265; Gartrell, 202; Hoover, 352; Horblit, 41; Mottelay, 82; Munk, I, 79; Osler, 675; Partington, II, 414, 511; P.M.M., 107; Sparrow, 85; S.T.C., 11883; Wellcome, I, 2830; Wheeler Gift, 72)

GILBERT, William

Tractatus, sive Physiologia Nova de Magnete, Magneticisque corporibus & magno Magnete tellure, sex libris comprehensus, a Guilielmo Gilberto Colcestrensi, Medico Londinensi. . . . Omnia nunc diligenter recognita, & emandatus quam ante in lucem edita, aucta & figuris illustrata, opera & studio D. Wolfgangi Lochmans, I.U.D. & Mathematici. . . . Stettin: Typis Gotzianis. 1633.

Third (second Stettin) edition. 4to. 10 leaves, 232, (1) pp., 17 leaves. With 12 copperplates (plate 10 folding), and many woodcut illustrations and diagrams in text. Occasional light browning (characteristic of paper of the period); otherwise an excellent copy, with wide margins, in original unlettered vellum. Signature on title page of the prominent Scottish physician and botanist Daniel Rutherford (1749–1819), and a stamp of the Edinburgh Medical Society.

THE GREAT work of Gilbert on the properties of the magnet and electrostatics (first edition, 1600) was edited and enlarged by Wolfgang Lochmann (1594–1643), of Stettin. The first Stettin quarto of 1628 contained errors, and the book was reprinted with the errors corrected in the present 1633 edition, the last to be published in the seventeenth



Gilbert, William. Tractatus. Stettin, 1633.

century. Both of the Stettin editions are rare, the present 1633 edition being the only one to contain a completely new series of plates. This copy has an important provenance, as Rutherford was the discoverer of nitrogen, in 1772, distinguishing it from carbon dioxide (see Weeks, *Discovery of the Elements* [1960], pp. 235–251). He was a pupil of Joseph Black and keeper of the Royal Botanic Garden in Edinburgh. (Cushing, G257; D.S.B., V, 397; Ekelöf, 4; Ferguson Coll., 266; Gartrell, 204; Poggendorff, I, 895; Waller, 11350; Watt, I, 414z; Wellcome, I, 2831; Wheeler Gift, 72a)

GINAECEUM

Ginaeceum Chemicum seu Congeries Plurium Authorum qui in Artem Hermeticam de Lapide Philosophico scripserunt, quorum Tractatus nec in Theatro, aut alio Volumine usque adhuc simul impressi fuerunt. Supradictorum tum librorum tum Authorum catalogus sequenti pagina continetur. In gratiam studiosorum animorum qui huius Artis notitiam sectantur. Volumen primum.

Lyons: Apud Io. de Treuis. 1679.

First edition. 8vo. 2 leaves, 727, (1) pp. (last blank). Fresh, crisp copy, in original vellum, lettered in ink on spine.

A COLLECTION OF twenty-two alchemical tracts, most of which are unfindable in their original editions. For a list of the contents, see Ferguson. Only the present volume was ever published. Heym (*Ambix*, I, [1937], 53), who stresses that this is a “very rare work,” also states that it was “intended to be a continuation of the Theatrum Chemicum.” It is so rare that even Ferchl lists it with wrong imprint and date (Leyden, 1579), and he had apparently never seen a copy. Not in Bolton, Edelstein, Guaita, Hall, Mellon, Partington, Smith, Waite, Waller, Watt, etc. (Caillet, 4540; Duveen, 249; Ferchl, 184; Ferguson, I, 318; Ferguson Coll., 267; Goldsmith, G1002; Neu, 1632; Thorndike, VIII, 367; Verginelli, 120; Wellcome, III, 117)

GIOBERT, Giovanni Antonio

Des Eaux Sulphureuses et Thermales de Vaudier avec des Observations Physiques, Économiques et Chimiques sur la Vallée de Gesse et des Remarques sur l'Analyse des Eaux Sulphureuses en Général par Jean-Antoine Giobert . . .
Turin: De l'Imprimerie de Jaques Fea. 1793.

First edition. 8vo. 4 leaves, 277, (1) pp. Very fine copy, uncut and unpressed, in the original pink wrappers, tastefully bound in brown half calf antique, marbled boards, 2 maroon morocco gilt-lettered labels, spine dated in gilt. From the library of Alessandro Volta, with Giobert's inscription in ink on verso of front wrapper: “Présent du l'Auteur à Mr. Alexandre Volta.”

AN IMPORTANT presentation copy from Giobert to the great Italian scientist Alessandro Volta (1745–1827). The book is almost entirely chemical in content, being a detailed discussion on the sulphurous mineral waters of Vaudier (southern France), with tables of analyses. Volta is mentioned several times (e.g., pp. 48, 49, 53, 54, and 62) in connection with electrical phenomena and eudiometry. Giobert describes the eudiometer he had invented for analyzing gases and compares it with that of Volta (p. 62). Giobert's eudiometer was later improved by the Italian chemist Angelo Bellami (1776–1852), on which see D.S.B., I, 586. Volta's important eudiometric researches are described by J. L. Heilbron (D.S.B., XIV, 74–76). Duveen states that this book “is important as an example of contemporary chemical analytical methods applied to mineral waters. The author uses the new nomenclature and gives at the end a table showing the new and ancient names of several common compounds.” Not in Bolton, Edelstein, Ferguson, Ferguson Coll., Smith, Waller, Watt, Wellcome, etc. (Blake, 176; Duveen, 250; Ferchl, 184; Neu, 1634 [Duveen copy]; Partington, III, 492; Poggendorff, I, 900)

GIOBERT, Giovanni Antonio

Traité sur le Pastel et l'Extraction de son Indigo. . . Imprimé par ordre de sa majesté impériale et royale.
Paris: L'Imprimerie Impériale. 1813.

First edition. 8vo. xx, 411 pp. With 4 folding engraved plates. Very good copy in contemporary quarter calf, mottled boards, spine gilt-lettered.

GIOBERT (1761–1834), professor of agriculture (1800) and of chemistry and mineralogy (1802) at the University of Turin, was the first in Italy to adopt Lavoisier's antiphlogistic views. He was an important figure in Italian industry, publishing papers on agriculture, phosphoric and hydrocyanic acids, potassium ferrocyanide, the action of electricity on various gases, sulphurous mineral waters, etc. This comprehensive treatise covers every aspect of the cultivation of woad, the extraction of its indigo, and the chemical technology employed in the dyeing of cloth with this blue dye. The book was printed at the expense of Napoleon and is a classic in its field. The plates depict the equipment used in dyeing and the layout of the dyehouses. Partington (III, 491–492) discusses Giobert's chemical researches but does not mention the present important book. Not in Bolton, D.S.B., Duveen, Ferguson, Ferguson Coll., Morgan, Partington, Smith, Waller, Waring, Watt, Wellcome, etc. (Edelstein, 3070; Ferchl, 184; Lawrie, 253; Poggendorff, I, 900)

GIRARD, Charles, and DE LAIRE, Georges

Traité des Dérivés de la Houille applicables à la Production des Matières Colorantes. . . .

Paris: G. Masson. 1873.

First edition. 8vo. viii, 640 pp. With 12 plates of apparatus (11 folding). Occasional minor water stains; otherwise fine copy in full green morocco, gilt panels on covers, spine gilt in compartments. Bookplate: The Society of Chemical Industry.

AN EXCELLENT textbook that describes the many organic compounds that can be distilled from coal tar (e.g., benzene, toluene, xylene, naphthalene, and anthracene). Derivatives that can be made from these compounds include halo-, amino-, nitro-, and sulphonic acid compounds. Synthetic dyes that can be prepared from these precursors and the technology used in attaching them to fabrics are described. A brief history of the discovery by William Perkin of the first synthetic dye, mauveine, is given (pp. 548–549). “One of the earliest French works on synthetic coal-tar colours. The authors discovered aniline blue (bleu de Lyon), by heating aniline with salts of rosaniline, and first produced synthetically diphenylamine-blue” (Sotheran). Good descriptions are given of synthetic triphenylmethane dyes, but there is no mention of the diazo dyes discovered by Peter Griess in the 1860s. Scarce. Not in Duveen, Lawrie, Partington, Smith, etc. (Bolton, 480; Edelstein, 3071; Sotheran, Cat. 879 [1947], 3183)

GIROLAMI, Flavio

Nuova Minera D'Oro di Flavio Girolami. Nella quale con vive, & efficacissime ragioni de' Scrittori famosissimi si dimostra, l'Arte Chimica esser verissima, e con la Piera Filosofica potersi far l'Oro. Con le risposte a quelli c'hanno scritto contra tal'Arte, & alle obiettoni, che si possono far' all'Auttore; il quale a pieno manifesta la grandissima potenza, e gli maravigliosissimi effetti del vero Lapis Philosophorum, e la natura, lodi, & eccellenze de gli Alchimisti.

Opera veramente piena di vaga, e bella dottrina: a i Lettori dilettevole, & utile: & a gli professori dell'Arte necessaria, & opportuna. . . .

Venice: Appresso Barezzo Barezzi. 1590.

First edition. 4to. 4 leaves, 171, (1) pp., 6 leaves. Roman and italic letter. Woodcut title-vignette. Historiated woodcut capitals. Fine copy in original vellum. From the library of Denis Duveen, with maroon and gilt bookplate.

GIROLAMI (fl. 1590) was an Italian alchemist, and this is his vigorous defense of alchemy and alchemical beliefs against the attacks of opponents. It covers the history and nature of alchemy, its influence on other sciences and con-

temporary thought, the philosopher's stone, and related subjects. A rare work. Not in Durling, Hall, Wellcome, etc. (British Library, S.T.C. *French Books, 1465–1600*, p. 306; Duveen, 250; Ferchl, 185; Ferguson, I, 318–319; Ferguson Coll., 267; Neu, 1635; Waite, 287)

GIRTANNER, Christoph

Anfangsgründe der antiphlogistischen Chemie von Christoph Girtanner, . . .

Berlin: Bei Johann Friedrich Unger. 1792.

First edition. 8vo. x, 470 pp., 1 leaf (errata). Fine copy in contemporary half calf gilt, boards, green morocco label. From the library of Friedrich Ludwig Ehrmann (1741–1800), with his signature in ink on first flyleaf.

THE FIRST German textbook of chemistry based entirely on the antiphlogistic system, which gave a detailed exposition of Lavoisier's doctrines to the German-speaking world for the first time. Berzelius, when a student, used this work. Bolton erroneously states that this edition has a portrait of the author, and Partington (copying Bolton) compounds the error. Girtanner's portrait first appears in the second edition (Berlin, 1795). An important work with an interesting provenance. Ehrmann, professor of physics at Strasbourg, corresponded with Lavoisier and was one of the first German scientists to adopt the antiphlogistic system. Not in Blake, Duveen, Ferguson, Ferguson Coll., Sondheimer, Waller, Wellcome, etc. (Bolton, 481; D.S.B., V, 411; Edelstein, 996; Ferchl, 185; Neu, 1636; Partington, III, 590; Pogendorff, I, 906; Smith, 195)

GIRTANNER, Christoph

Anfangsgründe der antiphlogistischen Chemie . . . Zweite, verbesserte und stark vermehrte Auflage.

Berlin: Bei Johann Friedrich Unger. 1795.

Second edition. 8vo. 16, 466 pp. Engraved frontispiece portrait of Girtanner (D. Berger sc., 1795), laid down. Fine, crisp copy, in contemporary half calf gilt, speckled boards, tan morocco label.

THE GREATLY enlarged and corrected second edition of this important work, dedicated to F. A. C. Gren, S. F. Hermbstädt, and J. B. Richter. Girtanner refers to objections made to him by Richter, who had been converted to Lavoisier's antiphlogistic doctrine by reading this book but had raised some pertinent questions. Published after Lavoisier's death in 1794, the author eulogizes him and compares him with Newton. Girtanner's portrait appears for the first time in this edition. The third edition (Berlin, 1801) was published posthumously. Not in Blake, Duveen, Ferguson, Neu,

Sondheimer, Waller, etc. (Bolton, 481; D.S.B., V, 411; Edelstein, 997; Ferchl, 185; Ferguson Coll., 267; Partington, III, 590; Poggendorff, I, 906; Smith, 195; Wellcome, III, 119)

GIRTANNER, Christoph

Dissertatio Inauguralis Chemica de Terra Calcarea Cruda et Calcinata. Quam consensu gratiosae acultatis medicae . . . X. Septembris A. MDCCLXXXII. Publico eruditorum examini submittit auctor Christophorus Girtanner St. Gallo-Helvetus.

Göttingen: Litteris Jo. Christ. Dieterich, Acad. Typogr. (1782).

First edition. 4to. 4 leaves, 13, (1) pp., 1 leaf. Fine, crisp copy with wide margins, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

THE DOCTORAL dissertation, dedicated to Johann Friedrich Gmelin, of the Swiss chemist and physician Girtanner (1760–1800), who lived several years in Paris and was well acquainted with the leaders of antiphlogistic chemistry. Written before he had adopted the antiphlogistic system, in this work Girtanner attempted to prove the existence of “fire matter” in quicklime (calcium oxide), by finding that the loss of weight on treating chalk (calcium carbonate) with an acid is less than its loss on heating. “This theory was also supported by Scopoli in his Italian translation of Macquer’s *Dictionnaire*, (9 vols., 8vo., Pavia, 1783–4)” (Partington). Bolton, Ferchl, and Poggendorff give the wrong date (1783). An early convert to Lavoisier’s doctrine, Girtanner translated the new nomenclature into German (*Neue chemische Nomenklatur für die deutsche Sprache*, Berlin, 1791) and published the first German textbook based on the antiphlogistic system (*Anfangsgründe der antiphlogistischen Chemie*, Berlin, 1792). Very scarce. Not in Blake, Neu, Waller, Wellcome, or the usual early chemical bibliographies. (Bolton, 482; D.S.B., V, 411; Ferchl, 185; Partington, III, 590; Poggendorff, I, 906; Waring, 296)

GLANVILL, Joseph

Essays on Several Important Subjects in Philosophy and Religion. . . .

London: Printed by J. D. for John Baker, at the Three Pidgeons, and Henry Mortlock, at the Phoenix in St. Paul’s Church-Yard. 1676.

First edition. 4to., 8 leaves, 66 pp. + 1 leaf, 56 pp. + 1 leaf, 43, (1) pp. + 1 leaf, 28 pp. + 1 leaf, 61, (1) pp. + 1 leaf, 58 pp. + 2 leaves (advertisements). Half titles not paginated. Very good copy, in blind-stamped sheep antique, dark-brown label, gilt.

AN INSIGHTFUL collection of seven essays, some of which “were written when I was very young . . . but . . . I am not grown so much wiser yet, as to have alter’d any thing in the main of those conceptions” (preface). Essay 1. Against Confidence in Philosophy and Matters of Speculation; 2. Of Scepticism and Certainty; 3. Modern Improvements of Useful Knowledge (Chymistry, Anatomy [in which Harvey’s discovery of the circulation of blood is praised]), Mathematicks, Physics [opticks, microscope, telescope, thermometer, barometer, air-pump, Royal Society]); 4. Usefulness of Real Philosophy to Religion; 5. The Agreement of Reason and Religion; 6. Against Modern Sadducism in the Matter of Witches and Apparitions; 7. Anti-Fanatical Religion and Free Philosophy in Continuation of Lord Bacon’s New Atlantis. In essay 3 the works of Boyle and of the Royal Society are reviewed and praised, with references to numerous scientists and physicians of the period. “Glanvill attempted to establish a scientific and philosophical basis for a belief in the supernatural, and is generally considered to be the founder of psychical research” (Norman). (Keynes, 2345; Knight, 31; Krivatsy, 4748; Norman, 908; Watt, I, 418y; Wing, G809)

GLANVILL, Joseph

Plus Ultra: or, The Progress and Advancement of Knowledge Since the Days of Aristotle. In an Account of some of the most Remarkable Late Improvements of Practical, Useful Learning: to Encourage Philosophical Endeavours. Occasioned by a Conference with one of the Notional Way. . . .

London: Printed for James Collins at the King’s-Head in Westminster-Hall. 1668.

First edition. 8vo. 18 leaves, 149, (1) pp., 3 leaves. Fine copy, in original unlettered, blind-ruled calf. From the library of the celebrated hermeticists A. T. & M. Atwood, with their signature dated 1859, in ink, on the recto of the imprimatur leaf.

GLANVILL WAS a remarkable man in whom is epitomized the transition between the medieval and modern ways of thinking. While in the present work he eulogizes the modern discoveries of the recently formed Royal Society in all areas of human knowledge, in other works he defends the real existence of witches and supernatural phenomena. The thirteenth chapter is especially important as it discusses “what hath been done by the Illustrious Mr. Boyle for the promotion of Useful Knowledge.” The books by Robert Boyle are named (including *The Sceptical Chymist*) and their contents praised. The *Plus Ultra* contains much of chemical interest. The former owner of this copy, Mary Anne Atwood (1817–1910), published the famous and now very rare book *A Suggestive Inquiry into the Hermetic Mystery* (London, 1850), on the origin, purpose, and progress of

alchemy. (D.S.B., V, 416; Krivatsy, 4750; Osler, 2739; Thorndike, VIII, 567; Watt, I, 418w; Wellcome, III, 120; Wing, G820)

GLANVILL, Joseph

Scepsis Scientifica: Or, Confest Ignorance, the way to Science; In an Essay of The Vanity of Dogmatizing, and Confident Opinion. With A Reply to the Exceptions Of the Learned Thomas Albius. By Joseph Glanvill, M.A.

London: Printed by E. Cotes, for Henry Eversden at the Gray-Hound in St. Paul's Church-Yard. 1665.

First (only) edition. 4to. 18 leaves (including imprimatur and errata leaves), 184 pp. With the leaf (signature A1) containing the longitudinal title preceding the title page and the fine engraved arms of the Royal Society (signature A3). Fine copy in blind-ruled calf, rebounded, gilt-lettered maroon morocco label, and spine dated at foot. From the library of Professor E. N. da C. Andrade, with his bookplate on the inside of the front cover. Bound with: Glanvill, Joseph, *Scirei tuum nihil est* . . . (London, 1665).

GLANVILL (1636–1680), English philosopher and theologian and an original F.R.S. (1664), devoted himself to the history and philosophy of science. He defended the newly formed Royal Society against its critics, and in his much-discussed works argued that the new experimental philosophy was beneficial. He contended that the firsthand study of nature would advance knowledge and not conflict with true belief in God. His first work, *The Vanity of Dogmatizing* (London, 1661), defended the use of reason in religion and attacked sectarians, dogmatism, etc. It was promptly attacked by Thomas White, a Catholic Aristotelian, as being destructively sceptical and an aid to Hobbesian atheism. Glanvill replied in the present revised version, with additional essays directed at White, together with a prefatory address to the Royal Society, in 1664 (see imprimatur). “The address won Glanvil election to the Royal Society and a reputation as a potentially valuable apologist . . .” (D.S.B., V, 414–417). A very scarce work, especially when bound with the *Scirei*. An important association item, having come from the library of the celebrated physicist and bibliophile Andrade. Many copies of these works were destroyed in the great fire of London in 1665. Most copies of these works were bound together, as here, but some occur separately in contemporary bindings. (Morgan, 316; Osler, 2736; Watt, I, 418v; Wellcome, III, 120; Wheeler Gift, 147a; Wing G827)

GLANVILL, Joseph

Scirei tuum nihil est: Or, The Authors Defence of The Vanity of Dogmatizing; Against the Exceptions of The Learned Tho. Albius In his Late Sciri. No doubt but ye are the Men, and Wisdom shall dye with you! Job.

London: Printed by E. C. for Henry Eversden at the Grey-Hound in St. Paul's Church-Yard. 1665.

First (only) edition. 4to. 8 leaves, 92 pp. Fine copy, printed on thick paper. Bound with: Glanvill, Joseph, *Scepsis Scientifica* (London, 1665).

THIS IS Glanvill's carefully considered reply to Thomas White's *Sciri, sive Sceptices et Scepticorum* (London, 1663) (Wing W1841). Pages 77–92 comprise “A Letter to a Friend concerning Aristotle,” in which Aristotelian philosophy is assessed and criticized. According to a note in the Osler catalogue, this work and the *Scepsis Scientifica* are “strongly marked with the features of an acute, an original and (in matters of science) a somewhat sceptical genius.” Most copies are found bound with the *Scepsis*, but copies occasionally occur for sale bound separately in contemporary calf, so that the *Sciri tuum nihil est* must have also been sold on its own. This work is listed separately by Wing. Very scarce. (Morgan, 316; Osler, 2736; Watt, I, 418v; Wellcome, III, 120; Wheeler Gift, 147b; Wing G828)

GLANVILL, Joseph

The Vanity of Dogmatizing: or Confidence in Opinions Manifested in a Discourse of the Shortness and Uncertainty of our Knowledge, and its Causes; with some Reflexions on Peripateticism; and an Apology for Philosophy. By Jos. Glanvill, M.A.

London: Printed by E. C. for Henry Eversden at the Grey-Hound in St. Paul's Church-Yard. 1661.

First edition. 8vo. 16 leaves, 250, (6) pp. Title page in red and black within double rules. Very good copy in original unlettered calf.

THE AUTHOR'S first book of philosophical, scientific, and some chemical interest, covering the writings of Kenelm Digby, Descartes, Henry More, Thomas Hobbes, and others. Included are “How our bodies are formed . . . formation of plants and animals . . . Difficulties about the motion of a wheel . . . Earth's Motion . . . Ignorance and Errour . . . Prejudice of Custom and Education . . . Peripatetick Philosophy . . . Of the magnetick cure of wounds,” etc. Glanvill's “most famous work is his *Vanity of Dogmatizing*, of which the second edition had the title *Scepsis Scientifica*; and parts then also appeared in his *Essays on Several Important Subjects* . . . [it] was an appeal . . . for an empirical, open-minded approach to science [and] in many ways

this exuberant first work is his most enjoyable to read today" (Knight). (D.S.B., V, 415–416; Keynes, 2359; Knight, 31; Krivatsy, 4753; Roller & Goodman, I, 464; Thorndike, VIII, 567; Watt, I, 418v; Wheeler Gift, 147; Wing, G834)

GLASER, Christophe

Chimischer Wegweiser, das ist, sichere Anweisung zur Chimischen Kunst, darinnen durch einen kurtzen Weg und leichte Handgriffe gewiesen wird, wie man allerley Artzneyen durch die Chimie bereiten kan. Erstlich in Frantzösischer Sprach beschrieben von Christophoro Glaser, Ordinar-Apotheker des Königes und Ihrer Durchleuchtigkeit des Hertzogs von Orleans in Pariss; Anitzo aber auf Begehren in unsere Teutsche Sprache Übersetzet von einem Philochimico.
Jena: Verlegtes Joh. Jac. Bauhofer. 1684.

Second German edition. 12mo. 6 leaves, 445 pp., 10 leaves (last 3 blank). Fine engraved frontispiece (J.B.L. sc.) showing apparatus and chemical symbols, and 3 folding copperplates of furnaces and equipment. Superb copy in pristine condition, in the original vellum. From the Donausingen library (auctioned in 1982). Bound with: Zobel, F., *Tartarologia spagirica* (1684); Gehema, J. A., à, *Diatetica rationalis* (1688), and *Der . . . Feld-Medicus* (1689).

ACCORDING TO Ferguson, the translation into German was by the Frenchman Jean Menudier. In addition to the first German edition (Jena: J. J. Bauhofer, 1677), three further editions followed, all apparently textually identical: this of 1684, plus those of 1696 and 1710, both of which were published by J. Birckner. In addition to this translation by Menudier, another German translation by Johann Marschalck also appeared (Nuremberg, 1677), on which see Bolton, Duveen, and Partington. Rare. This edition is not in D.S.B., Duveen, Edelstein, Neu, Partington, Smith, Waller, Wellcome, etc. (Bolton, 482; Cushing, G271; Ferchl, 186; Ferguson, I, 321 [not in Young Coll.]; Ferguson Coll., 270; R. G. Neville, *Chymia*, 10 [1965], 28; Poggendorff, I, 909; Watt, I, 419c)

GLASER, Christophe

Chimischer Wegweiser, das ist, sichere Anweisung zur Chimischen Kunst, . . . in unsere Teutsche Sprache übersetzet von einem Philochimico.
Jena: Verlegt von Matthäo Bircknern, buchh. in Jena und Helmstädt. 1696.

Third German edition. 12mo. 6 leaves, 528 pp., 6 leaves (index). Fine engraved frontispiece (sumptib. Mattheus Birckner Bibl.), and 3 folding copperplates of chemical apparatus. Title in red and black. Good copy in contemporary vellum.

THE FIRST edition published by Birckner, and the third appearance of the Menudier translation into German. Rare. Not in D.S.B., Duveen, Edelstein, Ferchl, Ferguson, Ferguson Coll., Neu, Partington, Poggendorff, Smith, Waller, Watt, etc. (Bolton, 482; R. G. Neville, *Chymia*, 10 [1965], 28; Wellcome, III, 121)

GLASER, Christophe

Traité de la Chymie enseignant par une brieve et facile methode toutes ses plus necessaires preparations. Par Christophe Glaser Apothiquaire ordinaire du Roy.

Paris: Chez l'Authheur au Faubourg St. Germain pres le petit marché. 1663.

First edition, first issue. 8vo. 1 leaf (engraved title), 8 leaves (last blank), 378 pp., 2 leaves. With 2 double-page copperplates of chemical apparatus. Fine copy in contemporary calf, rebaked, with original gilt spine laid on.

ONE OF the most important chemical textbooks of the seventeenth century. The first issue has the *petit marché* imprint, while the second issue has a cancel slip with the *Rose rouge* imprint. Glaser (ca. 1615–ca. 1672), born in Basel, attended the university and graduated in pharmacy and medicine. About 1658 he came to Paris and opened a laboratory and pharmacy. Glaser was an excellent chemist and in 1660 succeeded the celebrated Nicolas Le Fevre as demonstrator in chemistry at the Jardin du Roi. His most famous pupil was Nicolas Lemery. The *Traité* is Glaser's only publication. Printed in small number at the author's expense, the first edition was sold from his house. Rapidly becoming a best seller, many editions in French appeared, with translations into German and English. A milestone in the development of the chemical text, it is stripped of alchemical mysticism and gives clear descriptions of chemical preparations. The first part covers theory, and the second describes recognizable chemical compounds arranged in modern format (*viz.* inorganic, organic, biochemistry). The preparation of potassium sulphate, which became identified with him and was known as "sel polychrestum Glaseri," is described on pages 206–208. The definitive article on Glaser and his important *Traité* is by R. G. Neville (*Chymia*, 10 [1965], 25–52). Very rare. This edition is not in Cushing, Morgan, Smith, Waller, Watt, Wellcome, etc. (Bolton, 482; D.S.B., V, 417; Duveen, 251; Edelstein, 1000; Ferchl, 186; Ferguson, I, 321 [not in Young Coll.]; Ferguson Coll., 270; Neu, 1637; Partington, III, 25; Poggendorff, I, 908; Read, *Humour and Humanism in Chemistry*, 1947, 114–115; Thornton & Tully, 120)

Jay donne ce Livre au
 Sieur Jacques de la Guibertiere
 en reconnaissance des
 offices qu'il ma rendu —
 fait a paris ce 9 juillet
 1665. Glaser

Glaser, Christophe. *Traité de la Chymie Enseignant*. Paris, 1663.

GLASER, Christophe

Traité de la Chymie Enseignant par une brieve et facile methode toutes ses plus necessaires preparations. Par Christophe Glaser Apothiquaire ordinaire du Roy.

Paris: Chez l'Autheur. 1663.

First edition. 8vo. 1 leaf (engraved title page), 8 leaves (last leaf blank), 378 pp., 2 leaves. With 2 double-page copperplates of chemical apparatus. Fine copy, in the original speckled calf, spine gilt. Presentation copy, inscribed on recto of second flyleaf: "Jay donne ce Livre au Sieur Jacques de la Guibertiere en reconnaissance des offices qu'il ma rendu—fait a Paris ce 9 Juillet 1665. C. Glaser." Bookplate of J. Laissus on front pastedown endpaper. From the library of Professor Franz Sondheimer (1926–1981), with his bookplate on the recto of the first free endpaper.

AN OUTSTANDING copy. Books inscribed by Glaser are of legendary rarity. This copy is important because it proves

that there were two issues of the first edition, a fact previously unknown. In the first issue, the imprint on the engraved title reads: "A Paris Chez l'Autheur au faubourg St. Germain pres le petit marché." In the second issue, as here, a small slip of paper has been pasted over the original imprint. The cancel slip is printed as follows: "A Paris, Chez l'Autheur, au Fauxbourg S. Germain, rue du petit Lyon, à la Roze rouge." It is known that in 1663, the date of the first issue, Glaser lived at the address given on the original title page. From the written inscription in this copy and the cancel slip, we now know that Glaser moved to a different address, from which he continued to sell copies of his famous and historically important textbook. The original recipient of this precious copy, Jacques de la Guibertiere, has not been identified. A unique and most desirable copy of a very rare book. There is no copy of the first edition in the Wellcome Library.

GLASER, Christophe

Traité de la Chymie, enseignant par une brieve & facile methode toutes ses plus necessaires preparations. Par feu Christophe Glaser, Apotiquaire ordinaire du Roy & de Monseigneur le Duc d'Orleans. Nouvelle edition. Revueë & augmentée en toutes ses parties, principalement dans la troisième, que la mort de l'Autheur avoit empêché de mettre en sa perfection.

Lyon: Chez Jean Thioly. 1676.

Third Lyons edition. 12mo. 6 leaves (including engraved title), 439 pp., 4 leaves (index). With 3 folding copperplates of chemical apparatus. Good copy in contemporary speckled calf, rebaked, with original gilt spine laid on.

THE PRESENT edition is based on that of Paris, 1672, which appeared shortly before Glaser died. It contains information acquired since the first edition of 1663. Earlier editions with a Lyons imprint were those of 1670 and 1673. A fourth edition from Lyons appeared in 1679. Smith (p. 195) lists an edition with apparently identical collation and pagination but with different imprint: Lyon, Chez Pierre Bailly & Benoist Bailly, 1676. Very rare. This edition is not in D.S.B., Duveen, Edelstein, Ferchl, Ferguson Coll., Neu, Partington, Poggendorff, Sondheimer, Waller, Watt, Wellcome, etc. (Bolton, 452; Ferguson, I, 321 [not in Young Coll.]; R. G. Neville, *Chymia*, 10 [1965], 28; Smith, 195)

GLASER, Christophe

The Compleat Chymist, or, a New Treatise of Chemistry. Teaching by a short and easy method all its most necessary preparations. Written in French by Christopher Glaser, Apothecary in Ordinary to the French King, and the Duke of Orleans. And from the fourth edition revised and augmented by the author. Now faithfully Englished by a Fellow of the Royal Society. Illustrated with copper plates.

London: Printed for John Starkey at the Miter in Fleet-Street, near Temple-Bar. 1677.

First English edition. 8vo. 8 leaves, 285 pp., 1 leaf. With 3 folding engraved plates of chemical apparatus. Very good copy in tan half calf antique, marbled boards, maroon morocco label, spine dated in gilt.

THE ONLY English edition, translated by an unidentified fellow of the Royal Society. In his biography of Glaser in the D.S.B., Owen Hannaway erroneously states that the English translation is based on the second French edition (Paris, 1668). However, it is plainly stated in the title of this English edition that the translation was made "from the fourth edition revised and augmented by the author." Thus, this English edition was probably made from the fourth Paris edition of 1674 or possibly from the third Paris

edition (1672) or second Lyon edition (1673). The contents of this important book are discussed in detail by R. G. Neville (*Chymia*, 10 [1965], 25–52) and much more briefly by Partington, Read, and Thorndike. As Duveen correctly points out: "This English version is rare." Not in Bolton, Cushing, Ferchl, Morgan, Poggendorff, Waller, etc. (D.S.B., V, 418; Duveen, 251; Edelstein, 999; Ferguson, I, 321 [not in Young Coll.]; Ferguson Coll., 270; Neu, 1639; Partington, III, 25; Read, *Humour and Humanism in Chemistry*, 1947, pp. 114–115; Smith, 195; Watt, I, 419c; Wellcome, III, 121; Wing, G843)

GLASER, Johann Adam

Dissertationem de variis philosophorum circa principia corporum naturalium, praesertim viventium, placitis, amplissimae Facultatis Philosophicae in Alma Philurea Consensu, H.L.Q.C. ad d. XXVII. Octobr. MDCLXXXIIX. P.P.M. Daniel Ringmacher, Ulmensis, respondente Joh. Adamo Glasero, Curia-Varisco.

Leipzig: Joh. Christoph. Brandenburger. (1688).

First (only) edition. 4to. 68 pp. Fine, crisp copy, unbound.

AN UNUSUALLY comprehensive and scholarly doctoral dissertation on the theories of the physical and chemical composition of matter. No bibliographic references have been found on Ringmacher, of Ulm, or of Glaser, his student. The composition of matter is considered from the standpoint of the four Aristotelian elements, Cartesian vortices, the atomic theories of Democritus and Epicurus, and from the point of view of the chemists: viz. the Paracelsian *tria prima* (i.e., philosophical salt, sulphur, and mercury [e.g., on p. 62 et seq.]). These theories are of great importance to the historian of physics and chemistry. There are numerous references to contemporary physicists, chemists, and natural philosophers (e.g., Boyle, Descartes, Gassendi, Digby, Van Helmont, and Newton). The existence of physical atoms is discussed, the production of vacua, the nature of acids, alkalies and salts, etc. Boyle's *Sceptical Chymist* (1661) is quoted in several places (e.g., p. 64), and the author seems to agree with Boyle's position with regard to there being many more substances that could be regarded as elementary than the few postulated by the Aristotelians and Paracelsian followers (ref. to Bohr, Helmont, et al.) An unusually enlightened account of theories current in Germany in the final years of the seventeenth century. Surprisingly, the theories of J. J. Becher are not mentioned, even though the earliest form of the phlogiston hypothesis, shortly thereafter so ably expounded by G. E. Stahl, had recently been announced (in 1669). An unrecorded work of very great interest in the history of chemistry, physics, and related disciplines. Extremely rare.

GLASS, Samuel

An Essay on Magnesia Alba. Wherein Its History is attempted, Its Virtues pointed out, and the Use of it recommended. . . .

Oxford: Printed for R. Davis, . . . and J. Fletcher, London. 1764.

First edition. 8vo. (in 4s). 6, 38 pp. Good, crisp copy, in half calf antique, marbled boards, spine gilt and dated at foot, maroon morocco label.

PUBLISHED EIGHT years after Joseph Black's celebrated research on magnesia alba (containing the announcement of the discovery of carbon dioxide), the present work is valuable for its historical sketch, which includes a quotation from the "very ingenious Dr. Black" (pp. 34–35 and 37). One of the earliest monographs on the subject in the English language, this small book was written by Glass, a surgeon in Oxford, to promote his preparation of magnesia alba, which he sold commercially. Thomas Henry published an improved method of preparing magnesia alba in 1771 and criticized Glass's process (see Partington, III, 691, note 1). Duveen states (erroneously) that this is a "precursor of Joseph Black's famous work." Scarce. Not in Bolton, D.S.B., Ferchl, Ferguson, Ferguson Coll., Partington, Poggendorff, Smith, Sondheimer, Watt, etc. (Blake, 177; Duveen, 251; Edelstein, 1002; Neu, 1641; Sotheran, Cat. 800 [1926], 10895; Waring, 552; Wellcome, III, 122)

GLAUBER, Johann Rudolph

Apologia sive Defensio Iohannis Rudolphi Glauberi Contra Christophori Farnneri mendacia & Calumnias. Cum privilegio S. C. Majest.

Frankfurt: Sumptibus Thomae Matth. Götzens. 1655.

First Latin edition. 8vo. 1 leaf (dated title page), 86 pp. (including undated title page with no imprint). Minor browning of a few leaves; otherwise very good copy. Bound with: Glauber, J. R., *Miraculum Mundi* (Amsterdam, 1653), and 6 other works by Glauber.

A TRACT IN which Glauber defended himself against the lies and attacks of one of his laboratory assistants. In 1651 Glauber established a laboratory in a large house in Kissingen, where he developed several useful technical processes. "One of his assistants, Farner, who was bound by a promise of secrecy, afterwards offered for sale some of Glauber's processes as his own, at the same time ridiculing his master, so that in 1655–7 Glauber published his defences against Farner and made known the secrets. He seems to have felt this ingratitude keenly, since he had, apparently, so far escaped this very common annoyance of gifted

men" (Partington, II, 341). As Glauber was anxious to clear his name, he also published an edition in German (Frankfurt, 1655; Ferguson Coll., 273). Most authorities cite the ninety-four-page Amsterdam (1655) edition (e.g., Caillet, 4565; Edelstein, 1003; Wellcome, III, 123). The present Frankfurt edition is very rare. (Duveen, 253 [wrong date: 1665]; Guaita, 353 ["très rare"]; Neu, 1644; Partington, II, 346; Rosenthal, 361)

GLAUBER, Johann Rudolph

Consolatio Navigantium: in quâ docetur, & deducitur, quomodo per maria peregrinantes à fame ac siti immò etiam morbis, qui longinquo ab itinere ipsis contingere possunt, sibi providers ac suppetiari liceat. . . . Per Job. Rud. Glauber.
Amsterdam: Apud Joannem Janssonium. 1657.

First Latin edition. 8vo. 96 pp. Very good copy. Bound with: Glauber, J. R., *Miraculum Mundi* (Amsterdam, 1653), and 6 other works by Glauber.

AN INTERESTING tract in which Glauber attempts to give advice and "consolation to navigators." He describes how to make long-lasting food and drink, so that "they who Travel by Sea may preserve themselves from Hunger and Thirst, as also from Diseases, which are wont to happen to them in long voyages" (*Works*, 1689, p. 278). The medicinal virtue of dilute hydrochloric acid "against Thirst, and also the Scurvy" is recommended. Also potable gold (i.e., gold chloride) added in very small amounts to wine is extolled as a remedy to restore the health and strength of sailors who become weak. A French translation by Du Teil appeared (Paris, 1659; 64 pp.; Ferguson, I, 323). (Caillet, 4568; Duveen, 257; Ferguson Coll., 271; Guaita, 353; Kri-vatsy, 4814; Neu, 1692; Osler, 2750; Parkinson & Lumb, 1021; Smith, 196; Verginelli, 130; Waller, 3574; Wellcome, III, 124)

GLAUBER, Johann Rudolph

De Igne Secreto Philosophorum. Oder Geheimen Feuw der Weisen. Dadurch die Philosophi nicht allein ihre Universal Medicin gegen alle natürliche Kranckheiten des Menschen aussgezeitiget, sondern auch particulariter alle geringen Metallen in gut (Gold und Silber) mit grossen Nutzen figirt und Cupellen beständig gemacht haben. Allen Liebhabern der göttlichen und natürlichen Weissheit zu gefallen beschriben und bekandt gemacht. Durch Johan Rudolph Glauber.
Amsterdam: Bey Johan Jansson à Waesberge, und Wittwe von Elisaeo Weierstraet. 1669.

First edition. 8vo. 54 pp., 1 leaf (errata). Very good copy in quarter calf antique, marbled boards, spine gilt-lettered and dated.

ONE OF the last books written by Glauber, in which he summarizes his knowledge on fire, alchemy, the calcination of metals, and related subjects. "After 1662 Glauber was plagued with ill health and was eventually bedridden for months at a time. He continued to write prolifically, but with more time for contemplation he began to emphasize the esoteric side of alchemy and to regret his years of toil in the laboratory. He believed that he had finally found the 'secret fire of Arterphius' and the material of the philosophers' stone. He died in 1670, poor, lonely, and embittered" (D.S.B. [V, 420], without naming this work). Duveen states, erroneously, that this is the "first and only edition in Latin." He cannot have examined it closely as the book is in German, except for the names of processes and chemicals, which are in Latin. Partington (II, 344), quoting de Villiers, states correctly that this is one of "14 works . . . not translated into Latin." Alchemical symbols are used throughout. Not in Bolton, Caillet, Edelstein, Guaita, Hoover, Mellon, Smith, Sondheimer, Thorndike, Waller, etc. (Cushing, G281; Duveen, 259–260; Ferchl, 188; Ferguson, I, 328 [not in Young Coll.]; Ferguson Coll., 271; Neu, 1652; Partington, II, 347; Poggendorff, I, 910; Rosenthal, 367; Watt, I, 419s; Wellcome, III, 125)

GLAUBER, Johann Rudolph

Explicatio Tractatuli, qui Miraculum Mundi inscribitur, nuper à Joh. Rud. Glaubero editi, tam plana quam solida, in rei veritatis testimonium, & artes amore prosequentium utilitatem, Authore ipso Glaubero . . .

Frankfurt: Impensis Thomae Matthiae Götzens. 1656.

Second Latin edition. 8vo. 62 pp., 1 leaf (blank). Leaves uniformly lightly browned (owing to quality of paper); otherwise very good copy. Bound with: Glauber, J. R., *Miraculum Mundi* (Amsterdam, 1653), and 6 other works by Glauber.

A TRACT IN which Glauber clarifies certain parts of his *Miraculum Mundi* and adds more information. Editions in German (Amsterdam, 1656, 71 pp.; Duveen, 253) and the first Latin edition (Amsterdam, 1656, 70 pp., Duveen, 254) appeared earlier the same year. This Frankfurt printing is rare. (Ferguson Coll., 273; Krivatsy, 4781; Partington, II, 345; Wellcome, III, 123)

GLAUBER, Johann Rudolph

Furni Novi Philosophici, sive Descriptio Artis Destillatoriae Novae; nec non Spirituum, Oleorum, Florum, aliorumque Medicamentorum illius beneficio, facillimâ quâdam & peculiari viâ è vegetabilibus, animalibus & mineralibus, conficiendorum & quidem magno cum lucro; agens quoque de illorum usu tam chymico quàm medico, edita & publicata in gratiam veritatis Studiosorum per Joannem Rudolphum Glauberum.

Amsterdam: Prostant apud Joannem Janssonium. 1651.

First Latin edition. 8vo. 6 parts in 1 vol., each with divisional title page. 67 pp., 2 leaves (last blank), 148 pp., 2 leaves, 55, (1) pp., 83 pp., 2 leaves (last blank), 54 pp., 3 leaves (blank), 72 pp. With 3 folding woodcut plates and 8 woodcuts in text. Occasional neat seventeenth-century annotations and underlinings in ink, and sketch of a furnace and chemical apparatus on a blank leaf (facing p. 54 of part V); otherwise a fine copy in calf antique, spine gilt-lettered.

"CERTAINLY ONE of the most remarkable books on chemistry of the seventeenth century" (Ferguson). The first edition appeared in German in five parts, sequentially published as *Furni novi philosophici oder Beschreibung einer Newerfundener Distillir-Kunst* (Amsterdam: Johan Fabel, 1646, 1647, 1648, 1648, 1649). Immediately acclaimed as an important work, it was translated into the present Latin edition (1651) and soon after into English by John French (London, 1651–52). A French translation by Du Teil appeared later (Paris, 1659), together with subsequent editions in Latin, French, and German. Glauber (1604–1670), one of the greatest practical chemists of the seventeenth century, obtained his extensive knowledge by carrying out his own experiments. The *Furni novi* is by far his most important book. Rare. Not in British Library. Not in Bolton, Duveen, Ferguson Coll., Neu, Smith, etc. (Caillet, 4573; D.S.B., V, 423; Edelstein, 1008; Ferchl, 187; Ferguson, I, 323 [imperf.]; Forbes, 377; Hoover, 362; Morgan, 319; Partington, II, 344–345; Rosenthal, 372; Sondheimer, 620; Wellcome, III, 125)

GLAUBER, Johann Rudolph

A Description of New Philosophical Furnaces, or a new Art of Distilling, divided into five parts. Whereunto is added a Description of the Tincture of Gold, or the true Aurum Potabile; also, the First part of the Mineral Work. Set forth and published for the sakes of them that are studious of the Truth. By John Rudolph Glauber. Set forth in English, by J. F. D. M.

London: Printed by Richard Coats, for Tho. Williams, at the Signe of the Bible in Little-Britain. 1651.

First English edition. 4to. 7 parts with separate title pages (all but the first dated 1652), with continuous pagination. 8 leaves, 452 pp., 6 leaves (including errata leaf). Numerous woodcuts of furnaces and chemical apparatus. Woodcut capitals and headpieces. Neat seventeenth-century annotations in ink on flyleaves and a few margins. Lacks Qq1 (a blank); otherwise a very good copy in contemporary blind-ruled polished calf, rebacked to match, label gilt, spine dated. From the library of John Shirley (fl. 1678), medical writer (see D.N.B.) and author of *The Accomplished Ladies Rich Closet* (London, 1687), with his signature on the stub of a flyleaf at the end.

THE FIRST English translations of *Furni novi philosophici* (Amsterdam, 1646–49), *De auri tinctura* (Amsterdam, 1646), and the first part of *Operis mineralis* (Amsterdam, 1650). The second and third parts of the *Operis* were first printed in 1651 and were not available to the translator, John French (ca. 1616–1657). The first printing in England of any of Glauber's works, containing everything he had published to this time. *New philosophical furnaces* is Glauber's principal work. The other two treatises are more alchemical in character. "A book written with a clarity . . . almost unprecedented in early chemistry" (D.S.B.). "A compendium of chemical preparations . . . consisting to a large extent of original work" (Read, *Humour and Humanism in Chemistry*, pp. 92–95). (Duveen, 252; Edelstein, 1006; Ferchl, 187; Ferguson, I, 329 [not in Young Coll.]; Ferguson Coll., 272; Hoover, 363; Morgan, 318; Partington, II, 345; Smith, 197; Wing, G846)

GLAUBER, Johann Rudolph

Miraculum Mundi, sive Plena Perfectaque descriptio admirabilis Naturae, ac Proprietatis potentissimi Subiecti, ab antiquis Menstruum Universale sive Mercurius Philosophorum dicti: quo Vegetabilia, Animalia & Mineralia facillime in saluberrima Medicamenta, & imperfecta Metalla in permanentia ac perfecta transmutari possunt. In gratiam secretae Naturae Scrutatorum editum, à Johanne Rudolpho Glaubero, atque ex Germanico Latinum factum.

Amsterdam: Apud Joannem Janssonium. 1653.

First Latin edition. 8vo. 87, (1) pp. Eighteenth-century stamp on title page (Js. Ae. Rabaut); otherwise very good copy, in blind-ruled calf antique, maroon morocco label. Bound with: 7 other works by Glauber (1655–1659). Bookplate: Franz Sondheimer.

A TREATISE ON the universal solvent, the mercury of the philosophers, and the transmutation of metals. An edition of this text in German appeared almost simultaneously (Hanau, 1653; Ferguson, I, 324; reprinted in German, Amsterdam, 1653; Duveen, 252). Very rare. (Caillet, 4576; Ferguson Coll., 272; Guaita, 353; Neu, 1670; Partington, II, 345; Sondheimer, 622; Verginelli, 122; Wellcome, III, 123)

GLAUBER, Johann Rudolph

Miraculi Mundi Continuatio, in qua Tota natura denudatur, & toti Mundo nudè ob oculos ponitur; imò dilucidè & apertè demonstratur, fieri posse, ut ex Sale petrae omnium Vegetabilium, Animalium & Mineralium summa Medicina paretur, ac ideò Sal petrae jure ac meritò verum Subjectum solvens, sive Menstruum Universale . . . appellari queat. Miracula Divina manifestandi, & Hermeticae Medicinae studiosos docendi gratis conscripta, & in lucem edita Studio & Opera Johan. Rud. Glauberi.

Amsterdam: Apud Joannem Janssonium. 1658.

First Latin edition. 8vo. 133, (1) pp., 2 leaves (blank). With 3 folding engraved plates of furnaces (1 plate rebacked). Very good copy. Bound with: Glauber, J. R., *Miraculum Mundi* (Amsterdam, 1653), and 6 other works by Glauber.

THE SEQUEL TO *Miraculum mundi* (1653), in which the author gives details of four "excellent Arcanums [that] will prove very profitable to the publick" (Glauber, *Works* [1689, p. 186]). The first arcanum is offered to husbandmen, vintners, gardeners, and farmers. The second is for citizens, merchants, and those who wish to "augment or improve their Gold and Silver." The third arcanum "I present to all . . . Physicians . . . to prepare Salutiferous . . . Medicines"; and the fourth is dedicated to persons of "great Name and Authority" for the benefit of their health. The interesting plates (with captions in German) depict laboratories, furnaces, equipment, and chemical processes. The text describes the various uses of furnaces and apparatus, with practical directions for the purification of metals. (Caillet, 4577; Duveen, 254; Ferguson, I, 325; Ferguson Coll., 273; Neu, 1673; Partington, II, 345; Smith, 197; Verginelli, 126; Waller, 11151; Wellcome, III, 123)

GLAUBER, Johann Rudolph

Tractatus de Natura Salium. Sive Dilucida descriptio, perfecta explanation declarans naturam, proprietates, & usus salium vulgò notorum, ut & alius cujusdam, admodum mirabilis, & hactenus mundo ignoti salis, cujus adjumento omnia Vegetabilia, Animalia, & Mineralia, sine ponderum suorum diminutione, & formarum mutatione in dura, & incombustibilia corpora transmutari possunt . . . descriptus & in lucem editus opera & studio Rudolphi Glauberi.

Amsterdam: Apud Ioannem Janssonium. 1659.

First Latin edition. 8vo. 8 leaves, 96 pp. Very good copy. Bound with: Glauber, J. R., *Miraculum Mundi* (Amsterdam, 1653), and 6 other works by Glauber.

ONE OF the author's most important books on the nature of salts, in which he describes his discovery of "Glauber's Salt" (sodium sulphate decahydrate), which he named "sal

mirabile." The Latin translation was made from the first edition in German (Amsterdam, 1658, 120 pp.; Caillet, 4590; Poggendorff, I, 910). It was only in 1658 that Glauber recognized the significance of his sal mirabile and began to use it in the central position that niter (potassium nitrate) had formerly held. Made as a by-product of his secret process for making hydrochloric acid from common salt and sulphuric acid, Glauber believed that sal mirabile was common salt brought to its highest degree of purity. He thought that common salt was present everywhere in nature and maintained that salts could be converted into one another. All salts, he believed, were merely different forms of primordial common salt. "Glauber therefore saw no incompatibility between his previous focus on niter and his new commitment to 'sal mirabile'" (D.S.B.). Ferguson does not mention the German or Latin editions of this significant work. (D.S.B., V, 422; Duveen, 257; Edelstein, 1014; Ferguson Coll., 274; Krivatsy, 4811; Neu, 1690; Partington, II, 346; Smith, 198; Verginelli, 130; Wellcome, III, 124)

GLAUBER, Johann Rudolph

Tractatus de Signatura Salium, Metallorum, et Planetarum, sive Fundamentalis Institutio, evidentissimè monstrans, quo pacto facillimè non solum Salium, Metallorum, atque Planetarum, sed etiam Appellationum, & Nominum ipsis impostorum Vires, Significatio, Natura, & Proprietates, non ex Libris, aut Scriptis, sed nudâ ipsorum Signaturâ, Circuli & Quadrati ope, cognosci, addisci, & supputari queant. . . . in lucem editum a Joanne Rudolpho Glaubero.

Amsterdam: Apud Joannem Janssonium. 1659.

First Latin edition. 8vo. 44 pp. With 7 woodcut figures on page 7 (alchemical symbols for metals). Very good copy. Bound with: Glauber, J. R., *Miraculum Mundi* (Amsterdam, 1653), and 6 other works by Glauber.

TRANSLATED FROM the German (Amsterdam, 1658; Caillet, 4590), this is a sequel to the *Tractatus de natura salium* (1659), in which Glauber discusses the signatures of salts and metals, correlating them with the seven known planets. Substances definitely known to be metals were gold, silver, mercury, copper, iron, tin, and lead. Alchemical symbols are given for these metals, and each is associated with a celestial body: e.g., Sun = gold; Moon = silver; Mercury = mercury; Venus = copper; Mars = iron; Jupiter = tin; and Saturn = lead. "Glauber estimated the degrees of perfection of the metals from the number of sides of an enclosing square which made contact with their symbols" (Read, *Prelude to Chemistry* [1936, p. 89]). Only a later (1703) German edition is described by Ferguson (I, 327–328), and the same edition is in Ferguson Coll. (p. 274). (Duveen, 257; Edelstein, 1015; Krivatsy, 4812; Neu, 1690; Osler, 2752; Partington, II, 346; Verginelli, 130; Wellcome, III, 124)

GLAUBER, Johann Rudolph

Tractatus Medicina Universalis, sive Auro Potabili Vero, hoc est, Accurata Descriptio verae Medicinæ Universalis, ejusque admirabilis efficaciae & virtutis, quas in Vegetabilia, Animalia & Mineralia exercet. . . . Johan. Rudolph Glaubero.
Amsterdam: Apud Joannem Janssonium. 1658.

First Latin edition. 8vo. 75, (3) pp. Very good copy. Bound with: Glauber, J. R., *Miraculum Mundi* (Amsterdam, 1653), and 6 other works by Glauber.

A DETAILED DESCRIPTION of Glauber's potable gold, in which he discusses the uses of medicines made from various salts, some of which contained gold in solution. He claims to have extracted "gold" (i.e., medicinally useful) salts from animals, plants, and minerals by the use of fire (i.e., pyrolysis). This Latin translation was made from the earlier German edition (Amsterdam, 1657; Cushing, G286; Wellcome, III, 124). Ferguson (I, 328) describes the French translation by Du Teil (Paris, 1659). (Duveen, 254; Ferguson Coll., 274; Neu, 1688; Parkinson & Lumb, 1032; Partington, II, 346; Poggendorff, I, 910; Smith, 198; Wellcome, III, 124)

GLAUBER, Johann Rudolph

The Works of the Highly Experienced and Famous Chymist, John Rudolph Glauber: containing, Great Variety of Choice Secrets in Medicine and Alchymy in the Working of Metallick Mines, and the Separation of Metals: also, Various Cheap and Easie Ways of making Salt-petre, and Improving of Barren-Land, and the Fruits of the Earth. Together with many other things very profitable for all the Lovers of Art and Industry. Translated into English, and Published for the Publick Good by the Labour, Care, and Charge, of Christopher Packe, Philo-chymico-Medicus.

London: Printed by Thomas Milbourn, for the Author, and are to be sold at his House next Door to the Gun in Little-Moorfields; by D. Newman . . . and W. Cooper . . . 1689.

First edition. Folio, 3 parts in 1 vol. 7 leaves, 440 pp., 2 leaves, 220, 92 pp., 6 leaves. With 6 copperplates (1 folding), 4 woodcut plates, and woodcut in text. Separate title page to second part. Few neat marginal annotations in ink; otherwise fine copy in dark-blue nineteenth-century crushed morocco, gilt dentelles on both covers, spine richly gilt.

FIRST ENGLISH edition of Glauber's collected works, omitting his religious writings, illustrated by copperplates (with German captions) used in the original *Opera omnia* (Amsterdam, 1661). The reengraved woodcuts are copies of those in the *New philosophical furnaces* (London, 1651–52). Among the 190 subscribers are R. Boyle, William Cooper (bookseller of chemical works), Edmund Dickenson

(the dedicatee), and William Penn (founder of Pennsylvania). Some copies have a frontispiece that is a duplicate of the plate facing page 189 (Glauber's "Iron Man"). This has given rise to the misconception that there should be eleven plates, whereas ten are actually called for. The editor, Packe (fl. 1711), chemist and physician, published other chemical works. In 1694 Packe reissued the sheets of the 1689 edition with ten plates. (Bolton, 483; Cushing, G287; D.S.B., V, 423; Duveen, 260; Edelstein, 1018; Ferguson, I, 322; Ferguson Coll., 270; Hoover, 367; Neu, 1695; Osler, 2740; Partington, II, 344; Smith, 195; Sondheimer, 621; Watt, I, 419s; Wellcome, III, 124; Wing, G845)

GMELIN, Georg Ludwig

De Jacob. Boehmio judicium Henrici Mori philosophi & theologi celeberrimi Angli . . . praeside D. Jo. Wolfgang. Jägero, . . . respondente M. Georgio Ludovico Gmelin, Stuttgart. . . . ad dies (blank) & (blank) Sept.
Tübingen: Typis Viduae Georgi Heinrici Reisii. 1708.

First edition. 4to. 28 pp. Woodcut headpiece and initial. Very fine, crisp copy, with wide margins, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A DISSERTATION BY Gmelin (dates unknown), of Stuttgart, with the Lutheran divine Johann Wolfgang Jäger as praeses. The author discusses the English divine Henry More (1614–1687) and his opinions on the philosophy of the famous visionary and founder of the Behmenist sect, Jacob Boehme (1575–1624). The Aristotelian four elements, combustion, niter, fermentation, and other chemical subjects are covered in this strange work, with references to Dolaeus, Paracelsus, Willis, et al. Very rare. Not found in available bibliographies.

GMELIN, Johann Friedrich

Apparatus medicaminum tam simplicium quam praeparatorum et compositorum in praxeos adjumentum consideratus. P. II. Regnum minerale complectens. . . .
Göttingen: Apud Joann. Christ. Dieterich. 1795–1796.

First edition. 2 vols., 8vo. I: 2 leaves, 452 pp., 6 leaves. II: 1 leaf, 313, 5 pp. With 5 folding plates (engraved by Richter). Occasional very minor foxing; otherwise excellent set, entirely uncut, in original quarter vellum, marbled boards. Title pages inscribed "Ex libris Societatis Medicae Edinensis."

ALL THAT was published of this important, comprehensive, and interesting work on the preparation and properties of substances used in medicine. The first volume covers minerals, salts, and some metals, and the second deals with metals and their compounds. Complete in itself, this book is a supplement to the *Apparatus medicaminum* (Göttingen,

1776–90, 6 vols., 8vo.), by the Swede Johan Anders Murray (1740–ca. 1791), whose work covers only plants and their medicinal products. Gmelin (1748–1804), associate professor (1772) of medicine at Tübingen, then (1775) of medicine and chemistry at Göttingen, became full professor in 1780. He published books on chemistry and pharmacy, a few papers in journals, and a famous history of chemistry. The present work contains a great deal of historical and bibliographical information and is rare. Gmelin was the father of Leopold Gmelin (1788–1853), author of the great textbook of chemistry that was translated and published by the Cavendish Society. Bolton, Ferchl, and Poggendorff give long lists of Gmelin's publications but do not mention the present title. The Wellcome Library lacks the first volume. Not in the usual chemical and medical sources. (Blake, 178; Neu, 1700; Waring, 64, 168; Watt, I, 420m; Wellcome, III, 127)

GMELIN, Johann Friedrich

Chemische Grundsätze der Gewerbkunde . . .
Hannover: bei Christian Ritscher. 1795.

First edition. 8vo. x, 628 pp. Crisp copy in pristine state, in original marbled boards, old ink-lettered paper label on spine.

AN IMPORTANT work on the chemical principles of technology, in which Gmelin discusses the manufacture of numerous chemicals, the refining of metals, dyeing, glass-making, milk production, and many other subjects involving applied chemistry. One of the rarest books by Gmelin, it is unknown to most chemical historians. (Bolton, 485; Ferchl, 190; Kopp, *Geschichte der Chemie*, 1844, II, 100)

GMELIN, Johann Friedrich

Geschichte der Chemie seit dem Wiederaufleben der Wissenschaften bis an das Ende des achtzehenden Jahrhunderts. . . .
Göttingen: bey Johann Georg Rosenbusch. 1797, 1798, 1799.

First edition. 3 vols., 8vo. I: viii, 777, (1) pp. II: (iv), 790 pp. III: (vi), 1288 (recte 1294) pp., 48 leaves (index). Mint copy, crisp and spotless, in original half sheep, spines gilt-ruled, marbled boards, blue morocco labels, gilt.

A MASSIVE HISTORY of chemistry containing a vast amount of information: a milestone in the development of this type of work. "Gmelin's *Geschichte* is one of the recognised books of reference for the older Chemistry. It is not, however, really a history, but a collection of materials towards a history. It is a great enumeration of dates and authors and titles, of mining statistics and of the discovery of substances, etc., but it is devoid of systematic arrangement" (Ferguson). Zeitlinger (Sotheran) quotes Hermann Kopp: "Gmelin's

Geschichte is a proof of his diligence and his erudition, for which today's literature has no peer and through which all later treatises on the subject have been facilitated" (translation). "It excels in bibliographical references" (Bolton). (Blake, 178; Bolton, 114; Duveen, 261 [imperf.]; Edelstein, 1022; Ferchl, 189; Ferguson, I, 332; Ferguson Coll., 275; Neu, 1703; Partington, IV, 181; Poggendorff, I, 915; Smith, 199; Sondheimer, 625; Sotheran, Cat. 800 [1926], 10912 ["Scarce"]; Watt, I, 420m; Wellcome, III, 127)

GMELIN, Johann Friedrich

Grundsätze der technischen Chemie, entworfen Johann Friedrich Gmelin . . .

Halle: bei Johann Jacob Gebauer. 1786.

First edition. 2 parts in 1 volume, 8vo. xvi, 750 pp., 1 leaf (blank); viii, 402 pp. Very fine copy in contemporary marbled boards, old ink-lettered paper label on spine.

THE FIRST edition of "eines der besseren Lehrbücher aus jener Zeit" (Hirsch, II, 776–777). "A comprehensive text on technological chemistry" (Cole). There are substantial sections on distillation, dyeing, fermentation, glass, and many other subjects on applied chemistry. The extensive *Anhang* (appendix) deals with chemical analysis and the assaying of ores and metals. The copy at the University of Oklahoma lacks the *Anhang*. Rare. Not in D.S.B., Duncan, Edelstein, Ferguson, Partington, Poggendorff, Ron, Wellcome, etc. (Bolton, 485; Cole, 535; Duveen, *Supplement*, 156; Ferchl, 190; Kopp, II, 100; Roller & Goodman, I, 466)

GMELIN, Leopold

Handbuch der theoretischen Chemie zum Behuf seiner Vorlesungen entworfen von Leopold Gmelin . . .

Frankfurt am Main: in Commission bei Franz Varrentrapp. 1817–1819.

First edition. 3 vols., 8vo. I (1817): x, (4), 354, (2) pp. II (1817): 2 leaves, 355–934, (2) pp. III (1819): 4 leaves, 935–1588 pp. Occasional light foxing; otherwise very good set in original gilt-ruled marbled boards, red morocco labels (not on vol. I). Old ownership stamp on title pages: Anstalt Senenstein.

THE MOST famous member of a distinguished family of chemists, Leopold Gmelin (1788–1853) was professor (1817–51) of medicine and chemistry at the University of Heidelberg. Although he made extensive researches on organic and inorganic compounds, the *Handbuch der theoretischen Chemie* was his "masterwork" (D.S.B.). It passed through many editions and was kept up-to-date, and its successors are current today. In this treatise Gmelin sought to give a "complete, objective presentation of the prevailing

state of chemistry . . . it was Gmelin's task to unify it through his own knowledge and—more important—the existing literature. He planned, then, to adduce all pertinent facts, arrange them by element and compound, and give appropriate references" (D.S.B.). "He produced a very good handbook. . . . The work was better than Berzelius's *Lehrbuch* in several respects. . . . It gave references, was very concise yet aimed at completeness, and contained very little theory" (Partington). Rare. (Bolton, 485; D.S.B., V, 430; Ferchl, 190; Partington, IV, 181–182; Poggendorff, I, 916; Thornton & Tully, 218)

GMELIN, Leopold

Hand-Book of Chemistry. By Leopold Gmelin . . . Translated by Henry Watts . . .

London: Printed for the Cavendish Society. 1848–1872.

First English edition. 19 vols., 8vo. I (1848): (2), xviii, 519, (1) pp. II (1849): xv, (1), 504 + 8 pp.; 1 plate. III (1849): xxxvi, 488 + 2 pp. IV (1850): xl, 450, (2) + 16 pp. V (1851): xliii, (1), 499, (1) pp. VI (1852): xxxviii, (2), 428 + 8 + 4 pp. VII (1852): xv, (3), 501, (1) + 5, (3) pp. VIII (1853): xviii, (2), 499, (1) + 5, (3) pp. IX (1855): xxi, (1), 523, (1) pp. X (1856): xxvi, 566 + 5, (3) pp. XI (1857): xxiv, 526, (2) + 5, (3) pp. XII (1858): xxiv, (2), 560 pp. XIII (1859): xxviii, 588 pp. XIV (1860): xxiv, 534, (2) + 5, (3) pp. XV (1862): xxviii, 544 + 5, (3) pp. XVI (1864): (2), xxiii, (1), 536 + 4, (4) + 5, (3) pp. XVII (1866): xxxiii, (1), 618 pp. XVIII (1871): xix, (1), 469, (1) + (2) pp. XIX (1872): (4), 331, (1) pp. Very good set, top edges gilt, others uncut, in original green ribbed cloth, gilt monogram of Cavendish Society on all covers. Bookplate: J. Denham Smith, nineteenth-century chemist.

HENRY WATTS (1815–1884), professor of chemistry (University College, London, 1848–57), translated the fourth edition of Gmelin's *Handbuch der Chemie* (Heidelberg, 1843–70, 10 vols.) and added numerous notes to this English edition. The first six volumes cover metals, nonmetals, and their compounds; the other volumes are on organic chemistry. Thousands of references to original sources are cited, and the work is valuable for tracing the history of individual compounds. The final volume contains an index to the entire work. The former owner of this classic treatise, J. Denham Smith, is mentioned by Partington for his research on ferric acid. Complete sets are very scarce. (Bolton, 486; Ferchl, 568; Partington, IV, 182; Smith, 200)

GODFREY, Ambrose

An Account of the New Method of Extinguishing Fires by Explosion and Suffocation. Introduced by Ambrose Godfrey of Covent-Garden, Chymist. Wherein a description is given of the severall machines and their uses, together with plain and sufficient directions for the proper application of them. A method easily practicable, certain in its effects, and so universally useful to the publick, that his Majesty has been moved to authorize . . . his most gracious letters patents. To which is added, a short narrative of Mr. Povey's behaviour in relation to this useful invention . . .
(London:) Printed in the Year 1724.

First edition. 8vo. xvi, 40 pp. Copperplate vignette of burning house on page 1, and woodcut head- and tailpieces. An excellent copy, finely bound in gilt-lettered brown crushed morocco, by Sangorski & Sutcliffe.

GODFREY-HANCKEWITZ (1660–1741), a German who later dropped the second part of his surname, was employed for many years as an operator in the laboratory of Robert Boyle. Elected F.R.S. (1729), he established his own laboratory, where he made and sold the phosphorus for which he became famous (see Partington, II, 543–544). Godfrey describes here his new method of extinguishing fires by explosion with gunpowder, where water is of no use: this method is still used to put out oil-well fires. In 1723, before members of the Royal Society, a specially made three-story wooden house filled with combustible materials was set on fire, and when the flames were at their maximum height, the fire was completely extinguished by setting off gunpowder in a strategic location in the burning house. Apart from a paper on phosphorus in the *Philosophical Transactions of the Royal Society*, this is Godfrey's only publication. Extremely rare. Second and third editions appeared (1743, 1744). (Edelstein, 3856; Smith, 200; Watt, I, 421q)

GODFREY, Ambrose, and GODFREY, John

A Curious Research into the Element of Water; containing Many Noble and Useful Experiments on that Fluid Body. As I. Three different Experiments of reducing Water into Earth. II. Several Experiments of turning Salts into Water, with a Method of discovering their intrinsic Earths, and of what Nature they are. III. A Method of turning Vitriol of Mercury into Water; with a way to extract the genuine Earth of that corrosive Body. IV. An Experiment proving that that [sic] there is a latent Fire in Water; with a Method to attract the said Fire from the Water, and to render it visible, &c. &c. The whole Interspersed with Curious Queries and Remarks. Being the Conjunctive Trials of Ambrose and John Godfrey, Chymists, from their late Father's Observations.

London: Printed by T. Gardner, and Sold at his Printing-Office, at Cowley's-Head, opposite St. Clement's Church in the Strand. 1747. (Price One Shilling.)

First edition. 4to. 1 leaf. 18 pp. Fine copy in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

AMBROSE GODFREY, the younger (d. 1756), and his brother, John (fl. 1747), were both chemists. They were the sons of Ambrose Godfrey-Hanckewitz (1660–1741), a chemist who was employed by Robert Boyle. In the present work on the supposed composition of water (then believed to be an element), the authors describe many experiments of their own, as well as refer to the works of Boerhaave, Francis Bacon, Boyle, Godfrey-Hanckewitz, Newton, and others. Experiments on the gradual conversion of water into earth, the production of water from deliquescent salts, and other processes are described, as is the supposed presence of phlogiston in water. This very rare book provides a fascinating glimpse into the minds of eighteenth-century chemists and the primitive state of chemical theory. Not in Blake, Waring, or Wellcome, or the usual bibliographies. (Edelstein, 1023; Partington, II, 761; Watt, I, 421q)

GODFREY, Boyle

Miscellanea vere Utilia: or Miscellaneous Experiments and Observation [sic] on Various Subjects. In Three Parts. Part I. Observations and Experiments on Aliments, in order to Health and longer Life; wherein divers Kinds of Foods daily in use that are repugnant to Health are mentioned; and Teas and Wines particularly consider'd; also Eatables that are not work'd on by the digestive Faculty are pointed out: With the best Ways of regulating Diet laid down; deliver'd in Latin Lectures to Students by the Author, in a plain and easily intelligible Manner; now made English. Part II. Observations on some Parts of the Materia Medica, whence will appear the present Mistakes about the same. Likewise a Search into the Nature of Colours, whereby to know which are those that destroy the Workmen; with some Thoughts on the deplorable State of other Artificers. Part III. Divers useful Discoveries that occur'd to the Author during many Years researches in Chymistry. . . .

London: Printed for J. Robinson, near the Bedford Tavern in Tavistock-Street, Covent Garden; and to be had at the Dispensary near the same Place. N.d. (ca. 1735).

First edition. 8vo. (in 4s). 5 leaves, 138 pp. Woodcut capitals, head- and tailpieces. Crisp, clean copy, in blind-ruled sheep antique, maroon morocco label, gilt.

GODFREY (1688–1756) was one of the sons of Ambrose Godfrey-Hanckewitz, who was Robert Boyle's operator (i.e.,

laboratory assistant). "An interesting collection of observations . . . by one of the few professional chemists of the period [who] ruined himself by his passion for alchemy" (Duveen). A second edition, slightly enlarged, appeared (London, 1737; 152 pp.), copies of which are recorded by Blake, Ferchl, Watt, and Wellcome. The first edition is very rare and is not mentioned by most authorities. (Duveen, 262; Neu, 1707; Partington, II, 761)

GOES, Willem

Rei Agrariae Auctores legesque variae. Quaedam nunc primum, caetera emendatiora prodeunt cura Wilelmi Goesii, cujus accedunt Indices, Antiquitates agrariae & Notae: una cum Nicolai Rigaltii Notis & Observationibus, nec non Glossario ejusdem.
Amsterdam: Apud Joannem Janssonium à Waesberge. 1674.

Third edition. 4to. 10 leaves, 360 pp., 30 leaves, 328 pp. Engraved frontispiece, and numerous copperplates and woodcuts (many full page or almost full page). Fine copy, in original vellum. Embossed stamp of J. F. Jolibois Curé de Trévoux on first free endpaper.

THE FINAL and best edition (first, possibly 1603) of this classic agricultural work by Goes, latinized as Goesius, an early-seventeenth-century Dutch nobleman and senator. This edition contains important emendations and observations by Nicolas Rigault (1577–1654), which were added to the second edition of 1614. Of chemical interest are discussions of amber, alcohol, fire, Aristotelian elements, petrification, properties of metals and minerals, generation of metals in ores, mercury as the basis of all metals, common salt, and salts in general, etc. Although agricultural chemistry had not yet developed as a science, it is evident from this work that farmers of the sixteenth and seventeenth centuries possessed rudimentary but important knowledge of the beneficial effects of treating arable land with certain chemicals (e.g., common salt, chalk, lime, and plant ashes). In 1824 Watt described the present edition as an "esteemed and scarce work." It is now rare. (Brunet, IV, 1194–1195; Watt, I, 422q)

GOGUET, Antoine Yves

The Origin of Laws, Arts, and Sciences, and their Progress among the most Ancient Nations. Translated from the French of the President De Goguet. In three volumes. Adorned with cuts.

Edinburgh: Printed by Alex. Donaldson and John Reid. For the Translator. Sold by A. Donaldson. 1761.

First edition in English. 3 vols., 8vo. I: xxvi + 402 pp. With 3 engraved plates (2 folding) and 1 folding table. II: vi + 424

pp. With 1 folding table. III: vi + 340 pp. + 2 leaves (advertisements). With 6 folding engraved plates and 1 folding table. Fine copy in contemporary speckled calf, maroon morocco labels, spines gilt-ruled. Armorial bookplates: Thomas Munro (1761–1827).

WITH THE assistance of A. C. Fugère, this work originally appeared at Paris in 1758 with the title *De l'origine des loix, des arts, et des sciences; et de leurs progrès chez les anciens peuples*. Goguet (1716–1758) herein shows familiarity with the classical writers of antiquity, and the work contains extensive sections on the history of practical arts, technology, and manufactures, some of which is of interest to the chemical historian. Volume I covers the period from the *Deluge to the Death of Jacob*, volume II the *Establishment of Monarchy among the Israelites*, and volume III the *Return from the Babylonish Captivity* (of the Israelites). According to Watt, this translation into English from French was carried out by "Dr. Dunn and Mr. Speerman" [*sic*]. However, the Wellcome Catalogue states that "R. or A. Spearman" translated the work. The D.N.B. says that Robert Spearman (1703–1761) was an "eccentric theologian" and a pupil of John Hutchinson. A second English edition appeared (Edinburgh, 1775). Both the French and English editions are rare: the Wellcome Library having only the first two volumes of the French (1758) and only volume III of this (1761) edition. Not in Cushing, Osler, Partington, Waller, etc. (Ferguson, *Books of Secrets*, I, 4; Ferguson Coll., 278; Watt, I, 422y; Wellcome, III, 132)

GOHIER, J. B.

Observations et Expériences faites à l'École Impériale Vétérinaire de Lyon, sur le pain moisi, et sur quelques poisons minéraux et végétaux; suivies du précis de plusieurs essais sur la vaccination des bêtes à laine. Par J. B. Gohier, . . .
Lyon: de l'Imprimerie de J. M. Barret, place des Terreaux. 1807.

First edition. 8vo. 107, (1) pp. Fine copy in contemporary half calf, boards, gilt-lettered crimson label, spine gilt-ruled. A presentation copy inscribed in ink on title page by Gohier: "A M. Le docteur Vidal de la part de l'auteur." Bound with: Renaudin, Philibert, *Réflexions sur l'air atmosphérique* (Lyon, 1797), and 3 other works.

AN INTERESTING early work on veterinary biochemistry and toxicology by Gohier, professor of medicine at the Imperial Veterinary School at Lyon. Divided into three parts, in the first of which (pp. 7–32) the author describes his experiments on horses, mules, and other animals fed with moldy bread (containing mycotoxins) and the effects produced on them. The second part (pp. 33–61) describes the physiological effects produced in animals fed with food

containing various doses of poisonous inorganic and organic chemicals (e.g., arsenious oxide, mercuric chloride, strychnine, and opium). In the third part (pp. 62–104) Gohier describes his experiments on the vaccination of sheep. Rare. Not in the usual early medical and chemical bibliographies.

GOLDSMITH, Oliver

A Survey of Experimental Philosophy, considered in its present state of improvement. . . .

London: Printed for T. Carnan and F. Newbery, Jun. at Number 65, in St. Paul's Church-Yard. 1776.

First edition. 2 vols., 8vo. I: 6 leaves, 419, (1) pp. II: 4 leaves, 410 pp. With 24 engraved plates (Proud Sculp.). Fine copy, in original tree calf, gilt, dark-green and red morocco labels, gilt dentelles on each cover.

A TREATISE ON contemporary physics, of peripheral chemical and medical interest, by the eminent and versatile Anglo-Irish poet Goldsmith (1728–1774). The first volume was printed just before he died, the second just after. “The design of the author is evidently to give a short view of Experimental Philosophy in its present improved state” (advertisement, by the publisher). Topics covered include the general properties of matter, motion, gravity, magnetism and electricity, hydrostatics, light, and optics. Also covered, though more briefly, are the properties of air, water, and fire and their chemical reactions. Written for the general reader, the work achieved a certain degree of popularity. (Sotheran, Cat. 825 [1931], 350 [“Rare”]; Watt, I, 423v; Wheeler Gift, 458)

GOMEZ MIEDES, Bernardino

Alographia sive Diascepseon de Sale Libri Quatuor. Quorum 1. 2. 3. 4. est de Sale Physico seu Philosophico. Medico sive Empirico. Geniali seu locoso. Mystico a Bernardino Gomesio Miede, primum summa cum diligentia conscripti & publicati. Nunc vero denuo revisi, in certa quaedam capita distincti, duplicique indice locupletati per Petrum Uffenbachium Reip. Francofurtensis Medicum ordinarium.

Ursel: Ex Officina Typographica Cornelii Sutorii, Sump-tibus Ioan. Berneri Francofurtens. Bibliop. 1605.

First Uffenbach edition. 8vo. 20 leaves, 679, (17) pp. With woodcut title ornament, headpieces, and initials. Few quires lightly embrowned; otherwise fine copy in original overlapping vellum. Signature in faded brown ink on title page: Vauquelin des Yveteaux.

GOMEZ MIEDES (1521–1589), of Aragon, worked and traveled throughout Europe. He died in Valencia. This comprehensive book on “salt” actually covers many substances,

as the term was intended to denote a basic form of physical matter. Numerous salts are considered from four perspectives (e.g., common salt, alum, niter, and soda). First their action on the senses (taste, smell, touch, etc.) is discussed as they relate to living organisms. The second part is a treatise on chemistry, with alchemical references. The sociological third part describes the uses of salts in human life, food, and technology. The fourth part considers salt as a symbol or archetype in moral philosophy and theology. The first edition (Valencia, 1572; Durling, 2135; Duveen, 403) was reprinted (Valencia, 1579; Wellcome, I, 2884). The editor of the present third and definitive edition, Peter Uffenbach (d. 1635), a physician, has greatly expanded the original work with a vast number of scholarly references to complete the book as a compendium on its subject from every point of view. This copy has an important provenance, having belonged to the French alchemist Jean Vauquelin des Yveteaux (1651–1716), president of the Academic Society of Caen, “who lived only for his studies in alchemy, history and theology” (Duveen). Rare. (Bolton, 488; Ferchl, 195; Krivatsy, 4878)

GONNELLI, Giuseppe

Thesaurus Philosophicus, seu De Gemmis et Lapidibus Pretiosis. Doctoris Physici Josephi Gonnelli.

Neapoli (Naples): Apud Joannem Baptistam Komarek. 1702.

First edition. 12mo. 12 leaves, 258 pp., 2 leaves (errata). Fine copy in contemporary vellum, with red sealing wax seal on spine, and eighteenth-century engraved armorial bookplate bearing the motto “In Coelo Quies” on front pastedown endpaper.

A VERY RARE work on the formation of gems and precious stones, of considerable interest to the chemical historian and crystallographer. The author discusses the “petrifying spirit, or stone-forming solution” (*petrificante spiritu, seu de lapidiphico menstruo*), colors of stones and gems, the types of solutions from which they are produced, and related subjects. In addition to numerous references to the works of ancient authors (e.g., Aristotle, Avicenna, Arnaldus de Villanova, Lucretius, and Pliny), Gonnelli refers frequently to the writings of his contemporaries (e.g., Boyle, Helmont, Mercati, Aldrovandus, Bartholin, Basil Valentin, Paracelsus, Ettmuller, and Sendivogius). No biographical information has been found on the author, who was obviously a scholarly and well-read man. Watt lists this title under Jos. Gonnelli. Not in Bolton, Duveen, Ferguson, Ferguson Coll., Ferchl, Guaita, Neu, Partington, Poggendorff, Smith, Thorndike, Waller, Wellcome, Zittel, etc. (Waite, 287; Watt, I, 424u)

GOODYEAR, Charles

Gum-Elastic and its Varieties, with a Detailed Account of its Applications and Uses, and of the Discovery of Vulcanization. . . .

New Haven: Published for the Author. 1855.

First complete edition. 2 vols. in 1, 8vo. I: 246 pp. II: 379, (1) pp.; 31 lithographed plates illustrating numerous articles made using rubber. Very fine copy, in near-pristine condition, in original blind-tooled morocco, all edges gilt. Armorial bookplate: Epsom College Library, 1855. Bound with: *The Application and Uses of Vulcanized Gum-Elastic; with Descriptions and Directions for Manufacturing Purposes.*

THE FIRST full account of Goodyear's invention of the vulcanizing process, which completely revolutionized the rubber industry. Goodyear (1800–1860), a former hardware merchant, states that his object in publishing this work “is to claim and secure for himself and his country, that which is emphatically his, *viz.*, the credit of the discovery of the art of heating or vulcanizing gum-elastic” (preface, p. iii). Goodyear admits that he was then “in feeble health,” having been worn out with many legal battles and chemical experiments. Although he won all the legal actions brought against him, the cost of defending his patents ruined him financially. He received his first patent in 1844. The first volume was printed in 1853 and was reissued on the appearance of the second volume. Very few copies of this work were printed, as they were published at the expense of the author, who was by then almost destitute. “He died in New York City, July 1, 1860, . . . [and] left his family in debt, though his invention made millions for others” (*Encyclopaedia Britannica*). Very rare. Not in the usual chemical bibliographies. (Dibner, *Heralds of Science*, 1955, No. 47; Singer, *History of Technology*, 1958, V, 775; Wheeler Gift, 1320; Williams, *Biographical Dictionary of Scientists*, 1969, p. 219)

GORE, George, SPARLING, Marcus, and SCOFFERN, John

Practical Chemistry: including the Theory and Practice of Electro-deposition; Photographic Art; the Chemistry of Food, with a Chapter on its Adulterations; and the Chemistry of Artificial Illumination. . . .

London: Houlston and Stoneman, Wm. S. Orr and Co. 1856.

First edition. 8vo. 6 leaves, 574 pp., 1 leaf (advertisements). Many woodcut illustrations in text (some half page). Very good copy in contemporary maroon half morocco, marbled boards, spine gilt.

AN EXCELLENT work which summarizes the state of mid-nineteenth-century knowledge on the following subjects:

electro-metallurgy, photography, food chemistry, adulteration of food, and artificial lighting. Over a third of the book is on the chemistry of photography, its history and problems. Complete in itself, this is the “chemistry” volume of “Orr’s Circle of the Sciences” series. Rare. Not in the usual bibliographies. (Bolton, 489)

GORHAM, John

The Elements of Chemical Science. . . .

Boston: Published by Cummings and Hilliard. 1819, 1820.

First edition. 2 vols., 8vo. I: lii, 555, (1) pp.; 6 plates (1 folding: “Dr. Wollaston’s Scale of Chemical Equivalents”). II: viii, 528 pp.; 1 plate (frontispiece). Very fine, tall, wide-margined copy, uncut and unpressed, in contemporary boards, rebaked, printed paper spine labels. With bookplates of New Hampshire Historical Society, and inscription in ink: “(Presented by) Miss Dora N. Spalding of Nashua, June 26, 1899.” Dora Spalding was a descendant of the famous American chemist Lyman Spalding (1775–1821), cofounder of Dartmouth Medical School (New Hampshire) and first lecturer on chemistry there. On the recto of the second flyleaf is the bold signature of Charles P. Atherton (nineteenth century).

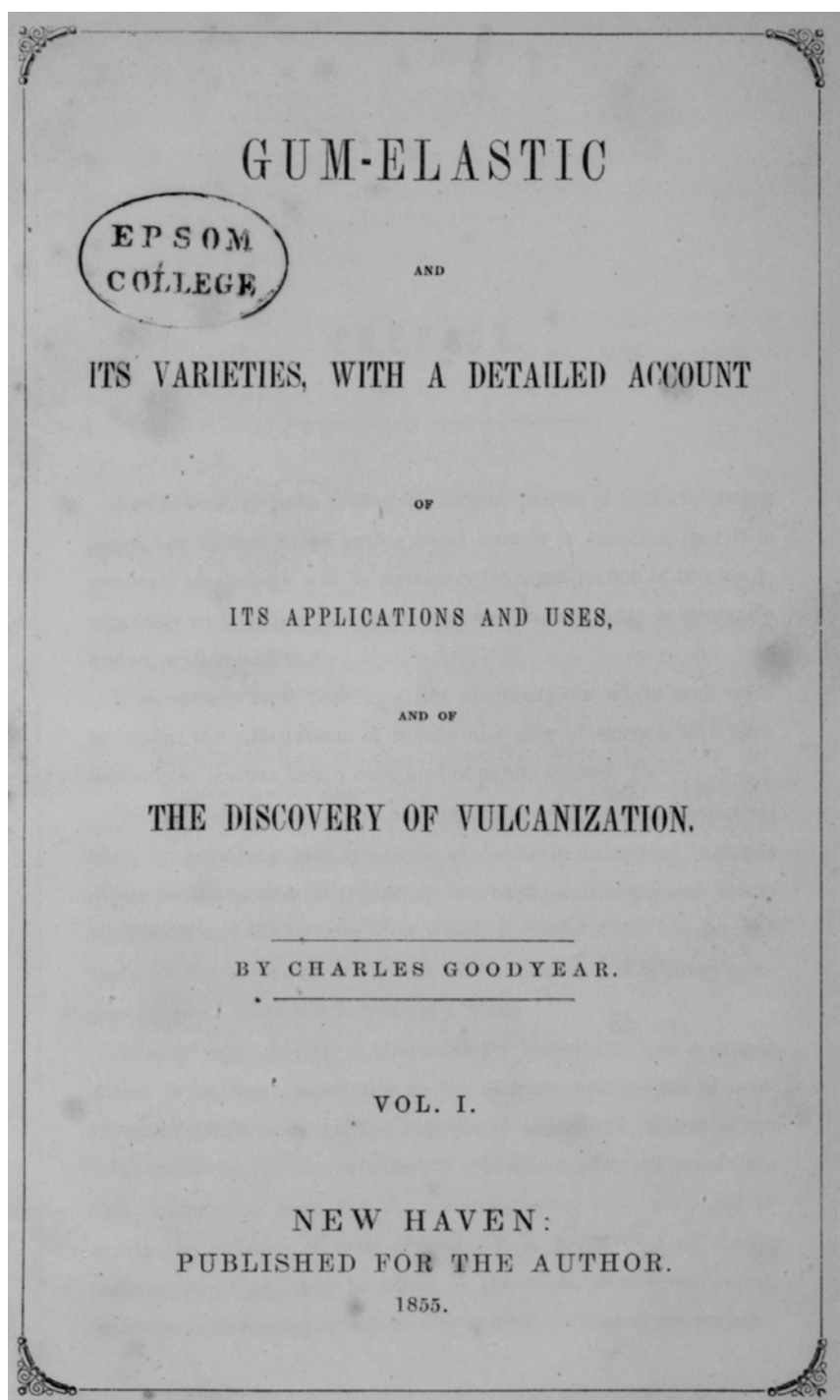
DEDICATED TO Aaron Dexter, M.D., emeritus professor of chemistry at Harvard, this excellent book “is the first original work of the kind which has been published in the United States” (preface, p. xi). Discussing this work at length, Smith (*Old Chemistries*, 1927, pp. 60–64) says that it “makes a strong appeal. . . . Its author was broadly informed on chemistry and displayed splendid judgment in the presentation of his material. It is a treasure in the chemical literature of America.” Smith emphasizes the rarity of the book, admitting that he had “long sought and inquired for the Gorham text.” “The first systematic treatise written by an American chemist and long a standard text” (Struik, *Yankee Science in the Making* [1948, p. 166]). Gorham had studied chemistry with Friedrich Accum in London, before his appointment at Harvard. In 1812 he was one of the founders of the *New England Journal of Medicine and Science*. Not in Duveen, Ferchl, Partington, Wellcome, etc. (Bolton, 489; Edelstein, 1029; Miles, 182; F. J. Moore, *A History of Chemistry*, 1939, p. 80; Smith, 201)

GORHAM, John

Inaugural Address, delivered in the Chapel of the University at Cambridge, December 11, 1816. . . .

Boston: Printed by Wells and Lilly. 1817.

First edition. 4to. 23, (1) pp. Foxed, characteristic of American paper of the period; otherwise good copy in quarter cloth antique, marbled boards, spine gilt-lettered and dated.



Goodyear. Gum-Elastic. New Haven, 1855.

THE ADDRESS of Gorham (1783–1829) upon accepting the position of Erving Professor of Chemistry at Harvard University. The speech prompted a laudatory letter from President John Adams, which is printed in full by E. F. Smith (*Old Chemistries*, 1927, pp. 62–64). Smith also discusses Gorham's *The Elements of Chemical Science* (Boston, 1819, 2 vols., 8vo.) and includes a portrait of Gorham. He does not refer to this inaugural address, but the letter from President Adams begins: "My thanks are due to you for your inaugural Address of December 11th." This shows that Gorham sent Adams a copy. The thrust of the address is to stress the great usefulness of chemistry and chemical technology to the newly founded United States. A well-read scholar, Gorham had studied under Joseph Black at Edinburgh, and in this work he traces the development of chemistry from early times to the beginning of the nineteenth century, mentioning many of the great names of the science (e.g., Paracelsus, Agricola, Libavius, Boyle, Newton, Becher, Stahl, Priestley, Black, Lavoisier, Davy, and Dalton). A biography of Gorham, but with no mention of the present work, is given by W. D. Miles (*American Chemists and Chemical Engineers*, 1976, p. 182). Very rare. Smith (p. 201) lists an imperfect copy, lacking pages 1–4. Not in the usual bibliographies.

GÖTTLING, Johann Friedrich August

Description of a Portable Chest of Chemistry; or Complete Collection of Chemical Tests, for the use of chemists, physicians, mineralogists, metallurgists, scientific artists, manufacturers, farmers, and the cultivators of natural philosophy.

Invented by J. F. A. Götting, . . .

London: Printed for C. and G. Kearsley. 1791.

First English edition. 8vo. vii, (1), 191, (1) pp. Fine, crisp copy in original speckled calf, rebounded, gilt, maroon morocco labels. Bound with: Anonymous, *Chemical Recreations* (London, 1800).

THE ENGLISH translation of Götting's *Anweisung zum gebrauch seines chemischen Probiercabinetts für Scheidekünstler* (Jena, 1790); however, Partington states that it is a translation of the author's *Vollständiges chemisches Probir-Cabinet* (Jena, 1790). The book was designed to accompany the portable chests of chemical reagents and apparatus (then becoming popular) manufactured by the publishers C. and G. Kearsley. "The tests mentioned in the course of this work are prepared by Mr. Hunneman, a friend of the author, and pupil of the two great luminaries of chemical science, Messrs. Klaproth and Hermbstaedt of Berlin" (preface). Scarce. (Blake, 179; Bolton, 487; Duveen, 264; Edelstein, 1032; Neu, 1726; Partington, III, 595; Smith, 200; Watt, I, 428n; Wellcome, III, 131)

GÖTTLING, Johann Friedrich August

Versuch einer physischen Chemie für Jugendlehrer beym Unterricht wie auch Gebrauchsanleitung der Sammlung chemischer Präparate zu unterhaltenden und nützlichen Versuchen für Liebhaber der physischen Scheidekunst. Entworfen von J. F. A. Götting, Professor zu Jena. Mit einem Kupfer.

Jena: Joh. Mich. Mauke. 1792.

First (only) edition. 8vo. xxxii + 423 + (1) pp. With folding copperplate at end showing 24 pieces of chemical apparatus. Fine, crisp copy, in contemporary yellow boards, spine gilt, with gilt-lettered orange label. Large engraved armorial bookplate on front pastedown endpaper: Ex Bibliotheca Serenissimae Domus Saxo-Isenacensis.

GÖTTLING (1755–1809) was assistant to Wiegleb in Langensalza and to Buchholz in Weimar. In 1789, through the influence of Goethe, he became the first independent professor of chemistry in Jena, combining the subject with pharmacy and technology. In the present textbook, which contains descriptions of 211 chemical experiments, the author discusses on pages 182–191 the phlogistic and antiphlogistic theories. He describes the theories of combustion and oxidation of Becher, Stahl, Scheele, Lavoisier, Crawford, Gren, De Luc, et al. Götting gave the first account in German of the new chemical nomenclature in an alphabetical list of the old and then-modern names. This beautiful copy came from the library of the Duke of Saxony-Eisenach. Rare. Not in Duveen, Ferguson, Ferguson Coll., Neu, Smith, Waller, Watt, Wellcome, etc. (Bolton, 488; Ferchl, 193–194 [wrong date: 1772]; Partington, III, 595; Poggendorff, I, 923)

GOULARD, Thomas

A Treatise on the Effects and Various Preparations of Lead, particularly of the Extract of Saturn, for different Chirurgical Disorders. Translated from the French of Mr. Goulard, . . .

London: Printed for P. Elmsly (Successor to Mr. Vaillant). 1770.

Second English edition. 12mo. 8 leaves, 222 pp., 1 leaf (advertisements). Very good copy in original calf, spine gilt-ruled, crimson morocco label. From the library of "The Hon.^{bc} George Baillie Esq.^r one of the Lords of the Treasury," with his signature in ink on title page, and engraved armorial bookplate (R. Cooper sc.), dated 1724.

THE BEST English edition (first, 1769), translated from the *Traité sur les effets des préparations du plomb* (Pézenas, 1760). It is the first English edition to contain the chemically important *Remarks on the extract of lead*, by Dr. Georges Arnaud

de Ronsil (1698–1774). Goulard (1697–1784), renowned anatomist and surgeon to the Royal and Military Hospital at Montpellier, is still remembered by Goulard's *Lotion and Extract*. In 1760 he observed the curative effect of lead in certain types of cancer. The present work covers the medical uses of sugar of lead (lead acetate) and other lead compounds. Many editions in English appeared (see Blake, Blocker, Ferchl, Osler, Waller, etc.). (Blake, 181; Ferguson Coll., 281; Waring, 626; Watt, I, 429p; Wellcome, III, 141)

GRAHAM, Thomas

Chemical and Physical Researches by Thomas Graham. Collected and printed for presentation only. Preface and analytical contents by Dr. R. Angus Smith.
Edinburgh: (T. & A. Constable). 1876.

Sole edition. Thick royal 8vo. lvi, 660 pp. With colotype portrait frontispiece of Graham, 3 double-page plates (at the end), and many figures in text. Exceptionally fine copy, uncut, in half calf antique, gilt, marbled boards, maroon morocco label.

THE ONLY collected edition of the important papers of Thomas Graham, the Scottish chemist, first president of the Chemical Society of London, and one of the chief founders of physical chemistry. He formulated Graham's law of diffusion relating the rate of diffusion of gases to their densities, discovered and named the process of dialysis used for separating colloids from crystalloids, studied the three forms of phosphoric and arsenic acids that led to the development of the concept of polybasic acids (a major contribution to inorganic chemistry), etc. An excellent analytical index precedes the text. A very scarce volume, of which only a limited number of copies were printed (at the expense of James Young) for presentation to friends of the lately deceased Graham and famous chemists. "In the preface to . . . Graham's papers . . . Dr. Angus Smith has indicated in precise . . . language Graham's position in that chain of thinkers which includes Leucippus, Lucretius, Newton, and Dalton" (Thorpe). (Bolton, 493; Ferchl, 506; Leicester & Klickstein, *A Source Book in Chemistry*, p. 333; Morgan, 327; Partington, IV, 265–266; Smith, 202; Sondheimer, 643; Thornton & Tully, *Supplement*, p. 67; Thorpe, *Essays in Historical Chemistry*, p. 273)

GRAHAM, Thomas

Elements of Chemistry, including the applications of the science in the arts. By Thomas Graham, F.R.S. . . .
London: Hippolyte Bailliere. 1842.

First edition. 8vo. vi, (2, errata), vii–xxii, 1088 pp. With 95 figures in the text. Fine copy in contemporary half calf, mar-

bled boards, spine gilt-ruled, with gilt-lettered black leather label.

ONE OF the greatest chemists of the nineteenth century, Graham (1805–1869) carried out research of fundamental importance mainly in the fields of inorganic and physical chemistry, and "he was the real founder of colloid chemistry" (Partington). The *Elements of Chemistry* is his first book. It is a masterpiece of clarity, presenting all the latest information, including organic chemistry and biochemistry, which were then emerging as distinct disciplines. Ernst von Meyer called it an "admirable text-book," and Partington describes it as "original and interesting." E. Mathieu-Plessy translated it into French (Paris, 1843), and a greatly enlarged German edition in several volumes by F. J. Otto also appeared (Brunswick, 1854–1893). Graham discusses his work on the diffusion of gases on pages 69–79 and his law first enunciated in 1829. For details on the life and work of Graham, see D.N.B., D.S.B., Partington, etc. *Elements of Chemistry* is unquestionably one of the great milestone textbooks of the nineteenth century. An American edition also appeared (Philadelphia, 1843), with notes and additions by Robert Bridges. Scarce. Not in Duveen, Edelstein, Morgan, Poggendorff, Smith, Waller, etc. (Bolton, 493; D.S.B., V, 492; Ferchl, 197 [wrong date: 1838]; Partington, IV, 266; Sondheimer, 639; Thornton & Tully, 219; Wellcome, III, 145)

GRAHAM, Thomas

On Phosphuretted Hydrogen. . . . From the Transactions of the Royal Society of Edinburgh. Vol. XIII. (Read 1st December 1834.)

Edinburgh: Printed by Neill & Company. 1835.

First separate edition. 4to. 1 leaf, 19, (1) pp. Crisp, clean copy in modern maroon cloth, gilt.

AUTHOR'S OFFPRINT of his important research on the preparation and properties of phosphine (PH₃) and liquid phosphorus dihydride (P₂H₄). Partington discusses this investigation in detail. The paper did not appear in the *Transactions of the Royal Society of Edinburgh* until early in 1836. Very scarce. Not in Bolton, D.S.B., Duveen, Edelstein, Smith, Wellcome, etc. (Ferchl, 197; Partington, IV, 268; Poggendorff, I, 937; Sondheimer, 638; Sotheran, Cat. 800 [1926], 10941)

GRAHAM, Thomas John

A Chemical Catechism: in which the Elements of Chemistry, with the recent discoveries in the science, are clearly and fully explained. Illustrated by notes, engravings, and tables; and containing an appendix of select experiments, &c. . . .

London: Published for the Author, etc. 1829.

First edition. 8vo. xi, (1), 616 pp. With 1 engraved plate (J. Walker sc.), and text illustrations. Very good copy, uncut and unpressed, in original quarter cloth, boards, printed paper label on spine.

GRAHAM (ca. 1795–1876), M.D., of the University of Glasgow and the Royal College of Surgeons, London, published a number of medical books. In the present work he claims to have greatly improved on the *Chemical Catechism* of Samuel Parkes by arranging the subjects in a more logical order and introducing sections on plant and animal chemistry, which were omitted by Parkes. There is an interesting chapter on atomic theory, with references to Higgins and Dalton. At the end is a useful vocabulary of chemical terms (pp. 609–616). Although stated to be the “second edition” on the title page, no earlier edition is known, and the wording of the preface (which is dated Feb. 1829) certainly suggests that this is the first edition. Very scarce. Not in the usual chemical bibliographies. (Partington, III, 753; Sondheimer, 634; Sotheran, Cat. 725 [1912], 8562; Wellcome, III, 145)

GRANDI, Lazaro

Alfabeto di Secreti Medicinali, et altri Curiosi, e dilettevoli d'ogni Materia . . . Et in questa seconda impressione aggiointovi dallo stesso Auttore numerosi altri Secreti di consideratione.

Milan: Appresso a Francesco Vigone, a S. Sebastiano. 1670.

Third (second Milan) edition. 12mo. 4 leaves, 243, (1) pp. Woodcut printer's device on title page. Minor stains on a few leaves; otherwise very good copy, in later vellum. Rosicrucian engraved bookplate on front pastedown endpaper.

A CURIOUS ITALIAN book of secrets, dealing with alchemy, chemistry, and pharmacology. “Among the subjects dealt with are transmutation of metals, manufacture of various essences, tinctures, sympathetic inks, distillation of liquors, etc.” (Duveen). The title states that this is the second edition, but it is actually the third printing, though the second with a Milan imprint. First published in Milan, 1666; several editions followed (e.g., Bologna, 1667; Milan, 1670 and 1681; Venice, 1679 and 1689; Bologna, 1694). Despite the appearance of at least seven editions, all are now rare. The first 218 pages describe numerous experiments and recipes in alphabetical order, and pages 219–239 list the

newest secrets discovered by the author. Grandi (fl. 1666) was a physician who practiced in Milan. This edition not in the British Library. (Duveen, *Supplement*, 158; Krivatsy, 4938; Neu, 1736)

GRANDI, Lazaro

Alfabetto di Secreti Medicinali, et altri curiosi, e dilettevoli d'ogni materia, con l'Arte facile d'Uccellare, e Pescare. . . .

Bologna: per il Longhi. (1694).

Seventh edition. 8vo. 217, (1) + 22 pp. Fine copy, in original calf-backed patterned boards.

THE FINAL edition of this book of secrets. The verso of the last leaf is dated 6 August 1693, but the recto of page 217 is dated 3 November 1694 and is signed by Grandi, so he was presumably still alive in that year. Pages 183–217 are on hunting, fishing, and bird-catching, and for this reason the work is noted by Westwood and Satchell (*Bibliotheca Piscatoria*, p. 108). Curiously, Ferguson (*Books of Secrets*) mentions neither the author nor his book; however, the Ferguson Collection Catalogue (p. 283) lists the Venice (1689) edition, as does the Wellcome Catalogue (III, 147). (Krivatsy, 4940)

GRANT, James Ludovic

The Report of James Ludovic Grant, Esq., chairman, and the other acting trustees of the fund for assisting Mr. Winsor in his experiments, to the subscribers to that fund, at a meeting convened by public advertisements, at the Crown and Anchor tavern, in the Strand, on the 26th of May, 1808.

London: Printed by G. Sidney. (1808).

Sole edition. 8vo. 2 leaves, 37, (1) pp., 4 leaves. Mint copy in modern marbled boards, maroon morocco label, gilt.

ONE OF the earliest publications in English on the use of coal gas for lighting and heating domestic and commercial buildings. Frederick Albert Winsor (1763–1830), a pioneer of gas lighting, was born Friedrich Albert Winner in Brunswick. On his return from Paris in 1802, he demonstrated the thermolamp of Phillippe Lebon, which burned wood gas, and obtained a privilege from George III. Becoming obsessed with the idea that streets and buildings could be effectively illuminated by burning coal gas, he demonstrated gas lighting in London in the autumn of 1804. He took out patents (1804–1809) for gas lighting and attempted street lighting in 1808. On 4 June 1807 he displayed his lights along the top of the wall separating the garden of Carlton House from the Mall, and in December he lighted part of the south side of Pall Mall. The present report summarizes Winsor's experiments and is a plea for further funding to enable him to manufacture coal gas commercially by

establishing a company for that purpose. The enterprise, originally named the National Light and Heat Company, was renamed the Gas Light and Coke Company when it received its charter in 1812. A milestone in chemical technology. At the end is an encouraging report by F. C. Accum (pp. 31–37) on the advantages of gas lighting. For a discussion of Winsor's work on gas lighting, see Singer et al., *A History of Technology*, IV, pp. 252, 264, 268. An extremely rare book, unrecorded by the bibliographers.

GRAPALDI, Francesco Maria

Lexicon de partibus aedium Francisci Marii Grapaldi Parmensis. Ab autore denuo auctum & recognitum. Cum indice.

Lyons: Apud Haeredes Simonis Vincentii. 1535.

First Lyons edition. 8vo. 361, (1) pp., 23 leaves (indices in Latin and Greek). Woodcut printer's device on title page and historiated woodcut capitals. Italic letter. Few very minor stains, and occasional neat sixteenth-century marginal annotations; otherwise crisp copy in contemporary calf, rebaked, maroon label.

A BEAUTIFULLY PRINTED edition of this valuable source book of Renaissance social history. Born in Parma, Grapaldi (1464–1515), humanist and poet laureate, describes in this work the construction of an Italian villa, or country house, from the ground plan to the roof, with every detail. One of the most intimate sources of our knowledge of Italian cultural life during the Renaissance; all aspects of everyday life are covered. Detailed descriptions are given of the use and the equipment of various parts of the house and garden. Of special interest are chapters on water supply, kitchen, bath, wine cellar, food preservation, bed- and sickrooms, and medicines and cures. Other chapters cover libraries, distillation, and subjects of chemical interest. The first edition (Parma: Angelus Ugoletus, ca. 1494; Stillwell, 846) was followed by about a dozen editions in less than forty years (Brunet, II, 1710), indicating the success of the book. Watt lists editions from 1508 to 1618 but omits the present one. The edition of Parma, 1516, was especially popular, and is listed by Ferguson Coll. (p. 284), Honeyman (no. 1538), and Waller (no. 19683). The present edition is not in the British Library. (Durling, 2149; Wellcome, I, 2908)

GRAVESANDE, Willem Jacob Storm van s'

Mathematical Elements of Natural Philosophy, confirm'd by Experiments: or, an Introduction to Sir Isaac Newton's Philosophy. Written in Latin by the late W. James s'Gravesande . . . Translated into English by the late J. T. Desaguliers . . . and published by his Son J. T. Desaguliers. London: Printed for W. Innys, T. Longman, and T. Shewell, C. Hitch, in Pater-Noster-Row; and M. Senex, in Fleet-Street. 1747.

Sixth (final) edition. 2 vols., 4to. I: 1 leaf, lxxv, (1), 475, (1) pp. II: 1 leaf, 389, (33) pp. With 127 engraved plates (J. Mynde sc.). Fine copy in contemporary tree calf, rebaked, original maroon and deep-green morocco labels.

THE EARLIEST exponent of Newtonian science in Europe, s'Gravesande (1688–1742) originally practiced law. Early in 1715, as secretary to two Dutch ambassadors, he was sent to congratulate George I on his accession to the English throne. While in England for a year he was elected F.R.S. and became acquainted with Newton and with Desaguliers (1683–1744). On returning to Holland, s'Gravesande was appointed professor of mathematics and astronomy (1717) and philosophy (1734) at Leiden. He published his celebrated work on experimental physics, entitled *Physices elementa mathematica, experimentis confirmata* (Leyden, 1720, 1721) in four books and constantly corrected and enlarged it in later editions. His scientific reputation "is enshrined in this book" (D.S.B.). Desaguliers immediately translated the Latin text into English (first: London, 1720, 1721), and after Desaguliers died, his son of the same name published the present sixth, final, and best edition, enlarged to six books. This work, with its remarkable folding plates, contains descriptions of chemical experiments and discussions on the nature of fire, calcination, phosphorus, the Bolognian stone, luminescence, exothermic and endothermic reactions, etc. Only volume II of this edition is in the Wellcome Library. (D.S.B., V, 510; Harvey, 170, 625; Partington, II, 739; Roller & Goodman, I, 478; Wellcome, III, 150)

GRAY, Samuel Frederick

The Operative Chemist; being a Practical Display of the Arts and Manufactures which depend upon Chemical Principles. . . .

London: Hurst, Chance, and Co. 1828.

First edition. 8vo. xiv, 881, (1) pp. With 100 steel-engraved plates (Fenner sc.), some folding, comprising 360 figures. Flyleaves foxed; otherwise fine copy, uncut and unpressed, in original marbled boards, rebaked in modern green cloth, spine gilt-lettered.

A WORK ON all branches of industrial chemistry, of great historical interest for its detailed illustrations of contemporary chemical apparatus. Written to satisfy the need “of a book peculiarly devoted to the general practice of the Chemical Arts and Manufactures” (preface), by Gray (fl. 1780–1836), a naturalist, pharmacologist, and “practical chemist” (title page). “A practical work of a high order of merit” (D.N.B.). This edition was used as the basis for *Chemistry of the Arts* (Philadelphia, 1830), edited by Arthur Livermore Porter. Translations into French (Paris, 1828–29, 3 vols.) and German (Weimar, 1829–30) appeared, as well as a second English edition (London, 1831). Scarce. Not in the usual bibliographies. (Bolton, 495; Sondheimer, 645; Sotheran, Cat. 672 [1907], 1636)

GREEN, Jacob

A Text Book of Chemical Philosophy. On the basis of Dr. Turner's Elements of Chemistry; in which the principal discoveries and doctrines of the science are arranged in a new systematic order. By Jacob Green, M.D., Professor of Chemistry in Jefferson Medical College. Philadelphia: R. H. Small, Chestnut Street. 1829.

First edition. Sm. 4to. 616 pp. Engraved frontispiece of chemical apparatus, and several woodcuts in text. Good copy in contemporary speckled calf, spine gilt-ruled, crimson morocco gilt-lettered label. Early signature in ink (“John Steele M.D.”) neatly written at top of title page.

IN THE preface, Green (1790–1841) acknowledges his indebtedness to the *Elements of Chemistry* (Edinburgh, 1827) of Edward Turner (1796–1837), professor of chemistry at the newly founded University of London. Green's book is based on the second edition (Edinburgh, 1828) of Turner's work, but he has presented his material in a new and different order. He states that “the history of Iodine and Bromine is of but recent date, and Chlorine, as an element, is perhaps not even now universally received.” Edgar F. Smith describes this work as “a fundamentally altered book, and very interesting reading today. . . its subject matter is very clearly set forth.” For biographical details on Green, see Wyndham D. Miles, *American Chemists and Chemical Engineers* (Washington, D.C., 1976, pp. 186–187). Not in Cushing, Duveen, Edelstein, Morgan, Partington, Poggenдорff, Waller, Wellcome, etc. (Bolton, 496; D.S.B., V, 518; Ferchl, 199; Smith, 204)

GREGOIRE, Pierre

Syntaxes Artis Mirabilis, in libros septem digestae. Per quas de omni re proposita, multis, & prope infinitis rationibus disputari, aut tractari, omniumque summaria cognitio haberi potest. . . .

Venice: Ex Officina Damiani Zenarii. 1586.

First Venice edition. 2 vols., 8vo., in 1. I: 8 leaves, 270 pp., 5 leaves. Page 103 is a divisional title page (*Commentaria*).

II: 582 pp., 32 leaves. Woodcut device on each title page, text woodcuts (some full page), and folding table. Roman letter. Neat small repair to blank portion of first title page and occasional very light embrowning of few leaves; otherwise fine, crisp copy, in early-eighteenth-century half calf, gilt, marbled boards.

AN ENCYCLOPEDIA work (first: Lyons, 1574) of scientific, medical, and miscellaneous knowledge. Topics covered include the formation of the world, stars, and constellations, with references to Copernicus, animals, plants, psychology, angels, demons, etc. Of chemical interest are discussions on distillation, inks, magnets, natural waters, minerals, metals, saltpeter, chemical compounds, etc. Ferguson, who states (erroneously) that the author's books do not deal with alchemy or chemistry, nevertheless cites Gregoire's work in Borel's *Bibliotheca chimica* (Paris, 1654, p. 107). Also covered in this book are medicines and the materia medica. Gregoire (Gregorius, d. 1595) was a physician, lawyer, and professor at Cahours, then at Toulouse, and finally at Pont à Mousson in Lorraine. He published several books on law and was said to have been extremely learned. Ferchl, Ferguson, Rosenthal, and Watt list other editions of this once popular work: e.g., Lyons, 1583, 1585, 1587, 1591; Cologne, 1600. A Venice edition of 1588, published by J. D. de Imbertis, is in the British Library and Wellcome (I, 2930). Very rare. (Neu, 1753)

GREGORY, William

A Handbook of Inorganic Chemistry; being a new and greatly enlarged edition of the "Outlines of Inorganic Chemistry;" for the use of students. . . . Third edition, corrected and enlarged.

London: Walton and Maberly. 1853.

Third edition. 8vo. viii, 291, (1) pp. + 8 pp. (advertisements of books, dated October 1853). Many woodcut illustrations in text. Contemporary blind-stamped green cloth. Presentation copy to unknown recipient: “With the Publisher's Compliments” inscribed in ink on verso of first free endpaper.

AN ENLARGED edition of *Outlines of Chemistry* (London, 1845; 2nd ed., 1847), being the first with this title. “The

present edition has been enriched with a number of additional woodcuts, illustrating the different forms of apparatus used in the various operations of Chemistry" (preface). Not in Duveen, Edelstein, Morgan, Smith, Sondheimer, Waller, etc. (Bolton, 496; Partington, IV, 320)

GREGORY, William

A Handbook of Organic Chemistry; being a new and greatly enlarged edition of the "Outlines of Organic Chemistry;" for the use of students. . . . Third edition, corrected and much extended.

London: Taylor, Walton, and Maberly. 1852.

Third edition. 8vo. xxvii, (1), 532 pp. With large folding printed table ("Homologous Series") facing page 1. Several woodcut illustrations in text. Fine copy in contemporary blind-stamped green cloth.

AN ENLARGED edition of *Outlines of Chemistry* (London, 1845; 2nd ed., 1847). The dedication is to "Justus Baron von Liebig." "Having been a favorite pupil of Liebig at Giessen, Gregory did much to introduce his researches into this country (i.e., Great Britain)" (D.N.B.). Partington says that Gregory "wrote some good text-books." The present was one of the most influential books of the prestructural organic chemistry period. Gregory discovered a process for preparing pure morphine (as the hydrochloride) from opium, which came into general use. Not in Duveen, Edelstein, Morgan, Smith, Sondheimer, Waller, etc. (Bolton, 496; Ferchl, 199; Partington, IV, 320; Poggendorff, I, 949)

GREGORY, William

Letter to the Right Honourable George, Earl of Aberdeen, K.T., . . . On the State of the Schools of Chemistry in the United Kingdom. . . .

London: Printed for Taylor & Walton. 1842.

First edition. 8vo. 1 leaves, 35, (1) pp. Fine copy in quarter maroon cloth antique, marbled boards, spine gilt-lettered and dated. Bound with: Bullock, Lloyd, *Liquor hydriodatis arsenici et hydrargyri* (London, n.d.).

GREGORY (1803–1858), professor of chemistry at Glasgow, Aberdeen, and Edinburgh successively, was a pupil of Liebig (1835) and translated several of his books into English. He was justifiably impressed by Liebig's laboratory for practical chemistry at Giessen and here implores the Earl of Aberdeen to use his influence with the government to establish similar laboratories for teaching chemistry in Great Britain. "It is obvious . . . that if any nation is bound to encourage and promote the study of practical chemistry, it is the British nation, which has derived . . . such vast ad-

vantages from the application of its principles to the useful arts. Yet, . . . the opportunities afforded in this country for the study of practical chemistry are exceedingly limited; . . . we possess no institution where the student can acquire . . . the art of scientific research, . . . by constant practice in the laboratory" (pp. 12–13). He goes on (pp. 16 et seq.) to praise Liebig's laboratory, pointing out the many advantages that will result from the establishment of similar laboratories in Britain. Gregory's biography is in the D.S.B., Partington, etc., but this rare work is not mentioned. Not in the usual bibliographies.

GREMBS, Franz Oswald

Arbor Integra et Ruinosa Hominis, id est: Tractatus Medicus Theorico Practicus in Tres Libros Divisus; in quo Sana & Morbosa Hominis natura ex Archeis seu Spiritibus in natis tanquam suis radicibus proveniens dilucidè demonstrator ac simul de rerum principiis, seu elementis, meteoris, lapidibus, mineralibus, vegetabilibus, animalibus; de usu & defectibus partium humani corporis, de animâ, de febribus, peste, venenis, vitâ longâ, & brevi, & tandem de remediis Paracelsicis, juxtâ consensum & dissensum Hippocratis, Galeni, & Helmontii cum exegesi remedium Galenicorum, & chymnicorum, historiarumque medicarum breviter, & accuratè disseritur. . . .

Frankfurt: Typis Johannis Georgii Spörlin, sumptibus Wilhelmii Serlini. 1657.

First edition. 4to. 10 leaves, pp. 199, 100–240, 385–512, 16 leaves (index). Page 512 misprinted 112. Pagination erratic, but complete. With additional finely engraved title page (Bartholom. Kilian sculp.). Woodcut initials, head- and tailpieces. Text in double columns. Fine, crisp copy, in original unlettered vellum. From the library of the seventeenth-century physician Johan Lager Chrona, with his neat signature in ink on title page dated 1658 at Stockholm ("Holmia").

A TRANSITIONAL IATROCHEMICAL work of considerable historical interest, in which the author attempted to combine the theories of Paracelsus and Van Helmont with those of Galen and his school. Grembs (fl. 1657–1682) was a celebrated iatrochemist and physician in Salzburg. At the end (pp. 489–512) he gives a synopsis of Paracelsian chemical remedies, with examples of their use in curing various diseases. The second edition appeared fourteen years later (Frankfurt: Richardum Stockium, 1671, 4to.). Rare. Not in Bolton, Duveen, Edelstein, Ferguson, Neu, Smith, Thorndike, etc. (Ferchl, 199; Ferguson Coll., 287; Manget, *Bibliotheca Scriptorum Medicorum*, 1731, vol. I, pt. 2, p. 513; Partington, II, 240; Waller, 3734; Watt, I, 441e; Wellcome, III, 163)

GREN, Friedrich Albrecht Carl

Principles of Modern Chemistry, systematically arranged, . . . Translated from the German; with notes and additions, concerning later discoveries, by the translator, and some necessary tables.

London: Printed for T. Cadell, Jun. & W. Davies. 1800.

First English edition. 2 vols., 8vo. I: 1 leaf, xvii, (1), 448 pp., 7 leaves; 6 engraved plates (by Lowry). II: 1 leaf, iv, (2), 498 pp.; 1 engraved plate ("Modern Chemical Characters," double page). Exceptionally fine copy, in near-pristine condition, in original gilt-ruled green half morocco, pink marbled boards, pink morocco labels, gilt. From the celebrated library of Prince Starhemberg, with his bold signature in each volume.

GREN (1760–1798), of Halle, after serving an apprenticeship to an apothecary, became dispenser in Trommsdorff's pharmacy at Erfurt in 1780, where he had facilities for research and study at the university. He graduated M.D. (1786) and D. Phil. (1787). In 1788 he became full professor at Halle, lecturing on medicine, natural history, and (later) on chemistry, pharmacology, and physics. He founded the *Journal der Physik* (1790), which is still continued. "Gren's text-books are clear and comprehensive and give extracts from original sources" (Partington). This English edition is an abstract, made by Gren in 1796, from his *Systematisches Handbuch der gesammten Chemie* (Halle, 1794–96, 4 vols.), "the most complete and systematical work ever published on this science" (preface). The book has a brief historical introduction and closes with a bibliography of the best books in chemistry. The translator, Gruber (a pastor of the Austrian colony in London), has incorporated the new chemical nomenclature. Not in Blake, Edelstein, Ferchl, Ferguson, Poggendorff, etc. (Bolton, 497; D.S.B., V, 532; Duveen, 268; Partington, III, 576; Smith, 205; Sondheimer, 651; Sotheran, Cat. 672 [1907], 1669; Watt, I, 441f; Wellcome, III, 163)

GREULINCK, Johann Heinrich

Dissertatio Physico-Chymica Experimentalis de Generatione Salium, quam praeside Friderico Hoffmanno, . . . in Academia Fridericiana die 30. Septembr. . . . publice defendendam suscipit Joh. Henr. Greulinck, Gedanensis.

Halae Magdeburgicae (Halle): Litteris Salfeldii, Typog. Elect. Brand. 1693.

First edition. 4to. 16 leaves, unpaginated. Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A DOCTORAL DISSERTATION by Greulinck, on the formation of salts by the reaction of acids with alkalis, presided over by the great Friedrich Hoffmann, the younger (1660–

1742). "In 1693 Frederick III, elector of Brandenburg, chose Hoffmann to become the first professor of medicine at the new University of Halle. Hoffmann was also charged with the organization of the medical school, and his success in the new institution was immediate. His lectures on physics, chemistry, anatomy, surgery, and the practice of medicine attracted a great number of both students and physicians" (D.S.B., VI, 458). This is probably the earliest dissertation of which Hoffmann was praeses. There are references to Boyle's *Sceptical chymist* (sig. B1v), Kunckel's *Ars vitraria* (sig. B3v), Borrichius's *De ortu et progressu chymiae* (sig. B4r), Becher's *Minera arenaria* (sig. C3r), and other chemical works dealing with the important topic of the composition of salts. A very rare work to which no bibliographical reference has been found

GREW, Nehemiah

The Anatomy of Plants. With an Idea of a Philosophical History of Plants, and several other Lectures, read before the Royal Society. . . .

(London:) Printed by W. Rawlins, for the Author. 1682.

First edition. Folio. 11 leaves, 24 pp., 5 leaves, 304 pp. (i.e., 300; p. 217 et seq. mispaginated), 10 leaves. With 83 (including 5 double-page) engraved plates. Ornamental woodcut capitals and 9 divisional title pages. Exceptionally fine, large paper copy (230 × 370 mm), in original speckled calf, spine richly gilt, maroon and orange morocco labels.

THE FIRST edition of Grew's magnum opus, being the texts of lectures that he had read to the Royal Society on several occasions, of which the last (dedicated to Robert Boyle), entitled *The Anatomy of Leaves, Flowers, Fruits, and Seeds*, had not previously been published. The other lectures, *An Idea of a Philosophical History of Plants*, *The Anatomy of Plants Begun*, *The Anatomy of Roots*, and *The Anatomy of Trunks*, are here in their second editions, revised by the author in the light of his matured opinions. Grew was the first in England to study the internal and microscopic structure and external morphology of plants. His many discoveries include observations of the structure of seeds, both by the hand lens and compound microscope, a theory of the vascular anatomy of plants and of the ascent of sap, as well as of the sexuality of plants. In his preface he states that he drew all the figures for the engravers, except for a few. His method of depicting plant structures gives the illusion of three dimensions, and the plates rank in execution with those of Hooke's *Micrographia*. Partington discusses the numerous chemical experiments contained in this work. The "birth of microscopic anatomy of plants" (Horblit). (Browne, 74; Dibner, 21; D.S.B., V, 535; Henrey, I, 138; Horblit, 43b; Krivatsy, 4986; Partington, II, 567; Sparrow, 88; Thorndike, VIII, 71; Wellcome, III, 164; Wing, G1945; Wolf, I, 423)

GREW, Nehemiah

The Anatomy of Vegetables Begun. With a General Account of Vegetation Founded thereon. . . .

London: Printed for Spencer Hickman, Printer to the Royal Society, at the Rose in St. Paul's Church-Yard. 1672.

First edition. 8vo. 16 leaves, 186 pp. (last page misnumbered 198), 10 leaves. With license leaf, and 3 folding engraved plates. Very good copy in original mottled calf, rebacked, red morocco label.

GREW (1641–1712), elected F.R.S., 1671, was secretary to the Royal Society, 1677–79. The present book, the first scientific work on plant physiology, was published in late November 1671 (see *The Anatomy of Plants*, London, 1682; sign. a2r). Grew, with Malpighi, was the founder of plant physiology. Malpighi subsequently had this work translated into Latin, and with Leeuwenhoek, Lister, and Wallis confirmed by microscopical studies of plants the observations that Grew had made with the naked eye. Grew was led to the study of plant histology and physiology because his investigations as a physician suggested that plants, like animals, possessed characteristic internal structures, and he was probably the first to observe the dual sexuality of plants. An augmented version of this work forms book I of *The Anatomy of Plants*. The chemical properties of the parts of plants, their ability to undergo fermentation, and other matters are discussed. His “first important book” (D.S.B.). It was translated by Le Vasseur as *Anatomie des Plantes* (Paris, 1675). (Browne, 73; Dibner, 21; D.S.B., V, 534; Eales, 782; Ferchl, 200; Ferguson, I, 346 [not in Young Coll.]; Ferguson Coll., 288; Freeman, 1461; Henrey, I, 135; Honeyman, 1555; Keynes, 2461; Krivatsy, 4987; Munk, I, 408; Osler, 2837; Partington, II, 567; Pritzel, 3554; Thorndike, VIII, 71; Thornton & Tully, 133; Watt, I, 441x; Wellcome, III, 164; Wing, G1946; Wolf, I, 423)

GREW, Nehemiah

Musaeum Regalis Societatis. Or a Catalogue & Description of the Natural and Artificial Rarities belonging to the Royal Society and preserved at Gresham Colledge. . . . Whereunto is Subjoyned the Comparative Anatomy of Stomachs and Guts. . . .

London: Printed by W. Rawlins, for the Author. 1681.

First edition, first issue. Folio. 8 leaves, 386 pp., 3 leaves, 43, (1) pp. Engraved frontispiece portrait of Daniel Colwall, 31 copperplates (1 folding), and text figures. Corrections and additions in ink by Grew on pages 62, 81, 239, and 343. Fine copy in original calf, rebacked, with old gilt spine laid on, maroon morocco label.

THE FIRST catalogue of the Royal Society Museum, founded in 1666 by (and dedicated to) Daniel Colwall, F.R.S. (d. 1690) and treasurer of the society (1665–1679). It was the first museum in England of real educational value and contained many objects donated by the most illustrious members. Originally housed in Gresham College, the collection was transferred to the British Museum in 1781, where many of the specimens still exist. Among the items described are Boyle's air pump (p. 357), Newton's reflecting telescope (p. 360), and instruments by Hooke, Bishop Wilkins, Wren, and others. The book is replete with information of chemical interest, and there are many references to minerals from America and elsewhere. Richly illustrated by plates 23–31, the treatise entitled *Stomachs and Guts*, with separate title page, is one of the best studies of the seventeenth century on “comparative anatomy,” a term earlier introduced by Grew. Newton owned a copy of this work. (Babson, 406; Cole, *History of Comparative Anatomy*, 245–254; Cushing, G402; D.S.B., V, 535; Eales, 784; Edelstein, 1046; Ferchl, 200; Garrison-Morton, 297; Harrison, 716; Krivatsy, 10001; Neu, 3572; Osler, 2840; Partington, II, 518; Thorndike, VIII, 42; Wellcome, III, 164; Wing, G1952)

GREW, Nehemiah

Musaeum Regalis Societatis: or, a Catalogue and Description of the Natural and Artificial Rarities belonging to the Royal Society, and preserved at Gresham Colledge. . . . Whereunto is Subjoyned the Comparative Anatomy of Stomachs and Guts. . . .

London: Printed for S. Holford, at the Crown in the Pall-Mall. 1686.

First edition, third issue. Folio. 7 leaves, 386 pp., 2 leaves, 43, (1) pp. Engraved frontispiece portrait of Daniel Colwall, 31 copperplates (1 folding), and text figures. Corrections and additions in ink by Grew on pages 62, 81, 239, and 343. Fine copy in contemporary calf, rebacked, maroon morocco label, gilt, spine dated. Armorial bookplates: John Wheler and Sir Trevor Wheler.

THE PORTRAIT of Colwall is different from that in the first issue: it was drawn and engraved by R. White and dated 1681. In the first issue there is no indication of the name of the engraver, and the portrait is not dated. The printer on the divisional title page of *Stomachs and Guts* is W. Rawlins, as in the first issue. Apart from the reset title page and the frontispiece portrait, this issue is identical to the first of 1681. Careful comparison reveals that the same sheets were used for the first, second, and third issues. Much rarer than the first issue, only three copies are listed in America by Wing, including the present copy. The other two are at Harvard and Columbia universities. Not in Krivatsy. (Wellcome, III, 164; Wing, G1954)

GRIFFIN, John Joseph

Chemical Handicraft: a Classified and Descriptive Catalogue of Chemical Apparatus, suitable for the performance of class experiments, for every process of chemical research and for testing in the arts. Accompanied by copious notes, explanatory of the construction and use of the apparatus. . . . Illustrated by upwards of Sixteen Hundred Engravings on Wood.
London: John Joseph Griffin and Sons. 1877.

Second edition. 8vo. xvi, 479, (1) pp., 2 leaves (advertisements). Woodcut on title page and hundreds of text figures. With inserted slip advertising telephone apparatus manufactured by Griffin, dated 1878. Fine copy in original blind-stamped cloth, spine gilt-lettered.

GREATLY ENLARGED final edition (first: 1866) of this valuable catalogue of all kinds of chemical apparatus, much of which is illustrated and was designed by Griffin in new and simple forms. Almost five thousand items are offered for sale. In addition, hundreds of chemical reagents are listed. Rare. Not in Duveen, Edelstein, Morgan, Smith, Sondheimer, etc. (Bolton, 498; Ferchl, 200; Partington, IV, 277)

GRIFFIN, John Joseph

Chemical Recreations: a series of amusing and instructive experiments, which may be performed easily, safely, and at little expense. To which are prefixed, first lines of chemistry; wherein the principal facts of the science, as stated by the most celebrated experimentalists, are familiarly explained. With a minute description of a cheap and simple apparatus; illustrated by seventy engraved figures of the different parts of it.
Third edition, corrected and enlarged.
Glasgow: Richard Griffin & Co. . . . 1824.

Third edition. 12mo. iv, 238 pp. With 6 engraved plates of chemical apparatus (R. Gray sc.). Very good copy, in contemporary maroon half calf, marbled boards, spine gilt. From the library of Professor Franz Sondheimer, with his bookplate on the recto of the first free endpaper.

GRIFFIN (1802–1877), at first a Glasgow bookseller and publisher, then founder of the firm of chemical apparatus dealers in London, was trained in Paris and Heidelberg. He assisted in the formation of the London Chemical Society (now the Royal Society of Chemistry), to which he presented his valuable library, containing many old books. Besides his *Practical Treatise on the Use of the Blowpipe* (Glasgow, 1827), he wrote *The Radical Theory in Chemistry* (London, 1858), *The Chemical Testing of Wines and Spirits* (London, 1866), *Chemical Experiments* (London, 1864), *Chemical Handicraft* (London, 1877), and this excellent introductory work. Dedicated “To the Members of the Me-

chanics’ Class of the Andersonian Institution, Glasgow,” the preface is dated 18 September 1823. Several editions followed in quick succession, the seventh appearing in 1834 and the thirteenth in 1853. Rose’s *Handbuch der Analytischen Chemie* was translated by Griffin as *A Manual of Analytical Chemistry* (London, 1831). Bolton, Ferchl, Morgan, Poggendorff, and Smith list other editions of this work. No edition in Duveen, Edelstein, Waller, etc. (Partington, IV, 277; Sondheimer, 653; Wellcome, III, 165)

GRIFFIN, John Joseph

Chemical Recreations: a series of amusing and instructive experiments, which may be performed easily, safely, and at little expense. To which are prefixed, first lines of chemistry: wherein the principal facts of the science, as stated by the most celebrated experimentalists, are familiarly explained. With a minute description of a cheap and simple apparatus illustrated by seventy engraved figures of the different parts of it.
By John Griffin. Sixth edition, corrected and enlarged.
Glasgow: Printed for Richard Griffin & Co. and Thomas Tegg, London. 1826.

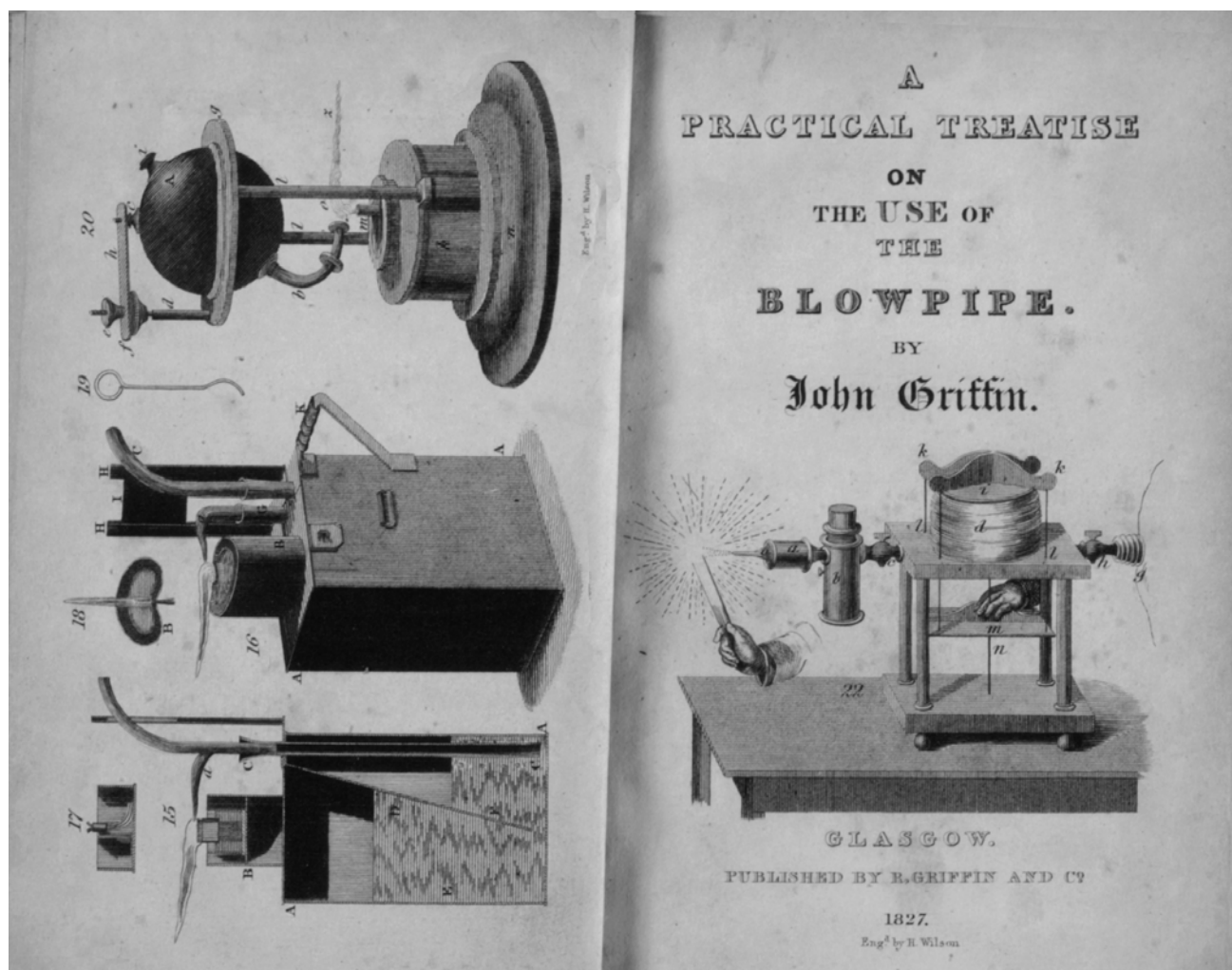
Sixth edition. 12mo. iv, 240 pp. With amusing engraved frontispiece (“Whimsical Effects of Nitrous Oxide Gas”) and 6 plates of chemical apparatus (R. Gray sc.). Few neat marginal notes in ink by an early-nineteenth-century owner; otherwise very good copy in contemporary half calf, rebaked with original spine laid on, black morocco label, gilt.

A CLOSE PAGINARY reprint of the third edition (1824), dedicated “To the Members of the Mechanics’ Class of the Andersonian Institution, Glasgow” (dated 18 September 1823, as in the 1824 edition). The humorous frontispiece shows a man happily dancing around a room as the result of inhaling nitrous oxide, while four people observe his antics. Griffin “devised many new and simple forms of chemical apparatus, and did much in introducing scientific methods into commercial processes” (D.N.B.). Very scarce. Bolton, Ferchl, Morgan, Partington, Poggendorff, Smith, Wellcome, etc., list other editions of this title.

GRIFFIN, John Joseph

The Chemistry of the Non-Metallic Elements and their Compounds: Air, Water, the Gases, the Acids; and a Summary of Organic Chemistry. Including a course of class experiments. . . .
London: Published by John Joseph Griffin. 1860.

Tenth edition. 8vo. xxiv, 121–720 pp. With 435 illustrations in text. Fine, crisp copy, in quarter calf antique, marbled boards, maroon morocco label, gilt.



Griffin. Practical Treatise on . . . the Blowpipe. Glasgow, 1827.

THE FINAL and best edition, of which this is the second volume (complete in itself) of a two-volume set. The leaf facing the title page is entitled *Chemical Recreations: a popular manual of experimental chemistry . . . second division: non-metallic elements*. This volume covers gases, acid radicals, salts, air, water, combustion, respiration, etc. On pages 123–124 are full-page tables of equivalent weights of the elements, calculated on the basis that hydrogen is unity. Most of the figures listed are close to the present values. Numerous experiments are described and illustrated with pictures of the apparatus to be used. Chemical equations are given throughout. The section on organic chemistry occupies pages 334–551. Not in the usual bibliographies. (Ferchl, 200 [1859 ed.]; Partington, IV, 277; Sondheimer, 654)

GRIFFIN, John Joseph

A Practical Treatise on the Use of the Blowpipe, in Chemical and Mineral Analysis: including a systematic arrangement of simple minerals, adapted to aid the student in his progress in mineralogy, by facilitating the discovery of the names of species. . . .

Glasgow: Published by Richard Griffin & Co., and Thomas Tegg, London. 1827.

First edition. 12mo. 2 leaves (engraved frontispiece and title page), xvi, 308 pp. With 4 engraved plates (by H. Wilson) of blowpipes and accessories. Very good copy in contemporary half calf, marbled boards, spine gilt-ruled, brown morocco label. An interesting association copy from the library of

David Thomas Ansted (1814–1880), professor of geology, King's College, London; with his bookplate (see D.N.B.).

THE FIRST comprehensive English work on the blowpipe: the earlier books of Clarke (London, 1819) and Berzelius (London, 1822) having dealt only with the gas blowpipe and mouth blowpipe, respectively. Griffin gives a history of the use of blowpipes (pp. 1–11), and his biographer in the D.N.B. “was unable to give the date and correct title” (Zeitlinger). Not in D.S.B., Duveen, Hoover, Morgan, etc. (Bolton, *First Supplement*, 190; Edelstein, 1052; Partington, IV, 149; Smith, 205; Sotheran, Cat. 851 [1937], 1022; *ibid.*, Cat. 877 [1947], 2336 [“Very Scarce”]; Wellcome, III, 166)

GRIFFITHS, Thomas

Chemistry of the Four Ancient Elements Fire, Air, Earth, and Water, an essay, founded upon lectures delivered before her Most Gracious Majesty, the Queen, . . .
London: Samuel Highly. 1842.

First edition. 8vo. ix, (1), 226 pp. Many woodcuts in text. Very fine copy, uncut, in original blind-stamped green pebbled cloth, royal arms in gilt on front cover, spine gilt-lettered.

AN INTRODUCTORY textbook, dedicated to Queen Victoria. Topics covered include fire and combustion, chemical properties of air and gases, composition of minerals, and the properties of water. The appendix discusses chemical reagents. A second edition appeared (London, 1851). Griffiths (dates unknown) was lecturer and later professor of chemistry and medical physics at St. Bartholomew's Hospital and for a time chemical assistant at the Royal Institution, where he worked under Faraday. He also published *Recreations in Chemistry* (London, 1841; see Sondheimer, 656) and *Chemistry of the Four Seasons* (London, 1846; on which see Duveen, 269; Edelstein, 1053; Wellcome, III, 166). Very scarce. Not in the usual chemical bibliographies. (Bolton, *First Supplement*, 190)

GRIGNARD, François Auguste Victor

Sur les Combinaisons Organomagnésiennes Mixtes et leur Application à des Synthèses d'Acides, d'Alcools et d'Hydrocarbures. Par Victor Grignard . . .
Paris: Librairie Gauthier-Villars (&) Lyon: A. Rey. 1901.

First edition. 8vo. 2 leaves, 118 pp., 1 leaf. Verso of half title states that this is “Exemplaire No. 292.” Fine copy, uncut, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated, with original printed wrappers bound in.

THE DOCTORAL thesis of Grignard (1871–1935), at the University of Lyons, in which he describes his discovery of organomagnesium halides (R.Mg.X) and their almost un-

limited use in organic synthesis. He specifically discusses the use of organomagnesium bromides and iodides in the syntheses of organic acids, alcohols, and hydrocarbons. This thesis was considered so important that the University of Lyons published it in its entirety, as here, and within a year a full abstract appeared in *Chemisches Zentralblatt*. “Grignard's method of synthesis thus became widely known and firmly established. By 1908 more than 500 papers dealing with the Grignard reaction had been published” (D.S.B.). Even today the full ramifications and diverse uses of Grignard reagents have not been completely explored. Grignard worked on his organometallic researches throughout most of his life, and in 1912 he received the Nobel Prize (shared with Paul Sabatier). A monumentally important work, one of the great milestones of organic chemistry. Very rare. Not in the major early chemical libraries. (Asimov, *Biographical Encyclopedia of Science and Technology*, 1964, col. 378; Bolton, *Second Supplement*, 96; D.S.B., V, 541)

GRIMALDI, Costantino

Dissertazione in cui si investiga quali sieno le operazioni che dependono dalla magia diabolica e quali quelle che derivano dalle magia artificiale e naturale e qual cautela si ha da usare nella malagevolezza di discernerle. . . .
Rome: Nella Stamperia di Pallade. 1751.

First edition. 4to. 4 leaves, 139, (1) pp. Copperplate vignette on title page (And. Mailar Scul.), woodcut initials, head- and tailpieces. Very good copy, with wide fore- and lower margins, in original vellum.

A WORK THAT covers a wide variety of scientific subjects, including electricity, light, and properties of matter. Of chemical interest are discussions on the nature of fire, elements, minerals, metals, salts, phosphorescence, Digby and the sympathetic powder, materia medica, and other topics, with numerous references to earlier and contemporary authors. Watt (I, 443u) states that Grimaldi (1667–1750) published *Discussioni Istoriche Theologiche, e Filosofiche* (Lucca, 1725, 3 vols., 4to.) but does not mention the present rare work. Not in the usual bibliographies. (Laehr, II, 414; Verginelli, 140; Wellcome, III, 167)

GRIMALDI, Gabriello

Saggi Filosofici di D. Gabriello Grimaldi P. P. di Fisica nell'Università Lucchese.
(Colophon: Lucca: Presso Domenico Maescandoli. 1803.)

First edition. 8vo. 223, (1) pp. Fine copy, uncut, in quarter calf antique, marbled boards, maroon morocco label gilt, spine dated, original wrappers bound in.

A SERIES OF essays on chemistry and galvanism by a professor of physics at the University of Lucca. The first three chapters (pp. 9–65) cover light, caloric, and oxygen, and the remainder of the book is on galvanism and electrochemistry. There are numerous references to contemporary chemists and physicists (e.g., Lavoisier, Berthollet, Chaptal, Humboldt, Volta, Galvani, and Coulomb), and the work is almost entirely chemical in content. Grimaldi (dates unknown) also published an early work on ballooning: *Memorie sopra la Direzione, Utilità, ed Invenzione dei Globi Aereostatici* (Florence, 1788), on which see Sotheran, *Cat.* 672 (1907), 1681. His works are very rare, and no reference to the present title has been located in available bibliographies.

GRIMAUX, Louis Édouard

Lavoisier 1743–1794 d'après sa correspondance, ses manuscrits, ses papiers de famille et d'autres documents inédits par Édouard Grimaux . . .

Paris: Ancienne Librairie Germer Baillière et Cie. Félix Alcan, Éditeur. 1888.

First edition. Royal 8vo. viii, 398, (2) pp. With 10 plates (including frontispiece of Lavoisier and his wife, after the painting by David). Splendid copy in prize polished calf, ornamental gilt dentelles on covers, arms of Mason's Science College (later Birmingham University) in gilt on front cover, rebaked with richly gilt and dated spine, red morocco label. Gilded bookplate on front pastedown endpaper indicating that this copy was a prize awarded to R. A. Lyster by the chemistry department, 1892–1893 session, and signed by the famous chemist (Sir) William A. Tilden (1842–1926).

THE STANDARD biography of Lavoisier: “still the most authoritative source of information regarding the life and activities of the great chemist” (Duveen). Originally a pharmacist, Grimaux (1835–1900) studied chemistry under Wurtz, lectured at the École de Médecine, and became professor at the Institut Agronomique National and, in 1876, at the École Polytechnique. A competent chemist, Grimaux synthesized allantoin, barbituric acid, parabanic acid, and citric acid from glycerol (with P. Adam), and showed that codeine is methylmorphine. (Bolton, 216; Cushing, G408; D.S.B., VIII, 88; Duveen, 342; Duveen & Klickstein, *Supplement*, 143; Partington, III, 364; Smith, 205; Waller, 17161)

GRINDEL, David Hieronymus

Allgemeine Uebersicht der neuern Chemie zur Einleitung für Anfänger dargestellt von D. H. Grindel . . .

Riga: bey Johann Friedrich Hartknoch. 1799.

First edition. 8vo. 4 leaves, 144 pp. Some leaves with light worming (not affecting legibility); otherwise fine copy in

original mottled sheep, floral endpapers, 2 red morocco labels, spine richly gilt. Bound with: Scherer, Alexander Nicolaus, *Kurze Darstellung der . . . Gasarten* (Weimar, 1799).

A TEXTBOOK FOR beginners, presenting a “clear exposition of the (then) new theories of chemistry, admirably written” (Bolton). It is divided into 112 short chapters (mostly of only one paragraph), covering all aspects of elementary chemistry. This is probably the earliest work published in Latvia based on the antiphlogistic doctrine of Lavoisier and was unknown to Duveen and Klickstein. There is a long section (pp. 16–32) on the composition of the atmosphere. The properties of oxygen are described, as are its essential role in combustion and the formation of acids. The oxidation of metals is discussed (pp. 88–97). The first book published by Grindel (1776–1836), a Latvian who studied at Jena, before moving to Riga, where he practiced medicine. Later he became professor of chemistry and pharmacy at the University of Dorpat (1804–1814). Very rare. Not in N.U.C. (Bolton, 499; Ferchl, 201; Poggendorff, I, 955)

GRÖNLUND, König Alexander

Dissertatio Chemica de Terra Silicea, quam, . . . praeside Mag. Torb. Bergman, . . . publice ventilandam sistit . . . König Alexander Grönlund, Roslagus. . . XXIV Nov. Anno 1779.

Uppsala: Apud Joh. Edman. (1779).

First edition. 4to. 2 leaves, 20 pp., 1 leaf. Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A DISSERTATION ON the chemical analysis and reactions of silicate minerals (e.g., sand, siliceous rocks) by Grönlund (dates unknown), with Bergman presiding. Silicate rocks were fused with potassium carbonate, and soluble (i.e., colloidal) silicic acid was formed by adding acid to a dilute solution of the alkali silicate. The preparation of pure silica (silicon dioxide) by reacting ammonium hydroxide with hydrofluosilicic acid is described. An important early thesis on the chemistry of silicates, with references to the works of contemporary chemists (e.g., Baumé, Pott, Priestley, and Scheele). A revised edition appeared in Bergman's *Opuscula Physica et Chemica* (Uppsala, 1780, vol. 2), from which English, French, and German translations were made. Rare. Not in Blake, Bolton, Duveen, Edelstein, Ferguson, Ferguson, Coll., Neu, Poggendorff, Waller, Wellcome, etc. (Moström, 138; Partington, III, 182, 187, 188)

GROSSCHEDEL VON AICHA, Johann Baptist

Proteus Mercurialis Geminus, exhibens Naturam Metallorum sive Operis Philosophici Theoriam & ejusdem praxin, sive Compositionem Lapidis secreti per Philosophorum sententias & auctoritates elucidatus. Per Johannem Baptistam Groschedelium ab Aicha, Equitem Romanum, Philosophorum & Chymicum.

Hamburg: Typis Matthiae Grociani, 1706.

Second edition. 8vo. 8 leaves, 192 pp. Woodcut ornament on title. Fine copy in modern maroon quarter calf, pebbled cloth boards, spine gilt-lettered and dated.

AN ALCHEMICAL work of some importance, of which the first edition appeared at Hamburg in 1629. After the preface to this second edition there is a small additional tract: *De Vita Longa sic Theophrastus* (8 pp.; 4 leaves). The book is divided into two main parts, each discussing the nature of metals, the philosopher's stone, and transmutation. Part I (pp. 1–101) is entitled *De Natura Metallorum, et Lapide Philosophorum*, and part II (pp. 101–192) is *Mineralis seu Physici Metallorum Lapidis*. The author lived during the early seventeenth century, but nothing appears to have been recorded of his life. Ferguson describes other works by this author, including the first edition (1629) of this title, but the 1706 edition was not in the Young Collection. Waite (p. 288) refers to the *Mineralis* (1706) section of this work as if it were a separate edition, but he was in error and evidently had never seen a copy of the present edition. Ferchl and Gmelin both mention a Hamburg, 1705 edition, but that is probably an error for this edition of 1706. Rare. Not in Bolton, Caillet, Guaita, Partington, Thorndike, Waller, Watt, etc. (Duveen, 271; Ferguson, I, 348; Ferguson Coll., 290; Neu, 1769; Rosenthal, 407; Smith, 206; Wellcome, III, 170)

GROTTHUSS, Christian Johann Dietrich von

Mémoire sur la Décomposition de l'Eau et des Corps qu'elle tient en dissolution à l'aide de l'Électricité Galvanique . . .
Rome. 1805.

First edition. 12mo. 1 leaf, 22 pp. Large folding engraved plate with 2 figures. Very good copy in crimson quarter morocco antique, cloth boards, spine gilt-lettered and dated. Bound in are the old (not contemporary) wrappers, with annotations on this work and its author. From the library of Prof. Pedro N. Arata, celebrated Argentinian chemist (see Bolton), and his son Mario Pedro Arata, with signature of the latter on title, and nineteenth-century bookplate of P. N. Arata on verso of title page.

THE VERY rare original edition of one of the milestones of electrochemistry: the explanation of the electrolytic decomposition of water and the conduction of electric current by

solutions of salts by means of charged particles. "In 1805, while in Italy, he presented an original explanation of the electrolysis of water, which postulated that molecules of water and salt are polarized and, under the influence of the electric poles, form in the solution electromolecular chains whose members at each end are discharged at the opposite poles of the current" (D.S.B.). Grotthuss (1785–1822), a brilliant student who studied under the best chemists of the period (Berthollet, Fourcroy, Thomson, Vauquelin), was advised by Thomson to repeat Pacchiani's experiments on the galvanic analysis of water. As a result of this investigation he published this famous memoir, in which he "presented an elegant theory to explain why the products of galvanic decomposition appear only at the poles, a theory which lasted until about 1890" (Partington, who discusses this important work). This classic memoir was reprinted (*Annales de Chimie*, 58 [1806], 54–74). (Bolton, 501; D.S.B., V, 558; Ferchl, 202; Mottelay, 390; Partington, IV, 25–28; Poggendorff, I, 959)

GROVE, William Robert

On Certain Phenomena of Voltaic Ignition and the Decomposition of Water into its Constituent Gases by Heat. By W. R. Grove . . .

London: Printed by R. and J. E. Taylor, Red Lion Court, Fleet Street. 1847.

First edition. 4to. 1 leaf, 21, (1) pp. With engraved plate containing 10 figures (J. Basire lith.). Very good copy in modern boards. A presentation copy, inscribed in ink on title page (slightly cropped with loss of 2 or 3 letters): "Lieut. Col. Tavern [?] With the Author's kind regards."

THE BAKERIAN Lecture read before the Royal Society, 19 November 1846. "The first experimental proof of dissociation was given by W. R. Grove, who showed that steam in contact with a strongly heated platinum wire is decomposed into hydrogen and oxygen" (Partington). At the end (pp. 17–21) is the second part, read 26 November 1846: "Supplementary paper on certain phenomena of Voltaic ignition, and the decomposition of water into its constituent gases by heat." Grove (1811–1896), a barrister of Lincoln's Inn, elected F.R.S. (1840) and royal medalist (1847), was an excellent scientist. He became vice president of the Royal Institution (1844) and in 1847 professor of experimental philosophy at the London Institution (see D.N.B.). Only about twenty-five offprints were printed for the author before the text appeared in the *Philosophical Transactions of the Royal Society*, 137, 1–21 (1847). (D.S.B., V, 561; Ferchl, 202; Partington, IV, 494; Poggendorff, I, 961)

GRULING, Philip

Florilegii Hippocrateo-Galeno-Chymici Novi & quasi Prodomi, Medicinae Practicae proxime insequentis editio tertia . . . in qua praescribitur plurimorum medicamentorum tum chymicorum, e metallis, mineralibus & vegetabilibus, praesertim novorum, rariorum & secretiorum, tum Hippocratico-Galenicorum conficiendorum certa ratio . . .
Leipzig: Sumptibus Georgii, Henrici Frommanni, Bibliop. 1665.

Third edition. 4to. 12 leaves, 578 (i.e., 568) pp., 6 leaves (index). Fine engraved title page (by Simon Grimm). Old name and inscription dated 1791 on letterpress title; otherwise very good copy, in contemporary calf, rebacked, corners repaired.

GRULING, OR Grueling (1593–1667), physician at Stolberg in the Harz, became the count's physician and Burgermeister in 1627. He was the author of several iatrochemical and medical works. The first edition of the *Florilegium* appeared at Leipzig in 1631, and the second in 1644. The last to be published in the author's lifetime, the present third and best edition, greatly enlarged and updated, contains much of chemical interest. It includes the preparation of many acids, bases, salts, and other chemicals, and there are extensive tables of chemical symbols (pp. 573–576). The verso of the dedication leaf gives Gruling's age as seventy-three on 26 February 1665. A reprint of this edition appeared at Leipzig in 1680. Unknown to Bolton, Caillet, Duveen, Partington, etc. (Ferchl, 203; Ferguson, I, 350 [not in Young Coll.]; Krivatsy, 5044; Wellcome, III, 171)

GRUMMET, Christoph

Sanguis Naturae, or, A Manifest Declaration of the Sanguine and Solar Congealed Liquor of Nature. By Anonimus.
London: Printed for A. R. and sold by T. Sowle, in White-Hart-Court in Grace-Church-Street. 1696.

First English edition. 8vo. 2 leaves, 112 pp. Original paper fault in 1 blank margin, tear repaired in sign. H3, and some browning; otherwise good copy in contemporary blind-ruled calf, rebacked.

DEALING MAINLY with the philosopher's stone, this work is apparently the English translation of *Das Blut der Natur* (Dresden, 1677; Ferchl, 203; Wellcome, II, 257). It is traditionally attributed to Grummet (or Brummet, fl. 1670), an assistant in Johann Kunckel's laboratory at Dresden (see Partington, II, 370). Duveen, however, states that the book "definitely has nothing to do with" Grummet's 1677 work. Duveen claims that the first part is based on the *Blut der Natur* by Anonymus von Schwartzfus (a pseudonym) and that the second part "may be based on another tract by Schwartzfus: 'Lehrsätze,' mentioned by Ferguson (II, 352),

as it is a practical instruction on experiments to produce the Stone." Newton, who was greatly interested in this work, had two copies (Harrison, 1445 and 1446), one of which was owned by Duveen and is now at the University of Wisconsin (Neu, 3738). Extremely rare. (Duveen, 539; Wing, G216A)

GRUMMET, Christoph

Sol Non Sine Veste, Oder Das unüberwundene Gold, In seiner Tapfferkeit triumphirend aufgeführt, Wider alle diejenigen, so jemalen vermeinet oder geschrieben, dass sie es wahrhaftig zu einem Glase, also genannten Rubin-Flusse, Purpur-Farbe oder dergleichen gebracht, Sondern, Dass ihr Color oder Farbe einig und allein aus der von Natur allerhöchst Purpur-Farbe begabten Magnesia, mediante Nitro, ausgebracht wird, Mit unumstösslichen warhaftigen Experimentis hierinnen angewiesen, Und Nebst einem ausführlichen Bericht von einer sonderbaren Minera, Hesperus genant, deutlich beschrieben von Christoph Grummeten.
N.p., n.d. (1720).

First edition thus. 8vo. 30 pp. (mispaginated). Final leaf (pp. 29–30) lacking; otherwise good copy in original vellum, rebacked in vellum antique. Bound with: Gertz, P., *Neuer-offnete Kunstammer* (1720), and 3 other alchemical works.

AN ATTACK on the *Sol Sine Veste* (Augsburg, 1684), by Johann Christian Orschall. The first edition by Grummet (Rothenburg, 1685; Partington, II, 370) is here reprinted, in which he claimed "that gold could be recovered from ruby glass, which Kunckel denied" (Partington). This work has its own title page and pagination but forms part of the book by P. Gertz, the signatures being continuous. Unlike the copy described by Duveen, this copy does not have the ten-page catalogue of chemical and emblem books. Not in Duncan or the usual bibliographies. (Duveen, 245)

GRUND, Francis Joseph

Elements of Chemistry, with Practical Exercises, illustrated by One Hundred and Forty Engravings on Wood. For the use of schools. . . .
Boston: Carter, Hendee and Co. 1833.

First edition. 12mo. (in 6s). 12 + 384 pp. With 141 woodcuts (not 140, as stated in the title). Fine copy in contemporary speckled calf, spine gilt-ruled. Signature (in pencil) on first free endpaper: "J. Bine. Harvard University, Cambridge. Feby 25th 1834."

GRUND (1798–1863), an American author who published works on natural philosophy, geometry, arithmetic, algebra, astronomy, and other subjects, here presents a chemical textbook. In his preface Grund states that "on his tour

to Europe the author has had an opportunity to embody in his work the latest discoveries in chemistry, and . . . his book is not inferior to any similar work published in this country." Divided into seven main chapters, much information is given on inorganic and organic chemistry, as these subjects were known in 1833. In the appendix (pp. 360–373) there is a detailed discussion of various stationary steam engines, with six large woodcuts. On page 374 there is a "Scale of Chemical Equivalents (or Atomic Weights), in which hydrogen gas is taken for unity, after Berzelius." Many of the atomic weights quoted are surprisingly close to the modern values. A very rare work, which is not in Cushing, Ferchl, Miles, Morgan, Osler, Partington, Poggendorff, Reynolds, Smith, Waller, Wellcome, etc. (Bolton, 502 [erroneously gives "Boston, 1838"])

GUERICKE, Johann Ernst Theophil

De Sulphure Antimonii Aurato Liquido. . . Pro gradu doctoris medicinae . . . publice disputabit, Io. Ernestus, Theophilus, Guericke, Salzliebenhalensi-Hildesius, . . . Erfurt: Typis Nonnianis. 1776.

First edition. 4to. 20, (4), 12 pp. Two woodcut headpieces. Fine copy with wide margins, uncut, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated. With author's signature in ink on title page (Dr. Gericke), and a few of his marginal corrections in text.

THE DOCTORAL dissertation of Guericke (b. 1755), a distinguished German physician and member of the Royal Society of Göttingen. The praeses was the professor of medicine at Erfurt, Wilhelm Bernhard Trommsdorff (1738–1782), father of the famous chemist Johann Bartholoma Trommsdorff (1770–1837). The dissolution of antimony pentasulphide (Sb_2S_5) in alkaline solutions (e.g., NaOH) is described. Mixtures of thioantimonates (e.g., Na_3SbS_4) and antimonates (e.g., Na_3SbO_4) are formed. "The object of this essay is to make more generally known an antimonial preparation discovered by Dr. C. Jacobus, which from its milder operation was intended to supersede the sulphur auratum antimonii and kermes mineral then commonly in use" (Waring [p. 245], who lists only an 8vo. reprint [Erfurt, 1780]). The last twelve pages, with separate divisional title page, comprise a short dissertation on musk. This is followed by a brief biography of the author, in which he traces his ancestry to the famous scientist Otto von Guericke (1602–1686) of Magdeburg, inventor of the vacuum pump and author of *Experimenta nova* (1672). A German translation of this dissertation appeared: *Abhandlung vom flüssigen spiessglas-goldschwefel* (Braunschweig, 1784; Smith, 207). Very rare. Not in the usual bibliographies. (Ferchl, 204)

GUERICKE, Otto von

Experimenta Nova (ut vocantur) Magdeburgica de Vacuo Spatio primum a R. P. Gaspare Schotto . . . Nunc vero ab ipso Auctore perfectius edita, variisque aliis experimentis aucta. Quibus accesserunt simul certa quaedam de aeris pondere circa terram; de virtutibus mundanis, & systemate mundi planetario; sicut & de stellis fixis, ac spatio illo immenso, quod tam intra quam extra eas funditur. Amsterdam: Apud Joannem Janssonium a Waesberge. 1672.

First edition. Folio. 8 leaves, 244 pp., 2 leaves. Errata leaf (not present). With fine engraved title page in earliest state (i.e., without names of Aristotle and Archimedes on the plinths above their heads: see Horblit). Engraved portrait of Guericke, 2 double-page plates, and 21 other plates (some full page). Plate XVIII in triplicate, and 2 plates on page 176. Fine, crisp copy, in half calf antique, plain boards.

A GREAT MILESTONE work in the history of science and technology, in which Guericke (1602–1686) describes the invention of his air pump for creating a vacuum. "The most famous of Guericke's public experiments is the one of the Magdeburg hemispheres, in which he placed together two copper hemispheres, milled so that the edges fit together snugly. He then evacuated the air from the resulting sphere and showed that a most heavy weight could not pull them apart. . . . The demonstration was performed with a team of horses for the first time in Magdeburg in 1657" (D.S.B.). Plate XI beautifully depicts this pivotal experiment, which proved that air has weight. Guericke also made a rough estimate of its density. This book is important for his description of the first electric generator (a rotating globe of sulphur), his discovery of electrical conduction, repulsion, and the discharging of points, etc. Of chemical interest are descriptions of experiments on the consumption of air by fire, respiration of animals, etc. Copies with the engraved title in the earliest state and with the fine portrait (often missing) are rare. (Dibner, 55; D.S.B., V, 575; Harvey, 270; Horblit, 44; Krivatsy, 5074; Partington, II, 514; Sparrow, 16; Wellcome, III, 175; Wheeler Gift, 170)

GUÉRIN, Benjamin Marie

Essai sur les Applications Thérapeutiques du Perchlorure de Fer. Thèse pour le Doctorat en Médecine, présentée et soutenue le 17 août 1858, par Benjamin Marie Guérin, né à Chateaufort-sur-Loire (Loiret). . . . Paris: Rignoux, Imprimeur de la Faculté de Médecine. 1858.

First edition. 4to. 60 pp. Very good copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

THE DOCTORAL thesis on perchloride of iron, presented by Guérin to the medical faculty at Paris. It is of interest to



Guericke, Otto von. *Experimenta Nova*. Amsterdam, 1672.

historians of chemistry, pharmacy, and medicine. "The author treats of the use of the perchloride in aneurisms, varices, naevi, panniform keratitis, haemorrhoids, haemorrhages, erysipelas, purpura, dysentery, and other affections. He has evidently bestowed much attention on the subject, and has brought together many interesting facts" (Waring). Perchloride of iron is now called ferric chloride. Rare. (Waring, 438)

GUGLIELMINI, Domenico

De Salibus Dissertatio Epistolaris Physico-Medico-Mechanica conscripta a Dominico Guglielmini Philosopho et Medico Bononiensi et in Patavino Lyceo Medicinae Theoricae Professore Primario. Ad Illustrissimum & Excellentissimum Dominum D. Christinum Martinelli Patritium Venetum.

Venice: Apud Aloysium Pavinum. 1705.

First edition. 8vo. 8 leaves, 280 pp. Copperplate printer's device on title page. Fine copy in full vellum antique.

GUGLIELMINI (1655–1710), inspector of canals and professor of mathematics and hydrometry at Bologna until 1698 and from 1702 professor of medicine at Padua, became F.R.S. in 1697. He established the law of constant interfacial angles in inorganic crystals. His earlier *Riflessioni Filosofiche dedotte dalle Figure de' Sali* (Bologna, 1688) first enunciated Guglielmini's ideas on the structure of crystals, and the *De Salibus* develops these concepts. He "tried to explain the crystals formed by salts, nitre coalescing into hexagonal prisms, vitriol and tartar into parallelepipeds, rock alum into octahedrons, and common salt into cubes" (Thorndike, VIII, 397). The book is a milestone in the history of crystallography and of considerable chemical interest, with many references to Boyle's *Sceptical Chymist* (p. 37 et seq.) and works by Paracelsus, Borrichius, Helmont, Homberg, et al. Rare. Not mentioned by Bolton, Duveen, Edelstein, Ferchl, Ferguson, Hoover, Neu, Partington, Smith, Watt, etc. According to Guareschi, Guglielmini was the first to give a clear concept of the formation of crystals by the packing of various molecular shapes depending upon their geometry, which resulted in crystals having constant interfacial angles. See Guareschi, *La Storia delle Scienze e D. Guglielmini*, pp. 17–19. (Blake, 189; Poggenдорff, I, 974; Wellcome, III, 177)

GUIBERT, Nicolas

De Interitu Alchymiae Metallorum Transmutatoriae Tractatus Aliquot, multiplici eruditione referti. . . Adjuncta est ejusdem Apologia in Sophistam Libavium, Alchymiae refutatae furentem calumniatorem, quae loco Praefationis in eosdem tractatus esse possit. . .

Toul: Apud Sebastianum Philippe, Typographum Juratum. 1614.

First edition. 8vo., 2 parts in 1 vol. I: 8 leaves, 88 pp. II: 2 leaves, 141, (1) pp., 1 leaf (blank). Woodcut ornament on title page of each part. Woodcut capitals, head- and tailpieces. Paper slightly and uniformly embrowned (as usual); otherwise very good copy, uncut, with wide fore- and lower margins; in modern quarter calf, gilt, marbled boards, maroon morocco label.

GUIBERT (ca. 1547–ca. 1620), a physician of Lorraine, traveled throughout Europe and was alchemist to the Cardinal of Augsburg. In later years he changed his views on transmutation and became a fierce opponent of alchemy. His first published attack, *Alchymia ratione et experientia* (Strasbourg, 1603), comprised a refutation of major alchemical literature, which brought forth a vigorous response from Andreas Libavius in his *Defensio alchymiae transmutatoriae opposita Nicolai Guiberti* (Ursel, 1604), in which he defends the transmutation of metals. Guibert then attacked Libavius in the present major work. Thorndike discusses the controversy in detail. This copy begins with the *Apologia* and is followed by the *Alchymia metallorum transmutatoria*, which is divided into three tracts. Uncut copies are very unusual. Not in Hall, Mellon, Smith, Verginelli, etc. (Bolton, 990; D.S.B., V, 580; Duveen, 273; Edelstein, 1063; Ferchl, 205; Ferguson, I, 353 [not in Young Coll.]; Ferguson Coll., 293; Goldsmith, G884; Neu, 1775; Partington, II, 268; Poggenдорff, I, 975; Rosenthal, 412 ["Très rare"]; Thorndike, VI, 245–247; Waite, 288; Watt, I, 449k; Wellcome, I, 2981)

GUIDOTT, Thomas

A Collection of Treatises Relating to the City and Waters of Bath. Containing, I. A Discourse of the Bath, and the Hot Waters there. Also some Enquiries into the Nature of the Water of St. Vincent's Rock near Bristol; and that of Castle-Cary. II. A Century of Observations; containing farther Discoveries of the Nature of the Hot-Waters at Bath. With the Contents, Property and Distinction of each Bath in Particular. III. The Lives and Characters of the Physicians of Bath, from the Year 1598, to the Year 1676. IV. An Apology for the Bath; being an Answer to a late Enquiry into the Right Use and Abuses of the Baths of England, &c. With some Reflexions on Fresh Cold Bathing, Bathing in Sea Water, and Dipping in Baptism. V. The Register of Bath; or, Two Hundred Observations. Containing an Account of Cures performed, and Benefits received, by the Use of the Famous Hot Waters of Bath: As they, for the most Part, came under the Author's Twenty-seven Years Experience and Observation. . . . To which is added, Thermae Redivivae; or, The City of Bath described, &c. By Henry Chapman, Gent.
London: Printed for J. Leake, Bookseller at the Bath. 1725.

Second edition. 8vo. 14 leaves, 430 pp. With 5 engraved plates (1 folding) and woodcuts in text. Divisional title pages to each part dated 1724. Very good copy, in original calf, rebacked, maroon morocco label.

THE SECOND collected edition (first: 1676) of Guidott's works on Bath in English, containing numerous details on the analysis and chemical composition of the mineral waters. The *Register of Bath* (first: London, 1694; Wing, G2199) and the *Thermae Redivivae* by Chapman (first: London, 1673; Wing, C1953) were added to this, the most complete edition. The copy described by Duveen contained only four plates. (Blake, 189; Blocker, 171; Duveen, 274; Ferchl, 205; Neu, 1781; Partington, II, 607; Watt, I, 449x; Wellcome, III, 178)

GUIDOTT, Thomas

De Thermis Britannicis Tractatus accesserunt Observationes Hydrostaticae, Chromaticae, & Miscellaneae, uniuscujusque Balnei apud Bathoniam Naturam, Proprietatem, & Distinctionem, Curatius Exhibentes. Experientiae Diuturnioris opus, & plurium Annorum Pensum, cum Indicibus Necessariis. Ad Regale Collegium Medicorum Londinensium. London: Excudebat Franciscus Leach, Sumptibus Authoris. 1691.

First edition. 4to. Engraved title page (by D. Loggan), 14 leaves, pp. 1–24, 4 leaves, pp. 25–412, 2 leaves (1 blank), 28 pp., 8 leaves. Divisional title page to *Observationem centuria*. With 8 engraved plates (3 folding), and the 4 extra leaves (sign. D*) between pages 24–25. Fine copy, in contemporary blind-ruled calf, rebacked, spine gilt-lettered and dated.

THE PHYSICAL and chemical properties of the mineral waters at Bath were extensively studied by Guidott, and his experimental investigations are reported in this, his most important work. There is much information on the analytical chemical methods of the late seventeenth century. Guidott had a large practice in Bath but in 1679 lost most of it by his "impudence, lampooning and libelling, and too much bibbing" according to Anthony à Wood. Fulton (*Bibliography of Boyle*, p. 169) notes that the folding plate facing page 13 is dedicated to Boyle. Guidott asked various prominent persons to pay for the copperplates, Boyle being the only scientist among them. The author published the book at his own expense. There are two states of the title page. One with the imprint as in this copy. The other (Wing, G2191) with the following words after "Sumptibus Authoris": *Veneunt apud S. Smith sub Insignium Principis signo in Coemeterio D. Pauli, aliosque.* (Cushing, G446; Duveen, 274; Ferchl, 205; Fulton, 292; Krivatsy, 5120; Neu, 1780; Partington, II, 607; Waring, 775; Watt, 449w; Wellcome, III, 178; Wing, G2191A)

GUIDOTT, Thomas

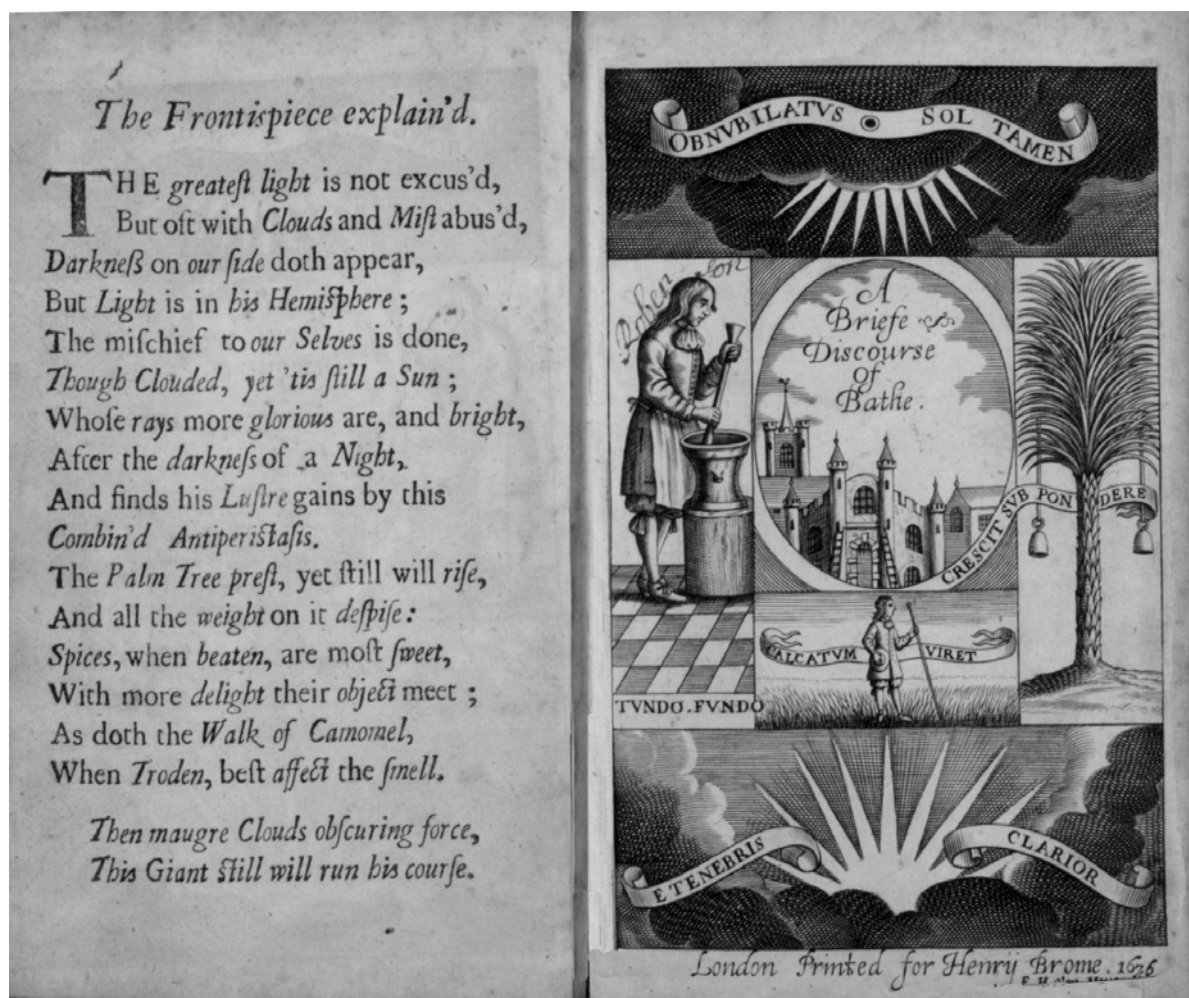
A Discourse of Bathe, and the Hot Waters There. Also, Some Enquiries into the nature of the Water of St. Vincent's Rock, near Bristol; and that of Castle-Cary. To which is added, a century of observations, more fully declaring the nature, property, and distinction of the Baths. With an account of the lives, and character, of the physicians of Bathe. . . . London: Printed for Henry Brome at the Gun in St. Paul's Church-Yard, at the West end. 1676.

First edition. 8vo. 16 leaves (including engraved title page), 200 pp. Engraved title page (by F. H. Van Hove), 5 engraved plates (2 folding), and large woodcut illustration on page 70. With the leaf "The Frontispiece explain'd" (often lacking) and 2 divisional title pages (pp. 129 and 159, the latter dated 1677). Very good copy, in contemporary gilt-ruled speckled calf, maroon label. Signature of Robert Nesbitt (d. 1761), physician and F.R.S., on front pastedown endpaper.

GUIDOTT (1638–1706), a physician of Oxford and later Bath and London, was greatly interested in the medicinal and chemical properties of spa waters, particularly those of Bath. The present book, his first, was preceded by two pamphlets: *A Quaere concerning drinking Bath-water* (London, 1673) and *A Letter concerning some Observations . . . at Bathe* (London, 1674; Wing G2195). Much of the work is of chemical interest, as Guidott discusses the analyses of Bath waters, pointing out that they contain niter, sulphur, vitriol, and several salts of metals. On page 6 et seq. the author criticizes John Mayow's recently published book (*Tractatus Quinque*, Oxford, 1674), in which Mayow asserts that Bath waters contain no niter or sulphur. Guidott then describes many experiments that confirm the presence of these components. Pages 131–157 describe physical and chemical experiments carried out on Bath waters, including color reactions used to identify solutes. Pages 163–200 contain useful biographies of Bath physicians, including Edward Jorden, Tobias Venner, and John Maplet. (Ferguson Coll., 294; Krivatsy, 5121; Osler, 2847; Partington, II, 607; Waller, 3836; Waring, 781; Watt, I, 449w; Wellcome, III, 178; Wing G2192)

GUIDOTT, Thomas

Thomae Guidotti Anglo-Britanni, De Thermis Britannicis Tractatus Accesserunt Observationes Hydrostaticae, Chromaticae, & Miscellaneae, uniuscujusque Balnei apud Bathoniam Naturam, Proprietatem, & Distinctionem, Curatius Exhibentes. Experientiae Diuturnioris opus, & plurium Annorum Pensum, cum Indicibus Necessariis. Ad Regale Collegium Medicorum Londinensium. London: Excudebat Franciscus Leach, Sumptibus Authoris. 1691.



Guidott. Discourse of Bathe. London, 1676.

First edition. 4to. Engraved title page (by D. Loggan), 14 leaves, pp. 1–24, 4 leaves, pp. 25–412, 2 leaves (1 blank), 28 pp., 8 leaves. With 8 engraved plates (3 folding) and the 4 extra leaves (signature D*) between pages 24–25. Fine copy in contemporary blind-ruled speckled calf, rebacked, spine gilt-lettered and dated. From the library of Joseph Mauleer, French protestant refugee and doctor of medicine (Montpelier, 1681), with his signature in ink at the top of the title page (“ex libris Jacobi Mauleere M.D.”). On Mauleer, see *Munk's Roll*, I, 480.

GUIDOTT EXTENSIVELY studied the physical and chemical properties of the spa waters at Bath. His experimental work is reported in this, his most important book, which contains much information on the analyses of Bath waters and the analytical chemical methods of the late seventeenth century. Although he had a large practice in Bath, in 1679 he lost most of it by his “impudence, lampooning and libelling, and too much bibbing,” according to Anthony à Wood. Fulton (*Bibliography of Robert Boyle*, p. 169) notes that the folding plate facing page 13 is dedicated to Boyle. Guidott

asked various prominent persons to pay for the copperplates in this book, Boyle being the only scientist in the list. The imprint states that the author published the book at his own expense. There are two states of the title page. One with the imprint as here. The other with the more commonly seen imprint: *Londini, Excudebat Franciscus Leach, Sumptibus Authoris. Veneunt apud S. Smith sub Insignium Principis signo in Coemeterio D. Pauli, aliosq; 1691*. The present imprint is not in Wing. (Cushing, G446; Duveen, 274; Ferchl, 205; Fulton, 292; Neu, 1780; Partington, II, 607; Waring, 775; Watt, I, 449w; Wellcome, III, 178; Wing, G2191)

GURNEY, Goldsworthy

A Course of Lectures on Chemical Science, as delivered at the Surrey Institution. . . .

London: G. and W. B. Whittaker. 1823.

First edition. 8vo. 4 leaves, 310 pp., 1 leaf (advertisements). With 8 lithographed plates (by G. Scharf, one partly colored)

drawn by the author. Pristine copy, unpressed and uncut, in original boards, rebacked in modern unlettered cloth. From the library of the American zoologist Charles Atwood Kofoid (1865–1947), with his bookplate.

THE FIRST lecture is a historical survey of alchemy and chemistry; the others cover cohesion, crystallization, elective affinities, caloric, electricity (anticipating the principle of the electric telegraph), combustion, oxygen, hydrogen, metals and earths, acids and alkalis, etc. Gurney's newly invented oxy-hydrogen blowpipe (illustrated in plate 8) and its applications are covered in the final lecture (pp. 272–310). "Faraday, then assistant to Davy at the Royal Institution, admitted his indebtedness to these lectures" (D.N.B.). Gurney (1793–1875), a remarkably talented man who was knighted in 1863, first discovered the so-called limelight (often attributed to Thomas Drummond) by playing his oxy-hydrogen flame over a piece of quicklime. He first applied the steam jet to steamboats, built a steam carriage that traveled from London to Bath and back at the (then) phenomenal speed of 15 miles per hour, extinguished fires in mines by his steam jet, used his "Gurney Stove" to warm and ventilate the old House of Commons, superintended the lighting and ventilation of the new Houses of Parliament (1854–1863), etc. Not in D.S.B., Duveen, Edelstein, Ferchl, Poggendorff, Smith, etc. (Bolton, 116; Morgan, 340; Partington, III, 725; Sondheimer, 662; Sotheran, Cat. 725 [1912], 8756 ["Scarce"]; Wellcome, III, 181)

GUSTAF ADOLPH

Kongl. Maj:ts Nådiga Förordning om Stångjerns-Smidet och Jern-Manufacturen I Riket. Gifwen Stockholms Slott den 15 Junii 1803. . . .

Stockholm: Tryckt I Kongl. Tryckeriet. 1803.

First edition. 4to. 7 leaves. Royal woodcut on title page. Fine copy, in maroon quarter cloth antique, marbled boards, spine labeled in gilt: Forordning om Jern, 1803.

A ROYAL DECREE of metallurgical interest, by the king of Sweden, Gustavus IV (Gustaf Adolph, 1778–1837), on the making and forging of iron. Issued from the palace in Stockholm on 15 June 1803, the decree is signed by Gustaf Adolph in bold type on the last page. "In 1796 Gustavus IV took the government into his own hands. He was scantily gifted but, combining obstinacy with passionate temper, he knew how to make himself felt" (see *Encyclopaedia Britannica*, 21, 494).

GUTIERREZ BUENO, Pedro

Curso de Quimica, teórica, y práctica para la enseñanza del Real Laboratorio de Quimica de esta corte.

Madrid: Por Don Antonio de Sancha. 1788.

First edition. 8vo. 10 leaves, 20 pp., 1 leaf, 250, lxxii pp. Superb copy in mint condition, in contemporary Spanish crimson morocco, richly gilt spine, ornamental double-gilt rules on both covers, inner dentelles gilt, all edges gilt. Contemporary engraved paper label on title page inscribed in ink: "El S.or Capiscol visita p.a la Racion."

THE FIRST textbook in Spain to use the new chemical nomenclature of Lavoisier and, as such, a milestone in Spanish scientific literature. One of the earliest modern chemistry texts, it was published a year before Lavoisier's great *Traité* (Paris, 1789) appeared. Gutierrez Bueno (1743–1822), professor of chemistry and pharmacy at the Royal Laboratory, had published a translation of the *Méthode de nomenclature chimique* (Paris, 1787) in January 1788 (Duveen & Klickstein, 152). "Gutierrez Bueno collected some of the lectures from [his] first course and published them at the end of 1788 as a volume dealing with theory. Its structure is similar to that of the *Éléments de chimie* (1777–78) of Guyton de Morveau, Maret, and Durande. The opening chapters [on] basic concepts, chemical operations, and a description of apparatus, are taken from the French text; other chapters . . . on chemical affinity, are . . . from the *Éléments d'histoire naturel* of Fourcroy. In the chapter on combustion and calcination, Gutierrez Bueno supports completely the antiphlogistic theory of Lavoisier" (Gago). The final seventy-two pages list for the first time the old and new Spanish names of chemical compounds. The Royal Laboratory disappeared after the Napoleonic wars. Probably printed in very few copies, this work is now of the greatest rarity. It is not in Aguilar Piñal, Palau, N.U.C., British Library, Bibliothèque Nationale, nor in any major Spanish library. (Ramon Gago, *Osiris*, 2nd series, 1988, 4, pp. 179–181; R. Roldan Guerrero, *Diccionario biografico y bibliografico de autores farmaceuticos españoles*, Madrid, 1958–1976, 1144.3; D. Hidalgo, *Diccionario General de bibliografía española*, Madrid, 1862–1881)

GUTIERREZ BUENO, Pedro

Prontuario de Quimica, Farmacia y Materia Médica, dividido en tres secciones. . . .

Madrid: Imprenta de Villalpando. 1815.

First edition. Sm. 8vo. 9 leaves, 269, (1) pp. With fine frontispiece portrait of Gutierrez Bueno with chemical apparatus. An excellent copy in the original Spanish tree calf, spine gilt-ruled, green morocco label.

A RARE INTRODUCTORY textbook, written in the form of a catechism. Section I deals with everything from “What is chemistry?” to a discussion of the principal types of chemicals (acids, bases, salts) and chemical processes (precipitation, sublimation, crystallization, etc.). Sections II and III cover pharmacy and the materia medica respectively. Gutierrez Bueno superintended the Royal Botanical Gardens in Madrid and was professor at the Royal College of Pharmacy. Bolton (p. 504) lists a *Curso de Quimica* (Madrid, 1802) by this author, but not the present work. Unknown to the usual bibliographers.

GUYTON DE MORVEAU, Louis Bernard

Digressions Académiques, ou Essais sur quelques Sujets de Physique, de Chymie, & d'Histoire naturelle . . .

Dijon: Chez L.N. Frantin, . . . et . . . Paris: Chez P. F. Didot le Jeune. 1772.

First edition, second issue. 12mo. 1 leaf, xvi, 417, (1) pp. Pristine copy in contemporary speckled calf, spine gilt-ruled, maroon morocco label.

ONE OF the rarest and most important books by Guyton de Morveau (1737–1816), a collaborator and friend of Lavoisier. In the first and longest of the three essays (*Dissertation sur le phlogistique*, pp. 1–267), he first proved that metals always gain in weight on calcination. This essay was largely responsible for attracting Lavoisier’s attention to the problem of calcination and combustion. Partington and McKie (see below) describe it as “a most notable and historical contribution to chemical literature.” In the second essay (*Essai physico-chymique sur la dissolution et la cristallisation*, pp. 269–377), he first advanced the theory that chemical affinity resulted from forces of attraction between the ultimate particles of matter, adding that from a study of the phenomenon of crystallization it should be possible to deduce the shapes of these ultimate particles and to calculate their relative forces of attraction. The *Observation sur une nouvelle espèce de Guhr* (pp. 378–384) is on a colloidal form of silica, or clay mineral. This is a copy of the second issue that is (as Smeaton indicates) considerably rarer than the first issue with the misprinted date (1762) on the title page. When making the correction, the printer removed the 1762 title page, replacing it with a reset and improved title and adding a half title. In all other respects the seven copies Smeaton examined are identical. Only two of the copies had the correct (1772) title page. Not in Duveen, Neu, Wellcome, etc. (Bolton, 505; D.S.B., V, 600; Edelstein, 1064; Partington, III, 519; Partington & McKie, *Annals of Science*, 2 [1937], 388–402; Smeaton, *Ambix*, 6 [1957], 21)

GUYTON DE MORVEAU, Louis Bernard

Tractado das Affinidades Chimicas: artigo, que no Dictionario de Chimica, fazendo parte da Encyclopedia por ordem de materias, deu Mr. de Morveau: e que para commodidade de seus discipulos traduzio Thomé Rodrigues Sobral lente de chimica e metallurgia.

Coimbra: Na Real Imprensa da Universidade. 1793.

First Portuguese edition. 8vo. 6 leaves, 512 pp. With 2 folding engraved plates (chemical symbols) and 7 folding printed tables. Superb copy in pristine condition, entirely uncut and unpressed, with wide margins; in speckled Portuguese calf antique, gilt, spine dated, crimson morocco label. From the library of the celebrated late-eighteenth- to early-nineteenth-century Portuguese scientist Professor Lobo, with several neat annotations in pencil by him.

“IT WAS also in 1789 that the second half-volume of the *Encyclopédie Méthodique, Chymie, Pharmacie et Métallurgie* was published; for Guyton’s convenience it had been printed in Dijon, and it included a second preface, in which Guyton explained his conversion to the anti-phlogistic theory. In addition to the article ‘Air,’ this half-volume included the important article ‘Affinité,’ in which Guyton developed his own ideas on the subject and also gave a critical account of other theories of affinity. . . . Parts of Guyton’s volume of the *Encyclopédie Méthodique* were translated . . . the article ‘Affinité’ into German, Italian and Portuguese” (Smeaton). Smeaton located only one copy of this extremely rare Portuguese edition, in the University Library, Coimbra. The present copy is probably the finest in existence. Unknown to the usual bibliographers. (Smeaton, *Ambix*, VI [1957], 28)

GUYTON DE MORVEAU, Louis Bernard

Traité des Moyens de Désinfecter l’Air, de prévenir la contagion, et d’en arrêter les progrès . . .

Paris: Chez Bernard. 1801.

First edition. 8vo. xxxii, 306 pp. Fine copy in original gilt-ruled half calf, marbled boards, tan morocco label. Presentation copy, inscribed in ink by Guyton on half title: “Mr. Pagès de la part de l’auteur.” The recipient was possibly François de Pagès, a captain in the French Navy, who published works on voyages, arts, and sciences (see Watt).

A CLASSIC BOOK in the history of chemistry and hygiene, in which the use of gaseous chlorine to fumigate churches and hospitals to destroy contagion and disease is first described. Although chlorine and hydrochloric acid vapor had been used as disinfectants before Guyton, this book was the most influential on the subject, and he is credited with the introduction of chlorine as an effective disinfectant. His book was translated into five languages, and he was made a

member of the Legion of Honor for the service to humanity by its publication. Guyton's "portable bottle," or "preservative phial," for generating chlorine is described. The gas was prepared by the reaction of common salt, manganese dioxide (pyrolusite), and sulphuric acid, or by the reaction of concentrated nitric acid, hydrochloric acid, and pyrolusite. On pages 305–306 is a bibliography of Guyton, listing seven of his books plus contributions to journals. Some copies (perhaps a later issue) have eight unnumbered advertisement pages at the end (cf. Duveen). (Bolton, 505; D.S.B., V, 603; Duveen, 276; Ferchl, 206; Partington, III, 530; Poggendorff, I, 981; Smeaton, *Ambix*, VI [1957], 32–34; Smith, 209; Sondheimer, 665; Thornton & Tully, 165; Waring, 150; Wellcome, III, 185)

GUYTON DE MORVEAU, Louis Bernard

Traité des Moyens de Désinfecter l'Air, de prévenir la contagion et d'en arrêter les progrès. . . .
Paris: Chez Bernard. 1802.

Second edition. 8vo. 2 leaves, xlvi, 429, (1) pp. + 8 pp. (advertisements, dated October 1802). With very fine portrait frontispiece of the author (in profile). Near-mint copy in original gilt-ruled quarter calf, marbled boards.

THE GREATLY enlarged and revised second edition of this important work, containing the "Rapport" by Jean Antoine Chaptal, which claims priority for Guyton against Sir James Carmichael Smyth and a sixteen-page *avertissement* by Guyton relating to this claim. The fine portrait of Guyton "au physionotrace par Quenedey," one of the rare examples of this technique, first appears in the present edition. Not in D.S.B., Duveen, Smith, Waller, Waring, etc. (Bolton, 505; Edelstein, 1066; Ferchl, 206; Osler, 2858; Partington, III, 530; Poggendorff, I, 981; Smeaton, *Ambix*, VI [1957], 33; Sondheimer, 666; Wellcome, III, 185)

GUYTON DE MORVEAU, Louis Bernard

Traité des Moyens de Désinfecter l'Air, de prévenir la contagion, et d'en arrêter les progrès. . . . Troisième édition, avec des planches et des additions considérables relatives surtout à la fièvre jaune.
Paris: Chez Bernard. 1805.

Third edition. 8vo. xiv, 441, (3) pp. + 16 pp. (catalogue of books published by Bernard, dated September 1805). With 3 engraved plates (Sellier Sc.). Fine copy in original tree calf, gilt, both covers with gilt fillets, crimson morocco label.

THE FINAL and most complete edition, the first to contain plates illustrating the apparatus for generating gaseous chlorine. In the *avertissement* Guyton states that he has entirely revised the text of the 1801 and 1802 editions and has added

a great deal of new information. There are considerable additions relating to yellow fever. Scarce. Not in Blocker, Cushing, D.S.B., Duveen, Edelstein, Osler, Partington, Sondheimer, Wellcome, etc. (Bolton, 505; Ferchl, 206; Poggendorff, I, 981; Smeaton, *Ambix*, VI [1957], 33; Smith, 210; Waller, 3895; Waring, 150)

GUYTON DE MORVEAU, Louis Bernard

A Treatise on the Means of Purifying Infected Air, of Preventing Contagion, and Arresting its Progress. . . . Translated from the French by R. Hall, M.D.
London: Printed by J. & E. Hodson . . . for T. Hurst. 1802.

First English edition. 8vo. 6 leaves, 248 pp. Occasional light foxing; otherwise fine, crisp copy, partly uncut, in half calf antique, marbled boards, maroon label, spine dated. From the library of Professor Franz Sondheimer, with bookplate.

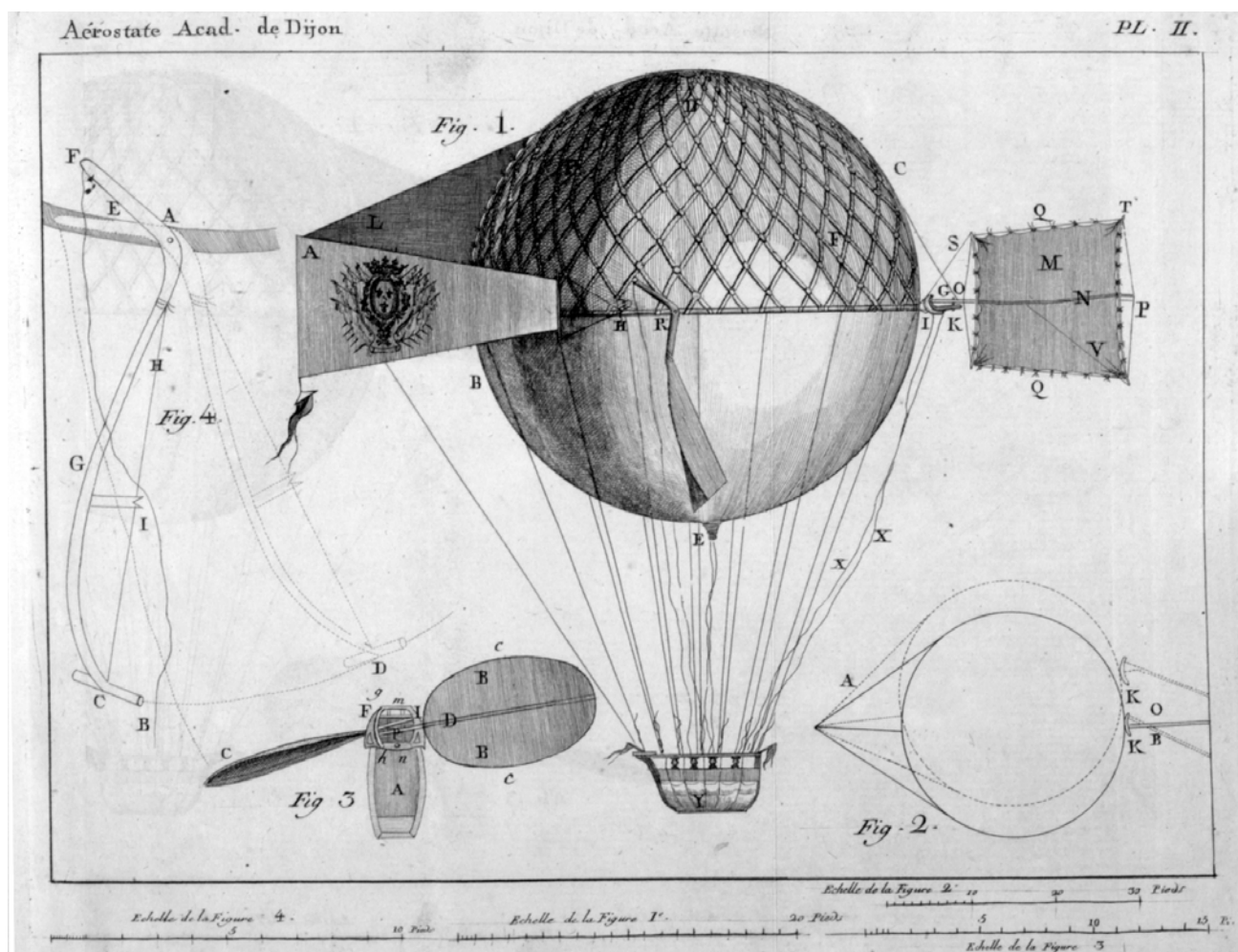
THE VERY rare English translation of the *Traité des moyens de désinfecter l'air* (Paris, 1801). The translator, Robert Hall (1755–1827), was the first user of chlorine for bleaching and the inventor of a new crane (see D.N.B.). Partington (III, 530) discusses the French editions of this work but did not know of this English edition. In his bibliographical study of Guyton de Morveau, W. A. Smeaton was able to cite only one copy of this English translation, in the Library of the Surgeon General's Office, U.S. Army, Washington, D.C. Unknown to the usual medical and chemical bibliographers. (Smeaton, *Ambix*, VI [1957], 34; Sondheimer, 668; Watt, I, 453h)

GUYTON DE MORVEAU, Louis Bernard, CHAUSSIER, François, and BERTRAND, Claude

Description de l'Aérostate l'Académie de Dijon, contenant le détail des procédés, la théorie des opérations, les dessins des machines & les procès-verbaux d'expériences. . . . Suivi d'un essai sur l'application de la découverte de MM. de Montgolfier, à l'extraction des eaux des mines.
Dijon: Chez Causse, . . . Paris: Chez Theophile Barrois. 1784.

First edition. 8vo. 1 leaf, v, (1), 224 pp. With 4 engraved plates (3 folding). Fine large, unpressed copy, fore- and lower edges uncut, in later quarter cloth, marbled boards, dark-blue morocco label.

IN NOVEMBER and December 1783 the balloon flights of J. F. Pilatre de Rozier and J. A. C. Charles attracted widespread attention, and the Dijon Academy decided to make its own balloon, to be filled with 'inflammable gas.' Guyton tested various gases . . . and eventually hydrogen was used.



Guyton de Morveau, Chaussier, and Bertrand. Description de l'Aérostate. Dijon/Paris, 1784.

Guyton made two flights, with Claude Bertrand, an astronomer, on 25 April 1784, and with C. A. H. Grossart de Virly, lawyer and amateur chemist, on 12 June 1784. During the second flight an attempt was made to steer the balloon with manually operated oars and a rudder, a method that . . . seems to have been partly successful. . . Full accounts of the preliminary calculations and experiments, as well as descriptions of the construction of the balloon and the large-scale production of gas, were published in the *Description de l'aérostate* (1784), an important treatise that added to Guyton's international reputation" (D.S.B.). "Of particular interest to chemists is the chapter containing Guyton's comparative account of the different inflammable gases, obtained by the action of metals on acids, etc." (Smeaton). Guyton's researches initiated the beginnings of aerial warfare, as they prompted the French government to form a corps of military balloonists that saw action at the Battle of Fleurus (1794). Rare. (D.S.B., V, 602; Neu, 1788; Poggendorff, I, 981; Smeaton, *Ambix*, VI [1957], 25–26; Smith, 209; Tissandier, I, 65–66)

GUYTON DE MORVEAU, Louis Bernard, LAVOISIER, Antoine Laurent, BERTHOLLET, Claude Louis, and FOURCROY, Antoine François

Méthode de Nomenclature Chimique, proposée par MM. De Morveau, Lavoisier, Bertholet, & De Fourcroy. On y a joint un nouveau Système de Caractères Chimiques, adapté à cette Nomenclature, par MM. Hassenfratz & Adet.

Paris: Chez Cuchet, Libraire, rue & hôtel Serpente. 1787.

First edition, second state. 8vo. 2 leaves, 314 pp. With large folding printed table facing page 100 ("Tableau de la Nomenclature Chimique") and 6 folding copperplates (chemical symbols). Fine copy, in original mottled calf, spine richly gilt, brown morocco label.

ONE OF the great books in the history of chemistry, in which the first foundations of modern chemical nomenclature were laid. The terms set forth in this work are still used today in modified form. The cornerstone of Lavoisier's chemical

revolution, it resulted from his epic discoveries that made a new and rational nomenclature imperative. Initiated by Guyton de Morveau (then an adherent of the phlogiston theory), the project was taken up by Lavoisier, who soon convinced de Morveau of the truth of his system. They entered into collaboration with Berthollet and Fourcroy, and the result of their combined efforts is the present volume. Lavoisier here discusses at some length his new chemistry and nomenclature two years before the appearance of the *Traité élémentaire de chimie* (Paris, 1789), which covers these subjects in greater depth. The first edition exists in two states (Duveen & Klickstein call them issues, but no priority has been firmly established), in which minor differences in pagination occur. Copies exist that contain features of both states. A second edition also appeared in 1787 from a completely different setting of type. (Bolton, 58; Cole, 566; Cushing, G499; Duveen, 340; Duveen & Klickstein, 129; Norman, 1291; Partington, III, 372; Poggendorff, I, 981; Smith, 209; Wellcome, III, 185)

**GUYTON DE MORVEAU, Louis Bernard,
LAVOISIER, Antoine Laurent, BERTHOLLET,
Claude Louis, and FOURCROY, Antoine
François**

Méthode de Nomenclature Chimique, proposée par MM. De Morveau, Lavoisier, Bertholet, & De Fourcroy. On y a joint un nouveau Système de Caractères Chimiques, adaptés à cette Nomenclature, par MM. Hassenfratz & Adet.
Paris: Chez Cuchet, Libraire, rue & hôtel Serpente. 1787.

Second edition. 8vo. 2 leaves, 314 pp. With large folding printed table facing page 100 ("Tableau de la Nomenclature Chimique") and 6 folding copperplates (chemical symbols). Very good copy, in contemporary quarter calf, mottled boards, spine gilt, maroon morocco label.

THE SECOND edition of this classic work, a close paginary reprint of the first edition. Printed on thinner paper, it has a different woodcut on the title page, different woodcut headpiece on page 1, and no colophon on page 314, and the folding table has been reduced in size and completely reset. The six plates of symbols are unchanged from those in the first edition. The text and pagination follow the second state of the first edition, including signature R (pp. 257–272), which is misnumbered 241–256 in both printings. This edition is described by Duveen and Klickstein as "the second printing of the first edition," implying that it is from the original setting of type. As it is printed from an entirely new and different setting of type, this volume is in fact the genuine second edition and not any variant of the first edition. (Duveen & Klickstein, 130)

**GUYTON DE MORVEAU, Louis Bernard,
LAVOISIER, Antoine Laurent, BERTHOLLET,
Claude Louis, and FOURCROY, Antoine
François**

Methode der Chemischen Nomenklatur für das antiphlogistische System, von Hrn. de Morveau, Lavoisier, Berthollet und de Fourcroy. Nebst einem neuen Systeme der dieser Nomenklatur angemessenen chemischen Zeichen, von Hassenfratz und Adet. Aus dem Französischen . . . von Karl Freyherrn von Meidinger, . . .

Vienna: auf Kosten des Herausgebers und in Kommission bey Christ. Fried. Wappler. 1793.

First complete German edition. 8vo. 8 leaves, pp. 3–365, (1) + 1 leaf ("Bericht an der Buchbinder"). With large folding engraved table ("Tafel der chemischen Nomenklatur") between pages 92–93 and 6 folding copperplates (chemical symbols). Superb copy in pristine condition, in original half calf, speckled boards, spine gilt.

ALTHOUGH AN incomplete German translation of the *Nomenclature* had been published by Christoph Girtanner (Berlin, 1791), the present work is the first complete translation. The translator, Karl Freiherr von Meidinger (1750–1820), has included the two papers by Hassenfratz and Adet and the two reports on the nomenclature. A rare work, this edition was privately printed for von Meidinger in a small number of copies. A tally of the list of subscribers shows that only 132 copies were spoken for, and it is probable that von Meidinger (who was paying the bill) had only about 140 copies printed. Evidently the printer ran off some additional copies (perhaps unknown to von Meidinger), as the book was reissued six years later (Vienna, 1799), with a new title page and called the second edition, although it was in fact made up of the sheets of the first edition. Duveen and Klickstein do not mention the leaf of directions to the bookbinder, here present. (Bolton, 58; Duveen & Klickstein, 145; Ferchl, 350; Poggendorff, II, 102; Wellcome, III, 185)

**GUYTON DE MORVEAU, Louis Bernard,
LAVOISIER, Antoine Laurent, BERTHOLLET,
Claude Louis, and FOURCROY, Antoine
François**

Method of Chemical Nomenclature, proposed by Messrs. De Morveau, Lavoisier, Bertholet [sic], and De Fourcroy. To which is added, A New System of Chymical Characters, adapted to the Nomenclature, By Mess. Hassenfratz and Adet. Translated from the French, and the New Chemical Names Adapted to the Genius of the English Language, By James St. John, M.D.

London: Printed for G. Kearsley, at Johnson's Head, No. 46, Fleet Street. 1788.

M É T H O D E
D E
N O M E N C L A T U R E
C H I M I Q U E,

*Proposée par MM. DE MORVEAU,
LAVOISIER, BERTHOLET,
& DE FOURCROY.*

ON Y A JOINT

Un nouveau Système de Caractères Chi-
miques, adaptés à cette Nomenclature,
par MM. HASSENFRAZ & ADET.



A P A R I S,

Chez CUCHET, Libraire, rue & hôtel Serpente.

M. DCC. LXXXVII.

Sous le Privilège de l'Académie des Sciences.

Guyton de Morveau, Lavoisier, Berthollet, and Fourcroy. Méthode de Nomenclature Chimique. Paris, 1787.

First edition. 8vo. (in 4s). (I–iv), 237, (1) pp. At the end is 1 folding engraved plate (chemical symbols) and 5 folding tables (1st: Chemical Characters; 2nd: Combinations of Caloric; 3rd: Combinations of Caloric with Oxygen, etc.; 4th: Combinations of the Two Substances; 5th: Neutral Salts, etc.). The large folding “Table of the Chemical Nomenclature” (facing p. 75) is lacking, as in many copies; otherwise good copy with many fore- and lower margins uncut, in late-nineteenth-century green cloth, spine dated and lettered in gilt.

“THE ONLY English translation of the complete work on the new nomenclature” (Cole). “It gives the entire contents of the original French edition. The translator, James St. John . . . shows an appreciation of the new nomenclature; he comments on phlogiston” (Duveen & Klickstein). St. John still believed in the “absolute existence of a phlogiston. It is . . . the matter of fire, flame, of light, and of heat, which is liberated in combustion” (preface). As Cole points out, copies of this work are often imperfect (e.g., those at Yale, Cornell, and the Philadelphia Hospital Medical Library). Apart from the plate (facing p. 75) this copy is complete. Very rare. St. John was “Engineer in Chief of Mines, and Professor of Mineralogy at the Practical School of Mines” (Watt). (Blake, 191; Bolton, 58; Cole, 571; Duveen & Klickstein, 135; Partington, III, 372; Roller & Goodman, I, 495; Smith, 209; Thornton & Tully, 167; Watt, II, 548q)

**GUYTON DE MORVEAU, Louis Bernard,
LAVOISIER, Antoine Laurent, BERTHOLLET,
Claude Louis, and FOURCROY, Antoine
François**

Metodo de la Nueva Nomenclatura Quimica. Propuesto por MM. De Morveau, Lavoisier, Bertholet, y De Fourcroy, a la Academia de Ciencias de Paris, y traducido al Castellano. Por D. Pedro Gutierrez Bueno . . .

Madrid: Por Don Antonio de Sancha. 1788.

First Spanish edition. 8vo. 3 leaves, 7, (1), 176 pp. With large folding printed table (“Tabla de la Nomenclatura Quimica”). Fine copy in contemporary vellum, old ink lettering on spine.

THE FIRST edition in Spanish of the *Méthode de Nomenclature Chimique* (Paris, 1787). As soon as the French edition appeared, Gutierrez Bueno (1743–1822), professor of chemistry at the Royal Laboratory in Madrid, translated it (with some omissions) and immediately adopted the new nomenclature in his lectures. “Indeed, it is likely that his translation . . . which appeared in January 1788, was the first published in Europe. In this work he included only the memoirs of Lavoisier, Fourcroy, and Louis Bernard Guyton de Morveau; the dictionary; and the synoptic table” (Ramon Gago, “The New Chemistry in Spain,” *Osiris*, 2nd series [1988], 4, p. 179). As the first Spanish translation

dealing with the new chemical nomenclature, this book is a milestone in the scientific literature of Spain. Bolton (p. 58) mentions a second edition (Madrid, 1801), but Duveen and Klickstein state that no copy has been located. However, Cole (no. 568) describes a copy. Appearing the same year as the English translation by James St. John (London, 1788), this Spanish edition precedes both the Italian (Venice, 1790) and German (Berlin, 1791) translations. Extremely rare. Not in N.U.C. (Cole, 567; Duveen & Klickstein, 152; Palau, 183310)

**GUYTON DE MORVEAU, Louis Bernard,
LAVOISIER, Antoine Laurent, BERTHOLLET,
Claude Louis, and FOURCROY, Antoine
François**

Metodo di Nomenclatura Chimica, proposto da Morveau, Lavoisier, Bertholet, e Fourcroy, tradotto dal francese da Pietro Calloud Maestro Speziali. Edizione prima veneta. Venice: Presso Lorenzo Baseggio. 1790.

First Italian edition. 8vo. 263, (1) pp. With large folding printed table facing page 57 (“Quadro della nomenclatura chimica”). Very fine copy, unpressed and uncut, in smooth half calf antique, marbled boards, maroon morocco label, spine dated, by Bayntun.

THE FIRST and only almost complete translation of the *Nomenclature* into Italian. The Venetian apothecary Pietro Calloud (ca. 1770–1835) translated and dedicated this work to the Medical Society of Venice. In the preface he states that he has omitted the new chemical symbols of Hassenfratz and Adet, for although he grants that they were well conceived, he feels that his readers would find them too difficult to comprehend. A close and accurate translation, in the “Sinonimia” and “Dizionario,” Calloud gives the Italian equivalents of both the old and the new chemical terms. In this copy page 71 is numbered, but in the copy described by Duveen and Klickstein it is not numbered; otherwise the two are identical. (Duveen & Klickstein, 148)

GUYTON DE MORVEAU, Louis Bernard, LAVOISIER, Antoine Laurent, BERTHOLLET, Claude Louis, and FOURCROY, Antoine François

A Translation of the Table of Chemical Nomenclature, proposed by de Guyton, formerly de Morveau, Lavoisier, Bertholet, and de Fourcroy; with explanations, additions, and alterations: to which are subjoined, Tables of Single Elective Attraction, Tables of Chemical Symbols, Tables of the Precise Forces of Chemical Attractions; and Schemes and Explanations of Cases of Single and Double Elective Attractions. Second edition, enlarged and corrected. . . .

London: Printed by Cooper and Wilson, Wild-Court, Lincoln's Inn Fields, for J. Johnson, No. 72, St. Paul's Church-Yard. 1799.

Second Pearson edition. 4to. viii, 156, 4 pp. With 13 tables on 12 folding leaves. Near-mint copy with wide margins, in tree calf antique, maroon morocco label, spine dated.

ONE OF the first English chemists to adopt Lavoisier's new system of chemistry, George Pearson (1751–1828), a pupil of Joseph Black, published a shorter and very incomplete translation of the *Nomenclature* in 1794. The present work, dedicated to Richard Kirwan, is the greatly enlarged, corrected, and improved second and final edition in English, containing six new tables, two new plates of symbols, and about one hundred pages more material. The four large tables of "Chemical Nomenclature" of the first edition have been corrected and improved. The new plates depict symbols used by Bergman, Geoffroy, Hassenfratz, and Adet. The other tables cover Cullen's "Double Elective Attractions," de Morveau's "Elective Attractions, Precipitations," etc. Pearson recommends, and uses, the term *nitrogen* (from Chaptal) instead of *azote*, as employed by Lavoisier. (Cole, 570; D.S.B., X, 446; Duveen & Klickstein, 138; Neu, 1792; Partington, III, 372; Watt, II, 740c)

GUYTON DE MORVEAU, Louis Bernard, MARET, Hugues, and DURANDE, Jean François

Éléments de Chymie théorique et pratique, rédigés dans un nouvel ordre, d'après les découvertes modernes, pour servir aux Cours publics de l'Académie de Dijon. . . .

Dijon: Chez L. N. Frantin. 1777–1778.

First edition. 3 vols., 12mo. I: 2 leaves, viii, 394 pp.; 2 folding tables (facing pp. 90 and 394). II: 2 leaves, xxviii, 382 pp. III: 2 leaves, x, 448 pp., 2 leaves. Very fine, crisp set, in quarter sheep antique, marbled boards, spines gilt, maroon morocco labels.

A FAMOUS TEXTBOOK by Guyton de Morveau and his colleagues, written to accompany the course of chemistry they gave under the auspices of the Academy of Dijon. Guyton planned the course and gave most of the lectures, with the assistance of Dr. Maret (1726–1786) on materia medica and Dr. Durande (d. 1794) on the chemistry of vegetable substances. "The work was hailed throughout Europe as an important milestone and de Morveau became famous almost overnight. The treatise is important and interesting, for we can see that de Morveau already had the main lines fixed in his mind of those ideas which were later to appear in his *Nomenclature chimique*, which was first published by him in the *Journal de Physique* (1782), and finally adopted by Lavoisier, Fourcroy and Berthollet in 1787" (Duveen). Ferchl and Poggendorff give the wrong dates of publication (1776/77). A German translation by Christian Ehrenfried Weigel appeared (Leipzig, 1779, 1780; 3 vols.). Complete sets of the first edition are rare. (Blake, 191; Bolton, 505; D.S.B., V, 601; Duveen, 275; Edelstein, 1065; Ferchl, 206; Neu, 1790; Partington, III, 521; Poggendorff, I, 981; Smeaton, *Ambix*, 6 [1957], 22–23; *ibid.*, 9 [1961], 58–60; Sondheimer, 664; Thornton:& Tully, 165; Wellcome, III, 185)

GWINNE, Matthew

In Assertorem Chymicae, sed Verae Medicinae Desertorem, Fra. Anthonium, Matthaei Gwynn Philiatr in Medicorum Londinensium Collegio quarti Censoris Regestarij succincta Adversaria. . . .

London: Excudebat Richardus Field. 1611.

First edition. 4to. 6 leaves, 251, (1) pp. Woodcut ornament on title page, woodcut capitals, head- and tailpieces. Fine, crisp copy in original vellum, old lettering in ink on spine. From the library of Dr. Ernst Darmstaedter (b. 1877), famous historian of science, with his stamp on front pastedown endpaper. Withdrawal stamp of Wellcome Library on verso of title page.

FRANCIS ANTHONY (1550–1623), an unlicensed medical practitioner who got in trouble with the Royal College of Physicians, published *Medicinae Chymicae et veri potabilis Auri assertio* (Cambridge, 1610), claiming that "the most potent force in medicine resided in metals, that among metals gold took first place . . . and that potable gold deserved to be called the universal medicine" (Thorndike). Gwinne, or Gwynne (ca. 1558–1627), an eminent physician (M.D., Oxford, 1593) and F.R.C.P. (1605), severely criticized Anthony's book in the present work, dedicating it (as did Anthony) to James I. Gwinne denied that the three kinds of potable gold sold by Anthony (see Partington) were of medicinal efficacy and claimed that there was no "universal" medicine. He quotes Anthony's text piece by

piece and demolishes his arguments with references to numerous classical and more recent chemical authorities (e.g., *De Auro*, by G. F. Pico, Raymund Lull, and other alchemical authors). In 1616 Anthony responded with a counter-attack published in Latin and English editions. Gwinne's book is a very rare and important iatrochemical work. "The merits . . . medical and chemical, of potable gold were to be argued repeatedly throughout the course of the seventeenth century" (Thorndike). Gwinne disputed before Queen Elizabeth (1592) and James I (1605), was first Gresham professor of physic (1598–1607), and was a friend of Florio. His biography is in Munk and D.N.B. Darmstaedter left his alchemical books to the Wellcome Library. (Ferchl, 207; Ferguson, I, 36 [not in Young Coll.]; Guaita, 2038 ["plus grande rareté"]; Munk, I, 121; Partington, II, 182, 279; S.T.C., 12550; Thorndike, VII, 170; Watt, I, 453p; Waring, 280; Wellcome, I, 3031)

GYLLENBORG, Gustaf Adolf

The Natural and Chemical Elements of Agriculture. Translated from the Latin of Count Gustavus Adolphus Gyllenborg; by John Mills, Esq; F.R.S. . . .
London: Printed for John Bell . . . and C. Etherington at York. 1770.

First English edition. 12mo. xvi, 198 pp., 1 leaf (advertisements). Very good copy, with half title, in modern boards, spine lettered and dated.

A FUNDAMENTAL WORK in the history of agricultural chemistry, being the English translation by John Mills (d. ca. 1784) of *Agriculturae Fundamenta Chemica* (Uppsala, 1761), a dissertation prepared by Count G. A. Gyllenborg (fl. 1761) under the direction of the famous Swedish chemist Johan Gotschalk Wallerius (1709–1785). The *Agriculturae* was the first book to indicate specifically the relationship of chemistry to agriculture in its title. Thomas Jefferson had a copy of the present English translation in his library. The contents of this important book are discussed in detail by C. A. Browne. Another edition appeared (Plymouth, 1818),

edited with additions by W. Pilkinton. Partington lists the book under Wallerius, and Watt cites it under Mills. Very scarce. Not in Blake, D.S.B., McDonald, Poggendorff, Wellcome, or the usual chemical bibliographies. (Bolton, 506; Browne, *A Source Book of Agricultural Chemistry*, 1944, pp. 128–134; Ferchl, 207; Fussell, *More Old English Farming Books*, 1950, p. 49; Partington, III, 170; Perkins, 730; Watt, II, 671c)

GYRÃO, Antonio Lobo de Barboza Ferreira Teixeira

Tratado Theorico e Pratico da Agricultura das Vinhas, da Extração do Mosto, Bondade, e Conservação das Agoas Ardentes. Por Antonio Lobo de Barboza Ferreira Teixeira Gyrão. Deputado ás Cortes Geraes, Extraordinarias, e Constituintes da Nação Portuguesa, Socio da Academia das Sciencias, da Sociedade Patriotica e Litteraria, e da Promotora da Industria Nacional.

Lisbon: Na Imprensa Nacional. Anno 1822.

First edition. 4to. Page 239, (1), lxxviii; 4 leaves (index). With large folding table and 3 engraved folding plates of distillation apparatus. Crisp copy in maroon quarter roan, marbled boards, spine gilt.

A VERY RARE Portuguese work on the preparation of wines, the distillation of alcohol, etc. The detailed plates depict the apparatus used for the distillation of alcohol by batches, as well as continuous distillation using a fractionating column. Chapter 29 covers the preparation of vinegar and the preparation of acetic acid by distilling vinegar. Of considerable chemical interest, with references to the works of Saussure, Duhamel, Chaptal, et al., on distillation and viticulture. No biographical information has been found on the author, apart from the professional posts he held as listed on the title of this work. He is recorded in the British Library Catalogue under Lobo, but the present title is not present. Neither the author nor this title are mentioned by Forbes (*A Short History of the Art of Distillation*).

H., C. G.

Eines wahren Adepti besondere Geheimnisse von der Alchymie zum Gebrauch und Nutzen denen Liebhabern herausgegeben und mit Figuren erläutert von C. G. H.
Dresden: bey Johann Nicolaus Gerlach. 1757.

First edition. 8vo. 6 leaves, 276 pp., 10 leaves. With 14 finely engraved copperplates of alchemical symbols and operations. Fine, crisp copy in contemporary half calf, marbled boards, spine gilt-ruled, tan lettering label, gilt; with a diagonal narrow green morocco label bearing the name of an eighteenth-century owner (Warnick) on spine. The first free endpaper (verso) is also inscribed "Warnick" in ink.

THE COMPILER of this interesting collection of alchemical works has signed the foreword cryptically with his initials: C. G. H. The volume contains ten books with the following titles (abbreviated): 1) *Mercurius redivoivus*, p. 1; 2) *Catholicon Physicorum*, p. 25; 3) *Venus Vitriolata*, p. 43; 4) *Elixir seu Medicinae Vitae*, p. 63; 5) *Saturnus Saturatus*, p. 85; 6) *Metamorphosis Lapidum ignobilium*, p. 117; 7) *Alchymiae Complementum et Perfectio*, p. 135; 8) *Auslegung der dunklen Wörter, der alten Alchymisten*, p. 163; 9) *Marsilius Ficinus, Vom Stein der Weisen*, p. 183; and 10) *Nuysement, Tractat von dem wahren geheimen Salz der Philosophen*, p. 233. As Ferguson points out: "It is therefore neither more nor less than a translation of Samuel Norton's tracts." Bolton (p. 986) lists a later work by Christian Gottlob Hilscher (i.e., C. G. H.) with a similar title: *Geheimnisse einiger Philosophen und Adepten aus der Verlassenschaft eines Alten Mannes* (Leipzig, 1780). Could Hilscher be the author of the present work? Very rare. Not in Blake, Caillet, Guaita, Rosenthal, Watt, Wellcome, or the usual bibliographies. (Ferchl, 253; Ferguson, I, 357; Neu, 1301; Smith, 210)

HAAN, Johann

Dissertatio Chymica Spiritus Vini atque Aceti Examen Instituens, . . . sub praesidio . . . Johannis Boecleri, . . . Examini D. (blank) Mens. Maji Anno MDCCIIIX. . . . Submittet Johannes Haan, . . .

Strassburg: Literis Johannis Friderici Spoor. (1708).

First edition. 4to. 1 leaf, 25, (1) pp. Original date of the reading of the thesis has been altered by hand, in ink, from (blank) May to 9 August. Fine, crisp copy, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A DOCTORAL DISSERTATION, of early organic chemical interest, on alcohol, acetic acid, diethyl ether, ethyl acetate, and other esters, although these compounds were not recognized as separate and distinct. They were considered to be different forms of alcohol, modified by treatment with acids, alkalies, heat, etc. On page 11 the work of Robert

Boyle is discussed. Other chemists mentioned include Barner, Bohn, Hoffmann, Kunckel, and Lemery. Hann (dates unknown), of Strassburg, presented this thesis under Johann Boecler (1681–1733), professor of medicine at Strassburg, on whom see J. J. Manget (*Bibliotheca Scriptorum Medicorum*, Geneva, 1731, Vol. I [Part I], 338). Hann is not mentioned by Manget, and no reference to him or the present work has been found in available bibliographic sources.

HAARTMAN, Johann Gustav

Dissertatio Chemica de Natura Salium Simplicium, . . . Praeside Mag. Johanne Gadolin, . . . Pro gradu publico examini subjicit Johannes Gustavus Haartman, Stipendiarius Haartmannianus, Australis. In Audit. Minori Die XX Junii MDCCXCV. . . .

Åbo: Typis Frenckellianis. (1795).

First edition. 4to. 1 leaf, 31, (1) pp. Mint copy, in maroon quarter cloth antique, marbled boards, spine labeled: Gadolin. 11 Dissertations. 1792–1805.

AN IMPORTANT dissertation on salts formed by the reaction of metals, bases, or carbonates with inorganic or organic acids, presented by Haartman under the direction of Gadolin, professor of chemistry at Åbo. Salts are classified as acidic, neutral, or alkaline and may be soluble in water or insoluble. The preparation of various inorganic acids (e.g., arsenious, molybdic, and tungstic) and organic acids (e.g., benzoic, citric, malic, suberic, succinic, and tartaric) is described. Not in Ferchl, Partington, Poggendorff, etc. (Bolton, *First Supplement*, 177)

HADLEY, John

A Plan of a Course of Chemical Lectures, By John Hadley, M.A. Fellow of Queen's College, and Professor of Chemistry in the University of Cambridge.

Cambridge: Printed by J. Bentham, Printer to the University. 1758.

First (only) edition. Sm. 4to. 45 pp. (p. 46 blank) + folding printed table ("Geoffroy's Table of Affinities"). Good copy in modern quarter cloth, boards, spine gilt-lettered. From the library of the famous eighteenth-century chemist William Brownrigg, with inscription in ink on title page in Brownrigg's characteristic hand: "W. B. from the Author." Bookplate on front pastedown endpaper: Franz Sondheimer.

A UNIQUE PRESENTATION copy from Hadley to Brownrigg. Hadley (1731–1764) was born in London and educated at Queen's College, Cambridge, where he received the A.B. (1753) and A.M. (1756). He was appointed professor of chemistry (1756), received the M.D. (Cambridge, 1763),

was elected F.R.C.P. (1764) and F.R.S. (1758). Dr. Hadley was physician to St. Thomas's Hospital (1762) and to Charterhouse (1763) but died at the early age of thirty-three, on 5 November 1764. His only publications were "Account of a mummy inspected at London" (*Phil. Trans.*, 1763, 54, 1) and this small book, which gives an insight into the detailed chemical lectures at Cambridge in the mid-eighteenth century. Brownrigg (1711–1800), to whom Hadley gave this copy, was an excellent chemist and eminent physician. On the death of Hadley, Richard Watson (1737–1816) was elected professor of chemistry at Cambridge. A rare book, the contents of which are discussed by Coleby. Not in Cushing, Duveen, Ferguson, Morgan, Neu, Osler, Reynolds, Smith, Waller, Wellcome, etc. (Bolton, 507; Coleby, *Annals of Science*, 8 [1952], 293–301; Ferchl, 208; Ferguson Coll., 295; *Munk's Roll*, II, 259; Partington, III, 114; Poggendorff, I, 987; Watt, I, 455a)

HAEN, Johann Jacob de

Dissertatio Chémico-Médica Inauguralis, de Salibus Polychrestis, tam Communi, quam illo Seignette . . . Pro gradu doctoratus . . . Johannes Jacobus de Haen, Vesalia-Clivensis. Ad diem (blank) Junii MDCCXXXIX.

Duisburg: Typis Johannis Sas, Academiae Typographi. (1739).

First edition. 4to. 32 pp. Very fine copy, in half calf antique, marbled boards, gilt-lettered and dated maroon morocco label.

THE DOCTORAL dissertation of De Haen (dates unknown), presented at the University of Duisburg, on the preparation, chemical properties, and medicinal uses of sel polychreste (potassium sulphate) and Rochelle or Seignette salt (potassium sodium tartrate). Brief accounts of the histories of these salts are given, with references to Boerhaave, Boulduc, Glaser, Lemery, Seignette, et al. De Haen refers to the first disclosure of the preparation of Seignette salt by Gilles François Boulduc (1675–1742), as published in 1731 in the *Mémoires de l'Académie Royale des Sciences*. Elie Seignette (1632–1698) and his brother Jehan (1623–1663) had previously kept the preparation secret and "made large sums from its sale" (Partington, III, 48). Very rare. Not in the usual bibliographies.

HAGEN, Karl Gottfried

Grundriss der Experimentalchemie zum Gebrauch bey dem Vortrage derselben, von Karl Gottfried Hagen . . .

Königsberg & Leipzig: bey Gottlieb Lebrecht Hartung. 1786.

First edition. 8vo. xvi, 389, (1) pp., 7 leaves (index). With 4 folding tables (2 engraved, 2 printed). Title page with large

engraving of chemical apparatus flanking an inset of a cherub carrying out a distillation. Early small ownership monogram stamp on blank outer margin of title and old stamp on verso (F.F. Bibliothek Donaueschingen). Fine copy in original gilt-ruled half calf, marbled boards, with citron label.

ONE OF the earliest German textbooks on experimental chemistry, by Hagen (1749–1829), professor of chemistry at the University of Königsberg. Although the discoveries of Lavoisier are mentioned, Hagen remained unconvinced and still used the theory of phlogiston. To teach himself chemistry, J. B. Richter used Hagen's textbook, and, later, Friedrich Wöhler made use of his father's copy of this work in his home laboratory, which inspired him to become a chemist. The two detailed engraved plates depict the names and symbols of chemicals described in the text. Rare. Not in N.U.C., Duveen, Edelstein, Neu, Smith, Wellcome, etc. (Blake, 193 [imperf.]; Bolton, 508; Cole, 581; Ferchl, 209; Ferguson, I, 358; Partington, IV, 320; Poggendorff, I, 992)

HAGEN, Karl Gottfried

Grundriss der Experimentalchemie zum Gebrauch bey dem Vortrage derselben, von Karl Gottfried Hagen . . .

Königsberg & Leipzig: bey Gottlieb Lebrecht Hartung. 1790.

Second edition. 8vo. xvi, 448 pp. With 4 folding tables (2 engraved, 2 printed). Title page with large engraving (identical to that in first edition). Very good copy in original half calf, gilt, mottled boards, orange-brown label.

COMPARISON OF the text of this second edition reveals that it has been carefully revised and greatly expanded. The folding tables are identical to those of the first edition of 1786. Several experiments for preparing oxygen are described (pp. 116–118), and details on its physical and chemical properties are presented (pp. 118–123). Wrongly dated 1791 by Ferchl and Ferguson, a third edition appeared in 1796 (Kopp, II, 117), and a fourth in 1815 (Poggendorff, I, 992). Not in Blake, Edelstein, Poggendorff, Waller, etc. (Bolton, 508; Cole, 582; Duveen, 278; Ferchl, 209; Ferguson, I, 358 [not in Young Coll.]; Neu, 1806; Partington, IV, 320; Smith, 211 [imperf.]; Wellcome, III, 190)

HAGMAN, Wolcker L.

Dissertatio Physica, de Sono Reflexo, . . . praeside Mag. Samuele Duræo, . . . XVIII Junii Anni MDCCCLXVI . . . publice defendet . . .

Uppsala: Wolcker L. Hagman, Nericius. (1766).

First edition. 4to. 14 pp. With 1 copperplate (E. U. sc.) depicting 5 figures. Large woodcut capital, head- and tailpieces. Fine copy. Bound with: Wimmermark, Sven, *De Diversa Radiorum* (Uppsala, 1776), and 30 other dissertations (q.v.).



Hagen. Grundriss der Experimentalchemie. Königsberg und Leipzig, 1790.

ON THE physics of the reflection of sound and echoes, with references to Kircher, Musschenbroek, Schott, Sturm, et al. Hagman mentions Robert Plot's *Natural History of Oxfordshire* (p. 9) and the peculiar echoes heard in the Woodstock area, which is unusual for a Swedish work. No reference to the author or this work has been found.

HAHN, Georg Christian

Dissertatio Inauguralis de Salibus Salsis seu Mediis quam gratiosi medicorum ordinis in Academia Lipsiensi consensu. Praeses Samuel Theodorus Quelmaltz. . . Pro licentia. . . George Christian Hahn Lignicens. Siles. . . XXIV Febr. . . MDCCXLI. . .

Leipzig: Ex Officina Langenhemiana. (1741).

First edition. 4to. 3 leaves, 46 pp. Large woodcut headpiece on page 1. Fine copy in quarter cloth antique, vellum spine ink-lettered and dated.

A DISSERTATION ON the chemical, physical, and medicinal properties of salts, presented by Hahn (dates unknown) under the direction of Samuel Theodor Quelmaltz (or Quelmaltz, 1696–1758), professor of medicine at the University of Leipzig. There are many references to Agricola, Boerhaave, Boyle, Ercker, Etmuller, Glauber, Hoffmann, Juncker, Sylvius, Wedel, et al. The praeses, Quelmaltz, also published works on phosphorescent zinc compounds (see Harvey, *History of Luminescence*, p. 383), arsenic (which he considered the “first principle” of metals), magnetism and electricity, and various medical subjects (see Poggendorff, II, 548). Rare. Not in Blake, Partington, Waring, etc. (Ferchl, 429; Wellcome, III, 191)

HAHN, Johann David

Sermo Academicus de Chemiae cum Botanica conjunctione Utili et Pulchra. Quem publice recitavit die XIX. Martii 1759. . .

Trajecti ad Rhenum (Utrecht): Ex Officina Joannis Broedelet, Academiae Typographi. 1759.

First edition. 4to. 2 leaves, 34 pp. Woodcut device on title. Fine copy with wide margins, in modern cloth boards, lettered in gilt on front cover.

AN INTERESTING lecture on the importance of chemistry in the study of botany, with references to Boerhaave, Grew, Hales, Linnaeus, Reaumur, Tournefort, et al. On page 29 the author states that plants are composed of water, salt, earth, and phlogiston, all of which can be identified by chemical analysis. Born in Germany (Heidelberg), Hahn (1729–1784) spent most of his life in Holland, where he became M.D. (Leiden). In 1759, as the result of presenting this sermon to the consuls and senators of the university,

he was appointed professor of chemistry and botany at Utrecht. Not in Bolton, Duveen, Edelstein, Ferguson Coll., Neu, Partington, Smith, Waller, Wellcome, etc. (Ferchl, 210; Ferguson, I, 359 [not in Young Coll.]; Poggendorff, I, 994)

HAIGH, James

The Dyer's Assistant in the Art of Dying Wool and Woollen Goods. Extracted from the Philosophical and Chymical Works of those most eminent authors, Ferguson; Dufay; Hellot; Geoffery [sic]; Colbert; and that reputable French Dyer, Mons. de Julienné. Translated from the French. With Additions and Practical Experiments. . . A new edition. London: For J. Mawman; York: For T. Wilson & R. Spence. 1800.

Third edition. 12mo. 256 pp. Very good copy in original calf, rebounded, spine gilt-ruled, maroon morocco label.

“THE FIRST practical English treatise on the subject” (Zeitlinger). Nothing appears to be known about Haigh except the statement on the title page that he was a silk and muslin dyer in Leeds, lately deceased. The first edition (Leeds, 1778) was reissued from London the same year. According to Lawrie, other editions were York, 1787 and 1800 (present edition), and Philadelphia, 1810. Haigh must have studied chemistry very thoroughly, as this work is full of chemical information on dyes and dyeing techniques. The section (pp. 243–256) *A Hint to the Dyers and Cloth-Makers*, with separate divisional title page, was not in the first edition. A milestone work in the history of dyeing technology. Very rare. Not in the usual chemical bibliographies. (Edelstein, 3107; Lawrie, 285)

HALE, Matthew

Difficiles Nugae: or, Observations Touching the Torricellian Experiment, and the various Solutions of the same, especially touching the Weight and Elasticity of the Air. The second edition, with some occasional additions.

London: Printed by W. Godbid, for William Shrowsbury, at the Sign of the Bible in Duck-lane. 1675.

First edition, second issue. 8vo. 4 leaves, 304 pp., 48 pp. With 2 folding copperplates (including figures of the famous Magdeburg hemispheres). Woodcuts on pages 3 and 14 of the last 48 pages. Fine copy, in original speckled calf, rebounded with contemporary gilt spine laid down. The extremely rare leaf “To be inserted on page 281” (i.e., following p. 281) and the errata are not bound into this copy.

SIR MATTHEW HALE (1609–1676), a judge who practiced under Cromwell and later under Charles II, was strictly of the “old school of thought.” In the present work he attacks Boyle's experiments and conclusions on the “spring and

weight” of the air. According to the *Philosophical Transactions*, this is “a strange and futile attempt of one of the philosophers of the old cast to confirm Dame Nature’s abhorrence of a vacuum, and to arraign the new doctrines of Mr. Boyle and others concerning the weight and spring of the air, the pressure of fluids on fluids, etc.” It was answered by the Cambridge Platonist Dr. Henry More in *Remarks upon two late ingenious discourses* (1676). The first edition appeared the previous year (1674). Both editions are rare, and this contains a chapter “Concerning Siphons” (48 pp.) that is not in the first edition. Although described on the title page as the second edition, it is probable that the first 304 pages are the sheets of the first edition, with identical pagination. This copy has a stub that undoubtedly belonged to the title page of the 1674 first edition. The printer merely had a new title page made and added the final 48 pages for this “second edition” (i.e., first edition, second issue). (Wing, H239)

HALE, Matthew

Observations Touching the Principles of Natural Motions; and especially touching Rarefaction & Condensation: together with a Reply to certain Remarks touching the Gravitation of Fluids. By the Author of Difficiles Nugae.

London: Printed by W. Godbid, for W. Shrowsbury, at the Bible in Duke-Lane. 1677.

First edition. 8vo. 8 leaves (including blank before title), 285 pp. + 3 pp. (advertisements). With 6 small woodcuts in text. Fine copy, with wide margins, in contemporary unlettered calf, rebaked, with original spine laid down.

A RESPONSE TO Dr. Henry More’s criticism of Hale’s *Difficiles nugae* (1675) and his *Essay touching the gravitation or nongravitation of fluid bodies* (1675). “A very philosophical book” (Augustus de Morgan, *Budget of Paradoxes*). Primarily on physics, this work discusses the atomic theory and certain chemical phenomena and mentions the physical and chemical experiments of Sir Kenelm Digby, Robert Boyle, Otto Guericke, and others. Hale opposes the novel theories of Boyle on the “condensation” (i.e., compression) and rarefaction of the air, which resulted from Boyle’s experiments with his air pump. (Fulton, 330; Sotheran, Cat. 795 [1925], 7967 [“Rare”]; Watt, I, 456; Wellcome, III, 193; Wing, H252)

HALES, Stephen

An Account of a Useful Discovery to Distill double the usual Quantity of Sea-Water, by blowing Showers of Air up through the Distilling Liquor: and an Account of the great Benefit of Ventilators in many Instances, in preserving the Health and Lives of People, in Slave and other Transport Ships, which were read before the Royal Society. Also an Account of the good Effect of blowing Showers of Air up through Milk, thereby to cure the ill Taste which is occasioned by some Kinds of Food of Cows. By Stephen Hales, D.D., F.R.S. Member of the Royal Academy of Sciences at Paris, and Clerk of the Closet to Her Royal Highness the Princess of Wales. The Second Edition. With an Appendix; in which is an Account of some farther considerable Improvements made in the Method of procuring Plenty of Fresh-Water at Sea, viz. three Parts in four more than in the common Methods of Distilling: Also a farther Account of more Instances and Proofs of the good Effect of Ventilators in Ships: As also of the curing, in a few Minutes, the ill Taste of Turnip Milk, and of musty Liquors. Also, with great Ease, presently to make Cream or Milk Sillabubs, viz. by blowing Showers of Air up through them.

London: Printed for Richard Manby, in the Old-Bailey, near Ludgate-Hill. 1756.

Second (final and best) edition. 8vo. Pp. 59, (1), Appendix 59–72. Copperplate facing page 59. Occasional neat marginalia in ink by a contemporary hand; otherwise a very good copy in modern brown cloth, spine gilt-lettered and dated.

THE FIRST edition, without the appendix, appeared in the same year. The scope of this chemically interesting work can be gleaned from the voluminous title. Partington (III, 112–123) extensively discusses Hales’ works but appears not to have known the present title, which is rare. “Hales’ best known invention was that of artificial ventilators” (Sir Francis Darwin, F.R.S.). The first edition is listed by Neu, 1810, and Waller, 11156. (D.S.B., VI, 47; Ferchl, 212; Osler, 1090; Smith, 212; Watt, I, 457; Wellcome, III, 195)

HALES, Stephen

An Account of Some Experiments and Observations on Tar-Water: wherein is shown the Quantity of Tar that is therein. And also a Method proposed, both to abate that Quantity considerably, and to ascertain the Strength of the Tar-Water. Which was read before the Royal Society. By Stephen Hales, D.D., F.R.S.

London: Printed for R. Manby and H. S. Cox on Ludgate-Hill. 1745. (Price Sixpence.)

First edition. 4to. (in 8s). 1 leaf, 29, (1) pp. Fine copy in contemporary calf, rebaked, 2 maroon morocco labels gilt.

Bound with: Berkeley, George, *Siris: a chain of philosophical reflexions . . . concerning . . . tar water* (London, 1744); and Prior, Thomas, *An authentick narrative of the success of tar-water* (London, 1746).

BERKELEY PUBLISHED his *Siris* (Dublin, 1744) on the virtues of tar-waters as effective medicines for a variety of disorders, but Hales was skeptical. First read as a paper before the Royal Society, the present work states that “the celebrated Tar-water . . . is said to be taken with great Benefit by some, and Detriment by others.” Hales therefore decided to determine experimentally “what Quantity of Tar, there was in Tar-water, made with different kinds of Tar, and . . . different Ways of making it.” The tars examined were Norwegian and Swedish resins, American tar (distilled from green fir trees), and Barbados tar, which he called a mineral or petroleum tar. By allowing the various tars to stand in contact with cold water for several days, he obtained tar-waters. Colored solutions resulted that contained phenolic compounds, now known to be efficacious in the treatment of sore throats by gargling. These experiments represent an early attempt at organic preparations and analysis, but chemical knowledge in Hales’ time was so primitive that few conclusions could be drawn. Not in Bolton, Cushing, Duveen, Ferchl, Poggendorff, Reynolds, Waller, etc. (Blake, 194; D.S.B., VI, 47; Edelstein, 1072; Ferguson Coll., 297; Neu, 1810a; Osler, 1088; Partington, III, 114; Smith, 212; Waring, 623; Watt, I, 457j; Wellcome, III, 195)

HALES, Stephen

An Account of the great Benefit of blowing Showers of fresh Air up through distilling Liquors; and, An Account of some Trials to cure the ill Taste of Milk, which is occasioned by the Food of Cows, either from Turnips, Cabbages, or autumnal Leaves, &c. Also to sweeten stinking Water, &c. (London: Philosophical Transactions of the Royal Society, 1755).

First edition. 4to. 36 pp. With 1 folding copperplate of apparatus (J. Mynde sc.). Extracted from the *Philosophical Transactions* (vol. 49, pp. 312–347). Fine copy, in modern quarter cloth, boards, spine gilt-lettered and dated.

BY PASSING a stream of air bubbles upwards through a distilling liquid, Hales describes how the quantity and purity of the distillate is improved. In a series of experiments he shows how boiling seawater can be used to provide ships with a plentiful supply of fresh water for drinking and also how cold water can be made wholesome by sufficient aeration. The processes described by Hales are now employed in sewage treatment plants. This work was later published as a separate tract (London, 1756, 8vo., 59 pp.; Duveen,

278–279; Wellcome, III, 195). Partington points out that William Brownrigg modified and improved Hales’ apparatus. (Ferchl, 212; Partington, III, 123; Poggendorff, I, 1001; Watt, I, 457)

HALES, Stephen

A Description of Ventilators: whereby Great Quantities of Fresh Air may with Ease be conveyed into Mines, Goals [sic], Hospitals, Work-Houses and Ships, in Exchange for their Noxious Air. An Account also of their Great Usefulness in many other Respects; as in Preserving all Sorts of Grain Dry, Sweet, and free from being Destroyed by Weevels, both in Grainaries and Ships: and in Preserving many other Sorts of Goods. As also in drying Corn, Malt, Hops, Gun-Powder, &c. and for many other useful Purposes. Which was read before the Royal Society in May 1741. . . .

London: Printed for W. Innys . . . R. Manby . . . and T. Woodward . . . 1743.

First edition. 8vo. xx, 172 pp. With 2 folding engraved plates containing 11 figures (P. Fourdrinier Sculp.). Fine copy in original gilt-ruled calf, red morocco label.

HALES’ EXPERIMENTS on air and respiration were the stimulus for his most successful invention: the artificial ventilators that used bellows to inject fresh air into hospitals, mines, prisons, holds of ships, and other places where fetid air was deleterious to health. Dedicated to the Lords Commissioners of the Admiralty, this classic work led to the installation of ventilators in all types of ships, as well as workplaces. “The invention met with immediate approval. . . . Hales was the inventor of artificial ventilation” (Garrison-Morton, 1596). A French translation by P. Demours appeared (Paris, 1744, 12mo.). By corresponding with Du Hamel, Hales “succeeded in getting his invention fitted to the French prisons in which English prisoners were confined. . . . The diminution in the annual mortality [was] very great. Newgate also benefited in the same way” (D.N.B.). A sequel volume was published later (London, 1758). (Blake, 194; Blocker, 176; D.S.B., VI, 44, 47; Osler, 1087; Partington, III, 120; Wellcome, III, 195)

HALES, Stephen

Philosophical Experiments: containing Useful, and Necessary Instructions for such as undertake long Voyages at Sea. Shewing how Sea-Water may be made Fresh and Wholsome: and how Fresh-Water may be preserv'd Sweet. How Biscuit, Corn, &c. may be secured from the Weevil, Meggots, and other Insects. And Flesh preserv'd in hot Climates, by Salting Animals whole. To which is added, An Account of several Experiments and Observations on Chalybeate or Steel-Waters: with some Attempts to convey them to distant Places, preserving their Virtue to a greater Degree than has hitherto been done. Likewise a Proposal for cleansing away Mud, &c. out of Rivers, Harbours, and Reservoirs. Which were read before the Royal-Society, at several of their Meetings. By Stephen Hales, D.D., F.R.S. . . .

London: Printed for W. Innys and R. Manby, at the West End of St. Paul's; and T. Woodward, at the Half-Moon between the Temple-Gates, in Fleet-Street. 1739.

First edition. 8vo. 2 leaves, xxx, (2, errata), 163, (1) pp., 3 leaves (index), 1 leaf (advertisements). With 1 engraved plate containing 2 figures. Fine copy, in contemporary half calf, marbled boards, rebacked, maroon morocco label, spine dated.

DEDICATED TO the Lords Commissioners of the Admiralty, this important work on applied chemistry and technology contains treatises on the distillation of seawater; the preservation of fresh water, biscuit, and meat at sea; the possibility of bottling mineral waters; and a method for removing silt from harbors. Although some of these had originally been published in the *Philosophical Transactions*, the others appear here for the first time. The imprimatur (verso of half title) is signed by Sir Hans Sloane, president of the Royal Society, and dated 29 March 1739. (Blake, 194; Bolton, 509; D.S.B., VI, 47; Ferchl, 212; Neu, 1811; Osler, 1085; Partington, III, 114; Poggenдорff, I, 1000; Smith, 212; Wellcome, III, 194)

HALES, Stephen

Some Considerations on the Causes of Earthquakes. Which were read before the Royal Society, April 5, 1750. By Stephen Hales, D.D., F.R.S.

London: Printed for R. Manby and H. S. Cox, on Ludgate-Hill. 1750.

First edition. 8vo. (in 4s). 23, (1) pp. Pristine copy, in half calf antique, marbled boards, longitudinal maroon morocco spine label.

A MINOR WORK by Hales, being a reprint of the paper he read to the Royal Society and published in the *Philosophical Transactions* (vol. 46, p. 669 et seq.). It is an ingenious attempt to show that earthquakes are the result of concus-

sions at the earth's surface as sulphurous fumes rising from pyrites in the earth combine with pure air and suddenly reduce its elasticity. Lightning ignites the sulphurous fumes and air, thus causing the loud noise that accompanies an earthquake. The sulphurous fumes Hales describes are what Priestley was later to name nitrous air (i.e., nitric oxide) and to use in his early approach to eudiometry. On the half title the original price is given as fourpence. Evidently well received, a second edition (or issue?) appeared in 1750 (Wellcome, III, 195). (D.S.B., VI, 47; Partington, III, 123; Watt, 457j)

HALES, Stephen

Statical Essays: containing Haemastatics; or, An Account of some Hydraulic and Hydrostatical Experiments made on the Blood and Blood-Vessels of Animals. Also An Account of some Experiments on Stones in the Kidneys and Bladder; with an Enquiry into the Nature of those anomalous Concretions. To which is added, An Appendix, containing Observations and Experiments relating to several Subjects in the first Volume. . . . With an Index to both Volumes. Vol. II. . . . By Stephen Hales, D.D., F.R.S. . . .

London: Printed for W. Innys and R. Manby, at the West-End of St. Paul's; and T. Woodward, at the Half Moon between the Temple-Gates, Fleet-Street. 1733.

First edition. 8vo. xxii, (26), 361, (1) pp., 11 leaves. Fine copy, in original blind-ruled paneled calf, rebacked, maroon morocco label. Armorial bookplate (nineteenth century): Edward Montagu Stuart Granville, Earl of Wharnclyffe.

PUBLISHED TO accompany the second edition of *Vegetable Statics* (London, 1731), with the general title *Statical Essays*, this classic book records Hales' invention of the manometer, with which he was the first to measure blood pressure quantitatively. "His work is the greatest single contribution to our knowledge of the vascular system after Harvey, and led to the development of the blood-pressure measuring instruments now in universal use" (Garrison-Morton, 765). "Hales' work marked the greatest advance in the physiology of the circulation between Harvey and the introduction of the mercury manometer and other instruments for the measurement of blood pressure by J. L. M. Poiseuille in 1828" (P.M.M., 189). Of chemical interest are experiments on attempts to dissolve bladder and kidney stones in acids, bases, salts, mineral waters, etc. The appendix contains an account of an instrument invented by Desaguliers for measuring the depth of the sea. (Blake, 194; Cushing, H36; D.S.B., VI, 47; *Heirs of Hippocrates*, 784; Horblit, 45b; Lilly, 109; Norman, 970; Osler, 1081; Partington, III, 114; Poggenдорff, I, 1000; Waller, 11527)

HALES, Stephen

Statical Essays: containing Haemastaticks; or, An Account of some Hydraulic and Hydrostatical Experiments made on the Blood and Blood-Vessels of Animals. Also An Account of some Experiments on Stones in the Kidneys and Bladder; with an Enquiry into the Nature of those anomalous Concretions. To which is added, An Appendix, containing Observations and Experiments relating to several Subjects in the First Volume. . . . With an Index to both Volumes. Vol. II. . . . By Stephen Hales, D.D., F.R.S. . . . The Third Edition, Corrected.

London: Printed for Wilson and Nicol, in the Strand; T. Durham, near Charing Cross; G. Keith, in Grace-church Street; and Robinson and Roberts, No. 25, in Pater-noster-Row. 1769.

Third edition. 8vo. 5 leaves, vi, xvii–xxii pp. (pagination skips, text complete), 13 leaves, 354 pp., 11 leaves. Very fine copy, in original light-brown speckled calf, gilt, red and green morocco labels. From the library of John Cator (1730–1806), with engraved armorial bookplate.

THE THIRD and final early edition of *Haemastaticks* (first: London, 1733), published simultaneously with the fourth edition of *Vegetable Staticks* (London, 1769), with which volume this copy is uniformly bound. The text is based on the “corrected” second edition of *Haemastaticks*, which appeared as the second volume of *Statical Essays* (London, 1740). The original owner, John Cator, was a friend of Dr. Samuel Johnson and Mrs. Thrale (Hester Lynch Piozzi, 1741–1821). (Blake, 194; Bolton, 510; D.S.B., VI, 47; Neu, 1814; Partington, III, 114; Watt, I, 457h)

HALES, Stephen

Statick des Geblüts, bestehend in Neuen Erfahrungen an lebendigen Thieren, ihres Bluts Bewegung zu erforschen, Nebst besondern Versuchen am Nieren- und Blasenstein, die Natur und Beschaffenheit dergleichen schädlichen Anwachs zu entdecken; Zum besondern Nutzen der Arzney-Gelehrten von Herrn Stephan Hales beschreiben, und mit des Herrn de Sauvages Anmerckungen, auch Abhandlungen von Entzündungen im menschlichen Körper und wahren Ursachen des Fiebers, uebersetzt, bey dieser Ausgabe aber vermehret, und mit einem vollständigen Register versehen.

Halle: Zu finden in der Rengerischen Buchhandlung. 1748.

First German edition. 4to. xxviii, (1), 408 pp., 19 leaves (index). With 1 folding engraved plate. Title page in red and black. Woodcut head- and tailpieces. Fine copy in original vellum. Bound with: Hales, S., *Statick der Gewächse* (Halle, 1748).

THE FIRST edition in German of *Statical Essays* (London, 1733), translated by the physicist and mathematician Christian Freiherr von Wolff (1679–1754), professor at the Uni-

versity of Halle. The translation was made from the French edition of Sauvages, *Haemastatique* (Geneva, 1744). In his preface Wolff refers to the researches of other distinguished scientists: e.g., Bellini, Bernoulli, Boerhaave, Borelli, Brunner, Keill, Michelotti, Nicolai, and Schenck. At the end (pp. 349–408) are German translations of Sauvages’ works on the origin of fevers. Rare. Not in Bolton, Cushing, Neu, Osler, Wellcome, etc. (Blake, 194; D.S.B., VI, 47; Ferchl, 211; Partington, III, 114; Waller, 3981)

HALES, Stephen

Emastatica, ossia Statica degli Animali: Esperienze Idrauliche fatte sugli Animali viventi dal Signor Hales, . . . Tradotta dall’Inglese nel Franzese, e Commentata dal Signor De Sauvages, . . . e dal Franzese nuovamente trasportata nell’Italiano Idioma. Volume Primo.

Naples: Presso Giuseppe Raimondi. 1750, 1752.

First Italian edition. 2 vols., 8vo., in 1. I: 16 leaves, 221, (3) pp.; 1 folding table. II: 4 leaves, 280 pp.; 1 folding engraved plate containing 20 figures (by J. A. Aloja). Few leaves lightly embrowned; otherwise fine copy, in original vellum, gilt-lettered tan label.

THE FIRST Italian edition of *Haemastaticks* (London, 1733), translated by Maria Angela Ardinghelli from the French edition, *Haemastatique* (Geneva, 1744), by François Boissier de Sauvages de la Croix. The first volume (1750) comprises *Haemastaticks*. The second volume, entitled *Esperienze ed osservazioni di Stefano Hales* (1752), contains Hales’ experiments on attempts to dissolve bladder and kidney stones (pp. 3–48). It also contains a translation of the experiments of Hales and David Hartley on Mrs. Joanna Stephens’ remedy for dissolving stones, which had appeared twelve years earlier (London, 1740). At the end (pp. 107–280) is the Italian translation of the works by Sauvages on theories of inflammation and fevers. Rare. Not in British Library or the usual bibliographies. (Blake, 194; D.S.B., VI, 47; Wellcome, III, 194)

HALES, Stephen

Haemastatique, ou la Statique des Animaux: Expériences Hydrauliques faites sur des [sic] Animaux vivans. Avec un Recueil de quelques Expériences sur les Pierres que l’on trouve dans les reins & dans la vessie; & des recherches sur la nature de ces Concrétions irrégulières. Par Mr. Etienne Hales, . . . Traduit de l’Anglois, & augmenté de plusieurs Remarques & de deux Dissertations de Medecine, sur la Theorie de l’Inflammation, et sur la Cause de la Fievre; par Mr. De Sauvages, . . .

Geneva: Chez les Hérit. Cramer & Frères Philibert. 1744.

First French edition, first issue. 4to. xxii, (2) blank, 348 pp., 2 leaves. With 1 full-page plate of woodcut diagrams. Minor damp stain to inner lower blank margin of some leaves; otherwise fine copy with very wide margins (many uncut), in early-nineteenth-century gilt-ruled quarter sheep, marbled boards, with original front pasteboard wrapper bound in.

THE FIRST French edition of *Haemastatics* (London, 1733), with additions by the eminent physician and botanist François Boissier de Sauvages de la Croix (1706–1776), professor of medicine at the University of Montpellier and physician to Louis XV. In his *avertissement* the translator praises the excellent French translation of *Vegetable Statics* by Buffon in 1735, mentions Boerhaave and Borelli, and states that he has confirmed some of Hales' experiments. At the end (pp. 199–340) Sauvages has reprinted his dissertations on theories of inflammation and fever. A second issue appeared in 1744, with 352 pages of text. (Blake, 194; D.S.B., VI, 47; Ferchl, 211; Osler, 1083; Partington, III, 114; Reynolds, 1799; Wellcome, III, 194)

HALES, Stephen

Vegetable Statics: or, An Account of some Statical Experiments on the Sap in Vegetables: being an Essay towards a Natural History of Vegetation. Also, a Specimen of an Attempt to Analyse the Air, by a great Variety of Chymio-Statical Experiments; which were read at several Meetings before the Royal Society. . . . By Steph. Hales, D.D., F.R.S. . . .

London: Printed for W. and J. Innys, at the West end of St. Paul's; and T. Woodward, over-against St. Dunstan's Church in Fleet-Street. 1727.

First edition. 8vo. (7), vii, (2), 376 pp. With 19 engraved plates (by S. Gribelin). Minor wormhole in blank outer margin of title and 3 following leaves; otherwise very fine copy, contents pristine, in original blind-ruled paneled calf, gilt, maroon morocco label. Armorial bookplate: Sir John Cope, Bart.

EDUCATED AT Corpus Christi College, Cambridge, Hales (1677–1761), F.R.S. (1718), was perpetual curate at Teddington, Middlesex. While still at Cambridge he carried out chemical experiments, and in his classic *Vegetable Statics* he presents the first complete account of the physiology of plants, including their dependence on air and the movement of sap. He demonstrated that plants inspire and emit "air" through their leaves, measured the volumes of water absorbed by and evaporated from plants, and recognized (obscurely) that light plays a vital role in plant growth. The first to improve techniques for collecting and quantitatively handling gases (e.g., over water), Hales isolated several gases (e.g., carbon dioxide from mineral waters and oxygen from niter) but failed to distinguish them from ordinary air. The

long chapter VI (pp. 155–317) on the "analysis of the air" is almost entirely chemical in content, with many references to Boyle, Hauksbee, Newton, et al. The imprimatur (title verso) is by Isaac Newton. The "most important contribution of the 18th century to plant physiology" (D.N.B.). (Blake, 194; Bolton, 510; D.S.B., VI, 47; Dibner, 26; Henrey, 37; Horblit, 45a; Norman, 970; Osler, 1080; Partington, III, 113; Waller, 11526; Wellcome, II, 194)

HALES, Stephen

Statical Essays: containing Vegetable Statics; or, An Account of some Statical Experiments on the Sap in Vegetables. Being An Essay towards a Natural History of Vegetation: Of Use to those who are curious in the Culture and Improvement of Gardening, &c. Also, A Specimen of an Attempt to Analyse the Air, by a great Variety of Chymio-Statical Experiments, which were read at several Meetings before the Royal Society. Vol. I. . . . By Stephen Hales, D.D., F.R.S. . . . The Second Edition, with Amendments.

London: Printed for W. Innys, at the West End of St. Paul's; T. Woodward, at the Half-Moon over-against St. Dunstan's Church in Fleet-Street; and J. Peele, at Locke's Head in Amen-Corner. 1731.

Second edition. 8vo. 3 leaves, viii, (4), 376 pp. With 19 engraved plates (by S. Gribelin). Fine copy, in original blind-ruled paneled calf, rebaked, maroon morocco label. Armorial bookplate (nineteenth century): Edward Montagu Stuart Granville, Earl of Wharncliffe.

THE AMENDED second edition of *Vegetable Statics* but the first with the general title *Statical Essays*, of which it forms volume I of the two-volume set, the second being *Haemastatics* (London, 1733). Hales obtained gases (or as he termed them, "airs") from plants by dry distillation and was the first to realize that atmospheric carbon dioxide was a vital food supply for plants. "These experiments led the way to those of Ingenhousz and de Saussure, while his ideas on combustion and respiration facilitated the discoveries of Black, Lavoisier and Priestley" (P.M.M.). (Blake, 194; Cushing, H36; D.S.B., VI, 47; Freeman, 1514; Norman, 970; Osler, 1081; Partington, III, 113; P.M.M., 189; Smith, 212; Waller, 11527)

HALES, Stephen

Statical Essays: containing Vegetable Statics; or, an Account of some Statical Experiments on the Sap in Vegetables. . . . Vol. I. . . . The Fourth Edition, with Amendments.

London: Printed for Wilson and Nicol, in the Strand; T. Durham, near Charing Cross; G. Keith, in Grace-church Street; and Robinson and Roberts, No. 25, in Pater-noster-Row. 1769.

Fourth edition. 8vo. 3 leaves, x, (4), 376 pp. With 19 engraved plates (by S. Gribelin). Very fine copy, in original light-brown speckled calf, gilt, red and green morocco labels. From the library of John Cator (1730–1806), with engraved armorial bookplate.

A REPRINT OF the second edition of *Vegetable Staticks* (London, 1731), published simultaneously with the third edition of *Haemastaticks* (first: London, 1733). The third edition of this work appeared in the second edition of *Statistical Essays* (London, 1738). The engraved plates are identical in all editions. An interesting association copy, as John Cator was a friend of Dr. Samuel Johnson and Mrs. Thrrale (Hester Lynch Piozzi, 1741–1821). Johnson, who advised Cator on the choice of books for his library, praised him thus: “Cator has a rough, manly independent understanding. . . . [H]e never speaks merely to please, and seldom is mistaken in things which he has any right to know” (*Letters*, ed. Chapman, no. 926). (Blake, 194; Bolton, 509–510; D.S.B., VI, 47; Neu, 1814; Partington, III, 113–114; Watt, I, 457h)

HALES, Stephen

La Statique des Végétaux, et l'Analyse de l'Air. Expériences Nouvelles lues à la Société Royale de Londres. Par M. Hales . . . Ouvrage traduit de l'Anglois, par M. De Buffon, de l'Académie des Sciences.

Paris: Chez Jacques Vincent, rue & vis-à-vis l'Église S. Severin, à l'Ange. 1735.

First French edition, first issue. 4to. xviii, (8), 408 pp. Page 400 misprinted as q00. With 10 folding engraved plates, each with 2 illustrations (by Maisonneuve). Occasional minor embrowning; otherwise fine copy with wide margins, in original mottled calf rebaked with old richly gilt spine laid on, maroon morocco label. Presentation copy, inscribed on leaf facing title page: À Monsieur Desaguliers de la part de son très humble et très obéissant serviteur De Buffon.

THE FIRST French translation of *Vegetable Staticks* (1727) and the first literary production of the great French naturalist George-Louis Leclerc, Comte de Buffon (1707–1788). It is “an influential French translation which has the famous ‘Preface du traducteur,’ in which Buffon praises the experimental method, and includes Hales’ appendix of 1733” (D.S.B.). An important association copy, boldly inscribed by Buffon to the famous scientist John Theophilus Desaguliers (1683–1744), F.R.S., who (though born in France) had lived in London since he was two years of age. At the end of the volume (pp. 378–400) is a description of an instrument constructed by Desaguliers for measuring the depth of the sea. Copies of the first issue (as here) do not have the extra leaf found in the second issue at the end:

Extrait des Registres de l'Académie Royale des Sciences. In the second issue page 400 is correctly numbered. Copies of a later issue in 1735 have a cancel title page, with the publisher given as Debure l'ainé. (Blake, 194; Cole, 585; D.S.B., VI, 47; Ferchl, 221; Neu, 1815; Osler, 1082; Partington, III, 114; Poggendorff, I, 338; Smith, 212; Watt, I, 457h; Wellcome, III, 194)

HALES, Stephen

La Statique des Végétaux, et celle des Animaux; Expériences lues à la Société Royale de Londres, par le D. Hales, . . .

Première partie. La Statique des Végétaux.

Paris: De l'Imprimerie de Monsieur. 1779.

Second French (first collected) edition. 8vo. xxxii, 390 pp. With 20 folding engraved plates (by Maisonneuve). Woodcut arms on title page, woodcut head- and tailpieces. Very fine copy, contents in pristine state, in original mottled calf, spine richly gilt, maroon morocco label. Bound with: Hales, Stephen, *Haemastatique ou la statique des animaux* (Paris, 1780).

THE SECOND French edition and the first in octavo format, being the original translation by Buffon (Paris, 1735), revised and edited by Joseph-Aignan Sigaud de la Fond (1730–1810). With the companion volume, *Haemastatique* (Paris, 1780), this comprises the first collected French edition of Hales’ classic works on the chemistry and physiology of plants and animals. Scarce. Not in Cole, Waller, Wellcome, etc. (Blake, 194; D.S.B., VI, 47; Partington, III, 114; Poggendorff, I, 338)

HALES, Stephen

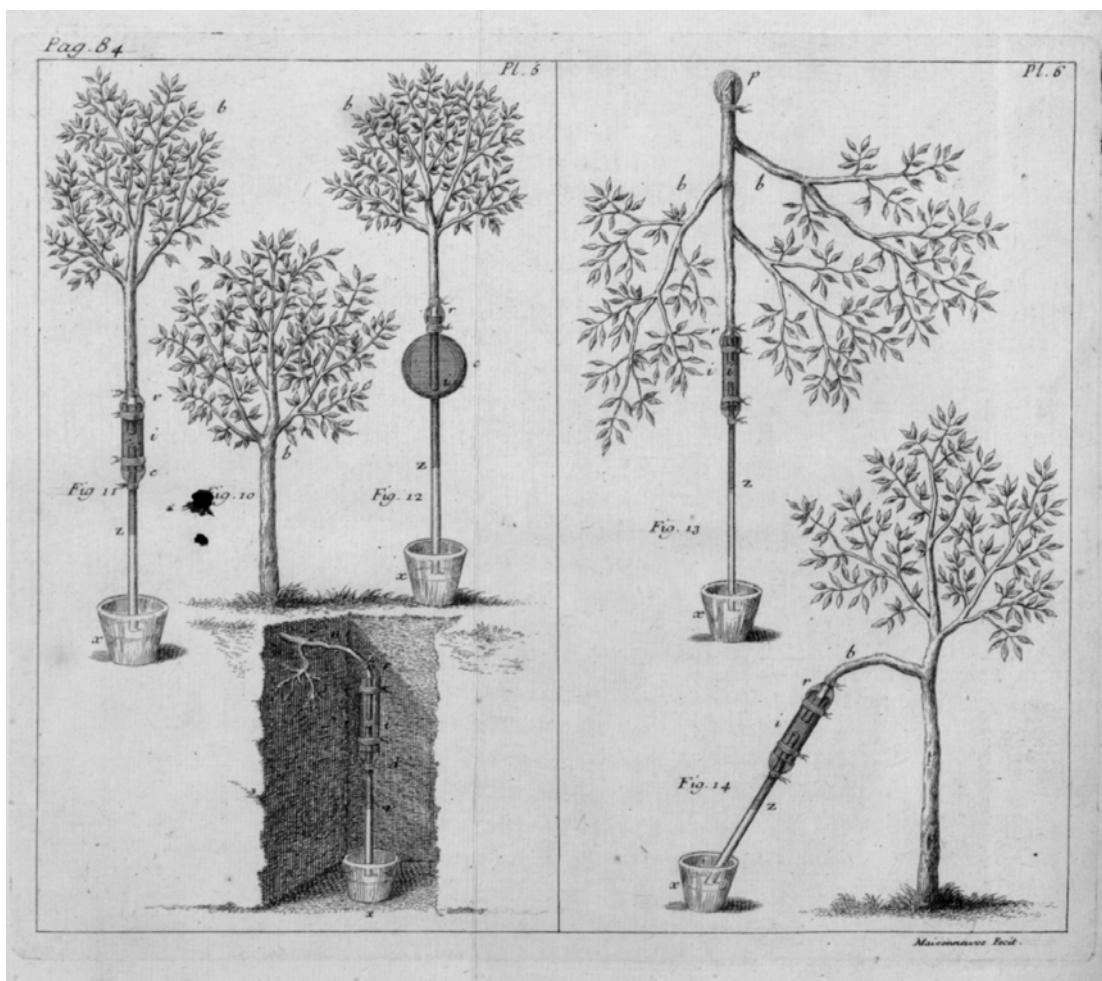
La Statique des Végétaux, et celle des Animaux; Expériences lues à la Société Royale de Londres, par le D. Hales, . . .

Seconde partie. La Statique des Animaux.

Paris: De l'Imprimerie de Monsieur. 1780.

Second French (first collected) edition. 8vo. xxviii, 256 pp. Woodcut arms on title page, woodcut head- and tailpieces. Very fine copy, contents in pristine state, in original mottled calf, spine richly gilt, maroon morocco label. Bound with: Hales, Stephen, *La statique des végétaux* (Paris, 1779).

THE SECOND (first 8vo.) edition of *Haemastatique*, being a reprint of the 4to. Paris (1744) edition translated by François Boissier de Sauvages de la Croix but omitting his works on inflammation and fever. With the companion volume, *La statique des végétaux* (Paris, 1779), this comprises the first collected French edition of Hales’ classic works on the chemistry and physiology of plants and animals. Scarce. Not in Cole, Waller, Wellcome, etc. (Blake, 194; D.S.B., VI, 47; Partington, III, 114)



Hales. La Statique des Végétaux. Paris, 1735.

HALES, Stephen

Statik der Gewächse oder angestellte Versuche mit dem Saft in Pflantzen und ihren Wachsthum, Nebst Proben von der in Körpern befindlichen Luft. Zum Aufnehmen und Verbesserung der Chymie, des Garten- und Ackerbaues von Herrn Stephan Hales . . . in Englischer Sprache herausgegeben, und nebst des Herrn De Buffon seiner Frantzösischen Ausgabe beygefügtten Erläuterungen ins Deutsche übersetzt, mit einem Vorrede des Herrn Cantzlers Reichs-Freyherrn von Wolff, und einem Vorbericht von der Pflantzen Structur und Geschlechtern.

Halle: Zu finden in der Rengerischen Buchhandlung. 1748.

First German edition. 4to. 9 leaves, 50, 264 pp., 7 leaves (index). With 11 folding plates (Gründler sc.). Title page in red and black. Woodcut head- and tailpieces. Fine copy in original vellum. Bound with: Hales, S., *Statik des Geblüts* (Halle, 1748). Armorial bookplate (twentieth century): Hermann Richters.

FIRST EDITION in German of *Vegetable Statics* (London, 1727), the great classic in the history of science that laid the foundation of plant physiology by experiments on the movement of sap. This rare German translation was carried out by the famous physicist and mathematician Christian Freiherr von Wolff (1679–1754), professor at the University of Halle. Wolff made the translation from Buffon's French edition (Paris, 1735), which contains the annotations and explanations of Buffon. To this edition Wolff has added a six-page introduction. Rare. Not in Bolton, Duveen, Neu, Osler, Wellcome, etc. (Blake, 194; D.S.B., VI, 47; Edelstein, 1079; Ferchl, 211; Partington, III, 114; Pritzel, 3700; Waller, 11525)

HALES, Stephen

Statica de' Vegetabili, ed Analisi dell'Aria. Opera del Dottore Stefano Hales della Società Regale delle Scienze, tradotta dall'Inglese con varie Annotazioni.

Naples: Nella Stamperia di Giuseppe Raimondi. 1756.

First Italian edition. 8vo. 4 leaves, 368 pp. With 20 folding plates, engraved by Giuseppe Aloja. Fine copy in contemporary vellum, spine gilt-lettered. From the library of Edward Mars Elmhirst of Worsboroughdale, Yorkshire, with his armorial bookplate on the front pastedown endpaper. A note on the first free endpaper (recto), in ink, reads "from Macerata in Italy by Major Edwd. Elmhirst. Eighth Army. December 1944."

TRANSLATED BY M. A. Ardinghelli, with commentary, this is the first appearance of *Vegetable Staticks* (London, 1727) in Italian. The second Italian edition appeared in 1776. The companion work, *Haemastaticks* (London, 1733), was translated into Italian from the French of Boissier de Sauvages with the title *Emastatica, ossia statica degli animali* (Naples, 1750–52, 2 vols.). Rare. Not in Bolton, Cushing, Duveen, Ferchl, Neu, Osler, Partington, Poggendorff, Smith, Waller, etc. The 1776 edition is listed by Wellcome (III, 194). (D.S.B., VI, 47; Edelstein, 1076; Thornton & Tully, 192; Watt, I, 457h)

HALES, Stephen, and HARTLEY, David

An Account of some Experiments and Observations on Mrs. Stephens's Medicines for dissolving the Stone: wherein their dissolving power is inquir'd into, and shown. By Stephen Hales, D.D., F.R.S. . . . To which is added, A Supplement to . . . A View of the present Evidence for and against Mrs. Stephens's Medicines, &c. being a collection of some particulars relating to the discovery of these medicines, their publication, use and efficacy. By David Hartley, M.A., F.R.S. London: Printed for T. Woodward, . . . Printer to the Royal Society. (Nov. 12, 1740.)

First edition. 8vo. 1 leaf, 66 pp. With folding plate of 16 bladder stones in original size (G. Vander Gucht Delin. & Sculp.). Paper slightly embrowned (as usual); otherwise good, crisp copy in modern boards, printed paper label on spine.

A FEW YEARS before the appearance of this tract, a Mrs. Joanna Stephens had invented a medicine that, taken orally, dissolved bladder stones. She cured the postmaster-general, Lord Carteret, and a public subscription was raised to collect 5,000 pounds (then an enormous sum) to purchase her remedy. Parliament set up a commission, including Hales, to investigate the composition of the medicine, which contained calcined eggshells and garden snails, mixed with burnt seeds, herbs, pig fat, honey, and soap. The Stephens recipe was published in the official *London Gazette* (16 June 1739). The remedy was evidently successful, as several eminent physicians testified to the completeness with which stones were dissolved. In this work Hales concludes that the medicine is a powerful solvent for bladder stones by virtue of the "soap-lees and lime of egg-shells" they contain. The support of contemporary physicians se-

cured Mrs. Stephens an international reputation for her quack remedy, and a French translation appeared (Paris, 1742). The *Supplement* (pp. 35–66), by David Hartley (1705–1757; see D.S.B., VI, 139), contains directions for preparing the medicine. Rare. (Blake, 194; Clark-Kennedy, *Stephen Hales*, 1929, pp. 124–129; D.S.B., VI, 47; Ferchl, 212; Murphy, *History of Urology*, pp. 116–117; Partington, III, 114, 121; Waring, 167; Wellcome, III, 194)

HALLENCREUTZ, Daniel

Dissertatio Gradualis de Rarefactione Aëris in Antlia Pneumaticas. . . moderante . . . Mag. Samuele Duræo, . . . IX. Junii, Anno MDCCLXIV. submittit Daniel Hallencreutz. Uppsala. (1764).

First edition. 4to. 1 leaf, 12 pp. With fine folding engraved plate of a Hauksbee vacuum pump. Fine copy. Bound with: Wimermark, Sven, *De Diversa Radiorum* (Uppsala, 1776), and 30 other dissertations (q.v.).

A DETAILED EXPERIMENTAL reexamination of Boyle's law and of the relationship between the pressure and volume of the air at constant temperature, using an improved version of the vacuum pump designed by Francis Hauksbee. Hallencreutz (1743–1816) tabulates the data and analyzes it mathematically. He refers to the experiments of Boyle, Guericke, Hauksbee, Desaguliers, et al. The author became a lecturer in mathematics at the University of Uppsala and, with a fellow lecturer in mathematics, Stephan Insulin (1726–1803), made improvements in the objectives of microscopes. They published these results at Uppsala in 1767. Poggendorff (I, 1003) cites Hallencreutz and some of his works but not the present title, which has not been traced in the usual bibliographies.

HALLER, Albrecht von

Opuscula Pathologica partim recusa partim inedita: quibus sectiones cadaverum morbosorum potissimum continentur. Accedunt experimenta de respiratione, quarta parte aucta. Lausanne: Sumpt. Marci-Mich. Bousquet & Soc. 1755.

First edition. 8vo. 304 pp. Title in red and black. With 3 folding engraved plates (on the pathology of the heart) and 2 engravings on title (medal of Haller, obverse and reverse). Fine copy in contemporary mottled calf, gilt, red label.

THE FIRST collected edition of the records of postmortem examinations carried out by Haller (1708–1777), several printed here for the first time. A pupil of Boerhaave and the greatest physiologist of his period, Haller made valuable original contributions to cardiac physiology and neurophysiology. He was the first to investigate the action of the intercostal muscles in respiration (see Garrison-Morton,

917) and was well acquainted with contemporary researches on air. Included in the present book is his very important *De respiratione* (pp. 163–292) and also a bibliography of Haller's works (pp. 295–304). He describes his own experiments on respiration and the chemical processes involved therein, as he interpreted them, with references to the works of Boyle, Lower, Mayow, Hales, Boerhaave, et al. Partington (II, 627) mentions this title but with a Venice (1755) imprint. Very scarce. Not in Cushing, D.S.B., Eales, Ferchl, Osler, or the usual chemical bibliographies. (Blake, 196; Blocker, 177; Neu, 1827; Waller, 4015; Watt, I, 459m; Wellcome, III, 199)

HÄLLSTRÖM, Laurentius

Dissertatio Chemica de Pissalitho Sibirico, . . . praeside Johanne Afzelio, . . . pro gradu philosophico . . . Laurentius Hällström, Gestricius. . . XIII Jun. MDCCC.
Uppsala: Joh. Fredr. Edman. (1800).

First edition. 4to. 1 leaf, 14 pp. Fine, large-paper copy, in maroon half morocco antique, marbled boards, spine gilt-lettered and dated.

AN IMPORTANT dissertation on pisolite, by Hällström, a student under the great Swedish professor of chemistry at Uppsala, Johann Afzelius, who was the teacher of Berzelius. Pisolite is a limestone composed of globular concretions of calcium carbonate about the size of a pea: hence the alternative name, peastone. The pisolite examined chemically came from Siberia and is compared with that of Saxony. Of interest in the history of analytical and mineralogical chemistry, the procedures throw much light on eighteenth-century techniques used for analyzing minerals. Rare. Not in the usual bibliographies. (Partington, III, 200; Poggen-dorff, I, 16)

HAMMER, Georg Jacob

De Platino eoque Chemice-Technice Obtinendo. Dissertatio inauguralis . . . in Academia Georgia Augusta scripsit Georg. Jac. Hammer, Moscoviensi-Russus.
Göttingen: Ex Officina Henrici Caroli Seeman. 1840.

First edition. 8vo. 1 leaf, 50 pp. With folding table. Very good copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

AN IMPORTANT doctoral dissertation on platinum by a Russian author, of whom nothing appears to be recorded. Hammer traces the history of platinum, the location of its ores, and the methods used in its analysis. He gives a detailed account of the chemical process employed by Wollaston in England to purify platinum from other metals and also that

used by Sobolewsky at St. Petersburg. The table comprises chemical analyses of the platinum found in the Urals, other parts of Russia, and America. The data show the amounts of iridium, osmium, palladium, rhodium, and other materials in native platinum. Extremely rare. Not found in available bibliographies.

HANAFORD, William G.

Lectures on Chemistry, with familiar directions for performing experiments with a small apparatus. To which are added, questions for the examination of scholars. Intended for Lyceums, Academies, and Private Students. By W. G. Hanaford, M.D.

Boston: Richardson, Lord and Holbrook. 1831.

First edition. 12mo. vi + (3)–140 pp. Good copy in contemporary quarter calf, marbled boards.

AN INTRODUCTORY work by Dr. Hanaford, on whom no biographical information has been found. In his preface Hanaford states that his aim is to give "a short series of Lectures upon this subject, with familiar directions for performing experiments with a cheap apparatus. . . . The arrangement which he has adopted does not materially differ from that of the large work of Brand." In eighteen chapters the author covers affinity, caloric, electricity, light, nomenclature, hydrogen, nitrogen, oxygen, sulphur, phosphorus, carbon, metals, and various aspects of organic chemistry. Pages 124–140 comprise questions for the student on the subjects covered. A scarce work. Not in Cushing, Duveen, Ferchl, Miles, Morgan, Partington, Poggendorff, Waller, Wellcome, etc. (Bolton, 512; Smith, 213)

HANCOCK, Thomas

Personal Narrative of the Origin and Progress of the Caoutchouc or India-Rubber Manufacture in England. . . . To which is added some account of the plants from which caoutchouc is obtained, its chemical analysis, statistical tables, etc. etc. With an appendix containing the specifications of the author's patents.

London: Longman, Brown, Green, Longmans, & Roberts. 1857.

First edition. 8vo. vii, (1), 283, (1) pp. + 24 pp. (adverts.). With lithographed frontispiece portrait of Hancock, 18 engraved and lithographed plates (some folding) with tissues, and large folding lithographed view of the Macintosh rubber factory. Inscribed in ink at top of title page: "Presented to Mr. W. B. Graham by the Author." Fine copy in modern morocco-backed cloth, spine gilt-lettered.

A RARE PRESENTATION copy of the most important early work on the manufacture of commercial rubber products. The book is remarkable for its firsthand account of the earliest history of the industry, for its unmatched technical information, and for its fascinating plates illustrating a vast array of products available only fourteen years after the introduction (in 1843) of Hancock's method for the vulcanization of rubber, which was the first commercially successful process. Hancock (1786–1865), founder of the india rubber industry in England, was a partner in the firm of Charles Macintosh (1786–1843), and the large folding view of the Macintosh rubber factory (here present) is not found in all copies. While Goodyear's book is far rarer, this work is more interesting to the nonspecialist. In many ways it is one of the most remarkable books on chemical technology of the mid-nineteenth century. Not in D.S.B., Duveen, Ferchl, Partington, Poggendorff, Smith, etc. (Bolton, *First Supplement*, 201; Edelstein, 3860; Honeyman, 1603; Morgan, 345; Singer et al., *History of Technology* [1958], V, 759, 766–768; Sondheimer, 682; Sotheran, Cat. 725 [1912], 8879; Wheeler Gift, 1391; Williams, 241)

HANHARDUS, Johannes Huldricus

Dissertatio Physico-Chymica de Salibus Novis experimentis illustrata, auctore Job. Huldrico Hanhardo, Medic. Doct.
Basel: Prostat apud Reges. 1685.

First edition. 4to. 12 leaves, unpaginated (signatures A–C4). Woodcut on title page. Large woodcut capitals. Paper slightly browned characteristic of the period; otherwise good copy in eighteenth-century plain boards.

A PHYSICO-CHEMICAL DISSERTATION on salts in four chapters, illustrated by new experiments. In the first chapter the author (dates unknown) discusses the different kinds of salts. The second and third chapters cover acids and alkalies, and the fourth describes specific salts (e.g., common salt, sea salt, and sal ammoniac). Small woodcut chemical symbols are used throughout, and there are references to William Harvey, Boyle, Bohn, Sturm, Wedel, J. M. Hoffmann of Altdorf, et al. Presented under the supervision of Emanuel König (1658–1731), professor at Basel, whose name appears on the final page, the work contains a surprising amount of information. Very rare. Not in the usual early chemical bibliographies. (J.J. Manget, *Bibliotheca Scriptorum Medicorum*, 1731, Vol. I, Part II, p. 564; Wellcome, III, 207)

HANIN, Jean Louis

Les 1000 Récréations de Physique et de Chimie, ouvrage renfermant un grand nombre d'expériences instructives et amusantes. Par L. Demerson, Docteur en Medecine, auteur de La Botanique en XXII Leçons.
Paris: Audin. 1828.

First edition. 12mo. 436 pp. With 15 folding engraved plates (by Bonnet). Contemporary gilt-ruled half vellum, marbled boards, brown morocco label.

AN EXCELLENT introductory work on physics and chemistry, containing many entertaining and instructive experiments. Evidently very rare, it is not listed in the usual chemical bibliographies. The name Demerson on the title is a pseudonym for Jean Louis Hanin (b. 1782). (Wellcome, III, 207)

HANN, Philippus Nerius

Dissertatio Inauguralis Chymico-Medica de Semi-Metallis . . . publicae disquisitioni committit Philippus Nerius Hann, Styrys Graecensis, . . . pro suprema medici doctoratus . . . die (blank) Mensis Aprilis M.DCC.LXIII.
(Vienna): E Typographeo Kaliwodiano. (1763).

First edition. 4to. 24 pp. Very good copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A DOCTORAL DISSERTATION on what were then considered imperfect metals (so-called semimetals), presented at the University of Vienna by Hann (dates unknown), on whom no biographical information has been found. Divided into thirty-four sections (in five chapters), the chemistry of the following metals and their compounds is discussed: antimony, bismuth, mercury, and zinc. The author refers to the works of Basil Valentine, Boerhaave, Brendel, Geoffroy, Ruland, Sala, Vogel, et al. On page 5 platinum and its properties are described, but this work remained unknown to D. McDonald and L. B. Hunt (*A History of Platinum*, London, 1982). Very rare. Not in the major early chemical libraries and unknown to historians of chemistry. (Watt, I, 464m)

HANNEMANN, Johann Ludwig

Cato Chemicus Tractatus quo Verae ac Genuinae Philosophiae Hermeticae, & Fucatae ac Sophisticae Pseudo Chemiae & utriusque Magistrorum Characterismi accurate delineantur.
Hamburg: Apud Gothoff. Liebernickel. Literis Brendekii. 1690.

First edition. 12mo. 48 leaves (unpaginated). Very good copy, in calf antique, spine gilt-lettered.

BORN IN Amsterdam, Hannemann (1640–1724) first practiced as a physician, then (1675) became professor of physics at the University of Kiel and was elected a member of the Academia Naturae Curiosorum in 1680. “He upheld a belief in the universal spirit or world soul, defended astrology and the chemical resuscitation of plants, saying that every atom has the virtue of reviving the entire compound” (Partington). Hannemann published several alchemical books, and although Partington (II, 302) and Thorndike (VIII, 401) discuss the author and some of his works, this title is not mentioned. The *Cato Chemicus* is a treatise on the origin of chemistry, the path to true alchemy, detection of fraudulent alchemical practices, and the mystery of the philosopher’s stone. (Duveen, 279; Ferchl, 213; Ferguson, I, 363; Ferguson Coll., 299; Neu, 1837; Poggendorff, I, 1012; Wellcome, III, 208)

HANNKE, Johann

Disputationem Physicam de Auro, sub praesidio . . . Dn. M. Johannis Sperling, . . . publicè in Alma Wittenbergensi, proponit Johannes Hannke Silesius. Disputabitur die 12. Julii Horis Antemeridianis in Collegio Majori.
Wittenberg: Ex Officinâ Johannis Röhneri, Acad. Typog. 1645.

First edition. 4to. 12 leaves. Fine, crisp copy, in maroon quarter morocco, marbled boards, spine gilt-lettered and dated.

A DOCTORAL DISSERTATION on gold, of considerable alchemical and chemical interest, presided over by Sperling (1603–1658), professor of physics at the University of Wittenberg. Hannke discusses the physical and chemical properties of gold and summarizes contemporary knowledge on its supposed composition. Comparing gold with silver and lead, Hannke believed that these metals could be transmuted into gold if they were to be treated with the correct proportions of sulphur and mercury mixed with the philosopher’s stone. The author comments on the fraudulent practices of many alchemists and emphasizes that transmutation of all metals is very difficult to accomplish. There are numerous references to the writings of earlier and contemporary chemists (e.g., Sennert, Augurellus, Scaliger, Ruland, Libavius, and Paracelsus). He also mentions that large amounts of gold are to be found in America. No biographical information on Hannke has been found, and this work is apparently unknown to the bibliographers.

HANSSON, Johann Peter

Dissertatio Academica, de Simplicitate Hydrogenii, . . . praeside Jona Alb. Engeström, . . . pro summis in Philosophia honoribus consequendis Eruditorum examini modeste subjicit Johannes Petrus Hansson, Scanus. In Lyceo Carolino d. XI Junii MDCCCXIV.
Lund: Literis Berlingianis. (1814).

First edition. 4to. 18 pp. Mint copy with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

AN IMPORTANT dissertation on the elementary nature of hydrogen, presented by Hansson under the direction of Jöns Albin Engeström (1787–1846), professor of chemistry and physics at the University of Lund. Two tables of analytical data are given, illustrating the proportions of hydrogen that will react with various gases (e.g., ammonia, oxygen, nitric oxide, and nitrogen dioxide). Works cited include those of many famous chemists (e.g., Berthollet, Berzelius, Davy, Gay-Lussac, Lavoisier, Priestley, and Scheele). Very rare. Unknown to the usual bibliographers.

HANSSON, Johann Peter

Dissertatio Academica, de Simplicitate Hydrogenii, . . . praeside Jona Alb. Engeström, . . . pro summis in Philosophia honoribus consequendis Eruditorum examini modeste subjicit Johannes Petrus Hansson, Scanus. In Lyceo Carolino d. XI Junii MDCCCXIV.
Lund: Literis Berlingianis. (1814).

First edition. 4to. 16 pp. Fine copy, uncut with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated. Bound with: Ingelman, Benedict Samuel, *De ratione arsenici in corpore* (Lund, 1814).

AN IMPORTANT dissertation on hydrogen, presented by Hansson, a pupil of Jöns Albin Engeström (1787–1846), professor of chemistry and physics at the University of Lund. The elementary nature of hydrogen is proved, with reference to the many experiments of Berzelius, Davy, Priestley, Scheele, et al. The chemical composition of ammonia, water, and other compounds is discussed, and their analyses are given in two tables (pp. 10 and 16). Very rare. Unknown to the usual bibliographers.

HARDER, Christophe

Dissertatio Chymico-Medica de Nitro ejusque Natura & Usu in Medicina . . . praeside . . . Theodoro Zuingeri, . . . Junii XV. Ann. MDCCVIII. . . defendere . . . Christophorus Harderus, Scafusa-Helvetius.
Basel: Literis Jacobi Bertschii. (1708).

First edition. 4to. 13 leaves (unpaginated). Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

AN INTERESTING dissertation on the chemical and medical uses of niter (potassium nitrate) by the Swiss physician Harder (1686–1748), presented under the direction of the celebrated professor of botany and anatomy at Basel, Theodore Zwinger (1658–1724). In thirty short chapters Harder traces the history and physical and chemical properties of niter, with frequent use of chemical symbols and references to the works of Boyle, Becher, Stahl, Glauber, Lemery, et al. Nitric acid and other nitrates are also discussed. The praeses, Zwinger, published the well-known *Theatrum botanicum* (Basel, 1696) and other works. Very rare, this dissertation was reprinted by Zwinger in his *Fasciculus dissertationum medicarum* (1710). Not in the usual chemical and medical bibliographies. (Waring, 638)

HARE, Robert

Appendix.
(N.p., n.d.)

First edition. 8vo. 56 pp., 1 leaf. With 5 engraved plates (chemical and electrical apparatus). Occasional minor brown-ing; otherwise good copy. Bound with: Hare, Robert, *Minutes of the Course of Chemical Instruction* . . . (Philadelphia, 1824), and 2 other works by Hare.

COMPRISING REPRINTS of articles previously published in various journals by Hare, this tract was no doubt printed in Philadelphia about 1824. The title page is printed like a half title. Subjects include discussions of the nature of heat and electricity, descriptions of an electrical plate machine and single-leaf electrometer, a new galvanic apparatus and theory of galvanism, improved galvanic deflagrators, and Ampere's and Oersted's theories of electromagnetism. The detailed plates depict electrochemical apparatus, much of which was improved or invented by Hare. This tract was probably issued with Hare's *Lectures on electricity & galvanism*, as that work refers to some of the plates herein. (Smith, 216)

HARE, Robert

Appendix, to Lectures on Electricity, Galvanism, &c.
(caption title).
N.p. (Philadelphia), n.d. (ca. 1834).

First edition? 8vo. (in 4s). 23, (1) pp. With 4 finely engraved plates. Fine copy, bound with Hare's *Compendium* (Philadelphia, 1834).

BEGINNING WITH an essay on whether there are two electrical "fluids," according to Du Faye, or one, as believed by Franklin, the work describes an electrical plate machine, a single-leaf electrometer, and new modifications of galvanic apparatus (in support of Hare's theory of galvanism) and concludes with an account of improved forms of deflagrator (in a letter to Professor Silliman in 1824). The plates depict very clearly the electrostatic and electrochemical apparatus devised by Hare. Very rare. Not in Bolton, D.S.B., Edelstein, Ferchl, Smith, Wheeler Gift, etc.

HARE, Robert

A Brief Exposition of the Science of Mechanical Electricity, subsidiary to the Course of Chemical Instruction in the University of Pennsylvania, with Engravings and Descriptions of the Apparatus employed. By Robert Hare, M.D., Professor of Chemistry.
Philadelphia: J. G. Auner, . . . E. L. Carey & A. Hart . . . 1835.

First edition. 8vo. (in 4s). viii + 48 pp. With fine engraved plate of Hare's laboratory and lecture room in the medical department of the University of Pennsylvania. Fine copy, bound with Hare's *Compendium* (Philadelphia, 1834).

PRIMARILY ON electrostatic phenomena, but of some chemical interest. The large, clearly engraved woodcuts amply illustrate the text. Smith (p. 214) describes an expanded edition (Phila., 1840). Not in Bolton, Cushing, D.S.B., Edelstein, Morgan, et al. Very scarce. (Wheeler Gift, 895)

HARE, Robert

A Brief Exposition of the Science of Mechanical Electricity, or Electricity Proper; subsidiary to the Course of Chemical Instruction in the University of Pennsylvania: with Engravings and Descriptions of the Apparatus Employed. By Robert Hare, M.D., Professor of Chemistry.
Philadelphia: J. G. Auner. 1840.

Second edition. 8vo. (in 4s). viii + 56 pp. With 2 full-page woodcut plates and many large woodcuts in the text. Fine copy, bound with Hare's *Compendium* (Philadelphia, 1843).

AN EXPANDED version of the first edition of 1835, of chemical interest from the point of view of the construction of voltaic piles, early types of batteries, etc. Not in Bolton, Cushing, D.S.B., Edelstein, Morgan, Wheeler Gift, et al. (Smith, 214)

HARE, Robert

A Compendium of the Course of Chemical Instruction in the Medical Department of the University of Pennsylvania. By Robert Hare, M.D., Professor of Chemistry. For the use of his pupils.

Philadelphia: J. G. Auner, No. 333, Market Street, Carey, Lea & Carey, Corner of Fourth and Chestnut Streets. Clark & Raser Printers, 33 Carter's Alley. 1827.

First edition, first issue. 8vo. xix, (1), (2), 310 pp. + 48 pp. (appendix) + 40 pp. ("On Electricity") + 7, (1) pp. ("Fluo-silicic Acid Gas"). With 16 engraved plates and numerous detailed woodcuts in text. Occasional damp staining and characteristic light browning; otherwise good copy in original sheep, dark-green label.

THE MOST original American textbook to that date, this work replaced Hare's syllabus (*Minutes of the Course of Chemical Instruction*), which was growing in size every year. This is a copy of the very rare first issue with the title page dated 1827; the second issue is dated 1828. In the copy of the second issue described by Cole, the appendix has only forty-six pages (cf. forty-eight pp. in this copy). Additional sections in this copy are "On Electricity" (40 pp.) and a paper reprinted from the *Journal of the Franklin Institute* describing Hare's "Apparatus for evolving Silicon from Fluo-silicic Acid Gas," with two full-page plates. The first plate in this volume depicts the "Chemical Laboratory and Lecture Room in the Medical Department of the University of Pennsylvania." The five plates of apparatus at the end are identical to those in the appendix (ca. 1824). References are to the 1828 issue. (Cole, 591; D.S.B., VI, 115; Edelstein, 1089; Miles, 196)

HARE, Robert

A Compendium of the Course of Chemical Instruction in the Medical Department of the University of Pennsylvania. By Robert Hare, M.D., Professor of Chemistry. Printed for the use of his pupils. Second edition.

Philadelphia: J. G. Auner, . . . E. L. Carey & A. Hart . . . 1834.

Second edition. 8vo. (in 4s). xx + 362 pp. With 19 full-page woodcut plates and numerous large woodcut figures in the text. Fine copy in contemporary half sheep, marbled boards, dark-blue gilt-lettered label. Bound with 6 other works by Hare.

A GREATLY EXPANDED edition (first: Philadelphia, 1827). In his *Old Chemistries* (New York, 1927), Edgar Fahs Smith states: "The *Compendium of Chemistry* by Robert Hare was a remarkable text-book. It passed through four or five editions. It was most comprehensive, including much elementary physics. . . . The *Compendium* was decidedly original.

The illustrations with few exceptions were made from apparatus devised by Hare himself. In it one observes the beginnings of gas analysis, the forerunners of apparatus employed by the brilliant Hofmann in the determination of the constitution of water, etc., the use of the mercury cathode in the electrolysis of metallic salt solutions, the first electric furnace ever constructed, in which calcium metal, phosphorus and calcium carbide were isolated or made. . . . [Smith concluded] that the book was unique, just as unique as Robert Hare himself, and original as few other books on descriptive chemistry have ever been." Smith adds later that "Hare and Wolcott Gibbs were true chemical philosophers. . . . They were two of America's most brilliant chemists." Very scarce. Bolton, Morgan, and Smith mention other editions. No edition in Cushing, Duveen, Osler, Wellcome, et al. (Edelstein, 1090)

HARE, Robert

A Compendium of the Course of Chemical Instruction in the Medical Department of the University of Pennsylvania. By Robert Hare, M.D., Professor of Chemistry. Printed for the use of his pupils. Third edition; edited in the absence of the author, by Franklin Bache, M.D.

Philadelphia: J. G. Auner, . . . John C. Clark, Printer. 1836.

Third edition. 8vo. xiv, (2), 518, (2), 12 pp., 4 leaves. Engraved frontispiece ("Chemical Laboratory and Lecture Room in the . . . University of Pennsylvania"). Numerous large woodcuts, some full page (on separate leaves). Top of title page missing, removing letter *A*; otherwise a very good copy in contemporary gilt-ruled sheep, black morocco gilt-lettered label.

OWING TO his departure for Europe on short notice, Hare asked his friend Dr. Franklin Bache (1792–1864) to edit this third edition. Bache, a great-grandson of Benjamin Franklin and well known for his coauthorship of the first U.S. dispensatory, added many valuable notes to the text. This, the first edition to contain the frontispiece, is rare. Not in Bolton, D.S.B., Duveen, Edelstein, Morgan, Partridge, Wellcome, etc. (Miles, 16; Smith, 215)

HARE, Robert

A Compendium of the Course of Chemical Instruction in the Medical Department of the University of Pennsylvania. By Robert Hare, M.D., Professor of Chemistry. In two parts. Part I. Comprising the Chemistry of Heat and Light, and that of Inorganic Substances, usually called Inorganic Chemistry. Fourth edition. With amendments and additions.

Philadelphia: J. G. Auner. 1840.

Part II. Comprising the Chemistry of Organic Substances . . . Philadelphia: J. G. Auner, . . . and Carey & Hart . . . 1843.

Fourth edition. 2 vols., 8vo. (in 4s). I: xii + 370 pp., 1 leaf (blank). With 19 full-page woodcut plates and engraved frontispiece ("Chemical Laboratory and Lecture Room in the Medical Department of the University of Pennsylvania"). Numerous woodcuts in the text. II: vi + pp. 371–605, + 20 pp. Very good copy in contemporary sheep, dark-blue morocco lettering label, spine gilt-ruled. From the library of General Robert Patterson, commander of the Union army in the American Civil War (who fought at the battle of Bull Run), with his bold signature, in ink, on the title page of volume I. Bound with 3 other works by Hare.

THE DEFINITIVE edition of this famous textbook, incorporating an up-to-date account of the latest discoveries. Between pages 570–571 of this copy there is a small (approx. 6 cm. square) piece of yellow paper, taken from a Civil War period publication, with a woodcut of a general leading his troops in battle, with the American flag flying above. On page 571 there is a discussion of the use of gelatin as a food for men and animals. This piece of paper was presumably used as a bookmark and possibly placed there by General Patterson. (Bolton, 514; D.S.B., VI, 115; Edelstein, 1092; Morgan, 349; Smith, 215)

HARE, Robert

An Effort to Refute the Arguments advanced in favour of the Existence in the Amphide Salts, of Radicals, consisting, like Cyanogen, of more than one Element. By Robert Hare, M.D., Professor of Chemistry in the University of Pennsylvania. Philadelphia: John C. Clark. 1842.

First edition. 8vo. (in 4s). 28 pp. Fine copy, bound with Hare's *Compendium* (Philadelphia, 1843).

ACCORDING TO the *Oxford English Dictionary*, the term *amphide* is "an obsolete name for salts viewed by Berzelius as compounds of two oxides, sulphides, selenides, or tellurides, as distinct from the haloid salts." Hare here discusses the similarities between, for example, the pseudohalides (e.g., cyanides) and the halides, as well as sulphates, nitrates, aluminates, etc. He challenges, on page 11, "any chemist to assign any good reason wherefor the red iodide of mercury is any more a salt than the red oxide, or the protochloride is more saline than the sulphide." At that time the definition of a salt was still unclear, and Hare asks: "How is a salt to be distinguished from any other binary compound?" An interesting and significant work in the history of chemical theory. Scarce. Not in D.S.B., Duveen, Edelstein, Morgan, et al. (Bolton, 515; Ferchl, 214; Smith, 215)

HARE, Robert

Essays, &c. &c. (caption title).
N.p. (Philadelphia), n.d. (ca. 1834).

First edition? 8vo. (in 4s). 16 pp. Good copy, bound with Hare's *Compendium* (Philadelphia, 1834).

TWO ESSAYS: 1) "On the question whether heat can be ascribed to motion" (pp. 3–10); 2) "On the gales experienced in the Atlantic States of North America" (pp. 11–16). In the first essay Hare disputes Humphry Davy's hypothesis (as enunciated in his *Elements of Chemical Philosophy*, London, 1812) that heat is due to a "constant state of vibratory motion" of particles. Very rare. No bibliographic reference to this work has been found.

HARE, Robert

Lectures on Electricity and Galvanism. By Robert Hare, M.D., Professor of Chemistry in the University of Pennsylvania. Printed for the use of his pupils. (N.p., n.d.).

First edition. 8vo. 69, (1) pp. Browning and foxing of some leaves. Bound with: Hare, Robert, *Minutes of the Course of Chemical Instruction* . . . (Philadelphia, 1824), and 2 other works by Hare.

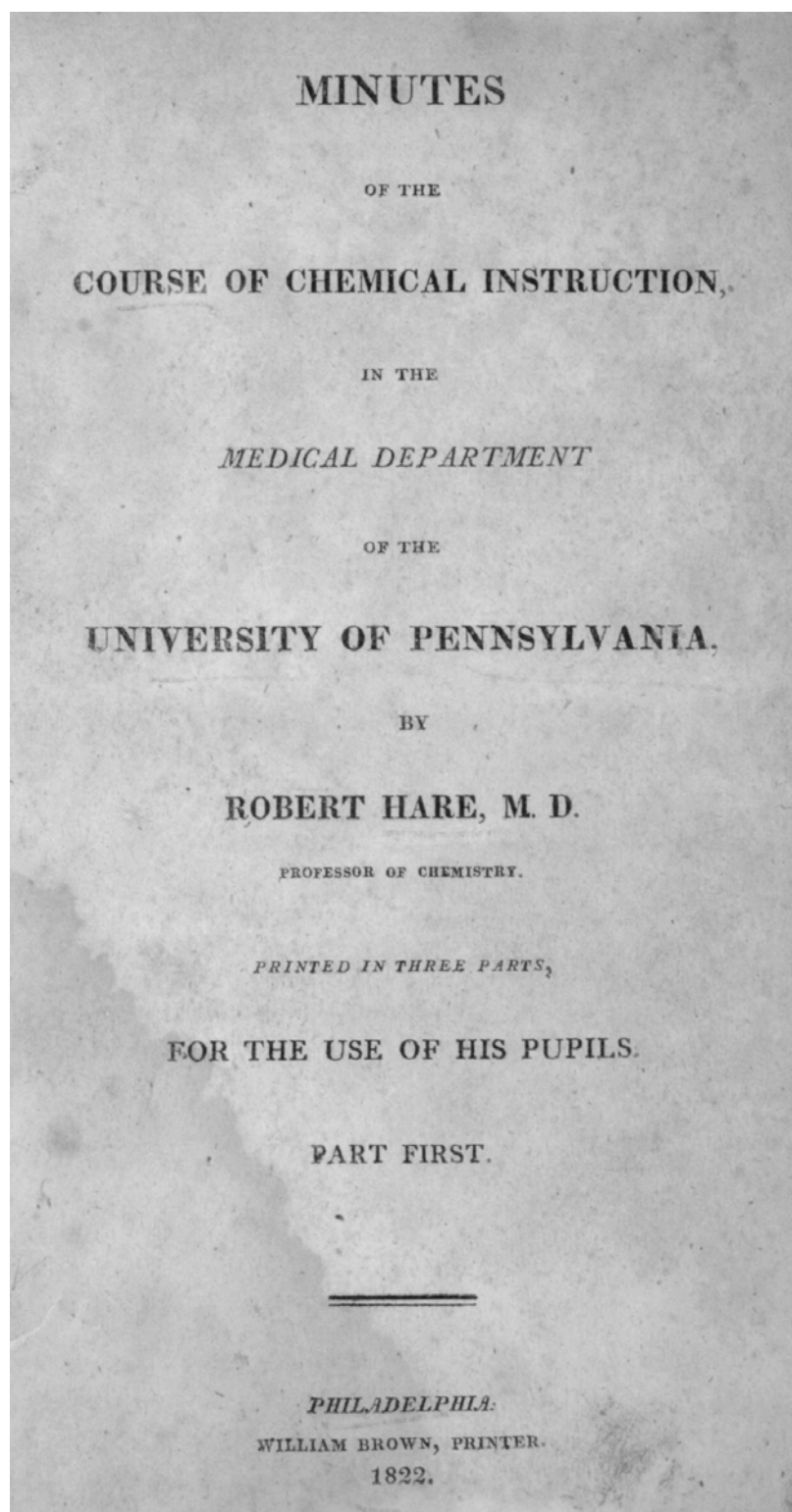
THIS WORK, which from internal evidence was probably printed in Philadelphia in 1824, deals with electricity (pp. 3–33), galvanism or voltaic electricity (pp. 35–52), and electromagnetism (pp. 53–69). Of chemical interest and importance are descriptions of experiments by Cruickshank, Davy, Franklin, Galvani, Oersted, Silliman, Volta, Wollaston, et al. The title page is printed like a half title. (Smith, 216)

HARE, Robert

Minutes of the Course of Chemical Instruction, in the Medical Department of the University of Pennsylvania, by Robert Hare, M.D., Professor of Chemistry. Printed in three parts, for the use of his pupils. Part first (second, third).
Philadelphia: William Brown, Printer. 1822, 1823.

First edition. 3 vols., 8vo., in 1. I (1822): 24 pp. II (1822): 51, (1) pp. III (1823): 42 pp., 1 leaf (blank). With errata slip for volume III bound before its title. Interleaved throughout, as issued, with occasional neat notes in pencil by an anonymous student. Characteristic minor embrowning of paper; otherwise very good copy in original calf, rebaked, maroon morocco label.

A PUPIL OF James Woodhouse at the University of Pennsylvania, Hare (1781–1858) joined the Chemical Society of Philadelphia (1801–1802), invented an oxy-hydrogen



Hare. Minutes of . . . Chemical Instruction. Philadelphia, 1822, 1823.

blowpipe (1818), and was professor of chemistry in the Medical School, University of Pennsylvania. Hare began teaching his course in 1818, and this first edition of his syllabus is divided into three parts, each with a separate title page. The first part covers attraction, crystallization, chemical affinity, definite proportions, equivalents, heat, and light. The second part covers pneumatic chemistry, oxygen, chlorine, iodine, nitrogen (including eudiometry), hydrogen, combustion, alkalies, alkaline earths, and acids. The third part covers metals (thirteen at length, plus an additional fifteen mentioned), vegetable and animal chemistry, electricity, and galvanism. Hare recommended Henry's *Chemistry* to his students, and his syllabus follows that textbook. Hare was an excellent teacher, his courses always being well attended, and several of his students became teachers of chemistry. (Cole, 593a; D.S.B., VI, 115; Duveen, *Supplement*, 68 [no. 422]; Miles, 196; Smith, 216)

HARE, Robert

Minutes of the Course of Chemical Instruction, in the Medical Department of the University of Pennsylvania, by Robert Hare, M.D., Professor of Chemistry. For the use of his pupils. Reprinted with corrections and additions.

Philadelphia: Robert Wright, Printer. 1824.

Second edition. 8vo. 107, (1) pp. Occasional foxing; otherwise good copy in original marbled boards, rebaced in gilt-ruled calf antique, maroon morocco label. Bound with: Hare, Robert, *Supplement to Minutes of the Course of Chemical Instruction* . . . (Philadelphia, 1824), and 2 other works by Hare.

THE CORRECTED and enlarged second edition of Hare's syllabus of his course of chemical lectures at the University of Pennsylvania. Omitted are the sections on vegetable and animal chemistry, electricity, and galvanism that were in the third part of the first edition of 1823. These topics were dealt with later in 1824 in separate and greatly enlarged supplements. In his *Old Chemistries* (1927, p. 76), E. F. Smith praised these *Minutes* as "an excellent syllabus designed for student use." The *Minutes* formed the basis for Hare's excellent textbook *A Compendium of a Course of Chemical Instruction* (Philadelphia, 1827). The third edition (Philadelphia: Clark & Raser, 1825, 96 pp.) is listed by Smith (p. 216). No bibliographical reference to the present second edition has been located.

HARE, Robert

Objections to the Nomenclature of the celebrated Berzelius, with Suggestions respecting a Substitute, in a Letter to Professor Silliman: first published in 1834, and republished in Silliman's Journal for 1835, Vol. XXVII. By Robert Hare, M.D., Professor of Chemistry in the University of Pennsylvania. Also, a Letter from the distinguished Swedish Chemist above-mentioned, in reply; with a concluding Examination of the Suggestions in that Letter, by the Author of the Objections: republished from the Journal of Pharmacy for April, 1837.

Philadelphia: John C. Clark. 1840.

Second edition. 8vo. (in 4s). 23, (1) pp. Fine copy, bound with Hare's *Compendium* (Philadelphia, 1834).

AN EXPANDED version of the work originally published under the title *Some Encomiums upon the excellent Treatise of Chemistry, by Berzelius* . . . (Philadelphia, 1834), in which Hare took Berzelius to task regarding his chemical nomenclature, especially vituperating the names assigned to various salts. This second edition contains a masterfully written reply from Berzelius, dated from Stockholm, 23 September 1834 (pp. 17–19). However, in his "Examination of the Suggestions in the preceding Letter of Berzelius" (pp. 19–23), Hare is unconvinced and recommends that the salts be classified into haloids and amphides. An interesting work in the history of the development of chemical nomenclature. Very scarce. Not in D.S.B., Edelstein, Ferchl, Morgan, Poggendorff, et al. (Bolton, 515; Smith, 217)

HARE, Robert

Of Organic Chemistry (caption title).

N.p. (Philadelphia), n.d. (ca. 1834).

First edition? 8vo. (in 4s). 90 pp., 1 leaf (blank). Bound with Hare's *Compendium* (Philadelphia, 1834). Fine copy.

AN INTRODUCTORY text on organic chemistry, which the author divides into vegetable and animal chemistry. Preparations and properties of several alcohols, acids, esters, etc., are described, with an early attempt at assigning chemical composition, with an interesting system of chemical symbolism (see, for example, pp. 37, 58–59). Rare. No bibliographic reference to this work has been found.

HARE, Robert

On the Origin and Progress of Galvanism, or Voltaic Electricity (caption title).

N.p. (Philadelphia), n.d. (ca. 1834).

First edition? 8vo. (in 4s). 24 pp. With full-page woodcut (Cruikshank's deflagrator of 700 pairs) and 3 woodcuts in

text. Fine copy, bound with Hare's *Compendium* (Philadelphia, 1834).

OF CHEMICAL interest, as it discusses the experiments of Nicholson and Carlisle on the electrolysis of water into its components, oxygen and hydrogen. The historical introduction describes the pioneers of voltaic electricity (e.g., Galvani, Volta, Davy, Faraday, De Luc, and Children). An attempt is made to give the theory of the zinc-copper couple and its production of an electrical current. Electromagnetism and the discovery of "Faradian Electrical Currents" are described (pp. 14–22). The description of an early galvanometer by Schweigger and Poggendorff (pp. 22–24), with a large woodcut illustration, is particularly interesting and important. Very rare. Not in D.S.B., Edelstein, Ferchl, Smith, Wheeler Gift, et al.

HARE, Robert

Some Encomiums upon the excellent Treatise of Chemistry, by Berzelius; also Objections to his Nomenclature, and Suggestions respecting a Substitute, deemed preferable, in a letter to Professor Silliman. By Robert Hare, M.D., Professor of Chemistry in the University of Pennsylvania (caption title). Philadelphia, June, 1834.

First edition. 8vo. (in 4s). 11, (1) pp. Fine copy, bound with Hare's *Compendium* (Philadelphia, 1834).

WRITTEN in the form of a letter to Benjamin Silliman, Hare states that "last year I had the honour to receive from the celebrated Berzelius, six volumes of his admirable treatise of Chemistry. . . . I am of opinion that . . . this treatise is the most interesting and instructive compilation of chemical knowledge which has ever issued from the press." He takes issue, however, with the nomenclature used by Berzelius and proposes a curious system of his own. As is well known, much of the nomenclature developed by Berzelius is still in current use. The edition used by Hare was presumably the French translation (*Traité de chimie*, Paris, 1829–33, 8 vols., 8vo.), as no English translation appeared. Very rare. No bibliographic reference to this work has been found.

HARE, Robert

Supplement to Minutes of the Course of Chemical Instruction, in the Medical Department of the University of Pennsylvania, by Robert Hare, M.D., Professor of Chemistry. Printed for the use of his pupils.

Philadelphia: Robert Wright, Printer. 1824.

First edition. 8vo. 62 pp., 1 leaf (blank). Occasional minor foxing; otherwise good copy. Bound with: Hare, Robert, *Minutes of the Course of Chemical Instruction* . . . (Philadelphia, 1824), and 2 other works by Hare.

DEALING ONLY with vegetable chemistry (p. 3–38) and animal chemistry (pp. 39–61), this *Supplement* includes (pp. 61–62) Hare's views on these subjects, which he concludes are "little more than a detail of facts. It is only from the splendid discoveries, which have been made in the Chemistry of Inorganic Matter, that we can hope for any theoretic elucidation of the properties of organic products." The text surveys what is now termed organic and biochemistry. An excellent account (pp. 21–34) is given "of the newly discovered vegetable alkalies" (i.e., alkaloids), including descriptions of strychnine, brucine, cytisine, cinchonine, atropine, hyoscyamine, aconitine, picrotoxine, nicotine, etc. (Smith, 216)

HARFVELIN, Matthias

Dissertatio Academica de Theoria Solutionis Chemicae . . . praeside Mag. Johanne Gadolin, . . . pro gradu publico examini Matthias Harfvelin Aboënsis in Audit. Maj. die XXX Maji MDCCXCV.

Åbo: Typis Frenckellianis. (1795).

First edition. 4to. 1 leaf, 12 pp. Very good copy, uncut with wide margins, in maroon quarter cloth antique, marbled boards, spine lettered in gilt: Gadolin. Dissertations 1784–1801. Bound with: Dissertations by Gadolin, Bremer, Maconius, and Montin.

AN IMPORTANT dissertation on the theory of chemical solution, presented by Harfvelin under the direction of Johan Gadolin at the University of Åbo, Finland. The dissolution of salts is explained as being due to their particles having an affinity for the solvent, usually water, thus foreshadowing the theory of electrolytic dissociation of ions enunciated by Arrhenius in 1887, almost a century later. Theories of the solution of salts by Paracelsus, Becher, Stahl, et al., are discussed. Rare. Not in Blake, Poggendorff, Wellcome, etc., or the usual chemical libraries. (Bolton, *First Supplement*, 177; Ferchl, 169; Partington, III, 235)

HARRINGTON, Robert

An Elucidation and Extension of the Harringtonian System of Chemistry, Explaining all the Phenomena; without One Single Anomaly . . .

London: Printed for Sherwood, Neely, and Jones, Paternoster-Row; By C. Thurnam, Carlisle. May, 1819.

First edition. 8vo. 2 leaves, 170 pp. Nineteenth-century stamp on title page ("Medical & Chirurgical Society") and old withdrawal stamp on verso of title ("Royal Society of Medicine"); otherwise very good copy, in early-twentieth-century textured blue cloth, spine gilt-lettered and dated.

THE POSTHUMOUSLY published final work by Harrington, being a vituperative attack on the chemistry of Lavoisier

and the researches of Berthollet, Berzelius, Dalton, Davy, Gay-Lussac, Murray, Priestley, Thomson, and many others. He quotes material from his earlier books and, despite the over three decades of astounding advances in chemical knowledge, persists in his defense of the phlogiston theory. He defiantly offers, in the present work, a premium of 100 pounds (then a very large sum) to anyone who can offer "a complete, fair and full refutation of his System." Extremely rare. Not in N.U.C. (Cole, 599)

HARRINGTON, Robert

A Letter addressed to Dr. Priestley, Messrs. Cavendish, Lavoisier, and Kirwan; endeavouring to prove, that their newly adopted opinions of Inflammable and Dephlogisticated Airs, forming Water; and the Acids being compounded of the Different Kinds of Air, are Fallacious. . . .

London: Printed for R. Faulder, J. Murray, and R. Cust. 1788.

First edition. 8vo. 4 leaves, 136 pp. Very good copy in speckled calf antique, gilt-lettered maroon morocco label. Presentation copy to an unknown recipient, signed in ink (by Harrington?): "From the Author" (title page, verso). Bound with: Harrington, Robert, *Some new experiments . . . upon heat* (London, 1798).

AN ATTEMPT to confute the opinions of Priestley, Cavendish, Lavoisier, and Kirwan "that inflammable air (hydrogen) and empyreal air (oxygen), form water; and that the acids are compounded of the different airs" (Introduction). Harrington concludes (pp. 134–135) that "phlogisticated air (nitrogen) is formed of the nitrous acid (nitrogen dioxide) and phlogiston or concentrated fire . . . [and] . . . artificial dephlogisticated air (oxygen) is formed of the same materials as dephlogisticated air (oxygen), only of a less concentration of fire." Extremely rare. Not in Blake, Wellcome, or the usual bibliographies. (Ferchl, 214; Gmelin, *Geschichte der Chemie*, 1799, III, 293; Watt, I, 468i)

HARRINGTON, Robert

A Philosophical and Experimental Enquiry into the First and general Principles of animal and vegetable Life: likewise into Atmospherical Air; with a Minute Investigation of the different secondary Principles attendant upon each: viz. Animal Heat, Sanguification, Animal Moisture, Age, Temperament, &c. &c. &c. With a Refutation of Dr. Priestley's Doctrine of Air: proving, by experiment, that the breathing of animals, putrefaction, &c. do not phlogisticate, but dephlogisticate the air; and that the office of that essential organ the lungs is not to discharge phlogiston to the air, but to receive it from the air. . . .

London: Printed for T. Cadell. 1781.

First edition. 8vo. 6 leaves, 402 pp., 1 leaf (advertisements of books sold by Cadell). Fine, crisp copy, in speckled calf antique by Bernard Middleton. From the library of Professor Franz Sondheimer, with bookplate on front pastedown endpaper.

HARRINGTON (fl. 1779–1815), of the Corporation of Surgeons, London, was a writer on chemistry and natural philosophy who also published works under the pseudonym "Richard Bewley, M.D." A physician and surgeon who practiced in Carlisle, he was one of the most vociferous adversaries of the antiphlogistic theory in England. In this, the first of several books he published attempting to discredit the experiments and theories of Priestley, Lavoisier, and others, he describes numerous experiments carried out in his own laboratory and explains his observations in traditional phlogistic terms. He assumed that fire is material and capable of chemical attraction, the strongest attractions being to acids, earths, and water, and the union of these constitutes oxygen (termed by him "empyrean air"). Many of his arguments make sense when viewed from the standpoint of the phlogiston theory. Some of Harrington's works are listed by Partington (III, 490) and Bolton (p. 516), but not the present title. All are very rare, and none were in the Duveen, Edelstein, or Young collections. (Blake, 198; Gmelin, *Geschichte der Chemie*, 1799, III, 808; Ferchl, 214; Smith, 218; Sondheimer, 684; Watt, I, 468h)

HARRINGTON, Robert

Some New Experiments, with Observations upon Heat, clearly shewing the Erroneous Principles of the French Theory. Also, a letter to Henry Cavendish, Esq. containing some pointed animadversions; with strictures upon some late chemical papers in the Philosophical Transactions, and other remarks. . . .

London: Published by T. Cadell, Jun. and W. Davies. 1798.

First edition. 8vo. xxx, 126 pp. Very good copy in speckled calf antique, gilt-lettered maroon morocco label. Bound with: Harrington, Robert, *A letter addressed to Dr. Priestley, Messrs. Cavendish, Lavoisier, and Kirwan . . .* (London, 1788).

ANOTHER VITRIOLIC attack on Lavoisier's antiphlogistic theory of combustion, as well as a long and abusive attack on Cavendish and his experiments on the formation of water and other compounds. The author, who writes in a forthright and animated style, liberally throws out abuse on both the theories he opposes and the chemists he seeks to deride. Not in the usual chemical reference works. Extremely rare. (Blake, 198; Watt, 468i; Wellcome, III, 212)

HARRINGTON, Robert

A Treatise on Air, containing New Experiments and Thoughts on Combustion; being a full investigation of Mr. Lavoisier's System; and proving, by some striking experiments, its erroneous principles; with strictures upon the chemical opinions of some eminent men. By Richard Bewley, M.D. London: Printed for T. Evans. 1791.

First edition. 8vo. vii, (1), 208 pp. Very good copy in modern marbled boards. From the library of Professor Ernst Cohen, with his unobtrusive stamp on title page.

THE PRESENT attack on Lavoisier's antiphlogistic system of chemistry, addressed to the Royal Society, was written by Harrington under the pseudonym "Richard Bewley, M.D." Ferchl, Partington, and Poggendorff erroneously ascribe this work to William Bewley, despite the forename "Richard" on the title page. William Bewley (1725–1783), a surgeon and apothecary of Great Massingham, Norfolk, was a friend of Priestley. This copy has a distinguished provenance, having once belonged to Ernst Julius Cohen (1869–1944), who succeeded van't Hoff at Utrecht. Cohen "worked on allotropes of tin and antimony, metastability, electrochemistry and piezochemistry, and wrote on the history of chemistry" (Partington, IV, 657). Of Dutch nationality, though of Jewish descent, Cohen at age seventy-five was murdered in the Nazi concentration camp at Auschwitz by the German butchers who massacred over six million other Jews. Very rare. (Bolton, 312; Duveen, *Supplement to A Bibliography of Lavoisier*, 1965, p. 138; Ferchl, 44; Gmelin, *Geschichte der Chemie*, 1799, III, 294; Partington, III, 252; Poggendorff, I, 183; Watt, I, 110j)

HARRIS, John

Lexicon Technicum: or, an Universal English Dictionary of Arts and Sciences Explaining not only The Terms of Art, but the Arts Themselves. By John Harris, M.A., F.R.S. London: Printed for Dan. Brown, Tim. Goodwin, John Walthoe, etc. 1704, 1710.

First edition. 2 vols., folio. Approx. 1,780 pp. Volume I with engraved frontispiece portrait of Harris (by Robert White). Title pages in red and black, 14 copperplates (8 folding), plate of "Characters Chymical" (I, sign. Q4v), numerous large and small woodcuts. Very good set in original paneled calf, both volumes rebaced (vol. I with original unlettered spine laid down, vol. II with maroon morocco label). Volume I is a presentation copy inscribed in ink on flyleaf by John Harris to Francis Scobell.

THE FIRST technical encyclopedia in any language and a landmark in the history of science. Harris (1666?–1719), F.R.S. (1696), was the earliest lexicographer to distinguish between a dictionary (word book) and an encyclopedia (sub-

ject book). A clergyman, mathematician, and (from 1709) secretary of the Royal Society, he compiled the first English encyclopedia arranged in alphabetical order covering all aspects of science, technology, medicine, and a variety of other subjects. His friend Isaac Newton is cited as an authority in many articles, as are the works of Robert Boyle, Nehemiah Grew, Edmund Halley, John Ray, Joseph Tournefort, and others. The *Lexicon Technicum* covers numerous subjects of chemical interest and is important for containing the first edition of the Latin text and English translation of Newton's only published writings on chemistry. Originally written in 1692, this brief paper entitled *De natura acidorum* appears on three leaves at the end of the introduction in volume II. Sets of first editions of both volumes are quite rare, as the first edition of volume II is most often accompanied by the 1710 reprint of volume I. (Collison, 99; D.S.B., VI, 129; Horblit, 25a; P.M.M., 171; Watt, I, 468s; Wellcome, III, 212)

HARRIS, John

Lexicon Technicum: Or, An Universal English Dictionary of Arts and Sciences: Explaining Not only the Terms of Art, but the Arts Themselves. In Two Volumes. By John Harris, D.D. and F.R.S. The Fifth Edition. Now digested into one Alphabet: With very considerable Additions and Improvements from later Discoveries in Mathematicks and Philosophy, &c. Illustrated with several Additional Copper-Plates, and many new Diagrams. . . .

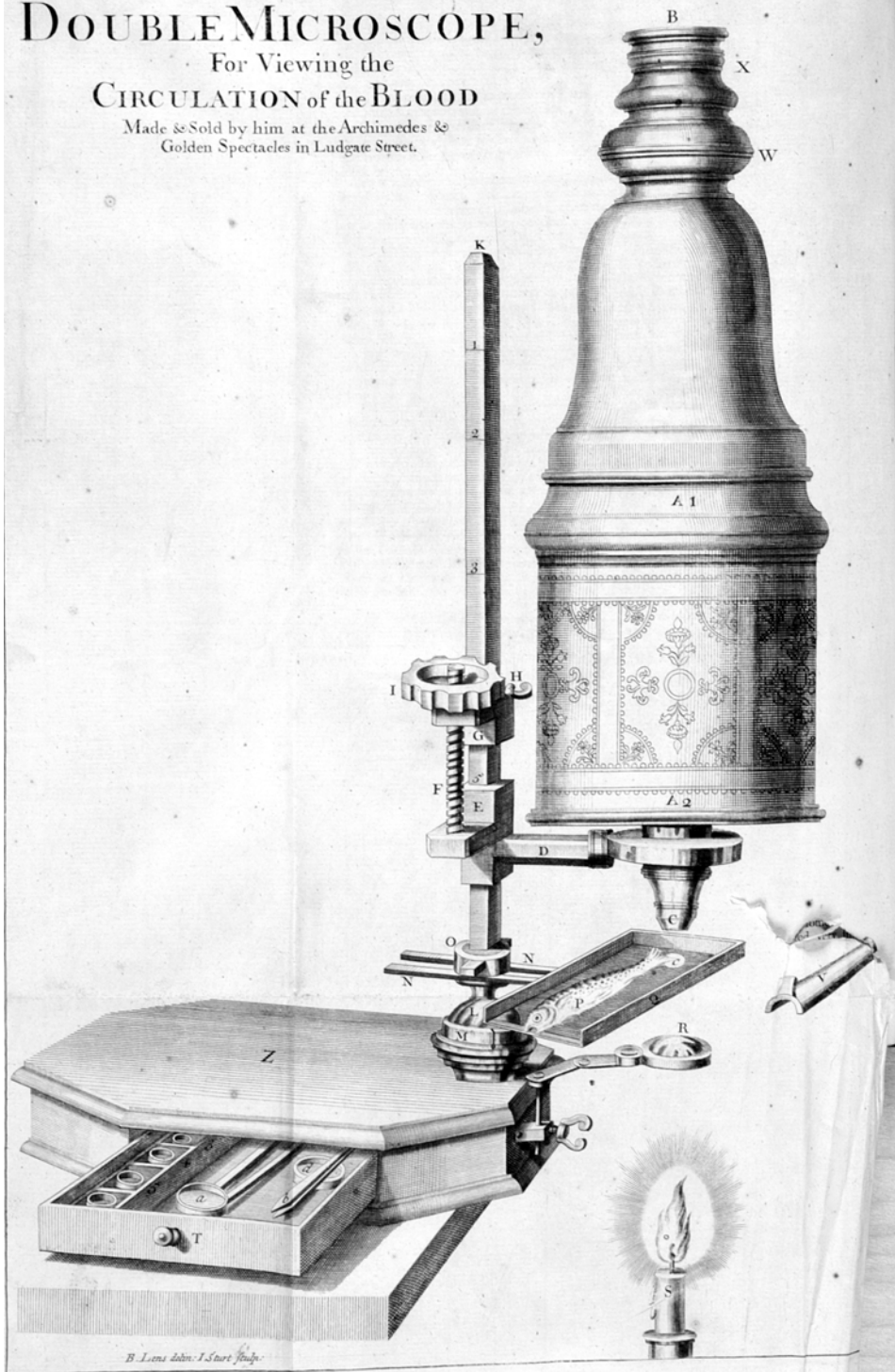
London: Printed for J. Walthoe, etc. 1736.

Fifth edition. 2 vols., folio. Unpaginated, approx. 1,700 pp. Engraved frontispiece portrait of Harris (by Robert White) in each volume. Title pages in red and black, 22 copperplates (11 folding), plate of "Characters Chymical" (I: sign. Qq2r), and hundreds of large and small woodcuts in text. Fine set in original calf, rebaced, maroon morocco labels, spines dated.

THE UPDATED, final, and best edition of this great work, to which Harris made many improvements before he died and added eight more plates. In previous editions the subjects in each volume were listed alphabetically. The present edition is the first in which the entries are merged into one alphabetical sequence. It is a truly remarkable production considering that it is the work of one man. Harris cites the sources of his information in the preface. There is much on chemistry and related subjects. "In Chemistry, the Knowledge of which is one great Help towards the understanding of Nature, I have been large and particular; explaining the Chymical Principles, Vessels, and Degrees of Fire; and have omitted no Process nor Operation of Use, that I could either meet with in Books, or get from my Friends" (preface). (Blake, 198; D.S.B., VI, 130; Harvey, 160; Thornton & Tully, 156; Wellcome, III, 212)

JOHN MARSHALL'S
New Invented
DOUBLE MICROSCOPE,
For Viewing the
CIRCULATION of the BLOOD
Made & Sold by him at the Archimedes &
Golden Spectacles in Ludgate Street.

Place this under your Microscope



B. Lens Linn. I. Start Study.

Harris, John. *Lexicon Technicum*. London, 1704, 1710.

HARRIS, John

A Supplement to Dr. Harris's Dictionary of Arts and Sciences; Explaining not only the Terms in Physics, Metaphysics, Ethics, Theology, History, Geography, Antiquity, Chronology, Grammar, Rhetoric, Logic, Poetry, Pharmacy, Medicine, Chymistry, Surgery, Phytology, War, Polity, Navigation, Architecture, Painting, Sculpture, Music, Commerce, Trade, Husbandry, Manage, Horticulture, &c. &c. &c. But also the Arts and Sciences themselves . . . By a Society of Gentlemen. London: Printed for the Authors; and Sold by M. Cooper, etc. 1744.

First (sole) edition. Folio. 1 leaf (title page), a–b2, A–10Z2, 11A–11S2 (i.e., over 1,000 pp.). Title page in red and black, 4 copperplates (2 folding), and woodcuts in text. Fine copy, in original blind-paneled reversed calf, richly gilt spine. Bookplate: Franz Sondheimer.

PREPARED BY a “Society of Gentlemen,” this massive *Supplement* to Harris’s *Lexicon Technicum* (1736) contains (in addition to the subjects in the earlier work) much augmented information on botany, medicine, pharmacy, etc. Subjects that Harris largely neglected are also covered: e.g., architecture, history, and philosophy. Updated information on chemistry is included, with important entries on calcination, the philosopher’s stone, etc. The compilers claim in the title that this work contains over eleven hundred articles omitted in *Chambers’s Cyclopaedia* (1728). Bibliographical references to original authors and their works are quoted in almost all entries. Writing before 1824, Watt states that from the *Lexicon Technicum* and this *Supplement* “originated all the other Dictionaries of Arts and Science and Cyclopaedias that have since appeared.” Scarce. (Collison, 99; Sondheimer, 687; Thornton & Tully, 156; Watt, I, 468s)

HARRIS, Walter

Pharmacologia Anti-Empirica: or a Rational Discourse of Remedies both Chymical and Galenical. Wherein Chymistry is impartially represented, the Goodness of Natural Remedies vindicated, and the most Celebrated Preparations of Art proved incapable of Curing Diseases without a Judicious and Methodical Administration. With some Remarks on the Causes and Cure of the Gout, the Universal Use of the Cortex, or Jesuits Powder, and the most Notorious Impostures of divers Empiricks and Mountebanks. . . .

London: Printed for Richard Chiswell at the Rose and Crown in St. Paul’s Church-Yard. 1683.

First edition. 8vo. 16 leaves, 332 pp., 6 leaves. Fine copy, in original unlettered calf. From the library of William Blakiston Bowes, Streatham Castle, Durham, with engraved armorial

bookplate, his signature (dated July 1683) on second flyleaf, and neat marginal annotations throughout.

PHYSICIAN TO Charles II and later to William III and Mary, Harris (1647–1732) was the author of *De morbis acutis infantum* (London, 1689; Garrison-Morton, 6321), the standard work on pediatrics for almost a century. Describing the present work Partington says: “In his very readable book on pharmacy Harris opposed belief in transmutation and the use of chemical remedies such as potable gold, and thought the virtues of mercury, antimony, vitriol, steel (except Dr. Willis’s ‘masterpiece’), Jesuits bark, and opium were exaggerated.” Harris traces the history of iatrochemistry and describes the preparation and properties of numerous compounds. He is remembered by chemical historians as the first to translate Lemery’s *Cours de chymie* into English (London, 1677 and 1686). (Ferchl, 215; Ferguson Coll., 301; Krivatsy, 5274; Munk, I, 424; Parkinson & Lumb, 1128; Partington, II, 311; Thorndike, VIII, 99; Watt, I, 469a; Wellcome, III, 212; Wing H885)

HARRISON, Edward

Dissertatio Medica Inauguralis, de Opio . . . Quam annuente summo numine . . . Gulielmi Robertson, . . . Academiae Edinburgenae Praefecti . . . pro Gradu Doctoris . . . eruditorum examini subjicit Edvardus Harrison, Anglus, . . . Ad diem 24 Junii, hora locoque solitis.

Edinburgh: Apud Balfour et Smellie. 1784.

First edition. 8vo. (in 4s). 3 leaves (title page, 2 dedication leaves, lacking first blank leaf), 47, (1) pp. Fine copy in half morocco antique, marbled boards, spine gilt-lettered and dated. Author’s presentation copy, inscribed in ink on verso of second dedication leaf: “Dr. De Butts from his sincere Friend E. Harrison.”

THE DOCTORAL dissertation of the distinguished physician Harrison (1766–1838), presented by him to Dr. Samuel De Butts, whose inaugural thesis of 1782 is listed by Wellcome (II, 439). In addition to its purely medical importance, this work is of interest as Harrison describes attempts to analyze chemically the various alkaloids in opium, referring to the investigations of Caspar Neumann. There are also numerous references to Boerhaave, Hoffmann, Whytt, Willis, et al. Harrison was active in promoting better medical care for patients. Watt (I, 469j) and Wellcome (III, 213–214) list several of his publications. The Wellcome copy of the present work lacks the title page. Not in the usual bibliographies. (Waring, 589; Wellcome, III, 213)

HARTMANN, Hieronymus Erhardus

Dissertatio Inauguralis Medica de Regulis Antimonii, eorumque praeparatione & usu, . . . sub praesidio Rudolphi Guilielmi Crausii, . . . pro licentia . . . doctoralia, . . . Hieronymus Erhardus Hartmann . . .
Jena: Krebs. 1703.

First edition. 4to. 16 pp. Very good copy, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

THE DOCTORAL dissertation of Hartmann (b. 1677), presented under the direction of Rudolph Wilhelm Crause (or Krause, 1642–1718), professor of chemistry, medicine, and philosophy at Jena. Dedicated to Georg Wolfgang Wedel, the author describes antimony, its ores and compounds, with their physical, chemical, and medicinal properties. Chemical symbols are used throughout. The history of antimony is discussed, with references to Basil Valentine, Suchten, Kerckring, Glauber, Zwelfer, et al. Ferchl, Poggendorff, and Manget list this work under Crause. Rare. Not in the usual chemical and medical bibliographies. (Ferchl, 108; Manget, *Bibliotheca Scriptorum Medicorum*, 1731, vol. I, part 2, p. 141; Poggendorff, I, 495; Waring, 236; Wellcome, III, 216)

HARTMANN, Johann

Officina Sanitatis sive Praxis Chymiatrica plane aurea. . . . Nunc verò indefesso labore & pari Chemiatricae experientia ab innumeris istis mendis & falsatione typographica revindicata, . . . atque compluribus arcanis, experimentis & secretioribus praeparationibus locupletata à Johanne Hiskia Cardilucio . . .

Nuremberg: Sumptibus Wolfgangi Mauriti Endteri, & Johannis Andreae Endteri Haeredum. 1677.

First Cardilucius edition. 4to. 8 leaves, 1231, (1) pp., 20 leaves. Engraved title page (by Cornelius N. Schurtz) depicting the 3 kingdoms of nature as ornately draped seated figures, with retorts and distillation furnaces below. Very fine copy, in contemporary speckled calf, rebaked with original richly gilt spine laid down, maroon label. Inscription on letterpress title page: "Ex libris Georgii Marii Med. Doctor 1678." From the Fugger library.

THE MONUMENTAL first edition of Hartmann's celebrated iatrochemical treatise to be edited by Cardilucius, here so greatly enlarged as to be almost a new work. Johann Hiskias Cardilucius (fl. 1663), physician to the Duke of Württemberg, was "a believer in Alchemy and Astrology, the doctrine of signatures, and the planetary influences in Medicine and Pharmacy; and he had a great esteem for Van Helmont" (Ferguson). He has corrected Hartmann's work and added

an immense amount of information on the preparation of inorganic and organic chemicals for use in medicine. With separate title at the end (pp. 1083–1231) is the extensive *Zodiacus Medicus, sive Libellus de concordantia rerum medicarum cum zodiaco coelesti*, by Cardilucius, printed here for the first time. Rare. Not in British Library. (D.S.B., VI, 146; Ferchl, 215; Ferguson, I, 366 [not in Young Coll.]; Ferguson Coll., 304; Krivatsy, 5289; Partington, II, 178; Wellcome, III, 216)

HARTMANN, Johann

Praxis Chymiatrica Johannis Hartmanni, . . . edita Johanne Michaelis, et Georgio Everharto Hartmanno, Authoris Filio.
Leipzig: Sumtibus Gotofredi Grossi Bibliopolae. 1633.

First edition. 4to. 8 leaves, 238 pp., 1 leaf (blank), 15 leaves (index). Title in red and black. Upper margins slightly stained and lower inner blank corner of title leaf repaired. Inscription in ink on fore-edge of title from "Joan. Stewart," dated 1791. Old stamp ("Med. Chir. Soc. Aberdeen") on a2r. Good copy in late-eighteenth-century half calf, marbled boards, rebaked, spine gilt-lettered and dated. From the library of Professor Maurice Stacey, organic chemist, auctioned by Sotheby, 14 May 1973, lot 134.

HARTMANN (1568–1631), professor of iatrochemistry in Marburg (1609), had the distinction of being the first professor of chemistry in Europe. "His *Praxis Chymiatrica* is a collection of recipes, including antimonial and mercurial preparations" (Partington). Published posthumously by his son, Georg Everhart Hartmann, this celebrated iatrochemical work gained immediate acceptance and passed through many editions until the end of the seventeenth century. An English translation, with additions, appeared in the *Royal and Practical Chemistry* (London, 1670) of Oswald Croll. Hartmann published several works on medicine and added notes to the *Tyrocinium Chymicum* of Beguin under the pseudonym of Christopher Glückradt. The first edition of the *Praxis*, as here, is rare. Not in Cushing, Duveen, Edelstein, Ferguson Coll., Neu, Osler, Reynolds, Rosenthal, Smith, Waller, Wellcome, etc. (Bolton, 517; D.S.B., VI, 146; Ferchl, 215; Ferguson, I, 366 [not in Young Coll.]; Partington, II, 178; Poggendorff, I, 1023; Thorndike, VIII, 117; Watt, I, 471h)

HARTMANN, Johann

Praxis Chymiatrica edita à Johanne Michaelis, . . . Huic postremae editioni adjecti sunt propter affinitatem materiae, tres Tractatus novi. I. De Oleis variis Chymicè distilatis. II. Basilica Antimonii Hameri Poppii Thallini. III. Marci Cornachini D.M. Methodus, qua omnes Humani Corporis affectiones ab humoribus copia, vel qualitate peccantibus, Chymicè & Galenicè curantur.
Geneva: Apud Johannem de la Planche. 1639.

Third (second Geneva) edition. 8vo. 631 pp., 16 leaves, 112 pp., 7 leaves. With 4 folding printed tables. Good copy in contemporary vellum.

THE GENEVA editions (first: Geneva: Sumptibus Petri Chouët, 1635) were the first to contain the three important additional tracts listed in the title. The author of the first tract was Johann Ernesti (i.e., Burggrav). Duveen erroneously states that the Geneva, 1647, edition is the first to contain the three tracts. A very rare edition, to which no bibliographical reference has been located.

HARTMANN, Johann

Praxis Chymiatrica edita à Johanne Michaelis, . . . & Georgio Everhardo Hartmanno Authoris Filio. Huic postremae editioni adjecti sunt propter affinitatem materiae, tres Tractatus novi. I. De Oleis variis Chymicè distilatis. II. Basilica Antimonii Hameri Poppii Thallini. III. Marci Cornachini D.M. Methodus, qua omnes Humani Corporis affectiones ab humoribus copia, vel qualitate peccantibus, Chymicè & Galenicè curantur.
Geneva: Sumptibus Petri Chouët. 1647.

Fourth (third Geneva) edition. 8vo. 631 pp., 16 leaves, 112 pp., 8 leaves (last blank). With 4 folding printed tables. Old stamp and signature on title (erased); otherwise a very good copy in contemporary overlapping vellum. From the Nordkirchen library, with bookplate.

A PAGINARY REPRINT of the Geneva, 1639, edition. Not in Bolton, Edelstein, Ferguson Coll., Morgan, Smith, Sondheimer, Waller, etc. (Duveen, 280; Ferchl, 215; Ferguson, I, 365–366; Neu, 1843; Partington, II, 178; Watt, I, 471h; Wellcome, III, 216)

HARTWICH, Henricus

Dissertatio Chemica de Sulphate Potassae, . . . praeside Mag. Joh. Gadolin, . . . pro gradu publicae censurae subijcit Henricus Hartwich, Ostrogothia-Svecus. In Auditorio Majori die XIX Maji MDCCCII. . .
Åbo: Typis Frenckellianis. (1802).

First edition. 4to. 1 leaf, 13, (1) pp. Mint copy, uncut with wide margins, in maroon quarter cloth antique, marbled boards, spine labeled: Gadolin. 11 Dissertations. 1792–1805.

A DISSERTATION on the history, preparation, properties, and reactions of potassium sulphate, including the formation of alums. Carried out by Hartwich under the direction of Gadolin, professor of chemistry at Åbo, this study presents quantitative analyses of potassium sulphate (as reported by Kirwan, Richter, and Wenzel). Rare. (Partington, III, 236; Waring, 639)

HARVEY, William

Exercitatio Anatomica de Motu Cordis et Sanguinis in Animalibus . . .
Frankfurt: Sumptibus Guilielmi Fitzeri. 1628.

Facsimile of first edition. 4to. 72 pp., 1 leaf. Large engraving on title page and 2 engraved plates. Mint copy printed on Japon vellum by R. Lier & Co., Florence, in original boards with printed paper labels (spine faded). One of only 250 copies, printed for the Royal College of Physicians of London, to commemorate the third centenary of the first edition.

THE ORIGINAL edition is extremely rare, and of the approximately sixty known copies all but a few are in institutional libraries. The discovery of the circulation of the blood, which Harvey (1578–1657) published in this, his first, work was “one of the major triumphs of early modern science, and thus helped to generate the enthusiasm for science that came to dominate European intellectual life during the second half of the seventeenth century” (D.S.B.). “The most important book in the history of medicine” (Garrison-Morton, 759). An English translation appeared as *The Anatomical Exercises of Dr. William Harvey* (London, 1653). Partington (vol. II) frequently refers to Harvey and the influence this work had on contemporary medical and scientific thought. The best facsimile of the first edition.

HASSELBOHM, Gabriel

De Pulvere Pyrio Dissertatio . . . Sub praesidio . . . Joannis Bilberg, pro Gradu exhibet Gabriel M. Hasselbohm. In Auditorio Gustav. Maj. ad diem Decemb. An. 1679.
Stockholm: Excudit Henricus Keyser, Reg. Typogr. (1679).

First edition. 4to. 16 leaves (unpaginated). With numerous neat marginal corrections by the author on every page of text. Very good, crisp copy, in brown quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A DISSERTATION on the manufacture and explosive properties of gunpowder, presented by Hasselbohm under the direction of the professor of mathematics at Stockholm, Johann Bilberg (1646 or 1650–1717). Berthold Schwartz

is claimed to be the discoverer of gunpowder in Germany (sign. A2v). Typical formulations of gunpowder from niter, sulphur, and charcoal, for various applications, are given (sign. C1r). Poggendorff (I, 190) briefly mentions Bilberg but not this title. Extremely rare. Not located in the usual bibliographies.

HATCHETT, Charles

An Analysis of the Carinthian Molybdate of Lead; with Experiments on the Molybdic Acid. To which are added some experiments and observations on the decomposition of the sulphate of ammoniac. By Charles Hatchett, Esq. Communicated by Sir Joseph Banks, Bart. K.B., P.R.S. From the Philosophical Transactions. (1796).

First separate edition. 4to. 1 leaf, 55, (1) pp. Fine copy with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated. Presentation copy inscribed in ink by Hatchett on title: "from the Author," and corrections on pages 32 and 39 in his hand.

AUTHOR'S SEPARATE printing of his analysis of a lead molybdate mineral from Carinthia. Most of Hatchett's research was done during the decade 1796–1806, and this is his first paper in the *Philosophical Transactions* (1796, vol. 86, 285–339). He states that Scheele in 1778 had proved "that the mineral called Molybdaena was composed of sulphur, and a peculiar metallic substance, which, like arsenic and tungsten, was liable by super-oxygenation to be converted into a metallic acid, which in its properties differed from any other that had been previously discovered." For several years this lead mineral from Carinthia was believed to be lead tungstate, but M. H. Klaproth proved it to be lead molybdate. Hatchett here describes a complete analysis of it, with studies on the properties and reactions of molybdic acid. He also describes experiments on ammonium sulphate and its reactions, a subject hitherto little investigated. (Bolton, 519; Ferchl, 217; Partington, III, 705; Poggendorff, I, 1031; Watt, I, 473q; Weeks, *Discovery of the Elements* [1960], 369, 387; Wellcome, III, 222)

HATCHETT, Charles

Chemical Experiments on Zoophytes; with some Observations on the Component Parts of Membrane. By Charles Hatchett, Esq., F.R.S. From the Philosophical Transactions. (London:) Printed by W. Bulmer and Co. 1800.

First separate edition. 4to. 1 leaf, 76 pp. Fine copy with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated. Presentation copy, inscribed in ink by Hatchett on title: "The Royal Institution, from the Author." With old stamp of the Royal Institution on title page.

AUTHOR'S SEPARATE printing of his researches on zoophytes (e.g., corals and sponges). "In his 'Chemical Experiments on Zoophytes . . .' he described the organic residue obtained . . . from shells, and distinguished it as a 'cartilaginous body,' different from gelatin, glue, or mucilage" (Partington). An important early work on organic and biochemistry, which was read to the Royal Society, 12 June 1800. Hatchett (1765–1847), an excellent chemist (F.R.S., 1797), investigated many naturally occurring materials. In 1801 he discovered the element niobium in columbite, a mineral from New London, Connecticut, the original specimen of which is preserved in the British Museum. Presentation copies of the author's separates are extremely rare, as it was customary to print only twenty to twenty-five copies. Not in the usual early chemical libraries. (Ferchl, 217; Partington, III, 705; Poggendorff, I, 1031; Watt, I, 473r; Wellcome, III, 223)

HATCHETT, Charles

On an Artificial Substance which possesses the Principal Characteristic Properties of Tannin. By Charles Hatchett, Esq., F.R.S. From the Philosophical Transactions. London: Printed by W. Bulmer and Co. 1805.

First separate editions. 3 vols., 4to., in 1. I (1805): 16 pp. II (1805): 1 leaf, 31, (1) pp. III (1806): 1 leaf, 38 pp. Very good copies with wide margins, in early-twentieth-century blue cloth. Presentation inscription ("from the Author") on original wrapper. From the library of the noted expert on tannin chemistry Maximilian Nierenstein, with his bookplate and signature dated 1922 on first flyleaf. Bound with: Hatchett, Charles, *Additional Experiments and Remarks on an Artificial Substance which possesses the Principal Characteristic Properties of Tannin . . .* (London, 1805); and Hatchett, Charles, *A Third Series of Experiments on an Artificial Substance, which possesses the Principal Characteristic Properties of Tannin . . .* (London, 1806).

AUTHOR'S SEPARATE printings of his researches on artificial tannin-like substances. He briefly reviews the history of making leather and shows the importance of tannin, which occurs in catechu, oak galls, sumac, etc. Processes are described in which "a substance possessing the chief characteristic properties of tannin may be formed by very simple means, not only from vegetable, but even from mineral and animal substances." As the result of many experiments "Hatchett obtained 'an artificial substance possessing the properties of tannin' by boiling charcoal powder with dilute nitric acid and evaporating the solution" (Partington). These three papers "contain important observations" (D.S.B.). The former owner, Nierenstein, published *Incunabula of Tannin Chemistry* (London, 1932). (D.S.B., VI, 166; Partington, III, 705; Poggendorff, I, 1013; Watt, I, 473s)

HAUDICQUER DE BLANCOURT, François (or Jean)

De l'Art de la Verrerie. Où l'on apprend à faire le Verre, le Cristal, & l'Émail. La manière de faire les Perles, les Pierres précieuses, la Porcelaine, & les Miroirs. La Méthode de peindre sur le Verre & en Émail. De tirer les couleurs des Métaux, Minéraux, Herbes & Fleurs. Ouvrage rempli de plusieurs Secrets & Curiositez, inconnus jusqu'à présent. . . . Paris: Chez Jean Jombert, près les Augustins à l'Image Nôtre-Dame. 1697.

First edition. 12mo. 8 leaves, 602 pp., 3 leaves. With 8 copperplates (2 folding) of furnaces and glassmaking equipment. Ornamental woodcut device on title, woodcut capitals and headpieces. Very good copy, in original speckled calf, rebacked, with original gilt spine laid on.

AN INFLUENTIAL work on glassmaking in twelve books, which, according to Ferguson, is "little more than a translation of Neri's *L'Arte Vetraria*" (which was in seven books). In fact, while following the Neri text, with the additions of Merrett, the book brings up to date the technology of glassmaking by including a great deal of completely new material and information on French practices, which were by then much more important than those used in Italy. The plates illustrate the processes employed in France at the end of the seventeenth century. Haudicquer de Blancourt (ca. 1650–ca. 1704) pays tribute to Colbert (1619–1683), the great minister of Louis XIV, who was instrumental in the revival of French arts and manufactures. Especially important are the sections on the making of mirror glass, enamel, ruby glass, and painting on glass, all of them arts in which French craftsmen reached the highest perfection. The author "cultivated chemistry and . . . possessed some alchemical secrets" (Ferguson). (D.S.B., X, 23; Duncan, 5804; Duveen, 281; Edelstein, 3782; Ferchl, 217; Ferguson, I, 367; Ferguson, *Books of Secrets*, I, pt. 3, p. 41; Goldsmith, H154, Honeyman, 347; Neu, 1861; Partington, II, 369; Singer, *History of Technology*, III, 678; Smith, 222; Sotheran, Cat. 832 [1932], 6001 ["Rare"]; Wellcome, III, 223)

HAUDICQUER DE BLANCOURT, François (or Jean)

L'Art de la Verrerie . . . Nouvelle édition augmentée d'un Traité des Pierres Précieuses. . . .

Paris: Chez Claude Jombert, au coin de la rue des Mathurins à l'Image Nôtre-Dame. 1718.

Second (final) edition. 2 vols., 12mo. I: 6 leaves, 328 pp. II: 1 leaf, 255, (1) pp. + (3), 4–61, (1) pp. + 12 pp. (advertisements). With 8 folding copperplates of furnaces and glassmaking apparatus. Different woodcut ornament on each title page.

Woodcut headpieces (each different). Fine copy in original mottled calf, gilt. From the library of Antoine Joseph Pernety (1716–1801), scholar and devoted occultist, with his neat signature on each title page.

A CAREFUL REPRINT of the first edition of 1697. The thirty-six-page section on precious stones at the end of the second volume first appears in this edition. Comparison of the copperplates shows that they are identical in the 1697 and 1718 editions (except for the numbering of the two plates in vol. II). An interesting association copy, having once belonged to Pernety, on whom see Ferguson (II, 182). The second edition appears to be rarer than the first, and Ferguson (*Books of Secrets*) does not mention it. (Duncan, 5804; Ferguson, I, 367 [not in Young Coll.]; Ferguson Coll., 305; Partington, II, 369; Sotheran, Cat. 832 [1932], 6003; Wellcome, III, 223)

HAUDICQUER DE BLANCOURT, Françoise (or Jean)

The Art of Glass. Shewing How to make all Sorts of Glass, Crystal and Enamel. Likewise the Making of Pearls, Precious Stones, China and Looking-Glasses. To which is added, The Method of Painting on Glass and Enameling. Also how to Extract the Colours from Minerals, Metals, Herbs and Flowers. A Work containing many Secrets and Curiosities never before Discovered. Illustrated with Proper Sculptures. Written Originally in French, By Mr. H. Blancourt, And now first Translated into English. With an Appendix, containing Exact Instructions for making Glass-Eyes of all Colours.

London: Printed for Dan. Brown at the Black Swan without Temple-Bar, Tho. Bennet at the Half-Moon, D. Midwinter and Tho. Leigh at the Rose and Crown, and R. Wilkin at the King's-Head in St. Paul's Church-Yard. 1699.

First English edition. 8vo. 8 leaves, 355, (1) pp., 6 leaves. With 9 copperplates (2 folding) of furnaces and glassmaking apparatus. Few minor marginal stains; otherwise very good copy, in original paneled calf, rebacked, with original spine laid down. Bookplate: Chester H. Thordarson Collection (University of Wisconsin). Written in pencil on front pastedown endpaper is "Exchanged w. Duveen copy." The Duveen copy lacks the half title, here present.

THE ENGLISH translation of *De l'Art de la Verrerie* (Paris, 1697), to which the anonymous translator has added a valuable appendix (pp. 353–355) giving precise details for making glass eyes not in the French edition. The section on mirrors describes an alloy of copper, tin, and arsenic, which is often attributed to Newton (p. 347). Not in D.S.B., Ferchl, Wellcome, etc. (Duncan, 5804; Duveen, 281; Edelstein, 3783; Ferguson, I, 367 [not in Young Coll.]; Ferguson Coll.,

305; Ferguson, *Books of Secrets*, I, pt. 1, p. 18; Honeyman, 348; Neu, 1862; Partington, II, 369; Sotheran, Cat. 800 [1926], 13107 ["Rare"]; Watt, I, 120w; Wing, H1150)

HAUKSBEE, Francis

Physico-Mechanical Experiments on various Subjects. Containing an account of several surprizing phenomena touching light and electricity, producible on the attrition of bodies. With many other remarkable appearances not before observ'd. Together with the explanations of all the machines . . . and other apparatus us'd in making the experiments. . . .
London: Printed by R. Brugis, for the Author; and sold only at his house in Wine-Office-Court in Fleet-Street. 1709.

First edition. 4to. 7 leaves, 194 pp. With 8 copperplates (7 folding), and woodcut on page 170. Very good copy, in original paneled calf, rebacked, maroon morocco label, spine dated.

A KEY BOOK in the history of electricity and the electrical properties of matter. Very important as the first English work on its subject, it contains a description of the first electrical machine with a glass cylinder (invented by Hauksbee), as well as illustrations of the improved air pump that he invented. Hauksbee (ca. 1666–1713), curator of experiments and instrument maker to the Royal Society, was elected F.R.S. in 1705. A self-taught experimental genius, he derived his theoretical principles from Newton, who took an active interest in his experiments and owned a copy of this work (see Harrison, no. 746). The book contains many firsts, including the relationship between light and electricity and the discovery of electroluminescence. Hauksbee's passage of electricity through rarefied air formed the starting point of modern researches, leading to the discovery of X-rays and mankind's investigation into the nature of the structure of atoms. A very scarce book, published in small number and sold from the author's house. (Dibner, *Early Electrical Machines*, 1957, pp. 16–19; D.S.B., VI, 169, 174–175; Duveen, 281–282; Ekelöf, 14; Ferchl, 219; Gartrell, 245; Harvey, 150, 276; Honeyman, 1616; Mottelay, 150; Partington, III, 110; Poggendorff, I, 1041; Ronalds, 234; Thornton & Tully, 150; Waller, 11361; Watt, I, 474g; Wellcome, III, 224; Wheeler Gift, 232)

HAUKSBEE, Francis

Physico-Mechanical Experiments on various Subjects. Containing an account of several surprizing phaenomena touching light and electricity, producible on the attrition of bodies. With many other remarkable appearances, not before observ'd. Together with the explanations of all the machines . . . and other apparatus us'd in making the experiments. To which is added, a supplement, containing several new experiments not in the former edition. . . .

London: Printed for J. Senex, . . . and W. Taylor. 1719.

Second edition. 8vo. 8 leaves, 336 pp. With 9 copperplates (8 folding) and 5 text woodcuts. Fine, crisp copy, in original paneled calf, rebacked, dark-blue morocco label. From the library of Professor E. N. da C. Andrade, F.R.S., with bookplate.

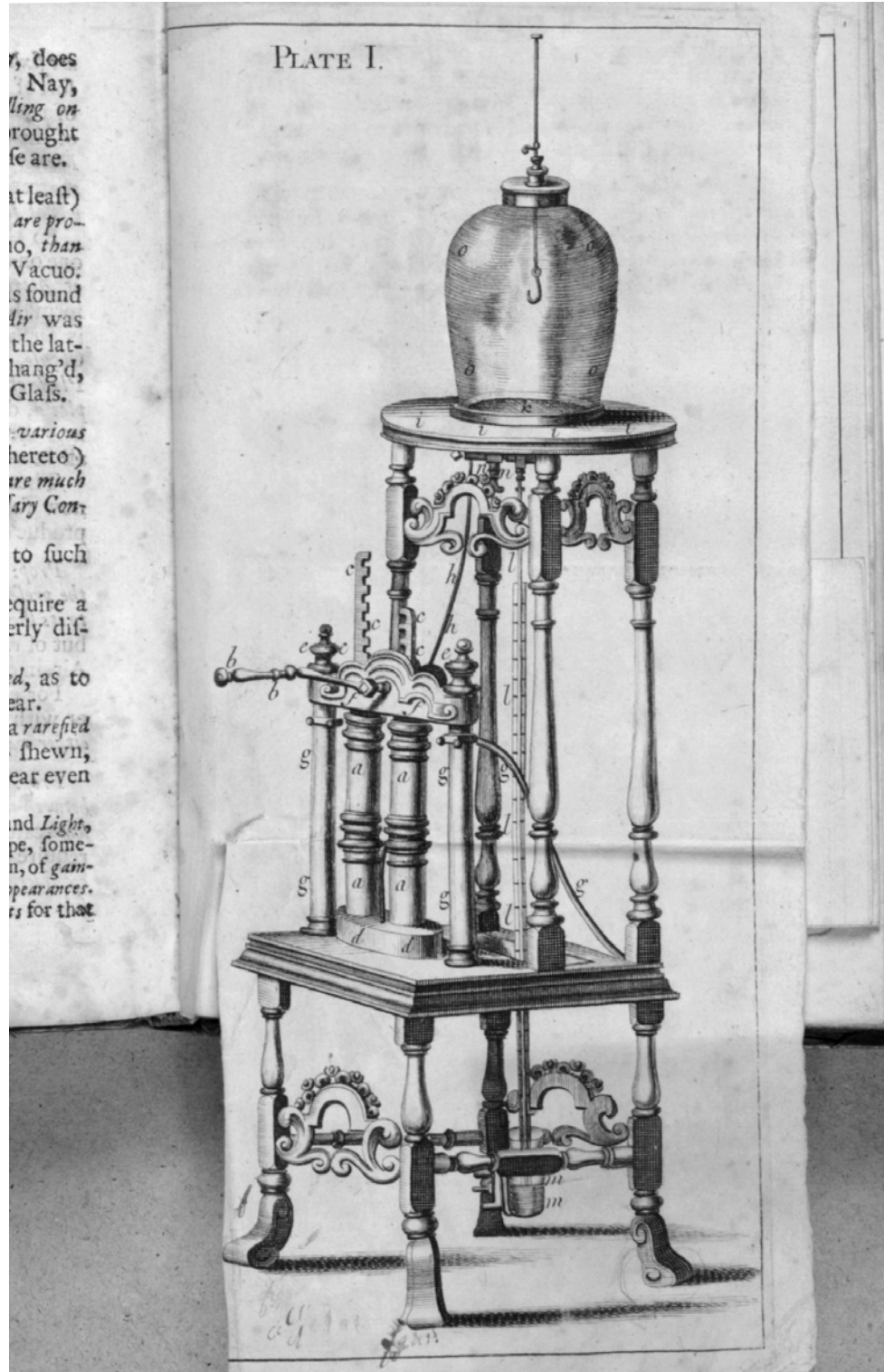
THE POSTHUMOUS second (first 8vo.) edition, greatly enlarged by a supplement (pp. 251–336) that describes twenty-four additional experiments, including the remarkably prophetic experiment VIII stating "that an Object may become visible through such an Opaque Body as Pitch in the Dark, while it is under the Circumstances of Attrition and a Vacuum." This edition is important as it is the first to foreshadow the discovery of X-rays. The supplement contains descriptions of the effects of static electricity on various chemicals, as well as physical phenomena. Partington discusses Hauksbee's important work. The supplement is illustrated by four woodcuts and a large folding plate (no. VIII). Not in Blake, Bolton, Ferchl, Poggendorff, Waller, etc. (D.S.B., VI, 169, 175; Duveen, 282; Ekelöf, 14; Harvey, 276; Honeyman, 1617; Partington, III, 110; Ronalds, 234; Sotheran, Cat. 725 [1912], 9024 ["Rare"]; Thornton & Tully, 150; Watt, I, 474g; Wellcome, III, 224; Wheeler Gift, 232a)

HAUKSBEE, Francis

Esperienze Fisico-Meccaniche supra vari Soggetti. Contendenti un racconto di diversi stupendi fenomeni intorno la luce e l'elettricità producibile dallo strofinamento de' corpi, con molte altre notabili apparenze non mai prima osservate. Colle spiegazioni di tutte le macchine. . . . Tradotta dall'idioma Inglese.

Florence: Nella Stamperia di sua Altezza Reale. Per Jacopo Guiducci e Santi Franchi. 1716.

First Italian edition. 4to. 8 leaves, 162 pp., 1 leaf (errata). With 8 copperplates (6 folding). Fine woodcut initials, head- and tailpieces. Lower edge of front cover slightly gnawed; otherwise an exceptionally fine, crisp copy, printed on heavy paper with wide margins, in original unlettered vellum.



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Hauksbee. Physico-Mechanical Experiments. London, 1709.

THE FIRST edition in Italian of the *Physico-mechanical experiments* (London, 1709), translated by Thomas Dereham (Watt), with the *Approvazioni* dated 22 and 29 November 1715. It is a beautiful example of early-eighteenth-century Italian fine printing. The *Esperienze* was the version “chiefly read in France, and used by the pioneer electrician C. F. de Cisternay Dufay. Translated into Italian, Dutch, and French, Hauksbee’s book was widely read in the eighteenth century” (D.S.B.). Curiously, Newton owned a copy of this Italian edition (Harrison, no. 747). Very rare. Not in Harvey, Mottelay, Poggendorff, Wellcome, Wheeler Gift, or the usual chemical bibliographies. (D.S.B., VI, 169, 175; Ekelöf, I, 14; Gartrell, 243; Ronalds, 234; Sotheran, Cat. 725 [1912], 9027 [“Rare”]; Watt, I, 474g)

HAUKSBEE, Francis

Experiences physico-mechaniques sur différens sujets, et principalement sur la lumiere et l’électricité, produites par le frottement des corps. Traduites de l’Anglois . . . par feu M. de Brémond, de l’Académie Royale des Sciences. Revûes et mises au jour, avec un discours préliminaire, des remarques et des notes, par M. Desmarest. . .

Paris: Chez la Veuve Cavelier, et Fils. 1754.

First French edition. 2 vols., 12mo. I: clxxvi, 490 pp., 1 leaf (errata). II: 1 leaf, 596 pp. With 7 copperplates (6 folding), by I. D. Gobin. (N.B. Two plates, each completely different, are numbered 4). From the library of the famous French astronomer Joseph Jérôme le Français de Lalande (1732–1807), with inscription in an eighteenth-century hand on flyleaf facing title page of volume I: “Acheté chez Mr Lalande.” Bookplate of Professor E. N. da C. Andrade on front pastedown endpaper.

THE FRENCH edition of this classic work, based on the enlarged second English edition (London, 1719), translated by Brémond and containing an éloge of Brémond by Mairan. The editor, Nicolas Desmarest (1725–1815), has “edited and . . . added voluminous notes and remarks” (D.S.B.). In his valuable *Discours historique . . . sur . . . M. Hauksbee*, Desmarest emphasizes the mutual influence of Hauksbee and Newton. Desmarest, a geologist and technologist, contributed “more than half of the work” by his additions (Sotheran). Not in the usual chemical bibliographies. (Cushing, H185; D.S.B., IV, 70, VI, 169, 175; Ekelöf, I, 14; Ronalds, 234; Waller, 11360; Wellcome, III, 224; Wheeler Gift, 232b)

HAUPTMANN, August

Neues Chymisches Kunst Project und sehr wichtiges Bergck-Bedencken, uber die allergrösten Hauptmängel des Bergckwercks, und dero Arbeit schweresten Verhinderungen, darüber oftmals die allerköstlichsten anbrüche, so sichtiglich vorhanden, gantz erliegen müssen, wie nehmlich solchen zu remediren seyn möchte, mit gewissen sonderbahren Rationibus, ex doctrina vacui & vinculo Naturae indissolubili bestercket. Benebenst einen vollkommenen Historischen Bergck-Berichte, wie wunderbarlich die beyden hohen Metallen, insonderheit aber das Silber, in der Erden gediegen wächset, und gebahren werde, so wohl denen einfaltigen Bergkleuten zu einer besseren Verständnis, als auch denen viel Irrenden Alchymisten, zu einer genaueren Erkenntnis, in was unge-reimten Materien, und gantz unnatürlichen wegen sie meistentheils ihre Nach-Arbeiten anzustellen pflegen, aufgesetzt von Augusto Hauptmannen, Med. Doct.
Leipzig: In Verlegung Andreen Löfflers. Gedruckt bey Johann Bauern. 1658.

First (only) edition. 8vo. 6 leaves, 98 pp. Folding engraved frontispiece (And: Frölich fec.) of mining scene, and folding engraved plate of Guericke pump and chemical apparatus. Fine, crisp copy, in calf antique, green morocco label, gilt.

A VERY RARE book on mining and metallurgical chemistry, by the Dresden physician Hauptmann (1607–1674), who studied parasites and discovered the itch acarus. This work is important because it is only the second to illustrate and fully describe the air pump invented by Guericke, demonstrated at Magdeburg in 1657, and first reported by Gaspar Schott in his *Mechanica hydraulico-pneumatica* the same year. Hauptmann’s account quotes Schott in part, but his illustration is only a little reminiscent of Schott’s. The possible use of Guericke’s air pump as a means of controlling mining hazards (e.g., flooding and ventilation) is discussed. Most of the book deals with the extraction and refining of metals, with a section on “enlightening foolish alchemists.” Not in the usual bibliographies. (Neu, 1863; Poggendorff, I, 1034)

HAUTNORTHON, Josaphat Friederich

Lucerna Salis Philosophorum. Hoc est: Delineato nuda desiderati illius Principii tertii mineralium Sendivogiani, sive Salis pontici, quod est subjectum omnis mirabilitatis & Academia unica veterum Sapientum . . .
Amsterdam: Apud Henricum Betkium, cum privilegio. 1658.

First edition. 8vo. 167, (1) pp. Very good, crisp copy, in contemporary white boards.

AN IMPORTANT alchemical work containing on the last page an advertisement in German directed against illegal reprints. This edition is discussed in detail by Ferguson, who gives the long title in full and states that the name Hautnorthon is a pseudonym, the real name of the author being Johann Harprecht (1610–?). A great admirer of Michael Sendivogius, the author styled himself the “son” of Sendivogius. Despite the legal notice against reprints, a pirated text was published the same year in duodecimo format (Amsterdam, 1658; Duveen, 282). A French translation (Paris, 1669) appeared, and a German translation was included in the *Deutsches Theatrum Chemicum* (Nuremberg, 1727, vol. I, pp. 339–390), edited by Friedrich Roth-Scholtz (Bolton, 1035; Caillet, 4986; Mellon, 528). Very rare. (Ferchl, 218; Ferguson, I, 368–369; Partington, II, 429; Verginelli, 156; Wellcome, III, 211)

HAÜY, René Just

Essai d'une Théorie sur la Structure des Crystaux, appliquée à plusieurs genres de substances cristallisées . . .
Paris: Chez Gogué & Née de la Rochelle, Libraires. 1784.

First edition. 8vo. 4 leaves, 236 pp. With 8 folding copperplates (Sellier Sculp.). Very fine copy, uncut with wide margins, in gilt-ruled brown quarter calf antique, marbled boards, green morocco label, original marbled wrappers bound in.

HAÜY (1743–1822) in this, his first book, “laid the foundation of the mathematical theory of crystal structure” (D.S.B.). He is often called the “founder of crystallography,” and the law of rational indices still bears his name. In this work he showed how the structure of a crystal could be accounted for by the various geometrical arrangements of its integrant molecules in three dimensions. He not only explained using geometrical principles the six basic forms of crystals; he also explained the phenomena of twinning, pseudomorphism, etc. The *Essai* is the first truly scientific treatise on crystallography, and Haüy's mathematical explanations of the structure of crystals greatly assisted in the discovery and classification of new minerals. For the first time minerals could be classified not only by means of chemical analysis but also by their crystal habit. Before Proust, Haüy proposed from first principles the law of fixed chemical proportions. His concepts enabled him to classify minerals hitherto considered different (e.g., beryl and emerald) into a single species and to separate groups that had been regarded as varieties of the same species (e.g., zeolites). (Dibner, 92; D.S.B., VI, 178; Horblit, 47; Norman, 1021; Partington, IV, 203; Poggendorff, I, 1038; Sotheran, Cat. 795 [1925], 9515 [“Rare”]; Ward & Carozzi, 1020; Wellcome, III, 224)

HAÜY, René Just

Exposition Raisonnée de la Théorie de l'Électricité et du Magnétisme, d'après les principes de M. Aepinus, . . .
Paris: Chez la Veuve Desaint, Libraire, rue du Foin-Saint-Jacques. 1787.

First edition. 8vo. xxvii, (5), 238 pp. (last 3 pages misnumbered). With 4 folding copperplates (apparatus and diagrams). Fine copy, in gilt-ruled half calf antique, marbled boards, maroon morocco label. A presentation copy from Haüy, with old stamp on verso of title page: Soc. Reg. Lond. ex dono Auctoris, dated 8 November 1787; and duplicate stamp of the Royal Society of London.

THE ABRIDGEMENT of the very important *Tentamen theoriae electricitatis et magnetismi* (St. Petersburg, 1759) by Aepinus of Rostock (1724–1802), through which the latter author's work became widely known. The *Tentamen* is one of the most original books in the history of electricity and is the first reasoned and productive exposition of electrical phenomena based on action at a distance. As it was published in St. Petersburg, however, it was neither easy to obtain nor to read, as it demanded greater mathematical facility than most physicists of the time possessed. It was Haüy's non-mathematical abridgement that provided the first adequate exposition of Aepinus's theories. Haüy has added much new data, especially from works published after the *Tentamen*, and he includes a full description of the torsion balance of Coulomb. Further authors whose writings are examined include Cassini and Lavoisier. Haüy also describes the most extensive and accurate observations then known on the development of electricity in minerals by friction. (D.S.B., VI, 178; Ekelöf, 44; Gartrell, 239; Mottelay, 286; Ronalds, 235; Wellcome, III, 224; Wheeler Gift, 541)

HAÜY, René Just

Tableau Comparatif des Résultats de la Cristallographie et de l'Analyse Chimique, relativement à la Classification des Minéraux . . .

Paris: Chez Courcier, Imprimeur-Libraire pour les Mathématiques, quai des Augustins, No. 57. 1809.

First edition. 8vo. 2 leaves, lvi, (2), 312 pp. With 4 folding plates (containing 69 figures of crystals). Fine copy, with half title and the rare supplementary errata leaf (before p. 1), in contemporary tree calf boards, gilt, red morocco label.

AN IMPORTANT work in the history of the development of chemical crystallography, in which Haüy correlates the crystal habit of minerals with their chemical analyses. This work represents a great advance in the author's thinking compared with the theories expressed in the *Essai d'une théorie sur la structure des cristaux* (1784) and the *Traité de minéralogie* (1801). This work on crystals marks the beginning of

crystallography in the modern sense. "Haüy became involved in a controversy with Berthollet, who supposed compounds to have a variable composition. In his *Tableau comparatif* (1809), Haüy emphasized the invariability of the form and the composition of the constituent molecule of a species but was forced to admit that the definite proportions were often blurred by heterogeneous materials accidentally mixed with the compound" (D.S.B.). Well documented with references to the chemical and mineralogical researches of Berthollet, Karsten, Klaproth, Reuss, Werner, et al., the book is also valuable for the extensive tables that name minerals in French with their German equivalent. (D.S.B., VI, 178; Ferchl, 218; Poggendorff, I, 1039; Smith, 223; Ward & Carozzi, 1025; Watt, I, 474s; Wellcome, III, 224)

HAÜY, René Just

Traité Élémentaire de Physique, . . . Ouvrage destiné pour l'enseignement dans les lycées nationaux. . . .

Paris: de l'Imprimerie de Delance et Lesueur. 1803.

First edition. 2 vols. 8vo. I: 22 leaves, xxxiv, 426 pp. II: 2 leaves, iii, (1), 447, (1) pp. With 24 folding plates. Very fine copy, uncut and unpressed, in gilt-ruled half calf antique, marbled boards, red morocco labels, spines dated, original marbled wrappers bound in. From the library of the great French physician and naturalist Henri Dutrochet (1776–1847), "father of general physiology," with his signature on title of volume I.

"NAPOLEON, who in 1802, while first consul, had nominated Haüy an honorary canon of Nôtre Dame, in the next year ordered him to write a textbook of physics for the newly instituted lycées. This book was outstanding for its clear, methodical exposition of physics. . . . Like most of his contemporaries, Haüy adhered to Newton's corpuscular theory of light and to the theory that heat was caused by a 'caloric matter.' His own contribution to physics consisted in his researches on double refraction in crystals, on pyroelectricity in crystals (especially tourmaline and boracite), and on piezoelectricity. Haüy's *Traité de physique* brought him appointment to the Legion of Honor in 1803" (D.S.B.). There are large sections on electricity and magnetism, and this work is also of some chemical interest. The book is divided into 905 paragraphs, each covering a specific topic. Second (1806) and third (1821) French editions appeared, as well as an English translation by Olinthus Gregory (London, 1807; Wheeler Gift, 684). (D.S.B., VI, 178; Gartrell, 242; Morgan, 360; Partington, IV, 26; Poggendorff, I, 1039; Watt, I, 474s)

HAYWARD, Joseph

On the Science of Agriculture: comprising a Commentary on and Comparative Investigation of the Agricultural Chemistry of Mr. Kirwan and Sir Humphry Davy; the Code of Agriculture of Sir John Sinclair, Sir Joseph Banks, and other Authors on the Subject. Shewing, that there is not only a discrepancy in the opinions of those Authors on many of the most important operations of Agriculture; but that this arises from their inferences and conclusions being erroneous; and their principles unfounded, or inapplicable; and particularly on the subject of breeding, and the nature, preparation, and application of manures. And also of the rust or black blight in wheat; of which the true cause, and its preventive are here explained. Dedicated to the British Public. By Joseph Hayward, Author of the Science of Horticulture.

London: Longman, Hurst, Rees, Orme, Brown, and Green. 1825.

First edition. 8vo. 1 leaf, x + 220 pp. Woodcut figure on page 11. Publisher's advertisement attached to first flyleaf (dated Sept. 1824). Fine, crisp copy, uncut, in the original quarter cloth boards.

HAYWARD (fl. 1798–1824), on whom no biographical information has been found, published *The Science of Horticulture* (London, 1818; 2nd ed., 1824). In the advertisement and dedication of the present work, he states, "I am not a professor of chemistry, nor an extensive practical agriculturist, . . . but I disclaim any other intention, than that of ascertaining . . . just principles." He says that this work was examined by Sir Humphry Davy, who found nothing objectionable in it. The book is of considerable agricultural chemical interest, referring to and discussing the works of Davy, Kirwan, Boyle, Hooke, Digby, Mayow, Scheele, Priestley, Lavoisier, et al. John Donaldson (*Agricultural Biography*, 1854) states that this work shows "a very sound scientific judgment in all practical points." The book is rare and is not listed by G. E. Fussell (*Early Agricultural Works in the Library of the Ministry of Agriculture and Fisheries*, London, 1930). Not in Bolton, Browne, Duveen, Ferchl, Partington, Poggendorff, Smith, Waller, Wellcome, etc. (Sotheran, Cat. 725 [1912], no. 9062)

HÉBERT, Louis

De l'Action de la Chaleur sur les Composés Organiques. Thèse présentée au concours pour l'agrégation et soutenue à la Faculté de Médecine de Paris le mardi 27 juillet 1869, par L. Hébert . . .

Paris: Imprimeur de la Faculté de Médecine. 1869.

First edition. 4to. 104 pp., 2 leaves. Fine copy with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A PHYSICIAN AND chief pharmacist at l'Hôpital des Cliniques, Hébert presented this thesis on the action of heat on organic compounds for a fellowship in the Paris faculty of medicine. Entirely chemical in content, it covers the thermal and oxidative stability of all types of naturally occurring and synthetic compounds. The action of heat on, and the decomposition products resulting from, each class of compounds is discussed, including isomerization, partial decomposition, polymerization, and other reactions. The trimerization of acetylene to benzene is covered, and the thermal stability of polynuclear aromatic hydrocarbons is noted. The works of numerous contemporary chemists are cited. In the twentieth century this subject became of vital importance to the governments of the United States and elsewhere, especially in connection with the thermal and oxidative stability of organic polymeric materials used in supersonic aircraft and spacecraft. (Bolton, *First Supplement*, 205)

HEDERSTRÖM, Carl Magnus

Afhandling om Kitt-Arter, . . . under inseende of M. Anders J. Retzius . . . Til Philosophiska Magister Gradens . . . den 17 Junii 1807, af Carl Magnus Hederström, Östgöthe.
Lund: Tryckt uti Berlingska Boktryckeriet. (1807).

First edition. 4to. 1 leaf, 28 pp. Minor marginal water stain; otherwise good copy with top and bottom margins uncut, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and misdated 1785.

A CHEMICAL AND mineralogical dissertation on different kinds of cements and mortars, presented by Hederström for the master of philosophy degree at the University of Lund under the direction of the professor of chemistry Anders Jahan Retzius (1742–1821). The author briefly outlines the history of cement with reference to the writings of Pliny, Vitruvius, et al. He then discusses the types of cements and mortars that can be produced from the calcareous and other minerals of Sweden. Rare. Not in the usual bibliographies.

HEDIN, Sven Gabriel

Dissertatio Physico-Mechanica de Frictione Corporum super Plano Inclinato Motorum, . . . sub praesidio . . . Mag. Samuelis Duraei, . . . pro honoribus philosophicus . . . Sveno Gabriel Hedini, Nericius. . . II. Junii Anni MDCCLXX.
Uppsala: Apud Joh. Edman, Reg. Acad. Typogr. (1770).

First edition. 4to. 18 pp., 1 leaf. With engraved plate (A.Å. sc.) depicting 6 figures. Fine copy. Bound with: Wimermark, Sven, *De Diversa Radiorum* (Uppsala, 1776), and 30 other dissertations.

A DETAILED STUDY on the friction produced by solids of different geometrical shapes as they slide down an inclined plane surface. Hedin (dates unknown) discusses the physics and mathematics of the subject with references to the works of Amontons, Daniel Bernoulli, Bulfinger, Euler, Kraft, Musschenbroek, et al. No reference has been found to the author or this work.

HEER, Henri de

Spadacrene. Hoc est Fons Spadanus, accuratissime descriptus, acidus bibendi modus, medicamina oxipotis necessaria. Et Observationum Medicarum Oppido rararum Liber Unicus. . . . Editio correctior, & auctior cum Indice.

Leyden: Apud Adrianum Wyngaerden & Franciscum Moiardum. 1645.

First complete edition. 2 vols., 12mo., in 1. I (*De acidulis Spadanis*): 12 leaves, 159, (1) pp., 8 leaves. II (*Observationes medicae*): 4 leaves, 254 pp., 12 leaves (last blank lacking). Woodcut printer's device on title page. Very good copy, in original unlettered calf.

HEER (ca. 1570–ca. 1636), physician at Liège from 1605, was also physician to Ernest Ferdinand, Elector of Cologne. A very learned man, “of keen insight and solid judgment, who continued a diligent student to the close of his career” (Ferguson), he spent several weeks every year at Spa and published the first part of the present book (Liège, 1614). His *Observationes Medicae* (Leodi, 1631), which “procured him distinction” (Ferguson), comprises the second part of this edition. These works contain much of chemical interest, including comments on the analysis of the mineral waters. The Duveen copy lacks the *Observationes*, which is over half the volume. Watt mistakenly gives the place of publication as Leipzig. Not in Blocker, Cushing, Ferguson Coll., Wellcome, etc. (Duveen, 283; Ferguson, I, 372 [not in Young Coll.]; Neu, 1870 [imperf.]; Partington, II, 228; Watt, I, 480i)

HEER, Henri de

Spadacrene hoc est Fons Spadanus, accuratissime descriptus, acidulasque bibendi modus, & medicamina oxypotis necessaria. Ut et Observationes Medicae Oppido rarae in Spa & Leodii animadversae, tum Medicamentis aliquot selectis, & ut volunt secretis. Editio Novissima, prioribus emendatior cum Indice.

Leyden: Apud Petrum Vander Aa, Bibliopolam. 1685.

Second complete edition. 2 vols., 12mo., in 1. I (*De acidulis Spadanis*): 12 leaves, 159, (1) pp., 8 leaves (including engraved title page). II (*Observationes medicae*): 3 leaves, 254 pp., 10 leaves; separate divisional title page. Pristine copy in original vellum. From the library of Andrew Fletcher (1655–1716),

Scottish patriot (see D.N.B.), with his signature on back pastedown endpaper.

THE CORRECTED final Latin edition of this important work on the chemical and medicinal properties of the mineral waters of Spa. The Duveen copy collates differently in part I (48 pp.), with twelve plates, and in part II there are two plates, but his copy is imperfect (lacks sign. N, pp. 107–130). The copy in the Blocker Collection (and other copies traced) has identical collation with the present copy. It is probable, therefore, that two issues were published: one without plates (as here) and one with plates (at higher cost). Judging from its near-immaculate condition, this copy never had plates and must be considered complete as published. A French translation appeared (La Haye, 1739, 12mo.), edited by Warner Chrouet, who added notes and corrected the chemical information. (Blocker, 185; Duveen, 283; Ferguson, I, 372 [not in Young Coll.]; Neu, 1871; Partington, II, 228; Wellcome, III, 233)

HEER, Henri de

Spadacrene, ou Dissertation Physique sur les Eaux de Spa, . . . Nouvelle Edition revue, corrigée & augmentée de Notes Historiques & Critiques, par Mr. W. Chrouet, Docteur en Medecine.

The Hague: Chez P. Paupie. 1739.

First Chrouet edition. 8vo. 8 leaves, 251 pp., 3 leaves. Title in red and black, with woodcut vignette. Very good copy in original blue patterned boards, spine gilt-ruled, maroon label.

FERGUSON SPEAKS highly of this Hague edition, saying that it is “edited by Warner Chrouet, with notes and emendations, especially in the Chemistry.” The analyses were brought up-to-date, and the present edition is a milestone of analytical chemistry. Not in Bolton, Duveen, Edelstein, Neu, Waller, etc. (Blake, 202; Ferguson, I, 372 [not in Young Coll.]; Partington, II, 228; Watt, I, 480j; Wellcome, III, 233)

HEEREBOORD, Adriaan

Philosophia Naturalis, cum Commentariis Peripateticis antehac edita: nunc vero hac posthuma editione mediam partem aucta, & novis commentariis, partim e Nob. D. Cartesio, Cl. Berigardo, H. Regio, aliisque praestantioribus philosophis, petitis, partim ex propria opinione dictatis, explicata.

Oxford: Typis Guil. Hall venales prostant apud Joh. Wilmot. 1665.

First Oxford edition, second issue. 8vo. 4 leaves, 256 pp., 4 leaves. Title page in red and black within ornamental wood-

cut border. Signature in ink (Gervas How, 1667) on first flyleaf. Fine copy, in original blind-ruled unlettered calf.

A TEXTBOOK ON chemistry, physics, and related subjects by the professor of philosophy at Leiden, Heereboord (1614–1661), who maintained that in addition to Aristotle the more modern teachings of Francis Bacon, Descartes, and others should be followed. The posthumously published first edition (Leyden, 1665; Poggendorff, I, 1045) was reprinted in Oxford (as here) in 1665 by four different publishers, each of whom issued the book with title pages bearing different imprints. The first issue has the names Guil. Hall and Joh. Crosley; the second (as here) has Guil. Hall and Joh. Wilmot; the third has Guil. Hall, Joh. Wilmot, and Joh. Crosley; and the fourth has Guil. Hall and Tho. Bowman. This copy has a stub following the title leaf showing a portion of the same inner woodcut border, this being the remains of the first-issue title leaf. Four other editions (or issues?) appeared in 1668 (2), 1676, and 1684, on which see Wing. Unknown to Watt (I, 480k), who lists the Oxford (1668) edition only. Wellcome (III, 233) lists the Oxford (1684) edition. Extremely rare. Only the present copy and that at Yale are cited by Wing, H1362A.

HEEREN, Friedrich

De Acido Hyposulphurico Commentatio, quam amplissimi philosophorum ordinis in Academia Georgia Augusta consensu et auctoritate pro summis in philosophia honoribus in se colatis. Scripsit Fridericus Heeren, Phil. Dr. Hamburgensis. Accedit tabula aenea.

Göttingen: Caroli Eduardi Rosenbusch. 1826.

First edition. 4to. 58 pp. + 1 leaf (additions and errata) + 1 engraved plate (depicting a flask and figures of crystals). Fine copy in wrappers.

HEEREN (1803–1885) was professor of theoretical and technical chemistry (formerly also of physics and mineralogy) in the Polytechnic School, Hannover. Partington (IV, 195, 399) discusses some of Heeren’s work on lichen pigments, nitrating acid mixtures, etc., but does not refer to the present booklet, the contents of which also appeared in Poggendorff’s *Annalen*. This work describes Heeren’s researches on hyposulphurous acid and its salts, which we now call thiosulphates. Heeren discusses the earlier work of Welter and Gay-Lussac and on pages 8–9 describes the preparation of free hyposulphurous (i.e., thiosulphurous) acid by passing sulphur dioxide through an aqueous slurry of manganese dioxide in cold water contained in a Woulff bottle. We now know that this process will yield a mixture of thiosulphurous and sulphurous acids, the latter being formed by the decomposition of the unstable free thiosulphurous

acid. On pages 17–19 the chemical reactions of thiosulphurous acid are described. Pages 21 et seq. describe the preparation and properties of various hyposulphites (i.e., thiosulphates), such as those of potassium, sodium, ammonium, barium, strontium, magnesium, aluminum, manganese, cerium, iron, zinc, cadmium, lead, copper, and mercury. The crystallographic habits of each of the thiosulphate salts are described in detail, as are their chemical analyses. A very scarce work. (Poggendorff, I, 1045). Not in Waring.

HEINRICH, Placidus

Die Phosphoreszenz der Körper oder die im Dunkeln bemerkbaren Lichtphänomene der anorganischen Natur, durch eine Reihe eigener Beobachtungen und Versuche gepüft und bestimmt . . .

Nuremberg: im Verlage der Johann Leonhard Schrag'schen Buchhandlung. 1811–1820.

First edition. 5 vols., 4to., in 1. I (1811): xvi, 132 pp. II (1812): x, (2), (133)–312 pp. III (1815): viii, (313)–424 pp. IV (1820): xvi, (425)–464, 461–570, (2) pp. V (1820): vii, (1), (571)–596, (4) pp. With the 1820 general title page and title pages to each of the 5 volumes. Few leaves with minor foxing; otherwise fine and complete set, in late-nineteenth-century cloth.

OF CONSIDERABLE chemical, mineralogical, physical, and biological interest, this is “the most comprehensive book on luminescence of the nineteenth century” by Heinrich (1758–1825), professor of physics and mathematics at the Abbey of St. Emeran, in Ratisbon. “The book . . . was a real monograph of 596 pages. It is divided into five sections, appearing separately between 1811 and 1820. They represent the ideas of that day on the classification of luminescences and . . . all the bioluminescences were grouped together in the third section (1815). . . . The other sections dealt with (I) phosphorescence of natural and artificial preparations, inorganic and organic after exposure to light (i.e., phosphors); (II) the phosphorescence of bodies as a result of rise in temperature. . . ; (IV) luminescence by mechanical means . . . ; and (V) luminescence from chemical mixtures. . . . Heinrich included not only the work of his predecessors, but his own experiments, and in a final series of papers (1820) answered the criticisms leveled against his book. . . . His classification of luminescences is quite modern” (E. N. Harvey, *History of Luminescence*, pp. 203–205). Complete sets (as here), with the general title page dated 1820, are rare. (Ferchl, 221; Poggendorff, I, 1051; Ronalds, 237 [incomplete]; Watt, I, 481a)

HEISICH, Andreas

Dissertatio Inauguralis Medica de Nitro, praeparatis ejus, et usu, . . . Publicae disquisitioni committit Andreas Heisich Silesius Rattieboriensis, . . . Die (blank) Mensis Martii M.DCC.LVII.

Vienna: Leopoldi Joannis Kaliwodra. (1757).

First edition. 4to. 10 leaves (unpaginated). Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A DISSERTATION ON the preparation and medicinal uses of niter (potassium nitrate) by Heisich (dates unknown), presented at the University of Vienna. The praeses is not named. In three chapters comprising sixty-four paragraphs, the history and physical and chemical properties of niter are described. Nitric acid and other inorganic nitrates are discussed. Very rare. Unrecorded by the usual chemical and medical bibliographers.

HELLENIUS, Carl Niclas

Dissertatio Chemica, de Exhalationibus Mineralium, . . . sub praesidio . . . Petri Adriani Gadd, . . . Modeste eruditorum examini submittit Carolus Nicol. Hellenius, Amanuensis in Laboratorio Chemico, Tavastia-Fenno. In Audit. Majori Die XX Dec. A. MDCCLXVI.

Åbo: Impressit Joh. C. Freneckell. (1766).

First edition. 4to. 2 leaves, 23, (1) pp. Fine copy, uncut with wide margins, in maroon quarter cloth antique, marbled boards, spine labeled: Gadd. Nine Dissertations. 1759–1778. Inscribed by the author in the lower margin of title page: Herr Professor Lidbeck.

A DISSERTATION ON the gases and vapors emitted by minerals in mines and caves, by volcanoes, and by marshes, with references to the works of Bacci, Baumer, Henckel, Wallerius, et al. Presented under the direction of Pehr Adrian Gadd, professor of chemistry at Åbo, Hellenius dedicated this work to his father and mother. Not in the usual chemical bibliographies. (Ferchl, 169; Poggendorff, I, 826)

HELLER, Johann Christoph

Dissertatio Inauguralis Chemica, Medica, de Tincturis Antimonii, minus usitatis, utcunque saluberrimis. . . . Praeside . . . Philippo Friderico Gmelin, . . . die (blank) August. MDCCLXIX. . . . respondens Joannes Christophorus Heller, Canstadiensis.

Tübingen: Typis Bauhofii et Franckii. (1759).

First edition. 4to. 40 pp. Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A DOCTORAL DISSERTATION on the preparation and medicinal uses of “tincture of antimony” by Heller (dates unknown), presented under the direction of Philipp Friedrich Gmelin (1721–1768), professor of chemistry and botany at Tübingen. Red tincture of antimony was prepared by fusing native antimony sulphide with “salt of tartar” (potassium carbonate), powdering the mixture, and then heating it with alcohol for several days. The alcoholic solution, containing trace amounts of antimony sulphide and oxide, was used in medicine to produce nausea. Rare. Not in the usual chemical and medical bibliographies. (Ferchl, 191; Poggendorff, I, 914)

HELLOT, Jean

L'Art de la Teinture des Laines, et des Étoffes de Laine, en grand et petit teint. Avec une Instruction sur les Débouillis. Par M. Hellot, . . .

Paris: Chez la Veuve Pissot . . . Jean-Thomas Herissant . . . Pissot, fils, . . . 1750.

First edition. 12mo. 12 leaves, 631, (1) pp. Fine copy, in original mottled calf, spine richly gilt, maroon morocco label.

A CLASSIC TREATISE on dyeing wool, and the first to establish a scientific basis for attaching dyes and pigments to fabrics. Considered the first French industrial chemist, Hellot (1685–1766), a pupil of E. F. Geoffroy, was a member of the Académie Royale des Sciences (1735). He was elected F.R.S. (1740) on visiting England the same year he was appointed inspector general of dyeing in France, a field in which he became a leading authority. “Hellot’s publications on dyeing and the theory of dyes are important. He assumed a purely physical explanation that the dye entered the pores of the wool (which must first be dilated), and the pores are then closed by its astringent action. Mordants such as alum act by forming lakes and also close the pores of the fabric. Dyes deposited on the surface are easily washed off” (Partington). The techniques for fast dyeing and fugitive dyeing are examined in detail. The book became the “standard work for the remainder of the century” (D.S.B.). Translations appeared in English, German, Italian, and Spanish. (Bolton, 521; D.S.B., VI, 236; Edelstein, 3117; Ferchl, 223; Lawrie, 303; Partington, III, 67; Poggendorff, I, 1057; Ron, 507; Sotheran, Cat. 725 [1912], 9098 [“Rare”]; Watt, I, 482a; Wellcome, III, 239)

HELLOT, Jean

L'Art de la Teinture des Laines, et des Étoffes de Laine, en grand et petit teint. Avec une Instruction sur les Débouillis. Par Mr. Hellot, . . .

Paris & Maastricht: Chez Jean-Edme Dufour, Imprimeur & Libraire. 1772.

Second edition, variant issue. 12mo. viii, 418 pp., 3 leaves. Very fine copy in essentially pristine condition, in original sprinkled calf, spine richly gilt, orange lettering label.

THE SECOND edition of this classic, with the very rare Paris and Maastricht imprint and different publisher. The usual imprint reads: Paris: Chez Jean-Thomas Herissant, rue S. Jacques, à S. Paul & à S. Hilaire, 1772. The collation of this issue is identical to that of the Paris issue (see Ron, 508). This is the true second edition; the edition of 1786, which Lawrie calls “2nd ed.,” is the third. (Cole, 614; D.S.B., VI, 236)

HELLOT, Jean, MACQUER, Pierre Joseph, and LE PILEUR D'APLIGNY

The Art of Dyeing Wool, Silk, and Cotton. Translated from the French of M. Hellot, M. Macquer, and M. Le Pileur d'Apligny.

London: Printed for R. Baldwin, Rater-noster-Row [sic]. 1789.

First edition. 8vo. 8 leaves, 508 pp. With 6 full-page engraved plates (depicting dye-house processes and equipment). Fine tall copy, uncut with wide margins, in speckled half calf antique, marbled boards, maroon morocco label, spine dated.

DEDICATED TO the Society of Arts, Manufactures, and Commerce, this anonymous English translation unites three important French works on dyeing that had originally appeared separately. Hellot’s *L'Art de la teinture* (Paris, 1750) on dyeing wool occupies pages 1–262; Macquer’s *Art de la teinture en soie* (Paris, 1763) on dyeing silk is pages 263–381; and Le Pileur d’Apligny’s *L'Art de la teinture des fils et étoffes de coton* (Paris, 1776) on dyeing cotton occupies pages 383–504. This rare English translation was reprinted in 1901 by Scott, Greenwood & Co. (Bolton, *Second Supplement*, 1904, p. 102). The London, 1785, edition listed by Lawrie is a ghost. (Cole, 615; D.S.B., VI, 236; Edelstein, 3121; Guerlac, *Chymia*, V [1959], 78–81; Lawrie, 304; Neu, 1880; Partington, III, 67; Ron, 510; Smith, 225; Watt, I, 482a)

HELLWIG, Christoph von

Curiöse Beschreibung, unterschiedlicher rarer und schöner physic. medicinischer, chymischer und oeconomischer Dinge, wovon uf folgenden Blat zusehen; sehr annehmlich und nützlich zu lesen; aufgesetzt von L. Christoph. Hellwig, . . . Frankfurt und Leipzig: verlegt Johann Gabriel Ehrh. 1704.

First edition. 12mo. 9 leaves, 119, (1) pp. A near-fine copy in old marbled boards, maroon morocco label, gilt.

A VERY RARE iatrochemical work in which the distinguished chemist and physician Hellwig (1663–1721) describes the

preparation, properties, and pharmaceutical uses of many inorganic and organic chemicals. One of the earliest publications of this author. Not in the usual chemical and medical bibliographies. (Blake, 205; Ferchl, 223; Poggendorff, I, 1058)

HELLWIG, Christoph von

Der Curiöse und wohl-erfahrne Chymist, welcher nicht alleine die aus dem Mineral-Vegetabilischen und Thier-Reiche hergenommene, und in der Medicin gebräuchlichste Chymische Processe gründlich und deutlich lehret, sondern auch anweist, wie solche nach denen gehörigen Kunst-Griffen geschicklich zu bereiten, um solche zu Erhaltung menschlicher Gesundheit bey allen zustossenden Kranckheiten in rechter Dosi nützlich zu gebrauchen. Aus berühmter Chymicorum Schrifften, theils auch aus eigener Praxi zusammen getragen, mit nöthigen Registern versehen, von Valentino Kräutermann. Andere Auflage.

Leipzig und Arnstadt: Verlegts Johann Jacob Beumelburg, 1738.

Second edition. 8vo. 5 leaves, 480 pp., 10 leaves (index). With beautiful engraved frontispiece (2 laboratory scenes with chemists at work). Title in red and black. Some leaves very lightly browned (characteristic of paper of this period); otherwise a fine copy in contemporary plain boards.

A RARE IATROCHEMICAL work that describes the preparation of many chemicals from mineral, plant, and animal sources. After the death of Hellwig in 1721, some of his unpublished works appeared under the pseudonym Valentin Kräutermann (see notes in Ferguson, I, 480, and Wellcome, III, 240). The first edition was published in 8vo. in Arnstadt, 1729. Not in Bolton, Edelstein, Ferguson Coll., Osler, Partington, Poggendorff, Rosenthal, Smith, Wellcome, etc. Caillet, Cushing, and Wellcome list other works by Hellwig. (Duveen, 327; Ferchl, 223, 284; Ferguson, I, 479; Neu, 1881; Waller, 4279; Watt, II, 578w)

HELLWIG, Christoph von

Dissertatio Inauguralis Medica de Alkabeth, . . . pro licentia . . . ac privilegia doctoralia . . . publico philiatrorum examini sistit Johannes Casparus Wedekind, . . . respondente Christophoro Helbigk, Cölledâ-Thuringo, . . . die 2. Septembr. . . Erfordiae (Erfurt): Typis Groschianis. 1685.

First edition. 4to. 20 pp. Two large woodcut initials in text. Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

HELLWIG (1663–1721) went to Jena in 1681, where he made great progress in medicine. In 1685 he went to Erfurt, where he presented this doctoral dissertation under Wedekind. After several years of medical practice, he became town physician at Tennstädt, Thuringia, where he remained until 1712. He died in Erfurt. Hellwig wrote many books on medicine, pharmaceutical chemistry, and related subjects. This doctoral dissertation on the alkahest, or universal solvent, is certainly one of his earliest publications. It reviews the history of the search for the alkahest, referring to the writings of many earlier and contemporary chemists (e.g., Paracelsus, Digby, Helmont, Starkey, Boyle, and Tachenius). There are extensive references to Becher and his *Physica subterranea* (1669). A very rare work, which is not mentioned by available bibliographies.

HELLWIG, Christoph von

Historisch-Medicinisches Regnum Minerale, oder Metallen- und Mineralien-Reich, und zwar in II. Haupt-Theilen, da in dem Ersten enthalten eine accurate Beschreibung aller Ertze, Mineralien, Metallen und Edelmetalle, wie sie wachsen und gefunden werden, und wo sie in der Medicin und sonst zu gebrauchen; Im Andern aber die vollkommene Scheide- und Probier-Kunst, darinnen gehandelt wird, was Scheiden und Probieren sey, wie es vorzunehmen, so wohl im nassen als trockenen Wege, wie die Ertze nach ihrem Gehalt zu erkennen, &c. samt etlichen raren Processen und Experimenten &c. Nebst nöthigen Register, von Valentin Kräutermann.

Arnstadt: Verlegts Johann Jacob Beumelburg. 1747.

Fourth edition. 8vo. 8 leaves, 472 pp., 4 leaves (index). Title in red and black. With fine engraved frontispiece of a landscape with miners working. Very good copy, in original calf.

THE POSTHUMOUS final and best edition (first: Frankfurt, 1716) of this work on the preparation of inorganic compounds extracted from minerals for medicinal uses. The first part (220 pp.) describes the properties and reactions of metals, their salts, oxides, sulphides, etc. The second part (pp. 221–449) is on the refining of metals from their ores and from each other. An appendix (pp. 450–472) covers analytical processes for determining the purity of metals, together with directions for preparing the three mineral acids (hydrochloric, nitric, sulphuric) and *aqua regia*. Other editions: Frankfurt, 1717; Arnstadt, 1726 (Duveen, 284; Neu, 1885). All editions are rare. Not in Blake, Caillet, Waller, Wellcome, or the usual chemical bibliographies. (Ferchl, 284; Ferguson, I, 480; Hoover, 396)

HELLWIG, Christoph von

Regulae de Formulis medicamentorum conscribendis, das ist: vom Recept-Schreiben . . .

Frankfurt & Leipzig: Sumtibus Joh. Christoph. Stossel Heredum. Erfurt. Typis Joh. Michael. Funck. 1712.

Second edition. 8vo. 157, (1) pp., 1 leaf (blank). Title in red and black, with woodcut ornament in red. Title page repaired in top right-hand corner (with loss of *ae* of *Regulae*); otherwise very good copy, uncut, in contemporary wrappers.

THE GREATLY enlarged final edition of this important set of rules for the formulation of medicines, of pharmaceutical chemical interest. The first edition of 1707 comprised only seventy-six pages (see Ferguson, I, 376; Wellcome, III, 240). Motschmann states that this is the only work that Hellwig wrote in Latin (see *Erfordia Literata*, 1729, vol. I, pp. 135–161). (Blake, 205; Ferchl, 223 [wrong date: 1714]; Waller, 4289; Watt, I, 482b)

HELLWIG, Johann Otto von

Areana Maiora, oder Curiöse und nützliche Beschreibung vieler wahrhaften Physicalisehen, Medicinischen, Chymischen, Alchymischen, Chyrurgischen, und Oeconomischen Geheimnisse. Aus Weltberühmter Leute . . . und anderer vortreflichen Männer Manuscriptis, und Correspondentzen, auch eigener Erfahrung, auf seinen zwanzig jährigen weitläuftigen Reisen, . . . collegiret. Mit unterschiedlichen . . . raren Experimenten, Observationen, und Animadversionen vermehret . . . nunmehr in Druck gegeben, auch mit nützlichen Figuren und nöthigen Registern versehen, von L. Christoph Hellwig . . . Erste (-neunte) Eröffnung.

Frankfurt & Leipzig: verlegt Michael Käyser, Buchhandler in Mühlhausen, daselbst druckt Tobias David Brückner. 1712.

First edition. 9 parts in 1 vol., 8vo. 6 leaves, 77, (11) pp. + 93, (11) pp. + 73, (7) pp. + 103, (9) pp. + 1 leaf, 70, (8) pp. + 1 leaf, 80, (6) pp. + 1 leaf, 71, (9) pp. + 1 leaf, 54, (7) pp. + 1 leaf, 48, (7) pp. Engraved portrait frontispiece of Hellwig, by Jacob Petrus of Erfurt (blank top margin clipped to remove name of early owner). Large folding double-page title in red and black and 13 woodcuts in text (chemical apparatus). Parts 2–9 have divisional title pages dated 1710–1712 (no title page required for part 1). Fine copy, in original vellum (clasps gone). Early-nineteenth-century engraved bookplate on front endpaper.

ONE OF the great rarities in the history of printed alchemy and iatrochemistry. Baron von Hellwig (1654–1698) studied medicine (M.D., Erfurt, 1675) and practiced for several years in the Dutch East Indies. Returning to Europe he traveled widely, his reputation being so great that the king of Denmark made him privy councillor and Charles

II created him a baronet. The present work, published posthumously by Hellwig's younger brother, Christoph (1663–1721), contains by far the most important of the author's writings. This copy contains the rare biographical notice of Hellwig, by his brother, on a leaf that follows the main title. (Blake, 205 [imperf.]; Ferchl, 224; Ferguson, I, 377–378 [imperf.]; Ferguson Coll., 309; Kopp, *Die Alchemie*, II, 351; Wellcome, III, 241)

HELLWIG, Johann Otto von

Curiosa Physica, oder Lehre von Unterschiedlichen Natur-Geheimnissen, welche unter etliche Capitel gesetzet, und auf der ander Seite, befindlich sind, in etwas vermehret; und ausgefertiget von Christoph Helwig, . . . In Verlegung Michael Kayzers.

Sondershausen: Druckts Ludwig Heinrich Schönermarck, Fürstl. Schwartzb. Hof-Buchdr. 1701.

First edition, second issue. 12mo. 6 leaves, 105, (1) pp. Fine copy, in vellum antique, manuscript lettering on spine.

ONE OF the rarest works on alchemy by Hellwig (first issue, 1700), in which he also discusses the magnet, colors, fire, light, elements, minerals, metals, acids, alkalies, salts, calcination, Paracelsian *tria prima*, etc. The section on transmutation and the making of gold comprises the major part of the text (pp. 43–105). There is a copy in the British Library. An enlarged edition appeared (Frankfurt, 1714; Smith, 225; Wellcome, III, 241), with differently worded title. Not in Duveen, Edelstein, Ferguson, Ferguson Coll., Partington, etc. (Ferchl, 224; Hirsch, III, 150)

HELMBOLD, Augustus Traugott

Dissertatio Inauguralis Medica de Aeris Fixi Usu Medico, . . . praeside Dn. Joan. Melchior Luther . . . pro gradu doctoris . . . defendet autor Augustus Traugott Helmbold Artera-Saxon. D. XVI Sept. MDCCLXXXIV.

Erfurt: Litteris Nonnianis. (1784).

First edition. 4to. 19, (1) pp. With ornamental woodcut headpiece and capital (p. 3). Fine, crisp copy with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A DOCTORAL DISSERTATION on fixed air (carbon dioxide), presented under the direction of Johann Melchior Luther (1725–1788). The text begins with a historical account of the preparation and chemical and physical properties of carbon dioxide, with references to Boyle, Hales, Priestley, et al. Several experiments are described in which carbon dioxide reacts with various compounds. Approximately half the work covers the physiological properties and medicinal

uses of carbon dioxide. Rare. Not in the usual chemical and medical bibliographies. (Waring, 315)

HELMONT, Franciscus Mercurius Van

One Hundred Fifty Three Chymical Aphorisms. Briefly containing Whatsoever belongs to the Chymical Science. Done by the Labour and Study of Eremita Suburbanus. Printed in Latin at Amsterdam, Octob. 1687. To which are added, Some other Phylosophick Canons or Rules pertaining to the Hermetick Science. Made English and published for the sake of the Sedulous Labourers in true Chymistry; By Chr. Packe, Philo-Chymico-Medicus.

London: Printed for the Author, and . . . Sold by W. Cooper . . . and D. Newman . . . 1688.

First edition in English. 12mo. 4 leaves, 64 pp. Lacks 4 leaves (i.e., pp. 55–62, part of “Post-Script to the Reader,” being a prospectus for the forthcoming 1689 English edition of Glauber’s *Works*); otherwise a very good copy in antique-style calf, spine gilt-lettered. From the library of Prof. Franz Sondheimer, with bookplate.

FRANCISCUS MERCURIUS VAN HELMONT (1614–1699) was the youngest of J. B. Van Helmont’s three sons. His two elder brothers died of the plague. He was a brilliant man, more so than his illustrious father, but lacked his tenacity and was unable to concentrate on any one department of learning. He was a linguist, artist, theosophist, handicraftsman, physician, and chemist who led people to believe that he had the secret and means of transmutation. His restlessness when young led him to join a band of gypsies, and about 1662 he roamed around Europe, finally staying in England for several years, becoming a Quaker temporarily, and publishing two books in English. Finally he went to Germany, where he became friends with Leibnitz, and he died in a suburb of Berlin. Christopher Packe translated the Latin (1687) edition into English and added 157 canons from Bernard Penotus, 115 “famous Cures” of Paracelsus, the Epistle of Pontanus, and “some other Phylosophick things” which had been “printed in the Year 1582.” In his preface Packe considered that these “together make up a Compendium of the Chymical Art . . . [and] . . . may be both pleasant and profitable to the Disciples of Hermes.” For some reason the missing leaves were removed in some copies but not others. The work by Van Helmont et al. is, of course, complete. A very rare book. (Duveen, 284–285; Ferguson, II, 161 [not in Young Coll.]; Ferguson Coll., 310; Neu, 1887; Wing H1392)

HELMONT, Franciscus Mercurius van

The Paradoxal Discourses of F. M. Van Helmont, Concerning the Macrocosm and Microcosm, or the Greater and Lesser World, and their Union. Set down in Writing by J. B. and now Published.

London: Printed by J. C. and Freeman Collins, for Robert Kettlewel, at the Hand and Scepter near S. Dunstan’s Church in Fleet-Street. 1685.

First edition. 8vo. 8 leaves, 127, (1), 215, (1) pp. With 2 copperplates. Fine, crisp copy, in half calf antique, marbled boards, spine gilt-lettered.

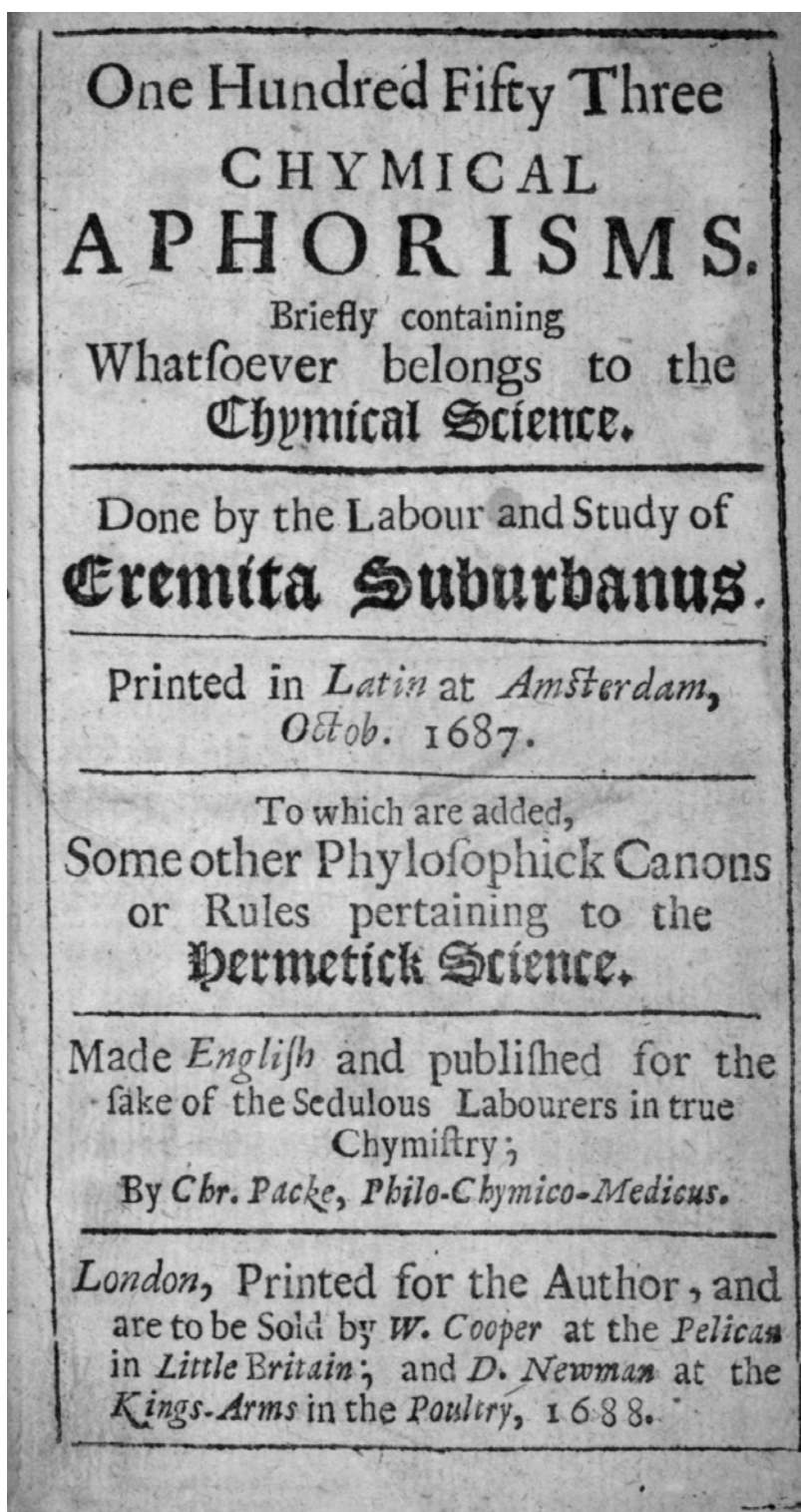
SON OF the famous Jan Baptista van Helmont (1578–1644), the author of this partly chemical and partly medical work studied and practiced medicine, but apparently not at a university. He “edited his father’s collected works, the *Ortus medicinae* of 1648, and became known through his collaboration on the *Kabbala denudata* (edited by Knorr von Rosenroth, 1677–1684), his early attempts at teaching the deaf and dumb (1667) and the orthopedic treatment of spinal deformity, his friendship with . . . Leibniz, . . . and his theosophical treatises” (D.S.B., VI, 253). The present work “describes some chemical experiments . . . e.g., the formation of ferrous sulphide . . . the increase in weight of lead on oxidation . . . sal ammoniac . . . the preparation of phosphorus from evaporated urine distilled with . . . sand” (Partington). According to this author gold is made of red and white arsenic. The plates in the medical section depict organs of generation and human embryos. Ferguson (I, 379) lists only an undated German translation from this English edition. Very scarce. Not in Bolton, Edelstein, Ferchl, Ferguson Coll., Thorndike, Waller, etc. (Duveen, 284; Hoover, 397; Neu, 1888; Osler, 2928; Partington, II, 242; Smith, 226; Watt, I, 482h; Wellcome, III, 241 [with variant title page]; Wing, H1393)

HELMONT, Joannes Baptista van

Opera Omnia. Additis his de novo tractatibus aliquot posthumis ejusdem authoris, maxime curiosis pariter ac perutilissimis, antehac non in lucem editis; una cum indicibus rerum ac verborum ut locupletissimis, ita et accuratissimis.

Frankfurt: Sumptibus Johannis Justi Erythropoli. Typis Johannis Philippi Andreae. 1682.

Sixth (first Frankfurt) edition. 4to. 19 leaves, 765, (1) pp., 36 leaves; 8 leaves, 275, (1) pp., 22 leaves (last blank). Main title page in red and black. Fine copperplate title page (bound as frontispiece). Very fine, crisp copy, in original overlapping vellum. Stamp on front endpaper: “Withdrawn from Chemical Society Library.”



Helmont, Franciscus Van. One Hundred Fifty Three Chymical Aphorisms.
London, 1688.



Helmont, Joannes van. Opera Omnia. Frankfurt, 1682.

THE PENULTIMATE Latin collected edition of the author's complete works, containing the *Ortus* with F. M. van Helmont's preface, the *Opuscula* with separate title page, and the *Tractatus de virtute magna verborum ac rerum* (pp. 753–765). "Très important recueil" (Caillet). The second and final Frankfurt edition of 1707 was edited by Michael Bernard Valentini. Not in Duveen, Edelstein, Ferguson Coll., Osler, Waller, etc. (Bolton, 521; Caillet, 11016; D.S.B., VI, 257; Ferchl, 224; Ferguson, I, 381 [not in Young Coll.]; Krivatsy, 5436; Neu, 1892; Partington, II, 213; Smith, 226; Thornton & Tully, 116; Watt, I, 482k; Wellcome, III, 241)

HELMONT, Joannes Baptista van

Opuscula Medica Inaudita. I. De Lithiasi. II. De Febris. III. De Humoribus Galeni. IV. De Peste.
Cologne: Apud Jodocum Kalcoven. 1644.

First edition. Four parts in 1 vol., 8vo. 4 leaves, 230, (2), 219, (3), 20, (2), 180 pp., 4 leaves (approbation & errata). Woodcut sphere on main title and the 3 divisional titles. Few very minor damp stains at the end; otherwise fine copy in original overlapping vellum.

ALTHOUGH AN alchemist, Helmont (1579–1644) was one of the founders of biochemistry. He used the balance and quantitatively confirmed the indestructibility of matter in most chemical reactions studied by him. His researches mark the transition from alchemy to chemistry in the modern sense, and Robert Boyle adopted many of his ideas. Helmont's most important chemical work, *De lithiasi*, on urinary calculi, contains the greatest number of experiments carried out over a long period. *De lithiasi* contains the first printed use of the word *gas* and its first definition. Observing that spa waters evolve bubbles of gas, Helmont distinguishes them from air and other vapors. He was the first to realize the physiological importance of ferments and gases, and he introduced the concept of density in the analysis of urine. Boerhaave later described the *De lithiasi* as "incomparably the best" of all Helmont's works. Of the four tracts in this volume only the second (*De febris*) had been previously published in 1642. The posthumous *Ortus medicinae* (1648) contains the second edition of the *Opuscula* together with the rest of Helmont's extensive unpublished writings. A rare and important milestone work in the history of chemistry and medicine. (D.S.B., VI, 257; Duveen, *Supplement*, 172; Ferchl, 224; Ferguson, I, 381 [not in Young Coll.]; *Heirs of Hippocrates*, 408; Krivatsy, 5441; Osler, 2931; Partington, II, 213; Thornton & Tully, 116; Watt, I, 482j; Wellcome, III, 241)

HELMONT, Joannes Baptista van

Opuscula Medica Inaudita. I. De Lithiasi. II. De Febris. III. De Humoribus Galeni. IV. De Peste. Editio secunda multo emendatior.
Amsterdam: Apud Ludovicum Elzevirium. 1648.

Second edition. Four parts in 1 vol., 4to. 4 leaves, 110, (2); 115, (1); 88 pp. Printer's woodcut vignette on main title page and the 3 divisional title pages. Woodcut initials and tailpieces. Very good copy, in original overlapping vellum. Bound with: Helmont, J. B. van, *Ortus medicinae* (Amsterdam, 1648).

THE SECOND (first 4to.) posthumously published and expanded edition, edited by the author's son, Franciscus Mercurius van Helmont (1614–1699). Helmont published very little during his lifetime, until this collection of iatrochemical and medical treatises appeared in the year he died (1644). The *Ortus medicinae* (1648) and the present collection comprise all of the author's important works. Although usually bound with the *Ortus*, this edition was also published separately. Further editions, however, appeared bound with the *Ortus*. (Blocker, 186; Cushing, H239; D.S.B., VI, 257; Ferchl, 224; Ferguson, I, 381 [not in Young Coll.]; Ferguson Coll., 311; *Heirs of Hippocrates*, 253; Honeyman, 1647; Krivatsy, 5442; Neu, 1893; Osler, 2932; Partington, II, 213; P.M.M., 135; Smith, 226; Waller, 4306; Wellcome, III, 241; Willems, *Les Elzevier*, 1067)

HELMONT, Joannes Baptista van

Ortus Medicinae. Id est, Initia Physicae Inaudita. Progressus medicinae novus, in morborum ultionem, ad vitam longam. . . . Edente Authoris Filio, Francisco Mercurio van Helmont, cum ejus praefatione ex Belgico translata.
Amsterdam: Apud Ludovicum Elzevirium. 1648.

First edition. 4to. 18 leaves, 800 pp. (pp. 159–160 and 453–456 omitted; pp. 373–382 repeated). Copperplate frontispiece including portraits of Helmont and his son, surrounded by armorial shields. Woodcut vignette on title page. Woodcut capitals and a few woodcut diagrams in text. Occasional minor water stains; otherwise fine, crisp copy, in original overlapping vellum. From the library of the celebrated chemist François Vincent Raspail (1794–1878), with signature stamp on title page. Bound with: Helmont, J. B. van, *Opuscula medica inaudita* (Amsterdam, 1648).

EDITED AND published posthumously by the author's son, the *Ortus medicinae* is a masterwork of one of the most original geniuses in the history of science and medicine. Like Paracelsus, Helmont was an iatrochemist, but he believed in experiment and empiricism as the path to true knowledge. A skeptic in Boyle's sense of the word, he rejected the

scholasticism of his contemporaries. He was persecuted in his own time but much admired by Boyle. The *Ortus* "is our chief source for the discoveries of Helmont with regard to the chemical nature of living processes . . . [and] . . . he sought a cosmological system of natural science which would embrace all phenomena" (P.M.M.). Frequently reprinted, this work was also translated into English, French, and German. Not in Bolton, Duveen, Edelstein, Krivatsy, etc. (Blocker, 186; Caillet, 11018; Cushing, H241; D.S.B., VI, 257; Ferchl, 224; Ferguson, I, 381 [not in Young Coll.]; Garrison-Morton, 665; *Heirs of Hippocrates*, 254; Neu, 1894; Osler, 2929; Partington, II, 213; Poggendorff, I, 1060; P.M.M., 135; Smith, 226; Thornton & Tully, 116; Waller, 4307; Watt, I, 482k; Wellcome, III, 241)

HELMONT, Joannes Baptista van

Ortus Medicinae. Id est, Initia Physicae Inaudita. Progressus medicinae novus, in morborum ultionem, ad vitam longam. . . . Editio nova, cumque locupletiori Rerum & Verborum Indice, pro illa Venetiis nuper excusa, multam partem adauctior reddita & exornatior.

Amsterdam: Apud Ludovicum Elzevirium. 1652.

Second Elzevier edition. 4to. 18 leaves, 894 (i.e., 884) pp., 24 leaves. Copperplate including portrait of Helmont and his son (identical to that in 1648 edition). Woodcut vignette on title page. Woodcut capitals, tailpieces, etc. Fine, crisp copy, in original calf, spine gilt, maroon morocco label.

THE FIRST Elzevier edition to have an index and the third printing of this important work. It is based on the folio Venice edition (Juntae & J. J. Hertz, 1651), the index of which was compiled by Tachenius. This is a copy in the earliest state, with the incorrect catchword at the end of the preface (AMI). Most copies have the correct catchword (IN), for the *Index Tractatum* which follows the preface. The *Opuscula medica* (Amsterdam: L. Elzevier, 1652) is bound with the *Ortus*, this being the *Editio tertia multo emendatior*, with general title page and the three divisional title pages. Textually this is one of the "best" editions (D.S.B., Ferguson). Not in Bolton, Duveen, Edelstein, Osler, Waller, Watt, etc. (Blocker, 186; Caillet, 11018; Copinger, 2219; Cushing, H242; D.S.B., VI, 257; Ferchl, 224; Ferguson, I, 381 [not in Young Coll.]; Ferguson Coll., 310; Krivatsy, 5432; Neu, 1895; Partington, II, 213; Smith, 226; Thornton & Tully, 116; Wellcome, III, 241; Willems, 1141)

HELMONT, Joannes Baptista van

Ortus Medicinae, id est Initia Physicae Inaudita Progressus medicinae novus, in morborum ultionem ad Vitam longam . . . Editio Quarta. In qua praeter quaedam Auth. Fragmenta adiecti fuerunt Indices. Tractatum de Lithiasi Febr. Humoribus, & Peste qui in aliis desiderabantur.

Lyons: Sumptibus Joan. Ant. Huguetan, & Guilliemi Barbier. 1667.

Fifth (second Lyons) edition. Folio. 12 leaves, 487, (1); 192 pp., 30 leaves (last blank). Half title, fine engraved title page (N. Auroux Fec.), many large ornamental woodcut capitals, head- and tailpieces. Text in double columns and separate letterpress title to *Opuscula Medica Inaudita*. Superb copy in mint condition, in original overlapping vellum.

THE DEFINITIVE second Lyons edition (first, 1655; Wellcome, III, 241) of this outstanding work and a sumptuous example of seventeenth-century French fine printing. This is the third edition to appear in folio format and the final Lyons printing. Sixth and seventh editions appeared at Frankfurt in 1682 and 1707, respectively. The *Ortus* is here bound with (as usual) the *Opuscula medica inaudita*, the *Editio sexta multo emendatior*. Not in Bolton, Duveen, Edelstein, Neu, Osler, Wellcome, etc. (D.S.B., VI, 257; Ferguson, I, 381 [not in Young Coll.]; Ferguson Coll., 310; Krivatsy, 5434; Partington, II, 213; Rosenthal, 433; Smith, 226; Waller, 4308; Watt, I, 482j)

HELMONT, Joannes Baptista van

Oriatrike or, Physick Refined. The common Errors therein Refuted, and the whole Art Reformed & Rectified: being a New Rise and Progress of Phylosophy and Medicine, for the Destruction of Diseases and Prolongation of Life. Written by that most Learned . . . Chymical Physitian, John Baptista Van Helmont . . . now faithfully rendred into English . . . by J. C. . . .

London: Printed for Lodowick Loyd, and are to be sold at his Shop next the Castle in Cornhill. 1662.

First complete English edition. Folio (in 4s). 21 leaves, 1161 (i.e., 1167), (1) pp., 11 leaves; without the 2 pp. "To the English Reader." Woodcut headpieces and initials. Very good copy in eighteenth-century gilt-ruled calf, rebaced with original spine laid down, brown morocco label. From the library of William Penn (1644-1718), founder of Pennsylvania, with armorial bookplate (dated 1703) on verso of title.

THE FIRST collected edition of van Helmont's works in English (first: Amsterdam, 1648), edited by his son, Franciscus Mercurius van Helmont, and translated by John Chandler. "Helmont was one of the founders of biochemistry. He was

the first to realise the physiological importance of ferments and gases, and indeed invented the word 'gas.' He introduced the gravimetric idea in the analysis of urine [but] published very little during his life" (Garrison-Morton, 665). Although some copies have an engraved frontispiece (not present here), this is an important association copy, as Belmont's son, Franciscus Mercurius, was a friend of William Penn. An early-nineteenth-century penciled note on the front pastedown endpaper states that this fact is recorded in an extant "letter of the celebrated Dr. Henry More." The text of this English edition was reissued with a different title page (London, 1664). (Cushing, H240; D.S.B., VI, 257; Duveen, 286; Edelstein, 1117; Ferguson, I, 381 [not in Young Coll.]; Ferguson Coll., 310; Krivatsy, 5438; Neu, 1896; Partington, II, 214; Watt, I, 482k; Wellcome, III, 242; Wing, H1400)

HELMONT, Joannes Baptista van

Les Oeuvres de Jean Baptiste van Helmont traittant des principes de medecine et physique, pour la guerison assurée des Maladies: de M. Jean Le Conte, Docteur Medecin.
Lyons: Chez Jean Antoine Huguëtan, & Guillaume Barbier. 1670.

First edition, first issue in French. 4to. 4 leaves, 396 pp. Title page in red and black, with fine copperplate vignette. Very good copy, in original mottled calf, gilt. Engraved armorial bookplate (colored in red and blue): "Charle Geille-Saint Leger de Bonrecueille."

THE PARTIAL French translation (by Jean Francois le Conte) of the *Ortus medicinae*, with a long preface (pp. 1–38) giving a summary of the contents. The second issue appeared in 1671 (D.S.B., VI, 257; Duveen, 286; Ferguson, I, 381 [not in Young Coll.]; Neu, 1891, etc.). Le Conte also published *Clavis hermetica, seu metallorum mineraliumque legitima solutio* (Lyons, 1680). Very scarce. Not in Bolton, Edelstein, Osler, Waller, Watt, Wellcome, etc. Not in British Library. (Caillet, 11017; Cole, 617; Ferchl, 224; Krivatsy, 5439; Partington, II, 214)

HELMONT, Joannes Baptista van

Deliramenta Catarrhi: or, The Incongruities, Impossibilities, and Absurdities Couched under the Vulgar Opinion of De-fluxions. The Author, That great Philosopher, by Fire, Job. Bapt. Van Helmont, &c. The Translator and Paraphrast Dr. Charleton, Physician to the late King. . . .
London: Printed by E. G. for William Lee at the signe of the Turks-head in Fleet-Street. 1650.

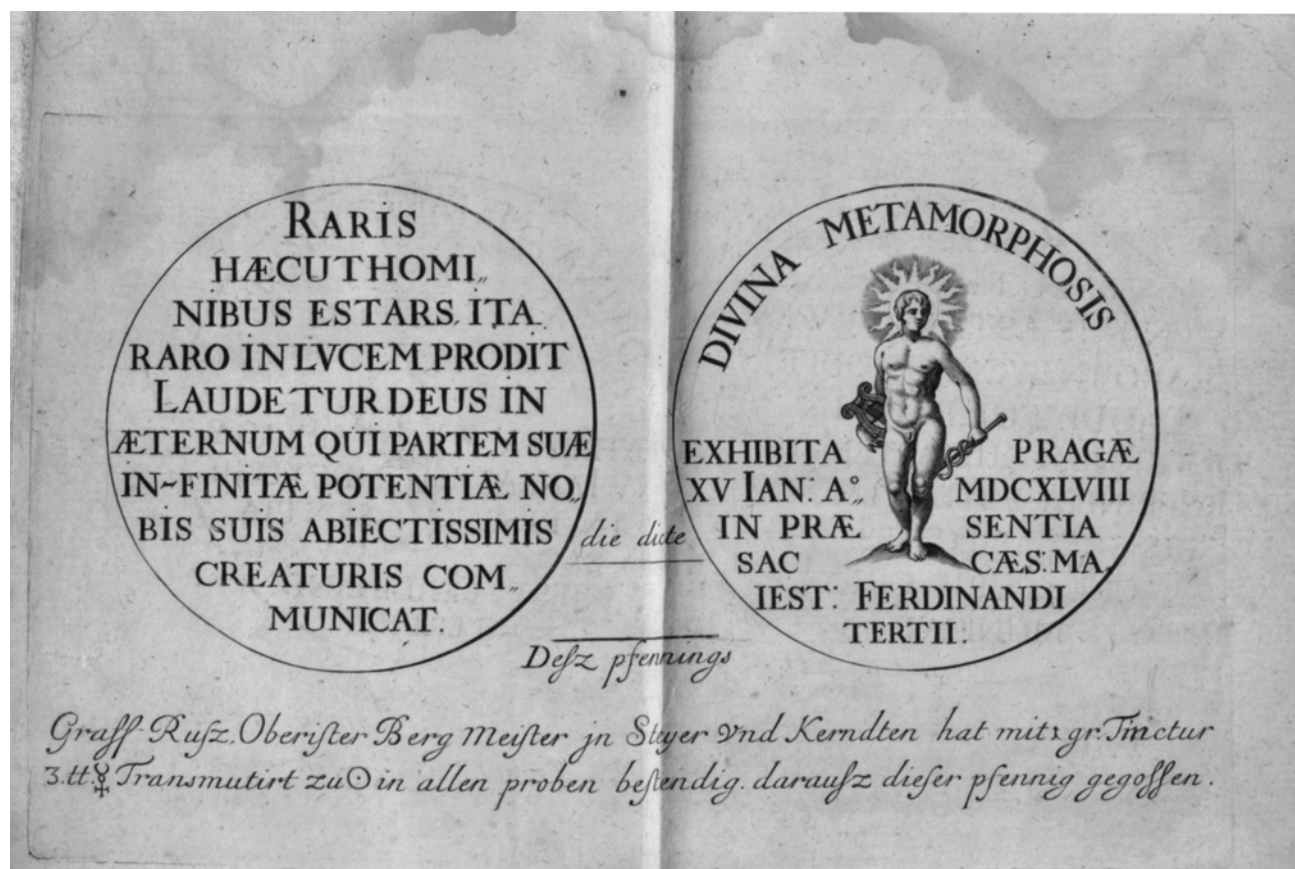
First edition in English. 4to. 6 leaves, 75, (1) pp. Title within ornamental woodcut border, woodcut headpieces and initials. Very good copy in contemporary blind-ruled calf, rebacked, with gilt-lettered label.

PROBABLY THE only edition in English, being a translation of a portion of the author's great *Ortus Medicinae* (Amsterdam, 1648). It is one of Helmont's chief works, translated by Walter Charleton, and is of importance in the history of biochemistry, of which the author was the founder. Helmont took a stand against bloodletting and did not support the traditional Galenic theory that catarrh resulted from phlegm distilling to the head and there became concentrated. Mucus of the nose and throat is produced, in his view, by a vital spirit or local archeus, which protects the tissues from irritation. On page 68 Helmont says: "It is plain and unquestionable, that no salt, acid, sharp, phlegmatick, or Choleric humor can distil from the brain; but that, whenever the Influent spirit, polluted with some alien and putrefactive impression, doth arrive at any part of the body; then doth nature, without delay, send thither the Latex, or source of serous humidity, to expung this impression, or at least rinse away the Excrements, there growing from the deprivation of the digestive Faculty." Not in Bolton, Duveen, Edelstein, Ferchl, Poggendorff, Reynolds, Smith, etc. (Cushing, H238; D.S.B., VI, 258; Ferguson, I, 381 [not in Young Coll.]; Ferguson Coll., 311; Neu, 1890; Osler, 2933; Partington, II, 214; Waller, 4304; Watt, I, 482j; Wellcome, III, 242; Wing, H1398)

HELMONT, Joannes Baptista van

A Ternary of Paradoxes. The Magnetick Cure of Wounds, Nativity of Tartar in Wine, Image of God in Man. Written originally by Job. Bapt. Van Helmont, and Translated, Illustrated, and Ampliated by Walter Charleton, . . .
London: Printed by James Flesher for William Lee, dwelling in Fleet-Street, at the sign of the Turks-head. 1650.

Second edition, "more reformed, and enlarged with some Marginal Additions" (first title page). 4to. 26 leaves, 147, (1) pp. Fine engraved portrait frontispiece of Walter Charleton (P. Omhart sculpsit). Large copperplate vignette on first title



Helvetius. *Vitulus Aureus*. Amsterdam, 1667.

page. Letterpress title page. Several leaves slightly embrowned; otherwise very fine copy, in calf antique, maroon label.

A PARTIAL ENGLISH translation by Walter Charleton of the *Ortus medicinae* (1648). It contains the first English version of the famous treatise *De magnetica vulnerum curatione* (1621), which was published against Helmont's will (pp. 1–93). The tract was denounced by the Louvain faculty of medicine (1623) and impounded by the Spanish Inquisition (1626). Helmont had become involved in a dispute over the concept of a weapon-salve, which would cure a wound when applied to the weapon that had inflicted it rather than to the wound itself. Helmont felt that such a claim should be investigated scientifically, and he discusses the supposed curative powers of the lodestone, as well as its real properties. On page 77 the singular noun *electricity* occurs for the second time (first: Sir Thomas Browne, 1646). Two English editions appeared in 1650. The beautiful portrait frontispiece of Charleton (here present) is usually missing. (Blocker, 186; Cushing, H243; D.S.B., VI, 258; Duveen, 285–286 [lacking portrait]; Edelstein, 1118; Ferguson, I,

381 [not in Young Coll.]; Ferguson Coll., 311; Krivatsy, 5450 [imperf.]; Neu, 1897; Osler, 2934; Partington, II, 214; Waller, 4301; Watt, I, 482j; Wellcome, III, 242; Wheeler Gift, 130; Wing, 131402)

HELVETIUS, Johann Friedrich

Diribitorium Medicum, de Omnium Morborum Accidentiumque in & externorum Definitionibus ac Curationibus, ex Saporibus, Odoribus Foetoribusque, provenientibus a Fermentoribus, Effervescentiarum aut Putrefactionum Salibus, Sulphuribus vel Mercuriis, quae male inveniuntur in succis alibilibus bene constitutis omnium Ventriculorum, Glandularum Vasorumque Lymphaticorum totius corporis. Amsterdam: Apud Joannem Janssonium à Waesberge. 1670.

First edition. 8vo. 8 leaves, 176 pp. Fine, crisp copy, in contemporary vellum, maroon morocco label.

AN IATROCHEMICAL work dealing with many chemical topics, which are explained in terms of the Paracelsian *tria prima* (i.e., spagyric salt, sulphur, and mercury). Physical

dysfunctions and diseases are accounted for by these spagyric principles becoming unbalanced, or in a different proportion, from their proportions in normal health. The work follows the doctrines of van Helmont, particularly as far as the explanations of fermentation are concerned, on which see Partington (II, 238–240). Rare. Not mentioned by the usual chemical and medical bibliographers. (Krivatsy, 5462; Osler, 2939)

HELVETIUS, Johann Friedrich

Vitulus Aureus, quem Mundus adorat & orat, in quo tractatur de Rarissimo Naturae Miraculo transmutandi Metalla, nempe quomodo tota Plumbi substantia vel intra momentum ex quavis minima Lapidis veri Philosophici particula in Aurum obryzum commutata fuerit Hagae Comitum. . . .
Amsterdam: Apud Johannem Jansonium a Waesberge, & viduam Elizei Weyerstraet. 1667.

First edition. 8vo. 72 pp. With fine engraved double-page plate (obverse and reverse of alchemical gold Prague medal) and 5 small diagrams (p. 31). Very good copy in original vellum.

“ONE OF the most important alchemical books, as it contains a (seemingly) very convincing account of a transmutation. . . . The above first edition is now very rare. Ferguson was only able to give its date, while Bolton only knew the work in reprints in Manget and other alchemical collections” (Duveen [quoting Zeitlinger]). This copy, in contemporary condition undisturbed in its binding, does not contain the portrait of Helvetius, as in other known copies (e.g., the two other copies owned by Duveen, p. 285, and *Supplement*, p. 29). It is probable that the portrait was issued with only a limited number of copies, as it is usually not present. Helvetius (or Schweitzer, 1631–1709), physician to the prince of Orange, created a sensation by publishing the *Vitulus Aureus* (“Golden Calf”), in which he gives a detailed account of the transmutation of lead into gold. Read discusses this work in detail. Translations were made in English, German, and Dutch, and the text was reprinted in collections of alchemical works. (Caillet, 5050; Duveen, 287; Edelstein, 1124; Ferchl, 225; Ferguson, I, 384 [not in Young Coll.]; Ferguson Coll., 312; Mellon, 423; Neu, 1901; Partington, II, 240; Poggendorff, I, 1061; Read, *Humour and Humanism in Chemistry*, 69–72; Smith, 227; Thorndike, VIII, 361; Waller, 11160)

HELVETIUS, Johann Friedrich

Guldenes Kalb, welches die gantze Welt anbetet und verehret, in welchen gehandelt wird von einem sehr hohen Wunder der Natur die Metalleu [sic] zuverändern, nemlich, Wie die gantze Substanz und Wesen des Bleyes in einer Minuten von einem sehr kleinen Körnlein des warhafftigen Philosophischen Steins in ein vollkommen Gold zu Graffenbage verwandelt worden. . . . In Teutsch verfertigt, und zum Druck befördert 1668.

Nuremberg: Bey Wolf Eberhard Feissecker. (1668).

First edition in German. 8vo. 4 leaves, 54 pp. With folding plate (obverse and reverse of Prague medal; not the same as in the Amsterdam, 1667 edition, but completely reengraved). An exceptionally fine copy in pristine condition, in modern boards, printed paper label on spine.

THE GERMAN translation by Johann Georg Volckamer of the famous *Vitulus Aureus* (Amsterdam, 1667). Editions in German also appeared in 1675 and 1727 from Nuremberg, in 1705 and 1726 from Frankfurt, and another without place or printer in 1710. The first German edition, rarer than the original Latin of 1667, is not mentioned by Bolton, Duveen, Mellon, Partington, et al. (Caillet, 5050; Ferchl, 225; Ferguson, I, 383; Ferguson Coll., 811; Poggendorff, I, 1061; Read, *Humour and Humanism in Chemistry*, 68)

HENCKEL, Johann Friedrich

Flora Saturnizans, die Verwandschafft der Pflanzen mit dem Mineral-Reich, nach der Natural-Historie und Chymie aus vielen Anmerkungen und Proben nebst einem Anhang vom Kali Geniculato Germanorum oder Gegliederten Saltz-Kraut, insonderheit von einer hieraus neu-erfundenen dem allerschönsten Ultramarin gleichenden Blauen Farbe. . . .
Leipzig: Verlegt Johann Christian Martini, Buch-Händler in der Nicolai-Strasse. 1722.

First edition. 8vo. 5 leaves, 671, (1) pp., 8 leaves. Title page in red and black. Engraved frontispiece (by I. B. Brühl) and 9 copperplates of minerals and plants. Very good copy, in nineteenth-century marbled boards, crimson label.

HENCKEL (or Henkel, 1678–1744) graduated M.D. (1711) under Georg Ernst Stahl at Halle and practiced medicine for eighteen years in the mining town of Freiberg, Saxony. He gave private courses in chemistry, carried out experiments, and became very proficient in the chemical analysis of minerals. “In the 1720’s he quickly attracted the acclaim of the German scientific world with the publication of his first major work: *Flora saturnizans* (Leipzig, 1722), an inquiry into the relations and similarities between plants and minerals” (D.S.B.). Numerous chemical experiments and

analytical processes are discussed, and the formation of minerals in ores is compared with the growth of plants. Of botanical interest, the appendix (pp. 619–671) describes and illustrates various species of kali plants (*Salsola kali*), the ashes of which yield potash used in the manufacture of glass and soap. The allegorical frontispiece depicts a mine in the foreground, farming activities in the middle distance, and a stately home with formal garden in the background. (D.S.B., VI, 259; Edelstein, 3125; Ferchl, 225; Partington, II, 706; Poggendorff, I, 1065; Ron, 514)

HENCKEL, Johann Friedrich

Pyritologia, oder: Kiess-Historie, als des vornehmsten Minerals, nach dessen Nahmen, Arten, Lagerstätten, Ursprung, Eisen, Kupffer, unmetallischer Erde, Schwefel, Arsenic, Silber, Gold, einfachen Theilgen, Vitriol und Schmelz-Nutzung, aus vieler Sammlung . . . Chymischer Untersuchung, mit Physicalisch-Chymischen Entdeckungen . . . und . . . einer Vorrede vom Nutzen des Bergwercks . . .

Leipzig: Verlegts Johann Christian Martini, Buchh. in der Nicolai-Strasse. 1725.

First edition. 8vo. 22 leaves, 1008 pp., 16 leaves. Title page in red and black. Engraved frontispiece (by Brühl) of pyrite cycle from extraction to export and 12 copperplates (crystals, pyrite specimens). Fine copy, in calf antique, red morocco label.

THE MOST important work of the eighteenth century on pyrites and a key book in the history of chemistry and mineralogy in which the origins, deposits, and industrial uses of sulphide minerals are described. Henckel accepts Becher's theory of three earths (vitreous, terra pinguis, mercurial) and Stahl's phlogiston theory, and he attributes the increase in weight of antimony on calcination to the fixation of particles of fire. The preparation and properties of metallic arsenic and its calx (arsenious oxide) are described, as well as metallic zinc, which he regards as an alloy containing lead. Blue, green, red, and white vitriols are correctly identified as being, respectively, compounds of copper, iron, cobalt, and zinc with sulphuric acid. The sulphides of arsenic, copper, and iron are distinguished, and he discovered that some pyrites contain gold and silver. That sulphur has a greater affinity for copper than for iron is clearly stated, and the ores of tin and tungsten are discussed. (D.S.B., VI, 259; Ferchl, 225; Ferguson, I, 385–386; Partington, II, 706; Poggendorff, I, 1065; Wellcome, III, 246)

HENCKEL, Johann Friedrich

Pyritologia: or, a History of the Pyrites, the Principal Body in the Mineral Kingdom. In which are considered its Names, Species, Beds, and Origin; its Iron, Copper, unmetallic Earth, Sulphur, Arsenic, Silver, Gold, original Particles, Vitriol, and Use in smelting. The whole compiled from a Collection of Samples; from visiting Mines; from an intercourse and Correspondence with Naturalists and Miners; but chiefly from a Course of Chymical Enquiries. With a Preface, containing an Account of the Advantages arising from Mine-works in general, and particular [sic] from those of Saxony. Translated from the German of J. F. Henckel. . . .

London: Printed for A. Millar, in the Strand; and A. Linde, in Catharine-Street, in the Strand. 1757.

First English edition. 8vo. 9 leaves, 376 pp., 3 leaves. Engraved frontispiece. Very good copy, in original gilt-ruled calf, rebacked, maroon morocco label. From the library of the metallurgical chemist Hugh Lee Pattinson (1796–1858), with armorial bookplate.

THE ENGLISH translation of *Pyritologia* (Leipzig, 1725), in which the twelve plates of the German edition were not included. The anonymous translator has abridged and clarified the obscure style of the original and added footnotes on the technical terms employed. "Henckel's influence . . . extended . . . the rapidly developing science of chemistry [and] his publications . . . played an important role in the spread of the Stahlian approach to chemical phenomena" (D.S.B.). Abraham Gottlob Werner (1749–1817) regarded Henckel as the "Father of Mineral Chemistry." This is a particularly interesting association copy, having belonged to Pattinson, who discovered a process for desilverizing lead (patented, 1833). Silver in pyrites is discussed (pp. 212–214) in the present edition. (Cole, 618; Duveen, 288; Ferguson, I, 385; Hoover, 407; Partington, II, 706; Ward & Carozzi, 1040)

HENCKEL, Johann Friedrich

Pyritologie, ou Histoire Naturelle de la Pyrite, ouvrage dans lequel on examine l'origine, la nature, les propriétés & les usages de ce Minéral important, & de la plupart des autres Substances du même Regne: on y a joint le Flora Saturnisans, où l'auteur démontre l'alliance qui se trouve entre les Végétaux et les Minéraux; et les Opuscules Minéralogiques qui comprennent un Traité de l'Appropriation, un Traité de l'Origine des Pierres, plusieurs Mémoires sur la Chymie & l'Histoire Naturelle, avec un Traité des Maladies des Mineurs & des Fondeurs. Par M. Jean-Frederic Henckel . . . Ouvrages traduits de l'Allemand.

Paris: Chez Jean-Thomas Herissant, Libraire, rue S. Jacques, à S. Paul & à S. Hilaire. 1760.

First French edition. 4to. xvi, 403, (1); 524 pp. Engraved frontispiece (by Pelletier) and 5 folding copperplates. Very fine wide-margined copy, in original calf, spine richly gilt.

THE ONLY collected edition in French of Henckel's principal mineralogical works. "The *Flora Saturnisans* was translated by Charas with revisions by Augustin Roux, while the other items were translated by Baron d'Holbach all from the German (some were from Karl Friedrich Zimmermann's German translations from the original Latin). The *Flora Saturnisans* has an addition to Chap VIII—"Tableau de l'analyse vegetale" taken from the lectures of G. F. Rouelle" (Cole). Included are two papers on the diseases of miners: "De la phtisie" and "De la colique des fonderies." Each treatise in this volume has a separate title page. (Cole, 619; Ferchl, 225; Ferguson Coll., 313; Hoover, 408; Partington, II, 706–707; Rosen, *History of Miners' Diseases*, 121; Ward & Carozzi, 1041; Watt, I, 483m; Wellcome, III, 246)

HENISCH, Georg

Artzneybuch Sexti Platonici Philosophi: Von Vöglen, wilden und zamen Thieren, wie man dieselben in der Artzney für allerhand Kranckheiten brauchen soll, gantz lustig, nutzlich und gut gemeinen Haushaltern, auch allen liebhabern der Artzney, zu lesen und zu wissen. Verteutscht durch Georgen Henisch von Bartfeld.

Basel: Gedruckt . . . in verlegung Ludwиг Konigs. 1615.

First edition. 8vo. 58 pp. Black letter. Woodcut device on title, woodcut capitals and tailpiece. Paper very slightly embrowned; otherwise fine copy in contemporary German blind-stamped vellum over oak boards, with original brass clasps (one lacking) on vellum thongs. Bound with: Mizauld, Antoine, *Neunhundert Gedächtnuszwürdige Gebeimnusz und Wunderwerck* (Basel, 1615), and 2 other works.

A PHARMACEUTICAL CHEMICAL book that describes medicines based on materials obtained from various parts of animals (especially mammals, reptiles, and birds). Of the author, Georg Henisch von Bartfeld (1549–1618), Thorn-dike (VI, 142–143) says that he was "a man of broad culture and learning, who taught logic and mathematics and practiced medicine at Augsburg, . . . published medical handbooks and works in arithmetic and astronomy, . . . also . . . astrological predictions." Henisch wrote *Enchiridion Medicinæ* (Basel, 1573) and translated Mizauld's *Memorabilium* into German (Basel, 1574), the second edition of which is bound with this copy. Other titles by Henisch, but not the present, are listed by Ferchl, Poggendorff, Watt, Wellcome, etc. Extremely rare. Not traced in the usual bibliographies.

HENRY, Thomas

An Account of a Method of Preserving Water, at Sea, from Putrefaction, and of restoring to the water its original pleasantness and purity, by a cheap and easy process: to which is added a mode of impregnating water, in large quantities, with fixed air, for medicinal uses, on board ships, and in hospitals; and likewise a process for the preparation of artificial yeast. By Thomas Henry, F.R.S. . . .

Warrington: Printed by W. Eyres for J. Johnson, No. 72, St. Paul's Church-Yard, London. 1781.

First edition. 8vo. 4 leaves, 43, (1) pp., 2 leaves (list of works by T. Henry and T. Percival). With 3 engraved plates (Bottomley sc.), with imprints handwritten in ink (dated 1 March 1781. By T. Henry?). Presentation inscription in ink on half title: "To C. Worsley Esqr. from his faithful Servant the Author." Fine copy. Bound with: Henry, T., *A Letter to Dr. Glass* . . . (London, 1774).

DEDICATED to John Montagu, Earl of Sandwich (1718–1792), Lord Commissioner of the Admiralty, this tract describes Henry's methods for preserving water during long sea voyages. Fresh water was first made strongly alkaline by the addition of quicklime. When desired for drinking, the alkaline water was neutralized by purging with fixed air (carbon dioxide), which precipitated the lime as chalk (calcium carbonate), leaving the water potable. The carbon dioxide was made by reacting ground marble with diluted oil of vitriol (sulphuric acid). The plates illustrate the apparatus used. Other processes suggested include the large-scale preparation of soda water by the method invented by Priestley and later modified by Magellan, Nooth, and Parker. Henry also describes processes for making artificial yeast (from flour), Pyrmont water, Seltzer water, Bewley's julep, etc. In 1785 Henry published papers on these subjects in the *Memoirs of the Manchester Literary and Philosophical Society*. (D.S.B., VI, 283; Watt, I, 485a)

HENRY, Thomas

An Appendix to Experiments and Observations on the Preparation of Magnesia, &c. Containing Strictures on Mr. Glass's Magnesia. By Thomas Henry, Apothecary. Manchester: March 8, 1773.

First edition. 8vo. 8 pp. Caption title on p. 1. Fine copy. Bound with: Henry, T., *Experiments and Observations* . . . (1773).

AN APPENDIX to the main work by Henry, in which the more expensive magnesia prepared by Samuel Glass is shown to be greatly inferior to that prepared by his newly published method. By chemical analysis Henry proves that Glass's magnesia is contaminated with lime (calcium hydroxide), which is caustic, and cautions the public against

its medicinal use. The purer magnesia originally prepared by Glass had been used by Henry as a standard, but since the death of Glass in 1773 "I do not consider him, but the present preparers of the Medicine, as culpable for the adulteration." Dated Manchester, 8 March 1773, this very rare *Appendix* was clearly written and published after the *Experiments and Observations*, which is dated Manchester, 18 January 1773. Unknown to the usual bibliographers, it is present in the copy in the National Library of Medicine. (Blake, 207)

HENRY, Thomas

Experiments and Observations on the Following Subjects:

1. *On the preparation, calcination, and medicinal uses of Magnesia Alba.* 2. *On the Solvent Qualities of Calcined Magnesia.* 3. *On the variety in the Solvent Powers of Quick-Lime, when used in different quantities.* 4. *On Various Absorbents, as promoting or retarding putrefaction.* 5. *On the comparative Antiseptic Powers of Vegetable Infusions prepared with Lime, &c.* 6. *On the Sweetening Properties of Fixed Air.* By Thomas Henry, Apothecary. . . .

London: Printed for Joseph Johnson, No. 72, St. Paul's Church-Yard. 1773.

First edition. 8vo. xvi, 142 pp., 1 leaf (advertisements: books printed for J. Johnson). Neat old stamp in blank lower margin of title page; otherwise fine copy in modern marbled boards, printed paper label on spine. Bound with: Henry, T., *An Appendix to Experiments and Observations* . . . (1773).

HENRY (1734–1816), a Welsh chemist who practiced as a surgeon-apothecary in Manchester, was elected F.R.S. (1775) and became secretary (1781) and later president (1807) of the Manchester Literary and Philosophical Society. In 1772 he published an improved process for preparing magnesia (i.e., hydrated basic magnesium carbonate), and this is reprinted in the present work, which is dedicated to his friend Thomas Percival, M.D. (1740–1804). "Henry's magnesia was long a favourite domestic remedy" (Partington). The researches of Priestley on carbon dioxide are mentioned (p. 41) as are those of Black (pp. 42–47) in detail. Henry first observed the use of carbon dioxide by plants. The book is an important eighteenth-century landmark in the chemistry of carbon dioxide, magnesium, and calcium compounds. (Blake, 207; Cole, 620; D.S.B., VI, 283; Duveen, 289; Ferchl, 226; Neu, 1911; Partington, III, 691; Poggendorff, I, 1069; Waring, 552; Watt, I, 484z)

HENRY, Thomas

A Letter to Dr. Glass, containing a Reply to his Examination of Mr. Henry's Strictures on the Magnesia sold under the name of the late Mr. Glass. To which are added some further testimonies in support of the truth of those strictures. By Thomas Henry, Apothecary. . . .

London: Printed for Joseph Johnson, No. 72, St. Paul's Church-Yard. 1774.

First edition. 8vo. 31, (1) pp. Presentation inscription in ink on half title: "To John Lees, Esqr. From his much obliged Humble Servant the Author." Fine copy, in half calf antique, marbled boards, maroon morocco label. Bound with: Henry, T., *An Account of . . . Preserving Water, at Sea* . . . (Warrington, 1781).

DESPITE HENRY's polite and innocuous comments in his *Appendix* (1773) to the *Experiments and Observations* (1773) on the superiority of his magnesia over that prepared by the method of Samuel Glass, in the present work he states that he was accused "in almost every news-paper in the kingdom . . . as a malicious and interested obtruder of falsehood and detraction." He again attempts in this tract (dated Manchester, 14 February 1774), politely and without rancor, to substantiate his claim that his method of preparing magnesia yields a purer and less expensive product than that made by Glass's process. Ostensibly addressed to the recently deceased Dr. Glass, Henry's words are obviously directed against those who had taken over Glass's business and were selling an inferior product. By means of a series of careful chemical experiments he demolishes the claims of his detractors and vindicates his reputation. Reprinted are copies of two letters from Thomas Percival and one from John Aikin, confirming the validity of Henry's experiments and results. At the end is a verbatim reprint of Henry's rare *Appendix* (8 March 1773). (Blake, 207; Partington, III, 691; Watt, I, 485a)

HENRY, William

Account of a Series of Experiments, undertaken with the view of Decomposing the Muriatic Acid. By Mr. William Henry.

From the Philosophical Transactions.

(London:) Printed by W. Bulmer and Co. Russel-Court, Cleveland-Row, St. James's. 1800.

First separate edition. 4to. 1 leaf, 16 pp. Fine copy with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated. Inscribed in ink on title page: "The Count de Bournon from the Author."

AUTHOR'S SEPARATE printing of his research on the composition of gaseous hydrogen chloride, in which he states that "we are not in possession of a single fact that gives the smallest insight into the constitution of the muriatic acid."

Henry passed "strong electric shocks . . . through a portion of muriatic acid gas, confined in a glass tube over mercury," and found that the mercury was "converted to the muriate." After many experiments he concluded that "muriatic acid . . . is an oxygenated substance" (p. 8). Despite his attempts to dry gaseous hydrogen chloride, it still contained traces of water, which resulted in the formation of hydrogen, oxygen, and oxymuriatic acid (chlorine). Henry thus incorrectly deduced that hydrochloric acid contains oxygen. Copies of author's separates are very rare, as only twenty to twenty-five copies were printed for presentation. (Cole, 621; D.S.B., VI, 284; Ferchl, 227; Partington, III, 823; Poggendorff, I, 1069; Wellcome, III, 249)

HENRY, William

Additional Experiments on the Muriatic and Oxymuriatic Acids. By William Henry . . . From the *Philosophical Transactions*.

London: Printed by W. Bulmer and Co. Cleveland-Row, St. James's. 1812.

First separate edition (offprint from *Phil. Trans.*). 4to. 11, (1) pp. Fine copy, unbound with wide margins, preserved in a cloth-covered folder with gilt-lettered crimson morocco label. Presentation copy to Peter Mark Roget, author of the *Thesaurus* (1852). Inscribed in ink by Henry on title: "Dr. Roget from his friend the Author."

A SIGNIFICANT PAPER in which Henry describes his experiments supporting the recent researches of Gay-Lussac and Thenard on the elementary nature of oxymuriatic acid (chlorine) and its combination with hydrogen in muriatic acid (hydrochloric acid). "The experiments, which form the subject of the following pages, are intended as supplementary to a more extensive series, which the Royal Society did me the honour to insert in their *Transactions* for the year 1800" (see Cole, 621). He describes further experiments in which electric discharges were passed through gaseous hydrogen chloride (carefully dried over anhydrous calcium chloride). Hydrogen and chlorine were produced. The offprint is dated (p. 11): Manchester, Jan. 6, 1812; and the paper was read before the Royal Society, 19 March 1812. It appeared in *Philosophical Transactions* (1812), vol. 102, pp. 238–246. Rare. (D.S.B., VI, 286; Ferchl, 227; Poggendorff, I, 1070; Smith, 228; Watt, I, 185g)

HENRY, William

An Analysis of Several Varieties of British and Foreign Salt (Muriate of Soda) with a View to Explain their Fitness for Different Economical Purposes. By William Henry . . . From the *Philosophical Transactions*.

London: Printed by W. Bulmer and Co. Cleveland-Row, St James's. 1810.

First separate edition (offprint from *Phil. Trans.*). 4to. 1 leaf, 34 pp. With printed errata slip attached to verso of title leaf. Fine copy, unbound with wide margins, preserved in a cloth-covered folder with gilt-lettered crimson morocco label. Presentation copy to Peter Mark Roget (1779–1869), English scholar and physician, author of the well-known *Thesaurus* (1852) and various scientific works. Inscribed in ink by Henry on title: "Dr. Roget from his friend the Author."

AN OFFPRINT of a paper read before the Royal Society on 25 January 1810 and later published in the *Philosophical Transactions* (1810, vol. 100, pp. 89–122). Henry proved that British salt produced by the evaporation of seawater was as good for preserving food as salt imported at great expense from France, Portugal, and Spain. Analyses of salt (mainly sodium chloride) from several sources (e.g., rock salt from Cheshire, brine springs, and seawater) are presented. The specific gravity of salt is discussed, the works of Hassenfratz, Muschenbroek, and Sir Isaac Newton being cited. The preparation of pure sodium chloride is described with the means of separating it from naturally occurring impurities (e.g., magnesium and calcium sulphates and magnesium chloride). On the verso of the title page is the request of W. H. Wollaston that recipients of the offprint not reprint it until one month after its publication in the *Philosophical Transactions*. The paper is dated (p. 34): Manchester, June 19, 1809. Authors' offprints are very rare, usually having been printed in only twenty or thirty copies. (Cole, 622; Ferchl, 227; R. P. Multhauf, *Neptune's Gift, A History of Common Salt*, [1978], p. 125; Partington, III, 823; Poggendorff, I, 1070)

HENRY, William

The Elements of Experimental Chemistry, by William Henry, M.D., F.R.S. . . . The eighth edition, comprehending all the recent discoveries; and illustrated with nine plates by Lowry. . . .

London: Printed for Baldwin, Cradock, and Joy, 47, Paternoster-Row; and R. Hunter, successor to J. Johnson, St. Paul's Church-Yard. 1818.

Eighth edition. 2 vols., 8vo. I: xxxii, 480 pp.; 9 folding engraved plates of apparatus (Lowry sculp.). II: xi, (1), 610 pp. Old stamp on title pages (Steevens's Hospital Library); otherwise good copy in original gilt-ruled half calf, marbled boards.

THE SIXTH edition of the *Epitome of . . . Chemistry* (London, 1810) was expanded to two volumes and the title changed to *The Elements of Experimental Chemistry*. This edition is dedicated to Henry's lifelong friend John Dalton, founder of the chemical atomic theory, which is discussed in volume I (pp. 28–38). In his advertisement Henry says that since the appearance of the seventh edition (London, 1815) "the progress of Chemistry . . . has . . . been marked . . . by the discovery of a great number of important facts, and of some new and interesting bodies. Among practical inventions, the Safety Lamp of Sir Humphry Davy stands predominant." He discusses the newly discovered element lithium, as well as the elementary nature of chlorine and its compounds with oxygen, nitrogen, and phosphorus. Organic and biochemical compounds are covered in the second part of volume II, including the preparation of various acids, esters, ether, etc. Rudimentary analyses of some of the compounds are given. At the end are sections on the analysis of minerals and the detection of poisons. (D.S.B., VI, 285; Edelstein, 1127; Partington, III, 826; Wellcome, III, 249)

HENRY, William

The Elements of Experimental Chemistry, by William Henry, M.D., F.R.S. . . . The tenth edition, comprehending all the recent discoveries; and illustrated with ten plates by Lowry, and several engravings on wood. . . .

London: Printed for Baldwin, Cradock, and Joy, Paternoster-Row, and B. Hunter, St. Paul's Church-Yard. 1826.

Tenth edition. 2 vols., 8vo. I: xxiv, 666 pp.; 10 engraved plates of apparatus (Lowry sculp.). II: vi, 731, (1) pp. Woodcuts in text. Signature Z (pp. 337–352) wrongly bound between pages 304 and 305. Very fine copy in original calf, covers elaborately blind-stamped and gilt, rebacked in matching richly gilt calf, crimson morocco labels.

THE PENULTIMATE edition of this famous textbook, dedicated to John Dalton. The final edition appeared three years later (London, 1829). "Henry's *Elements* was the most popular and successful chemistry text in English for more than thirty years" (D.S.B.). Constantly updated, in the addenda to this edition Henry includes the latest information on boron, iodine, selenium, tantalum, thorium, titanium, tungsten, zirconium, newly discovered hydrocarbons, etc. The Wellcome Library copy contains a frontispiece, which was added to it from another source and never published with this edition. (Bolton, 524; Cole, 626; D.S.B., VI, 285; Partington, III, 826; Wellcome, III, 249)

HENRY, William

The Elements of Experimental Chemistry. By William Henry, M.D., F.R.S. . . . The third American, from the sixth English edition, greatly enlarged by the author; and illustrated with nine plates. To which are added, notes, on various subjects; with an additional plate, illustrating the decomposition of the fixed alkalis, by heat—and a frontispiece, exhibiting the pneumatic cistern of Yale College, by B. Silliman, professor of chemistry in Yale College. . . .

Boston: Published by Thomas & Andrews; Sold by them and by Cummings & Hilliard; also by Howe & Deforest, New-Haven. Joseph T. Buckingham, Printer. Nov. 1814.

Fourth American (second Boston) edition. 2 vols., 8vo. I: 395, (1) pp. Engraved frontispiece (by A. Doolittle, dated Aug. 1810) and 10 folding plates of apparatus (IX and X signed M. Butler sculpt.). II: 443, (1) pp. Usual light browning of paper; otherwise very good copy in original tree calf, spines gilt-ruled, green morocco labels.

THE FOURTH American edition (despite the statement on the title), and the second with a Boston imprint. It is the first American edition to reprint the greatly enlarged two-volume English edition (London, 1810). Benjamin Silliman has added extensive notes (vol. I, pp. 343–395; vol. II, pp. 389–420) on gases, metals, and several other subjects. Silliman "was the greatest scientific lecturer of his time and . . . did much to stimulate the study of chemistry and geology in the United States" (W. D. Miles, *American Chemists and Chemical Engineers*, 1976, p. 438.) Plates I–VIII are identical to those of the third American edition (Boston, 1810). (Morgan, 371; Roller, 263)

HENRY, William

The Elements of Experimental Chemistry, by William Henry, M.D., F.R.S. . . . The second American from the eighth London edition . . . Together with an Account of Dr. Wollaston's Scale of Chemical Equivalents. Also, a substitute for Woulfe's or Nooth's apparatus, and A Theory of Galvanism; by Robert Hare, M.D. . . .

Philadelphia: Published by Robert Desilver, No. 110, Walnut Street. 1822, 1823.

Fourth Philadelphia edition. 3 vols., 8vo. I (1822): xlviii, (ix)–390 pp. (collation complete). II (1822): 1 leaf, 440 pp. With 13 engraved plates of apparatus (1 folding). III (1823): xii, 252 pp. With 1 engraved plate. Woodcuts in text. Very good copy in original calf, spines gilt-ruled, crimson labels.

THE FIRST edition from Philadelphia appeared in 1802, and in 1817 a second was edited by John Redman Coxe. In 1819 Robert Hare first edited another Philadelphia edition. The present so-called second American edition was

superintended by the chemist Franklin Bache (1792–1864), “one of the most widely known American teachers of chemistry in his time” (W. D. Miles). In the advertisement Bache states that the 1819 edition was printed in “great haste” and contained “numberless errors” that have now been corrected. Bolton does not mention the third volume (1823), which is a supplement containing new material from the ninth English edition (London, 1823). These volumes include the latest discoveries reported by Humphry Davy, Michael Faraday, J. J. Berzelius, Thomas Thomson, et al. (Bolton, 524; Cole, 625; Edelstein, 1129; Miles, *American Chemists and Chemical Engineers*, 1976, pp. 15–16; Morgan, 372; Roller, 263; Smith, 228)

HENRY, William

An epitome of chemistry, in three parts. Part I, intended to facilitate, to the student, the acquisition of chemical knowledge, by minute instructions for the performance of experiments. Part II, directions for the analysis of mineral waters; of earths and stones; of ores of metals; and of mineral bodies in general. And part III, instructions for applying chemical tests and re-agents to various useful purposes.
London: J. Johnson. 1801.

First edition. 12mo. (in 6s). Pp. xv, 216, 2 leaves (advertisements of chemical books by William and Thomas Henry). Fine and crisp copy, uncut and unpressed, in the original boards.

THE VERY rare first edition of Henry's first major book, preceded only by the author's two minor works (viz. *A general view of the nature and objects of chemistry*, Manchester, 1799, 44 pp., and *Syllabus of a course of lectures on chemistry*, Manchester, n.d., 40 pp.). The scope of the work is set out in the title. In the preface Henry states that his purpose in publishing this work was to provide an up-to-date review of the rapidly expanding science of chemistry, to assist the students attending his lectures, and to “serve as a companion to the collections of chemical substances, which I have been induced, by the repeated applications of students of this science, to fit up for public sale.” He refers to the “chest of chemical re-agents” (portable laboratory), which he designed and which became very popular during the early years of the nineteenth century. Written in Henry's appealing style, the work passed through five editions from 1801 to 1808; it was then expanded and issued (the edition numbers being continued) as *The elements of experimental chemistry* (2 vols., 8vo., London, 1810, 6th edition). The eleventh English edition appeared in 1829. The *Epitome* quickly came out in an American edition (Philadelphia, 1802), with later editions from Boston and New York. French, German, and Danish translations also appeared (see Bolton and

Partington). Cushing, Morgan, and Smith cite later editions, but Duveen, Ferchl, Ferguson, Osler, Poggendorff, Waller, et al., do not mention the *Epitome*. (Bolton, 523 [wrong date: 1800]; Partington, III, 825; Wellcome, III, 249)

HENRY, William

An Epitome of Chemistry, in three parts. Part I, intended to facilitate, to the student, the acquisition of chemical knowledge, by minute instructions for the performance of experiments. Part II, directions for the analysis of mineral waters; of earths and stones; of ores of metals; and of mineral bodies in general. And Part III, instructions for applying chemical tests and re-agents to various useful purposes. By William Henry.
London: Printed for J. Johnson, No. 72, St. Paul's Church-Yard, by R. and W. Dean and Co., Manchester. 1801.

First edition. 12mo. xv, (1), 216 pp., 2 leaves (advertisements of chemical books by William and Thomas Henry). Small piece of paper lacking from bottom of spine; otherwise fine copy, uncut and unpressed, in original blue boards.

HENRY'S FIRST major book, preceded only by his two minor works (*A general view of the nature and objects of chemistry*, 1799, 44 pp., and *Syllabus of a course of lectures on chemistry*, n.d., 40 pp.). The preface states the purpose of the work is to give an up-to-date review of the rapidly expanding science of chemistry, to assist students attending Henry's lectures, and to “serve as a companion to the collections of chemical substances, which I have been induced, by the repeated applications of students of this science, to fit up for public sale.” He refers to the “chest of chemical re-agents” (portable laboratory) he designed, which became very popular during the early years of the nineteenth century. Passing through five progressively enlarged editions (1801–1808), the work was then greatly expanded (edition numbers being continued) as *The elements of experimental chemistry*, 6th edition (London, 1810, 2 vols., 8vo.). Bolton and Watt wrongly date this work 1800. Rare. (Bolton, 523; D.S.B., VI, 285; Partington, III, 825; Watt, I, 485d; Wellcome, III, 249)

HENRY, William

An Epitome of Chemistry, in three parts. . . . By William Henry. The third edition, corrected.
London: Printed for J. Johnson, No. 72, St. Paul's Church-Yard. 1803.

Third edition. 12mo. xliii, 280 pp. + 4 pp. (advertisements of books by Thomas Henry and of portable chemical chests by William Henry). Fine copy, uncut and unpressed, in original blue boards, manuscript title on spine.

THE CONSIDERABLY enlarged third edition with identical wording of the title as the first edition (1801), containing "recent discoveries that have been announced since the former ones" (preface). This is the first edition of the *Epitome* to reprint (in the prefatory leaves) Henry's *A general view of the nature and objects of chemistry* . . . (first: Manchester, 1799). Rare. (D.S.B., VI, 285; Wellcome, III, 249)

HENRY, William

An Epitome of Experimental Chemistry, in three parts. . . . By William Henry, M.D. . . . The fifth edition, illustrated with plates, engraved by Lowry.

London: Printed for J. Johnson, No. 72, St. Paul's Church-Yard. 1808.

Fifth edition. 8vo. xiv, xxx, (2), 502 pp. With 8 folding plates dated 1 May 1806 (Lowry sculp.). Very fine copy, in original speckled calf, spine richly gilt, black morocco label.

THE LAST edition with the title *Epitome* and the first to add the word *experimental*. In the preface Henry states that "the work in its present enlarged form . . . in order to keep pace with the rapid progress of chemical science, it has been, almost entirely, written anew; and that what has been added to this . . . edition exceeds very considerably the original matter." The fourth edition (London, 1806; Cole, 629) was the first to appear in octavo format and to be illustrated with the eight plates, which are used again in the present edition. The first appendix (pp. 431–481) contains many useful tables of physical and chemical data, and the second appendix (pp. 483–494) comprises detailed descriptions of every piece of apparatus illustrated in the plates. (D.S.B., VI, 285; Partington, III, 826)

HENRY, William

An Epitome of Chemistry, in Three Parts. Part I. Intended to facilitate to the Student, the Acquisition of Chemical Knowledge, by minute Instructions for the Performance of Experiments. Part II. Directions for the Analysis of Mineral Waters; of Earths and Stones; of Ores; of Metals; and of Mineral Bodies in general. Part III. Instructions for applying Chemical Tests and Re-agents to various useful Purposes. By William Henry.

Philadelphia: James Humphreys. 1802.

First American edition. 12mo. (in 6s). 214 pp., 1 leaf (advertisements of works by Parkinson, Woodhouse, Coxe, Lavoisier, Fyfe, Chaptal, etc.). Very good copy in contemporary tree calf, spine gilt-ruled, with maroon gilt-lettered label.

TWO ENGLISH editions of Henry's *Epitome* were published in London in 1801. The preface of the first edition is dated

Manchester, 9 March 1801, and that of the second edition is Manchester, 26 June 1801. This first American edition is a reprint of the second English edition, not the first as is commonly believed, as the preface to this American edition is dated Manchester, 26 June 1801. In the second English edition the errata of the first edition were corrected, but otherwise no changes were made. In the preface to the second English edition (here reprinted), the author states that owing to "the rapid sale" of the first edition, he had "no time for material alterations." Speaking of this book, E. F. Smith (*Old Chemistries*, New York, 1927, pp. 43–47) states: "Chemists of the present do not realize the influence exerted on Americans by the text-book of William Henry, M.D. which made its appearance in London shortly after the beginning of eighteen hundred. . . . It was in 1808 that American editions of the English work appeared." Smith was obviously unaware of this 1802 American edition when he wrote in 1927, but a copy was added to the Smith collection after he died in 1928. The first American edition is not in Bolton or Sabin and has been described as "extremely rare" (Dawson [London], Catalogue 186 [Feb. 1968], item 224). Not in Duveen, Ferchl, Morgan, Osler, Partington, Poggendorff, Reynolds, Waller, Watt, Wellcome, etc. (Cushing, H267; Smith, 228)

HENRY, William

An Epitome of Chemistry, in three parts. . . . By William Henry.

Philadelphia: Printed and sold by James Humphreys, at the N.W. Corner of Walnut and Dock-street. 1802.

First American edition. 12mo. 214 pp., 1 leaf (advertisements of books by Chaptal, Coxe, Fyfe, Lavoisier, Parkinson, et al.). Characteristic very minor embrowning of paper; otherwise good copy in original sheep, maroon morocco label, gilt-ruled spine.

THE RARE first American edition, being an exact reprint of the second English edition (London, 1801), in which the preface is dated Manchester, 26 June 1801. In the first English edition the preface is dated Manchester, 9 March 1801. The errata of the first edition were corrected in the second, but no other changes were made. Henry states that owing to "the rapid sale" of the first edition he had "no time for material alterations." (Cole, 628; Cushing, H267; Edelstein, 1130; Smith, 228)

HENRY, William

An Epitome of Chemistry, in three parts. . . . By William Henry. From the fourth English edition: much enlarged and illustrated with plates. To which are added Notes by a Professor of Chemistry in this Country.

New York: Printed and sold by Collins and Perkins, No. 189, Pearl-Street. 1808.

Second American edition. 8vo. xl, 416, lxxxiv pp. With 8 folding engraved plates of apparatus (I–VI by Rollinson, undated; VII and VIII by B. Tanner, dated February 1808). Minor foxing of some leaves and occasional neat marginal notes in ink by an early owner; otherwise good copy in original sheep, spine gilt-ruled, maroon morocco label.

A REPRINT OF the fourth English edition (London, 1806; Cole, 629), to which the first professor of chemistry at Yale, Benjamin Silliman (1779–1864), has added extensive notes (pp. lxxv–lxxxiv). On the leaf following the title is reprinted a testimonial praising Henry's book "as the best Compendium of the Science with which we are acquainted," by John Maclean and Benjamin Silliman. This is followed by a laudatory letter of 15 February 1808 signed by James S. Stringham and another of the same date by B. De Witt, M.D. Maclean, Stringham, and De Witt were professors of chemistry at New Jersey College (later Princeton University), Columbia College, New York (later Columbia University), and New York University, respectively. This edition is praised by E. F. Smith (*Old Chemistries*, 1927, pp. 43–44). Silliman "relied at first upon William Henry's *Epitome of Chemistry* and *Elements of Chemistry* of which he brought out American editions" (W. D. Miles, *American Chemists and Chemical Engineers*, 1976, p. 438). (Bolton, 524; Cole, 630; Edelstein, 1131; Smith, 228)

HENRY, William

An Epitome of Experimental Chemistry, in three parts. Part I. Intended to facilitate the acquisition of chemical knowledge, by minute instructions for the performance of experiments.

Part II. Directions for the analysis of mineral waters; of earths and stones; of metallic ores; and of mineral bodies in general. And Part III. Instructions for applying chemical tests and re-agents to various useful purposes. By William Henry, M.D. . . . The second American, from the fifth English edition, illustrated with plates. To which are added, Notes on various subjects; Observations on metals; Mines; Mining; Metallurgy; and on the artificial preparation of mineral waters; an account of the new discoveries of Professor Davy, and of the French chemists; and of meteoric stones, &c. With a frontispiece, exhibiting the pneumatic cistern of Yale College. By B. Silliman, professor of chemistry, &c. of Yale College.

Boston: William Andrews . . . 1810.

Second American edition. 8vo. xii pp., 9 leaves (misnumbered), 432, lxxvii pp., 4 leaves (index). 8 engraved plates (6 by Rollinson, 2 by B. Tanner). Fine frontispiece (drawn and engraved by A. Doolittle). Fine copy in contemporary tree calf, crimson gilt-lettered label, spine gilt-ruled. Neat signature in ink on recto of first flyleaf (Francis Peabody, 1820), and old bookplate on front pastedown endpaper (Essex Institute. Library of Francis Peabody. Presented by Mrs. Martha Peabody).

THE FIRST American edition appeared eight years earlier in 12mo. format (Philadelphia, 1802). Here reprinted from the greatly enlarged fifth English edition (London, 1808), this American edition is valuable for first containing the rich appendix and notes by Benjamin Silliman (1779–1864), professor of chemistry at Yale (1802–1853). The various American editions of Henry's *Epitome* are discussed by E. F. Smith (*Old Chemistries*, New York, 1927, pp. 43–47). This edition is not in Duveen, Edelstein, Ferchl, Partington, Waller, Watt, Wellcome, etc. (Bolton, 523–524; Morgan, 373; Smith, 228)

HENRY, William

An Epitome of Experimental Chemistry, in three parts. . . . By William Henry, M.D. . . . The second American, from the fifth English edition, illustrated with plates. To which are added, Notes on various subjects; Observations on Metals; Mines; Mining; Metallurgy; and on the Artificial Preparation of Mineral Waters; an account of the New Discoveries of Professor Davy, and of the French Chemists; and of Meteoric Stones, &c. With a Frontispiece, exhibiting the Pneumatic Cistern of Yale College. By B. Silliman, . . .

Boston: Published by William Andrews, No. 1, Cornhill. T. B. Wait and Co., Printers. 1810.

Third American (first Boston) edition. 8vo. xii pp., 9 leaves (misnumbered), 432, lxxvii, (1) pp., 4 leaves (index). With 8 engraved plates (6 by Rollinson, 2 by B. Tanner). Frontispiece (by A. Doolittle). Fine copy in original calf, spine gilt-ruled, crimson morocco label. Neat signature in ink on first flyleaf (Francis Peabody, 1820) and old bookplate (with release stamp) on front endpaper (Essex Institute. Library of Francis Peabody. Presented by Mrs. Martha Peabody).

ALTHOUGH THE title page states that this is the second American edition, it is in fact the third, but the first with a Boston imprint. The present edition reprints the text of the fifth English edition (London, 1808). The plates are identical to those of the second American edition (New York, 1808), with only the names of the publishers changed on plates VII and VIII. The section at the end ("Additions to the Second American Edition of Henry's Chemistry, by Professor Silliman, of Yale College," pp. xxi–lxxvii), completely new in this edition, describes the electrolysis of potash and soda by Humphry Davy, the first isolation of metallic potassium and sodium, and their reactions with

oxygen, water, chlorine, phosphorus, sulphur, etc. Also described are the isolation of metallic barium and strontium, as well as many other great discoveries by Davy. (Bolton, 523–524; Cole, 632; Morgan, 373; Smith, 228)

HENRY, William

An Estimate of the Philosophical Character of Dr. Priestley; by William Henry . . . Read to the first meeting of the British Association, for the Promotion of Science, at York, September 28th, 1831.

York: Printed by Thomas Wilson and Sons, High-Ousegate. 1832.

First edition. 8vo. 2 leaves, 15, (1) pp. Tipped into the first flyleaf is a printed admonition barring reprinting: "until after the publication of the Report of the British Association." With presentation in ink by Henry on recto of first flyleaf: "The Royal Medical Society of Edinburgh, from their Associate the Author." Fine copy in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

THE PRE-PUBLICATION offprint, complete with the appendix (pp. 13–15), which was omitted when the text later appeared in the *Report of the British Association for the Advancement of Science*, for 1831 and 1832 (1833), pages 60–71. A reprint of the *Report* also appeared in the *American Journal of Science* (1833), vol. 24, pp. 28 et seq.; Bolton, 235. "A penetrating study" (D.S.B.). Not in the usual bibliographies. OCLC cites only one location of this very rare work. (British Library Cat. [Readex edition], vol. 11, p. 1233, vol. 112; D.S.B., VI, 285)

HENRY, William

A General View of the Nature and Objects of Chemistry, and of its Application to Arts and Manufactures. By William Henry, . . .

Manchester: Printed by R. and W. Dean, No. 9, Spring-Gardens; for J. Johnson, 72, St. Paul's Church-Yard, London. 1799.

First edition. 8vo. (in 4s). 44 pp. With manuscript corrections in ink by the author. Fine copy, in half calf antique, marbled boards, maroon morocco label gilt-lettered and dated.

THE THIRD SON of Thomas Henry, William Henry (1774–1836) was born in Manchester and lived most of his life there. Entering Edinburgh University in 1795, he studied chemistry under Joseph Black but in 1796 left to assist in his father's practice and superintend the family manufacturing business. On becoming a member of the Manchester Literary and Philosophical Society, he began carrying out original chemical research (1796). In 1805 he returned to Edinburgh, graduating M.D. (1807) for his dissertation

on uric acid. Later he specialized in urinary diseases, contributing papers on these and related subjects to medical journals. Elected F.R.S. (1808), he received the Copley Medal for his researches on the solubilities of gases and for papers already published. The present tract, the author's first in book form, contains the substance of an introductory address to a course of chemical lectures given in Manchester (1798–1799) on the uses and applications of chemistry in agriculture, bleaching, dyeing, metallurgy, and other industrial occupations. Some copies (presumably issued later) contain a half-page slip of printed errata (see Cole). In the present, no doubt earlier copy, Henry has personally corrected textual errors in ink on pages 34, 36, 40, and 42. (Cole, 634; Lawrie, 307; Partington, III, 825; Sotheran, Cat. 879 [1947], 2691 ["Very scarce"]; Watt, I, 485d; Wellcome, III, 249)

HENRY, William

On the Aëriform Compounds of Charcoal and Hydrogen; with an account of some additional experiments on the gases from oil and from coal. By William Henry . . . From the Philosophical Transactions.

London: Printed by W. Bulmer and W. Nicol, Cleveland-Row, St. James's. 1821.

First separate edition (offprint from *Phil. Trans.*). 4to. 1 leaf, 26 pp. Fine copy, unbound with wide margins, preserved in a cloth-covered folder with gilt-lettered crimson morocco label. Presentation copy to an anonymous recipient, inscribed in ink on title: "From the Author."

AN IMPORTANT paper in which Henry describes his analyses of combustible mixtures of gases obtained from whale oil and from coal. "Henry set out to analyze various inflammable mixtures . . . with a view to determining their relative powers of illumination and to explain the differences in terms of their compositions. His investigations covered a period of more than twenty years, during which he gradually improved his analytic techniques. As well as representing a significant contribution to the progress of the gas industry, his work confirmed that of Dalton on the compositions of methane and ethylene; and their conviction that hydrogen and carbon combined only in definite proportions, to form a limited number of compounds" (D.S.B.). Henry cites the researches of Berthollet, Cruickshank, Dalton, Davy, Faraday, Gay-Lussac, Murray, Thomson, et al. Of interest are Henry's observations on the reaction of olefiant gas (ethylene) with chlorine to produce chloric ether (ethylene dichloride) and its formation as a means of analyzing gases (e.g., mixtures of methane, ethylene, hydrogen, and carbon dioxide). Partington (III, 823–825) discusses Henry's researches on methane and ethylene but does

not mention this paper, which was read before the Royal Society, 22 February 1821. The offprint is dated (p. 26): Manchester, January 1821. (D.S.B., VI, 284; Ferchl, 227; Poggendorff, I, 1070)

HENSHAW, Nathaniel

Aero-Chalinos: or, A Register for the Air; in Five Chapters.

1. *Of Fermentation.* 2. *Of Chylification.* 3. *Of Respiration.* 4. *Of Sanguification.* 5. *That often changing the Air, is a friend to health. Also a discovery of a new Method of doing it, without removing from one place to another, by means of a Domicil, or Air-Chamber, fitted to that purpose. For the better preservation of Health, and cure of Diseases, after a new Method. . . .*

London: Printed for Benj. Tooke at the Ship in St. Paul's Church-Yard. 1677.

Second (first London) edition. 12mo. 12 leaves, 166 pp., 1 leaf (advertisements). With imprimatur leaf before title page. Very good copy, in original calf, covers gilt-ruled, rebounded with contemporary spine laid on, maroon label, gilt.

HENSHAW (1628–1673), a physician (M.D., Leiden and Dublin) who practiced in Dublin, was an early member of the Royal Society (F.R.S., 1663). Little is known of his life and work, except the present book, which appeared in Dublin in 1664 (Wing, H1481). It was inspired by Boyle's publications on the air (1660 and 1662), and the author's debt to Boyle's early experiments is acknowledged in the preface. "A curious little treatise. . . . The second edition was printed by order of the Royal Society, having been prepared for the press by the author's elder brother, Thomas Henshaw. It was reviewed in the *Phil. Trans.* (XII, 834–5) by Henry Oldenburg" (D.N.B.). Containing much of chemical and biochemical interest, the preface refers to air in plants (Hales's idea), and Henshaw believed that air is the cause of all fermentation. He "deals with respiration, saying that air cools the lungs and deprives them of fuliginous exhalations by a purely mechanical effect; . . . and life is a continued fermentation of the blood. The book describes an air-chamber for people to live in" (Partington). (Ferchl, 227; Krivatsy, 5496; Neu, 1913; Partington, III, 121; Sotheran, Cat. 725 [1912], 9161 ["Rare"]; Thorndike, VIII, 423; Watt, I, 485n; Wellcome, III, 249; Wing, H1482)

HÉRICART DE THURY, Vicomte Ferrand

Des Fosses d'Aisances Mobiles Inodores, de leur nécessité, de leur avantage pour le gouvernement, les propriétaires et les locataires. Suivis du rapport fait à la Société Royale d'Agriculture, dans sa séance du 19 août 1818, par M. le Vicomte Héricart Ferrand de Thury.

Paris: Aux Bureaux de l'Entreprise générale. Août 1818.

First edition. 8vo. 1 leaf, 46 pp. Very fine copy in contemporary tree calf gilt, maroon morocco label gilt. From the library of Héricart de Thury, Conseiller d'État, with neat stamp on title. Bound with: 8 other works on the same subject.

AN IMPORTANT pioneering work on the chemistry, technology, and sanitary engineering of newly invented odorless, portable privies. They were deodorized by using quicklime and other chemicals and were a vast improvement over the odor-laden privies of the time. The report on the new privies made by MM. Cazeneuve & Co. is given on pages 27–46. A very rare and important work on chemical and sanitary engineering, not mentioned in the usual bibliographies. Watt (II, 907r) and Poggendorff (I, 1076) give brief biographical details on Héricart de Thury (1776–1854), noted mine and civil engineer, without mentioning this or the other works in this volume. A unique and desirable association copy.

HÉRICART DE THURY, Vicomte Ferrand

Rapport à la Société Royale et Centrale d'Agriculture; par M. Héricart de Thury, Maître des Requêtes, Ingénieur en chef des Mines, Membre de la Société, au nom de la Commission des engrais, le 5 Janvier 1820; sur un nouvel engrais proposé sous le nom d'Urate, par MM. Donat et Compagnie. . . . Imprimé par ordre de la Société.

Paris: De l'Imprimerie de Madame Huzard. 1820.

First edition. 8vo. 102 pp. With folding plate (Bourla del et sculp., 1820). Fine copy, in crimson half morocco antique, marbled boards, spine gilt-lettered and dated.

A REPORT ON the use of urine and night soil as a fertilizer in agriculture. The sources were the cesspits of Montfaucon, and a distinguished panel of scientists and engineers was commissioned to examine the subject. Vauquelin was the chemist on the panel. Detailed descriptions are given on the analysis of fresh and aged urine and dried night soil as prepared by Donat and Company. The various types of fertilizers produced were tried on the growth of turnips, potatoes, beets, and other vegetables, with good results in different types of soils. The folding plate depicts the equipment required for producing urates calcaires. A rare and important book on agricultural chemistry and the production of fertilizers from natural sources. No bibliographical reference to this interesting work has been found.

HERLENIUS, Daniel

Dissertatio Chemica Acidum Vegetabile Sistens, . . . Publico examini deferunt Andr. Ph. Tidström . . . et Daniel Herlenius, V. Gothus. In Aud. Carol. Maj. die XV Junii Anni MDCCLXV.

Uppsala. (1765).

First edition. 4to. 2 leaves, 10 pp. Very good copy, uncut with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A DISSERTATION ON the acidic substances that can be obtained from plants, either directly or from their decomposition and fermentation. Acids are defined as materials that contain three of the Aristotelian elements (earth, fire, water), are corrosive, react with alkalies to produce salts, and possess the ability to turn syrup of violets from blue to red. The works of Wallerius are cited. No reference to Tidström, Herlenius, or this very rare Swedish dissertation has been located in the usual bibliographies.

HERMANN, Paul, and BOECLER, Johann

Cynosura Materiae Medicae, ante sedecim annos in lucem emissa, brevibusque annotatis exornata a Dn. Joh. Sigismundo Henningero . . . Nunc diffusius explanata, et compositorum medicamentorum recensione aucta, curante Johanne Boeclero . . .

Strassburg: Sumptibus Johannis Beckii. 1745–1754.

Second edition. 3 vols., 4to. I (1745): 8 leaves, 728 + 154, (6) pp. II (1747): 6 leaves, 891, (17) pp. III (1754): 2 leaves, 894, (22) pp. Title page of volume I in red and black. Fine set in original speckled calf, spines richly gilt, maroon morocco labels. Signature in ink on flyleaves of volumes I and II: "Boecler. 1747."

THE MOST complete edition of this monumental treatise on pharmaceutical chemistry, containing additional notes by Johann Sigismund Henninger (d. 1719). One of the most honored botanists of the pre-Linnaean era, Hermann (1646–1695) traveled in the Dutch East Indies collecting plants. In 1680 he was appointed professor of botany at Leiden and head of the botanical garden, which, through his efforts, became the richest in Europe in exotic plants. The first volume comprises his *Materia medica*, enlarged to nearly three times the size of the first edition (Strassburg, 1710; Wellcome, III, 253). Edited by Boecler (1681–1733), professor of chemistry and materia medica at Strassburg, the first volume of Hermann's *Cynosura* contains additional notes by Boecler. Volumes II and III comprise Boecler's *Materiae medicinae continuata*, parts one and two of which first appeared at Strassburg in 1729 and 1731, respectively. Volume III of the present edition was published by Conrad

Schmidt. All editions are rare, and this copy belonged to a relation of the editor, Johann Boecler (1710–1759), professor of chemistry, botany, and materia medica at Strassburg. (Blake, 52)

HERMBSTÄDT, Sigismund Friedrich

Allgemeine Grundsätze der Bleichkunst oder theoretische und praktische Anleitung zum Bleichen des Flachs, der Baumwolle, Wolle und Seide, so wie der aus ihnen gesponnenen Garne, und gewebten oder gewürkten Zeuge; nach den neuesten Erfahrungen der Physik, Chemie und Technologie bearbeitet von D. Sigismund Friedrich Hermbstädt, . . .

Berlin: Im Verlage der Realschulbuchhandlung. 1804.

First edition. 8vo. xxiv, 432 pp. With 10 folding engraved plates of chemical and related apparatus. Very fine copy, unpressed and uncut with wide margins, in gilt-ruled quarter morocco antique, marbled boards, maroon morocco label, spine dated, original colored wrappers bound in.

ONE OF the important books in the history of bleaching and the first of several on this subject by Hermbstädt (1760–1833), who later became professor of technology at the University of Berlin. The first chemist in Germany to adopt the antiphlogistic views of Lavoisier, he translated the *Traité élémentaire de chimie* (Paris, 1789) into German in 1792 (see Duveen & Klickstein, 175). "Hermbstädt not only gave very good courses of lectures but he also furthered the interests of chemical industry by his researches and books" (Partington, who lists several of the author's works on chemical technology). (Bolton, 526; Cole, 639; Edelstein, 3128; Ferchl, 230; Lawrie, 310; Partington, III, 578; Poggendorff, I, 1082; Ron, 517)

HERMES TRISMEGISTUS

Hermes Mercurius Trismegistus, His Divine Pymander in Seventeen Books. Together with his Second Book, Called Asclepius; Containing fifteen Chapters, with a Commentary. Translated formerly out of the Arabick into Greek, and thence into Latine, and Dutch, and now out of the Original into English; By that learned Divine Dr. Everard.

London: Printed by J. S. for Thomas Brewster, at the three Bibles in Paul's Church-Yard near the West End. 1657.

Second (most complete) edition. 12mo. 8 leaves, 246 pp.; 1 leaf (title to Asclepius), 127, (1) pp. Few minor stains; otherwise very good copy in blind-ruled brown morocco antique.

THE VERY rare complete English edition of this translation by John Everard (1575?–1650?), divine and mystic. Edited by the chemist and physician to Oliver Cromwell's parliamentary army, John French (1616?–1657), the address "To the Reader" is signed with his initials: J. F. The text

comprises a synthesis of neo-Platonic philosophy, Philonic Judaism, and cabalistic theosophy. "The reputed Egyptian original of alchemy is encouraged throughout the vast body of medieval alchemical literature by constant references to Hermes Trismegistos, or Hermes the Thrice-Great, the alleged father of the 'Hermetic Art' and the patron of its practitioners, the self-styled 'sons of Hermes'" (Read, *Prelude to Chemistry*, p. 5). The first English edition (London, 1650) did not contain the important second book called *Lacrepidius*, which is listed separately by Wing. Not in Guaita, Krivatsy, Mellon, Neu, Smith, Wellcome, etc. (Duveen, 291; Edelstein, 1137; Ferguson, I, 389 [not in Young Coll.]; Ferguson Coll., 316; Wing, H1566 & H1567)

HERMES TRISMEGISTUS

Mercurii Trismegisti Pymander, de Potestate et Sapientia Dei. Eiusdem Asclepius, de voluntate dei. Opuscula sanctissimis mysteriis, ac vere coelestibus oraculis illustrissima. Iamblicus de mysteriis Aegyptiorum, Chaldaeorum, & Assyriorum. Proclus in Platonium Alcibiadem, de anima & daemone. Idem de sacrificio & magia. Quae omnia solerti cura repurgata, ac suo tandem candori restituta sunt. Basel: Per Mich. Isingrinium, Mense Augusto. 1532.

First Basel edition. 8vo. 480 pp., 2 leaves. Woodcut printer's device on last page. Large and small historiated woodcut initials. Fine, crisp copy, in late-seventeenth-century mottled calf, tastefully rebounded, with richly gilt spine laid on, maroon morocco label. Armorial bookplate: Geo. Norton.

A PHILOSOPHICO-RELIGIOUS TREATISE of the second century A.D., ascribed to Hermes Trismegistus, whose name was associated with alchemy (the Hermetic art) throughout the Middle Ages and indeed into the eighteenth century. The texts are based on much earlier Greek and Egyptian sources. One of the two principal works is the *Pymander* ("Shepherd of Men"). This volume contains the first edition of the commentary of Proclus on Plato's *Alcibiades* and the first edition of his *De sacrificio et magia*. In addition to works listed on the title page, there is a final piece, *Ex Porphyrio de animae descensu atque ascensu*. All the works are in the translations of the great Greek scholar Marsilius Ficinus (1433–1499), with the exception of the *Asclepius*, the most ancient of the writings attributed to Hermes, which is in the translation sometimes (possibly by mistake) ascribed to Lucius Apuleius. The original Greek text did not appear until the Adrien Turnebus edition (Paris, 1554). Dannenfeldt (D.S.B., VI, 305–306) gives an account of Hermes Trismegistus. A very rare and important edition. This was the text used throughout the sixteenth century. Not in Brunet, Caillet, Durling, Graesse, Guaita, Hall,

Mellon, Waite, Watt, or the usual chemical bibliographies. (British Library, *S.T.C. German, 1455–1600*, p. 398; Smith, 229; Wellcome, I, 3121)

HERMES TRISMEGISTUS

Il Pimandro di Mercurio Trimegisto, tradotto da Tommaso Benci in lingua Fiorentina. . . . Florence: (L. Torrentino). 1548.

First edition in Italian, first issue. 8vo. 12 leaves, 119, (1) pp., 8 leaves (last blank). Large woodcut printer's device on title page. Roman type, with guide letters. Very fine copy, in contemporary vellum. Engraved armorial bookplate: The Right Honourable Wilmot, Earl of Lisburne in the Kingdom of Ireland (possibly Sir Charles Wilmot, 1570?–1644? See D.N.B.).

A BEAUTIFULLY PRINTED edition by the famous Torrentino press, translated from Latin into Italian by Tommaso Benci and edited by Carlo Lenzone. The preface is dated 28 January 1547. "The correctness of the ancient tradition that this treatise of mystic and gnostic speculation goes back to ancient Egypt is reasserted by modern scholars" (Thorndike, I, 287–291). Very rare. The second issue, with identical pagination (Florence, 1549), is described by Ferguson (I, 389). Not in D.S.B., Durling, Mellon, Neu, Verginelli, Watt, Wellcome, etc. (British Library, *S.T.C. Italian Books, 1465–1600*, p. 325; Caillet, 5092 ["Très rare, superbe édition"]; Duveen, 290; Smith, 230)

HERMETISCHE PHILOSOPHUS

Der Hermetische Philosophus, oder Haupt-Schüssel, derer zu der Chymie gehörigen Materien, Ursprung, und Herkommen aller Metallen und Mineralien. Das ist: Ein Weegweiser und Summarischer Bericht, wie nemblich das Universale Generallissimum, gleichwie die Metallen und Mineralien durch die Astra gewürcket, aus Wasser und Erden ihren Leib endlichen durch viele Jahre nehmen, und in mancherley Gestalt formiret werden, per Artem inner kurtzen Zeit zu erlangen sey; und wie man folglich aller Metallen und Mineralien Eigenschafft auff das leichteste erkundigen und erforschen solle. Allen fleissigen Nachforschern der Natur zu gefallen an vielen Orthen dieses Büchleins klar beschrieben, und in sieben Tractätlein bestehend zum Druck befördert.

Franckfurt und Leipzig: Verlegt Johann Gabriel Grahl, Buchhandler in Wienn. 1709.

Second edition? 8vo. 10 leaves, 319, (1) pp. Lacks frontispiece (mentioned by Ferguson). Neat marginal annotations in ink (probably eighteenth century). A good copy in late-nineteenth-century half morocco, pebbled cloth, spine gilt-lettered. Bound with: Söldner, *Keren Happuch* (Hamburg, 1702), and another work.

IL
PIMANDRO DI MER-
curio Trimegisto, tradotto da
Tommaso Benci in lin-
gua Fiorentina .



Con privilegio
IN FIRENZE
1548.

Hermes Trismegistus. Il Pimandro di Mercurio Trimegisto. Florence, 1548.

A RARE COLLECTION of seven distinct alchemical works, the titles of which are listed by Ferguson. An earlier (first?) edition (Frankfurt, 1690, 8vo.) is mentioned in Jacob Leupold's *Prodromus Bibliothecae metallica* (1732, p. 70). Ferguson states that certain of the tracts "seem to have been reprinted from the *Hermetischer Rosenkrantz*." Although the title page of this copy is printed in red and black, in agreement with the copy in the Young Collection, copies exist in which the title page is printed entirely in black and without the frontispiece (see Walter Aliche, *From Alchemy to Atoms*, Vaduz, 1975, Catalogue 261, item 105). Aliche suggests that owing to the book's popularity, the publisher had to put out a second issue the same year, without the frontispiece. Not in Blake, Bolton, Duveen, Edelstein, Ferchl, Guaita, Heym, Neu, Rosenthal, Smith, Waite, Waller, Watt, etc. (Caillet, 5105; Ferguson, I, 395; Ferguson Coll., 318; Wellcome, III, 254)

HEROLD, Nicolaus Bernhard

Dissertatio Inauguralis Medica sistens quaedam momenta de Usu Mercurii Phosphorati Schaefferi. . . Praeside D. Christ. Gothfr. Grunero . . . Die VI Aprilis . . . publice defendet . . . Nicolaus Bernhardus Herold Revaliensis.
Jena: Typis Goepferdtii. 1793.

First edition. 4to. 2 leaves, 18, (2), 14 pp., 1 leaf (blank). Woodcut seal on verso of penultimate leaf. Fine copy in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated, with original yellow wrappers bound in.

THE DOCTORAL dissertation of Herold (1768–1806), presented under the direction of the celebrated German physician Christian Gottfried Gruner (1744–1815). The preparation, chemical properties, and medicinal uses of mercuric ortho-phosphate are described, with references to the works of C. Hagen, J. B. Richter, J. A. M. Schaeffer, et al. Herold discusses the effectiveness of mercuric ortho-phosphate in the treatment of various types of venereal disease. At the end, with separate divisional title page, is an address, *De convulsione cereali responsum IV*, by the praeses, Gruner, and a brief biography of Herold. See Garrison-Morton (nos. 2376, 5524) for other works by Gruner. Rare. Not in the usual chemical and medical bibliographies. (Ferchl, 231; Waring, 504; Wellcome, III, 255)

HERON ALEXANDRINUS

Heronis Alexandrini Spiritualium Liber. A Federico Commandino Urbinate, ex Graeco, nuper in Latinum conversus. Cum privilegio Gregorii XIII. Pont. Max.
Urbino: (Domenico Frisolino). 1575.

First edition. 4to. 2 leaves, 80 folios. Historiated woodcut capitals and many large woodcut illustrations in text. Small repair to title leaf (with no loss), minor water stain in lower margin of 30 leaves, occasional neat early marginal annotations; otherwise fine, crisp copy with wide margins, in contemporary vellum, with remains of ties. From the Fuerstenberg library, Donaueschingen, with stamp on verso of last leaf. Bound with: Porta, Giovanni Battista della, *I tre libri de' spiritali* (Naples, 1606).

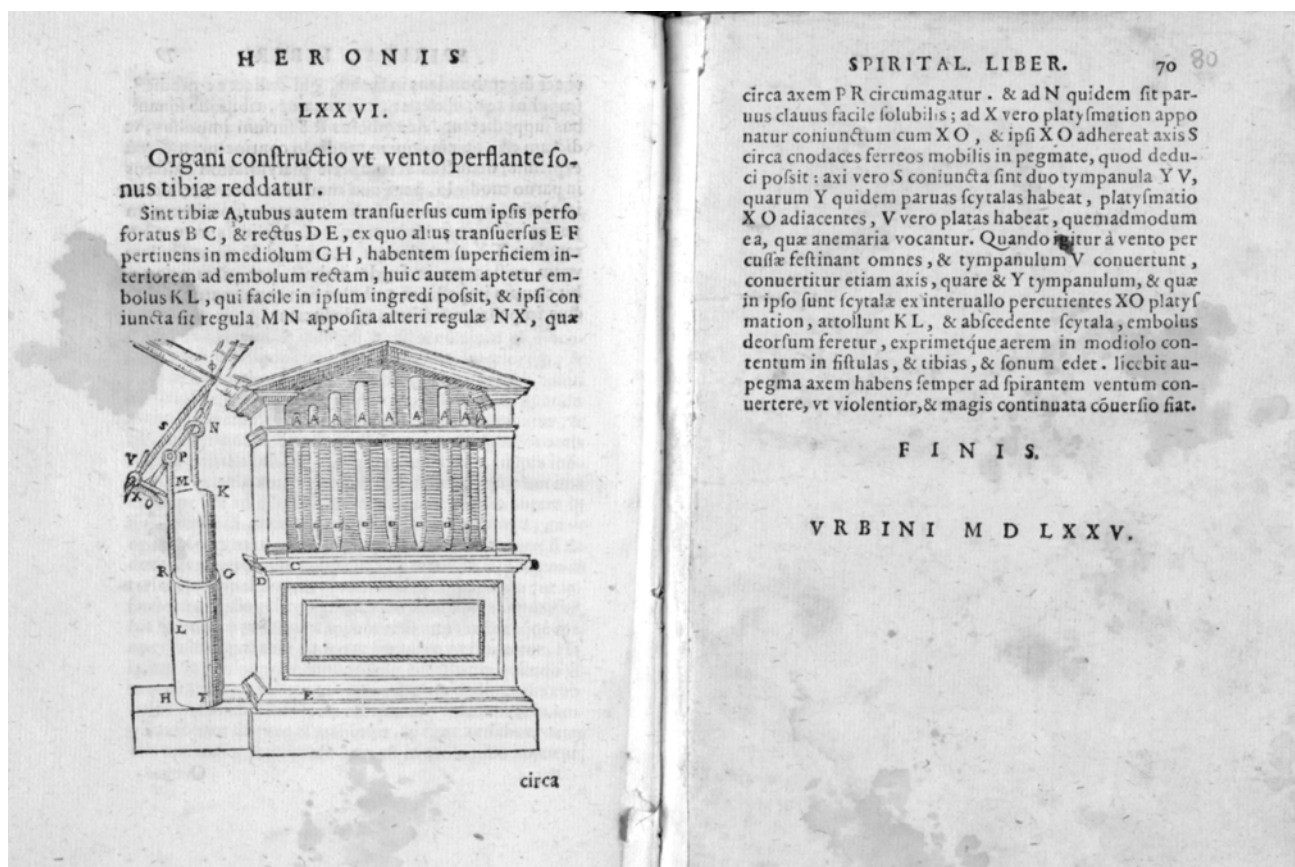
HERO OF Alexandria (fl. 1st–2nd century A.D.), physicist, mathematician, and mechanic, published several books of which the present on pneumatics, translated by Federico Commandino, is one of the most important. Thorndike (I, 188–193) states that "his works constitute our most important, and often our only, source for the history of exact science and of technology in antiquity." "Modern science, in its early stages, was helped . . . by the mechanical treatises of Archimedes and the technological works of Hero of Alexandria and Vitruvius" (Wolf, I, 2). "Hero's *Pneumatics* may be largely derived from the writings of Ctesibius and Philo of Byzantium. The mechanical contrivances described are mostly operated by the pressure of the atmosphere or of heated gases; they include the siphon, the fountain, the pump, the 'steam engine' (operated by the reaction of escaping steam), the organ . . . thermoscope . . . and automata" (Williams). Partington (I, 206–208) discusses this work. "The *Pneumatics* was by far the most read of Hero's works during the Middle Ages and the Renaissance; more than 100 manuscripts of it have been found" (D.S.B., VI, 310–312). (Adams, H369; British Library, *S.T.C. Italian Books, 1465–1600*, 326; Caillet, 5117; Hoover, 412; Poggendorff, I, 1084; Thorndike, I, 188–193; Thornton & Tully, 16; Waller, 11371; Watt, I, 488i; Wellcome, I, 3129; Williams, *Biographical Dictionary of Scientists*, 251)

HERPIN, Jean Charles

De l'Acide Carbonique des ses Propriétés Physiques, Chimiques et Physiologiques; de ses Applications Thérapeutiques comme Anesthésique, Désinfectant, Cicatrisant, Résolutif, etc. . . .
Paris: J. B. Baillière et Fils. 1864.

First edition. 8vo. 12 + 564 pp. Several woodcut illustrations in text. Fine, crisp, uncut copy, in gilt-lettered red quarter cloth antique, marbled boards, with original printed wrappers bound in.

THE MOST comprehensive monograph on the chemical, physical, and physiological properties and applications of carbon dioxide and carbonic acid to appear up to that time. There are important historical references to the researches of Bergman, Black, Berzelius, Dumas, Faraday, Hales, Lavoisier, Priestley, Stas, et al. An extensive bibliography at



Heron Alexandrinus. *Spiritalium Liber. Urbino, 1575.*

the end lists earlier and contemporary works on carbon dioxide and carbonic acid, including a number on balneology. "A valuable work of reference on all that relates to the physiological effects, the medical properties and therapeutic applications of carbonic acid" (Waring). Not in Blocker, Osler, Reynolds, Waller, etc. (Bolton, 528; Ferchl, 231; Waring, 317)

HERPIN, Jean Charles

Récréations Chimiques, ou Recueil d'Expériences Curieuses et Instructives, auxquelles on a joint: un précis élémentaire de chimie; l'explication raisonnée des phénomènes produits dans les diverses expériences; enfin leurs applications a l'économie domestique ou aux arts. . .

Paris: Audot, Libraire-Éditeur, rue des Maçons-Sorbonne, No. 11. 1824.

First edition. 2 vols., 8vo., in 1. I: 2 leaves, 12 + 384 pp. II: 2 leaves, 304 pp. With 4 detailed folding copperplates of apparatus. Superb copy in pristine condition, in original quarter vellum, blue boards, gilt-lettered black morocco label.

AN INTERESTING and extensive collection of experiments designed to illustrate the various principles of inorganic and organic chemistry, including industrial applications. The second volume begins with a long section on fireworks (30 pp.). Two editions in Spanish appeared: Barcelona, 1827, 2 vols. (Philip, 70); Barcelona, 1829, 2 vols. (Duveen, 292–293). Herpin (1798–1872) was a native of Metz, where he founded the academy in 1819 at the age of only twenty-one. He later practiced medicine in Paris and published a number of chemical works. Scarce. Not in Brock, D.S.B., Wellcome, etc. (Bolton, 528; Ferchl, 231; Philip, 70; Pogendorff, I, 1086)

HERRENSCHWANDT, Johann Friedrich von

Dissertatio Medica Inauguralis, sistens Historiam Mercurii Medicam. . . pro gradu doctoratus . . . solemnini examini submittit Joh. Fredericus Herrenschwandt, Morato Helvetius. Ad diem 7. Augusti 1737.

Leyden: Conradum Wishoff. (1737).

First edition. 4to. 22 pp., 1 leaf (blank). Fine engraved title page (by R. Blokhuisen). Extremely fine, large-paper copy, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated, with original marbled wrappers bound in.

A SUMPTUOUS COPY of the very rare doctoral dissertation of the celebrated Swiss physician Herrenschwandt (1715–1798) on the history of the use of mercury and its compounds in medicine. Attempts to transmute mercury into gold by the alchemists are mentioned. The works of many earlier and contemporary chemists are cited, and Boerhaave is often quoted. The engraved title by Reynier Blokhuisen (fl. 1710–37), depicting a botanical garden, chemical apparatus, etc., is particularly attractive. Blake and Wellcome list several other titles by this author. Not listed in the usual chemical and medical bibliographies. (Waring, 470)

HERSCHEL, John Frederick William

A Preliminary Discourse on the Study of Natural Philosophy . . .

London: Printed for Longman, Rees, Orme, Brown, Green, & Longman, and John Taylor. 1832.

First edition, second issue. 8vo. 1 leaf (engraved title, dated 1830, with bust of Francis Bacon), vii, (3), 372 pp., 1 leaf (variant title page, dated 1832). Fine copy, uncut, in original purple cloth, rebacked, with original spine and printed paper label laid on.

HERSCHEL (1792–1871), celebrated astronomer, physicist, and chemist, in this his “most influential book . . . influenced the philosophy of science of John Stuart Mill and William Whewell; and it was read by Darwin and indeed by most scientists of his generation. It is an informal, personal and discursive work, in which almost every page contains some insight invaluable to the student of the science of the period” (Knight). The book contains much of chemical importance, including discussions of the atomic theory, phlogiston, and the researches of Black, Boyle, Dalton, Davy, Gay-Lussac, Lavoisier, Thomson, Wollaston, et al. Complete by itself, this is the initial volume (first issue, 1830) of *The Cabinet Cyclopaedia*, edited by Dionysius Lardner (1793–1859), which extended to 133 volumes. Other English editions appeared (1840, 1851), as well as American, French, German, and Italian editions. (G. Buttman, *The Shadow of the Telescope*, 1970, pp. 57–60; D.S.B., VI, 327; Knight, 147; Poggendorff, I, 1090; Sotheran, Cat. 672 [1907], 1901; Wellcome, III, 256)

HERTODT, Johann Ferdinand

Crocologia seu Curiosa Croci Regis Vegetabilium enucleatio continens illius Etymologiam, differentias, tempus quo viret, & floret, culturam, collectionem, usum mechanicum, Pharmaceuticum, Chymico-Medicum, omnibus pene humani corporis partibus destinatum, additis diversis observationibus, & quaestionibus Crocum concernentibus, ad normam et formam S.R.I. Academiae Naturae Curiosorum congesta . . .

Jena: Sumptibus Viti Jacobi Trescheri, Bibliopolae Vratislaviensis, Typis Johannis Nisi. 1670.

First edition, first issue. 8vo. 9 leaves, 283, (1) pp., 3, leaves. With engraved frontispiece (by J. M. Lerch), and large folding copperplate of 8 crocuses at the end. Title page in red and black. First gathering lightly embrowned; otherwise fine copy in original overlapping vellum. Bound with: Hertodt, J. F., *Opus mirificum sextae diei* (Jena, 1671).

HERTODT (or Herdott, 1647–1714), von Totenfeld, or Todtenfeldt, of Niclasburg in Moravia, was a member of the Leopoldine Academia Naturae Curiosorum in 1670 and chief physician to the emperor. He practiced medicine with great success in Brunn, the capital of Moravia. The *Crocologia* is an iatrochemical work that describes the chemical and medicinal properties of plants of the crocus family and is in fact an early book on phytochemistry. Only the second issue of 1671, with a reset title page, is mentioned by Ferguson, Krivatsy, and Watt. Rare. Not in the usual chemical and medical bibliographies. (Ferchl, 232; Ferguson, I, 400 [not in Young Coll.]; Krivatsy, 5541; Pritzel, 4014; Watt, I, 490k; Wellcome, III, 256)

HERTODT, Johann Ferdinand

Opus Mirificum Sextae Diei, id est Homo Physice, Anatomice, & Moraliter in potiores suas partes dissectus . . .

Jena: Sumptibus Viti Jacobi Trescheri, Bibliopol. Wratislav. Typis Johannis Nisii. 1671.

First edition, second issue. 8vo. 2 leaves, 78 pp. With engraved frontispiece (by Joh. Mart. Lerch). Fine copy. Bound with: Hertodt, J. F., *Crocologia seu curiosa croci* (Jena, 1670).

WRITTEN PARTLY in blank verse, this work deals with the culminating miracle of the Almighty's six days' work, namely, man. The author dissects man's physiology, anatomy, and moral character and comments upon each from the chemical, medical, and theological points of view. Only the first issue of 1670 is mentioned by Ferguson and Wellcome. In the present second issue, the title page has been reset. Rare. Not in the usual bibliographies. (Ferguson, I, 400; Krivatsy, 5542; Waller, 4383; Watt, I, 490k; Wellcome, III, 256)

HERTTWIG, Christoph

Neues und Vollkommenes Berg-Büch, bestehend in sehr vielen und raren Berg-Händeln, und Bergwercks-Gebräuchen, absonderlich aber über 200 vorhin noch nicht edirten und ans Licht gegebenen Berg-Urtheln und Abschieden, mit grossem Fleiss und Mühe, dergestalt colligiret und abgefasst, dass bey nahe keine einzige Materia in Berg-, Schmelz-, und Hammerwercks-Sachen, vorfallen mag, so nicht unter einer Rubric, der Nothdurfft nach, abgehandelt, und mit Alle-girung gelehrter und bewährter Männer Schrifften, wie nicht weniger darzu gehörigen Kayserlichen, Königlichen Churund Fürstlichen Berg-Ordnungen, sowohl was deren Concordanz als auch Discrepanz betrifft, entschieden, und auf die leichteste Manier zu finden wäre, . . .

Dresden und Leipzig: bey Joh. Christ. Zimmermanns sel. Erben, und J. N. Gerlachen. 1734.

Second edition. Folio. 5 leaves, 438 pp. Title in red and black. Some leaves characteristically embrowned (but not heavily); otherwise a very good copy in original unlettered blind-ruled calf over oak boards, with brass clasps on leather thongs. Unobtrusive eighteenth-century stamps of University of Vienna on title; also neat inscription dated 1750.

A VALUABLE ALPHABETICAL glossary of mining terms of considerable metallurgical and chemical interest, containing numerous notes and bibliographical references to earlier and contemporary literature. A close paginary reprint of the first edition (Dresden and Leipzig: J. C. Zimmermanns, 1710), this encyclopedic work includes much information on the laws, practical operations, and economics of the mining, smelting, and refining of metals and alloys. Herttwig (fl. 1710) was a counselor and professor of mining at Freiberg. The present second printing appears to be even rarer than the first, which is listed by Hoover, Smith, and Ward and Carozzi. Not in the usual chemical bibliographies. (Ferchl, 232; Hoover, 417)

HETON, Thomas

Some Account of Mines, and the Advantages of them to this Kingdom. With an Appendix relating to the Mine-Adventure in Wales. . . .

London: Printed by W. B. for John Wyatt, at the Rose in St. Paul's Church-Yard. 1707.

First edition. 8vo. 12 leaves, 171, (5) pp. Very good copy, in original paneled calf, rebounded, spine gilt-ruled, dark-green label. Engraved armorial bookplate of Ambrose Holbech (dated 1702) on verso of title leaf and pictorial bookplate of Robert Charles Sticht on front endpaper.

A WORK ON the advantage to Great Britain of developing its mining industry. Although published anonymously, the

author was Thomas Heton, who dedicated this book to the "Governour and Company of the Mine-Adventurers of England." In the preface Heton traces the history of mining in Britain, indicating the valuable metals and minerals that have been found: e.g., gold, silver, copper, tin, lead, iron, alum, and copperas. There is a detailed list of mining and metallurgical works referred to by Heton, including authors from Agricola to Webster. Also listed are alchemical titles from Albertus Magnus to Trevisanus. Strongly chemical in content, the book covers the extraction and refining of metals, the supposed growth of metals in ores, and transmutation and ends with six chapters on individual metals: gold, silver, copper, lead, tin, and iron. The appendix (pp. 161–171) discusses the famous silver, copper, and lead mines recently discovered by Sir Carbery Pryce (d. 1695), which were bought by Sir Humphrey Mackworth (1657–1727), with their progress to date. Very rare. (Ferguson Coll., 662; Hoover, 419)

HEURLIN, Samuel Nicolaus

Disquisitio Chemica Hypotheseos de Transmutatione Aquae in Terram, . . . moderante . . . Petro Adriano Gadd, . . . ad Publ. Bonorum Examen modeste defert Samuel Nicolaus Heurlin Wiburgensis, in Auditorio Majori, die XIV Junii Anni MDCCLXIII.

Åbo: Impressit Joh. Christoph. Frenckell. (1763).

First edition. 4to. 1 leaf, 18 pp. Large woodcut tailpiece on final page. Fine copy, in maroon quarter cloth antique, marbled boards, spine labeled: Gadd. Nine Dissertations. 1759–1778.

AN INTERESTING dissertation on the alchemical hypothesis that water can be transmuted into earth under certain conditions. A student of Pehr Adrian Gadd at Åbo, Heurlin makes special mention of the experiments carried out by Boyle, Hooke, and Dickinson in England and also cites similar experiments by Van Helmont, Juncker, Marggraf, Rochas, Wallerius, et al. By boiling distilled water under reflux in glass flasks for several months and then evaporating the water, a white residue was obtained. Chemists thus believed that they had achieved a transmutation of water (then thought to be an element) into the Aristotelian element earth. The true explanation was that the boiling water had dissolved small quantities of salts and silica from the glass flasks, and these substances appeared as the "earth" on evaporating the water. (Bolton, 466; Edelstein, 945; Ferchl, 168; Partington, III, 179; Poggendorff, I, 826)

SOME
 ACCOUNT
 OF
 MINES,

And the *Advantages* of them to
 this KINGDOM.

With an *APPENDIX* relating
 to the MINE-ADVENTURE in *Wales*.

Fert Britannia Aurum & Argentum.

Tacitus in vita Agricolaë, cap. 10.

Fodinæ sunt Scholæ Optime Philosopharum.

Paracelsus de Merallis & Mineralibus, lib. 1.

Τὰ γὰρ μὲν ἀργυρεῖα εἰ κατασκευασθῆναι ὡς δεῖ, πάλι-
 πολλα ἂν νομίσω χρήματα ἴξαι αὐτῶν προσιέναι.

Xenophontis Opera (edita per Stephanum) p. 539.

L O N D O N,

Printed by *W. B.* for *John Wyat*, at the *Rose* in
St. Paul's Church-Yard. MDCCVII.

HEYDON, John

The Wise-Mans Crown: or, the Glory of the Rosie-Cross. Shewing the Wonderful Power of Nature, with the full discovery of the true Coelum Terrae, or first Matter of Metals, and their Preparations into incredible Medicines or Elixirs that cure all Diseases in Young or Old: with the Regio Lucis, and holy Household of Rosie Crucian Philosophers. Communicated to the World by John Heydon, Gent. A Servant of God, and Secretary to Nature. . . .

London: Printed for the Author; and are to be sold by Samuel Speed at the Rainbow in Fleet-Street. 1664.

First edition, first issue. 3 parts in 1 vol., 8vo. 22 leaves, pp. 1–40, (41–47), 48–54; 2 leaves, 44 pp. With engraved portrait frontispiece of Heydon. Divisional title to *Hammegulleh Hampaaneah* (p. 41, dated 1665, with imprint: P. L. for Samuel Speed), and *Hampaaneah Hammegulleh* (dated 1664, with imprint: Printed for the Author). Fine, crisp copy, in polished calf antique. Bound with: Paracelsus, *Of the Chymical Transmutation* (London, 1657).

THE ECCENTRIC astrologer and attorney Heydon (1629–ca. 1670), who practiced law and also cast nativities, was arrested several times for treasonable writings but was the most famous astrologer of the Restoration. Apparently not a Rosicrucian, he knew their lore and wrote several books popularizing it. The most alchemical of his writings, the three books (parts) give directions for preparing the philosopher's stone and transmutation. Much of the work is purloined from Philalethes, and Waite says that Heydon was the “chief of the alchemical liars who have lived in England.” Krivatsy lists the second issue of 1665 with variant title page. The third book (*Hampaaneah Hammegulleh*) has separate collation and pagination. (Duveen, 293 [“Extremely rare”]; Ferguson Coll., 320, 321 [2 copies, both imperf.]; Hall, 86; Krivatsy, 5597; Neu, 1933; Pritchard, 168; Waite, 289; Watt, I, 493g; Wing, H1667A, H1677)

HEYLYN, Peter

Cosmographie in Four Books. Containing the Chorographie and Historie of the whole World, and all the principal Kingdoms, Provinces, Seas, and Isles thereof. . . .

London: Printed for Henry Seile, and are to be sold at his Shop over against St. Dunstons Church in Fleet-Street. 1657.

Second edition. Folio. 7 leaves, 1095, (1) pp., 10 leaves. Engraved title page (by Robert Vaughan) with allegorical figures representing Europe, Africa, Asia, and America. With 5 divisional title pages (books I, III, and IV dated 1656, book II dated 1657, and book IV, part 2, undated). Four double-page folding maps, each dated 1652, of Europe, Asia, Africa, and America (North and South). The maps engraved by Robert

Vaughan, Johann Goddard, Henry Seile, and William Trevelthen, respectively. Very fine copy, in original calf, rebacked, maroon label, spine dated.

HEYLYN (1600–1662), ecclesiastical writer, of Magdalen College, Oxford, was prebendary of Westminster (1631) and incumbent of Alresford, Hampshire (1633). Although at first converted to Puritan views, he later joined Charles I at Oxford, and became sub-dean at Westminster at the coronation of Charles II in 1661. The *Cosmographie* (first, 1652) is one of his chief works, and the present edition is the last published during his lifetime. The section on America is particularly interesting, the map showing California as an island extending as far north as Cape San Sebastian (near Mendocino). San Francisco is named Port Sir Francis Drake, Monterey is Port de Monte Rey. Northern California was named Nova Albion by Drake in 1577 “in honour of England, his own Countrey, which was once called Albion.” Many details are given of the first meeting of the English explorers with the “painted savages of northern and southern California.” Heylyn also covers subjects of chemical interest in his descriptions of various countries (e.g., mineral waters, fire, gunpowder, dyes, pigments, glass, lodestones, naphtha, ores, and metals). (Watt, I, 493m; Wing, H1690)

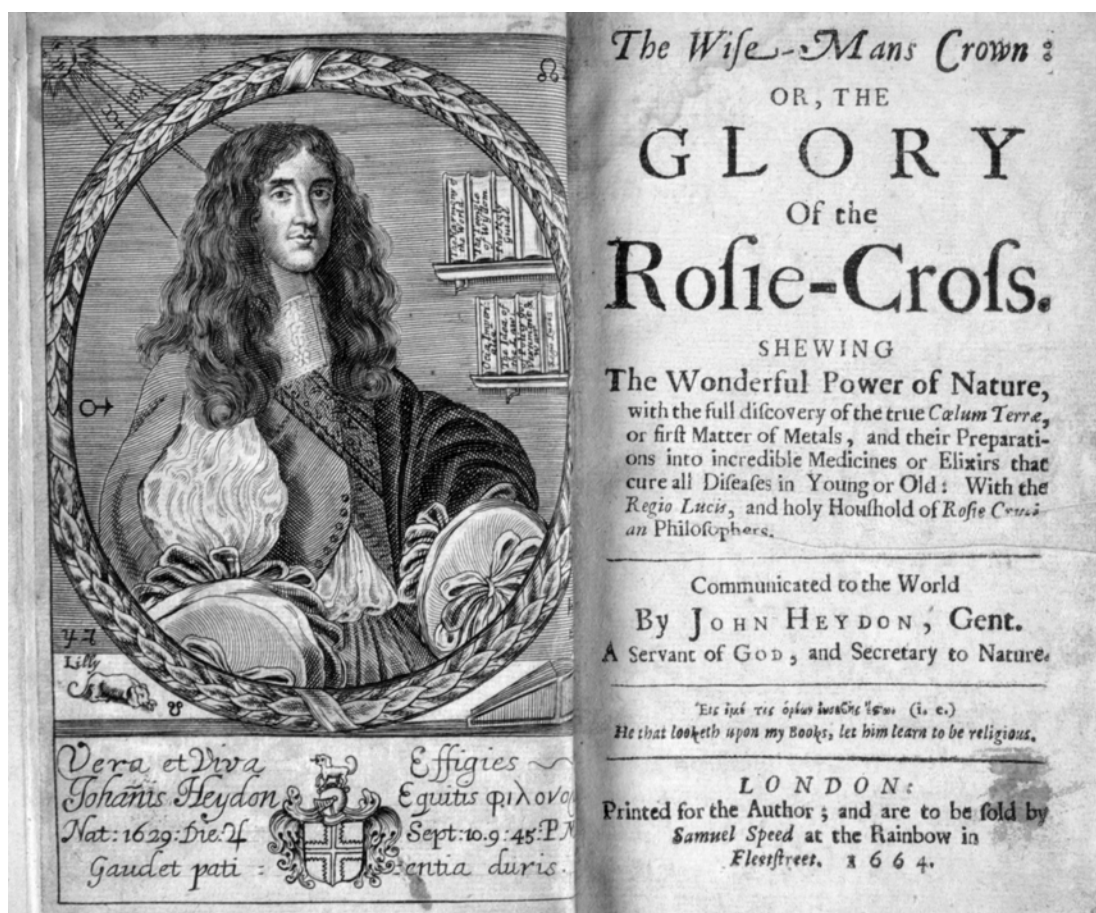
HIGGINS, Bryan

Experiments and Observations made with the View of Improving the Art of composing and applying Calcareous Cements and of preparing Quick-lime; Theory of these Arts; and Specification of the Author's cheap and durable Cement, for Building, Incrustation or Stuccoing, and artificial Stone. By Bry. Higgins, M.D.

London: Printed for T. Cadell, opposite Catherine-Street, in the Strand. 1780.

First edition. 8vo. xi, (1), 233, (1) pp. Pristine copy, with half title, in original speckled calf, spine gilt-ruled, crimson morocco label.

AN IMPORTANT book and one of the earliest on the chemistry of cement making. Higgins (1737 or 1741–1818), chemist and physician (M.D., Leiden, 1765), obtained a patent in 1779 for a cheap and durable cement composed of washed sand, slaked lime, limewater, and bone ash. This work describes the many experiments he made to optimize his invention. It is of interest to note that Higgins' patent for an artificial cement was granted forty-five years before Joseph Aspdin's patent for Portland cement (21 October 1824), which is usually cited as the first, and in which Aspdin (1779–1855) used Higgins' phrase “a cement of artificial stone.” Higgins opened a School of Practical Chemistry



Heydon. *The Wise-Mans Crown*. London, 1664.

in 1774, with regular lectures that were attended by Benjamin Franklin, Edward Gibbon, Joseph Priestley, et al. This is a copy of the true first edition; an almost identical second edition (not issue) also dated 1780 was published in 1796 or later. For differences in the two editions, see Cole, 642. "Beside lecturing, experimenting, consulting, and advising across a broad range of chemical topics, Higgins also developed a considerable business in the manufacture and supply of reagents and chemicals" (D.S.B.). (Bolton, 1176; D.S.B., VI, 383; Duveen, 294; Edelstein, 1144; Ferchl, 234; Honeyman, 1679; Neu, 1938; Partington, III, 728; Watt, I, 495n; Wellcome, III, 262)

HIGGINS, Bryan

Experiments and Observations relating to Acetous Acid, Fixable Air, Dense Inflammable Air, Oils, and Fuel; the Matter of Fire and Light, Metallic Reduction, Combustion, Fermentation, Putrefaction, Respiration, and other subjects of Chemical Philosophy. By Bryan Higgins, M.D.
London: Printed for T. Cadell, in the Strand. 1786.

First edition. 8vo. xvi, 353, (1) pp., 1 leaf (Corrections). Fine copy with the half title, in green half calf antique, cloth boards, maroon morocco label.

DEDICATED TO the late duke of Northumberland, this, "his best known work . . . appears also to have formed the subject of some of his lectures . . . many of his views are, for their time, remarkable for their acuteness and generalising character" (D.N.B.). "More than one third of the book had been printed in 1784 but press of duties, the fact that some of the material had been presented in his course and illness all conspired to delay publication" (Cole). Higgins describes the preparation of glacial acetic acid, as well as its reaction with bases to form acetates. He discovered acetamide by distilling well-dried ammonium acetate and describes its physical and chemical properties, including its precipitation by silver nitrate (pp. 192 ff.). Higgins's experiments and conclusions are based on the phlogiston theory. In a statement (p. 317) he "approaches Dalton's idea of atoms and elements having different weights, and Avogadro's hypothesis that equal volumes of gases contain equal

numbers of particles" (Partington, who discusses this book in detail [pp. 734–735]). (Bolton, 530; Cole, 643; D.S.B., VI, 384; Duveen, 294; Edelstein, 1145; Ferchl, 234; Neu, 1939; Partington, III, 728; Poggendorff, I, 1101; Sotheran, Cat. 672 [1907], 1916 ["rare"]; Waring, 200; Watt, I, 495n)

HIGGINS, Bryan

Minutes of the Society for Philosophical Experiments and Conversations.

London: Printed for T. Cadell, Junior, and W. Davies (Successors to Mr. Cadell), in the Strand. 1795.

First edition. 8vo. 1 leaf (title), 355, (1) pp. With 4 folding engraved plates (2 of which are signed: see Cole). Fine copy in early-nineteenth-century green embossed cloth, maroon morocco label. Armorial bookplate: Charles Walter Lyon.

THE SOCIETY for Philosophical Experiments and Conversations was founded in London on 25 January 1794 and met weekly in Higgins's laboratory. A list of members is given (pp. 7–9). Higgins was the principal experimenter, and one of his assistants was Thomas Young (1773–1829). The purpose of the society was the performance of experiments and demonstration of the useful application of the latest discoveries in chemistry. Some of the apparatus employed was quite complicated and expensive. This volume records the twenty-one sessions of the society. Included are discussions and experiments on heat, analysis and synthesis of atmospheric air, respiration, animal heat, synthesis and decomposition of water, and oxidation of metals. Many experiments repeat those described in Lavoisier's *Elements of chemistry* and Crawford's *Experiments . . . on animal heat*. The antiphlogistic theory of Lavoisier was not then clearly understood, and Thackray states that Higgins possessed "a powerful mind actively grappling with some of the leading theoretical problems of the day" (D.S.B.). Published in a small number of copies, this work is now very rare. A German version by A. N. Scherer appeared (Halle, 1803). (Bolton, 1129; Cole, 644; D.S.B., VI, 384; Ferchl, 234; Partington, III, 729; Poggendorff, I, 1101; Sotheran, Cat. 725 [1912], 9267 ["Rare"]; Sondheimer, 729; Watt, I, 495n)

HIGGINS, William

A Comparative View of the Phlogistic and Antiphlogistic Theories. With inductions. To which is annexed, an analysis of the human calculus, with observations on its origin, &c. By William Higgins, of Pembroke College, Oxford. . . .

London: Printed for J. Murray, No. 32, Fleet-Street. 1789.

First edition, first issue. 8vo. 3 leaves, xiv pp., 1 leaf (errata), 316 pp. Diagrams in text. Fine copy, unpressed and uncut with wide margins, in quarter calf antique, marbled boards, maroon morocco label, spine gilt-ruled and dated. From the library of

Thomas Romney Robinson (1792–1882), F.R.S. (1856), Irish astronomer and mathematician (see D.N.B.).

HIGGINS (1763–1825), nephew of Bryan Higgins, studied at Oxford (1768–1788) but left without a degree. First appointed chemist at Apothecary's Hall, Dublin (1792), then chemist to the Irish Linen Board (1795), he became professor of chemistry and mineralogy to the Royal Dublin Society (1796). In contrast to his uncle Bryan, William Higgins was an early supporter of Lavoisier's antiphlogistic theories, which he defends in this book. Published the same year as Lavoisier's great *Traité élémentaire de chimie*, this work is mainly concerned with a clever refutation of Richard Kirwan's *Essay on phlogiston* (1787), which the French chemists had translated and criticized. An extensive account is given by Partington, who describes this as Higgins's "most important work." Duveen (*Supplement to a Bibliography of the Works of A. L. Lavoisier*, 1965, p. 138) lists this among the historically significant books relating to Lavoisier's researches. Higgins later claimed that he had put forward ideas on the atomic theory in this work that anticipated those of John Dalton. (Bolton, 530; Cole, 648; D.S.B., VI, 386; Edelstein, 1147; Ferchl, 234; Partington, III, 737; Poggendorff, I, 1102; Smith, 233; Thornton & Tully, 172; Watt, I, 495t)

HIGGINS, William

A Comparative View of the Phlogistic and Antiphlogistic Theories. With inductions. To which is annexed, an analysis of the human calculus, with observations on its origin, &c. By William Higgins, of Pembroke College, Oxford. . . .

London: Printed for J. Murray, No. 32, Fleet-Street. 1789.

First edition, first issue. 8vo. 3 leaves, xiv pp., 1 leaf (errata), 316 pp. Diagrams in text. Very fine, virtually mint copy, in quarter calf antique, marbled boards, maroon morocco label, spine gilt-ruled and dated.

ANOTHER COPY of this important work. In his *Experiments and Observations on the Atomic Theory* (London, 1814, p. 10), Higgins states that when the *Comparative View* (1789) "was published, there were one thousand copies of it sold." Not in Blake, Duveen, Ferguson, Ferguson Coll., Waller, Wellcome, etc.

HIGGINS, William

A Comparative View of the Phlogistic and Antiphlogistic Theories. With Inductions. To which is annexed, an analysis of the human calculus, with observations on its origin, &c. By William Higgins, of Pembroke College, Oxford. *The second edition* . . .

London: Printed for J. Murray, No. 32, Fleet-Street. 1791.

Second edition. 8vo. 3 leaves, xiv, 316 pp., 1 leaf (errata). Very good copy, uncut, in contemporary boards, rebounded in early-nineteenth-century cloth. Lacks 6 leaves (signatures N2–N7, pp. 179–190), which have been supplied in neat nineteenth-century manuscript. Inscribed in ink on recto of half title: “William Bigland his Book 1791.”

FIRST EDITION, second issue, being the sheets of the first issue (London: J. Murray, 1789) with a new title page. Higgins (1762 or 1763–1825), nephew of Bryan Higgins, was educated at Pembroke College, Oxford, but left without a degree. In contrast to his uncle he was an early adherent (the earliest among the English chemists, he claimed) of Lavoisier's theories, which he defends in the present work. Partington says that this is Higgins's most important book. It is mainly concerned with a clever refutation of Richard Kirwan's *Essay on phlogiston* (1787), which the French chemists had translated and criticized. For an extensive account of this work, see Partington (III, 737–749). This second issue is reproduced in T. S. Wheeler and J. R. Partington, *The Life and Work of William Higgins Chemist* (Oxford: Pergamon Press, 1960). Duveen (*Supplement to a Bibliography of the Works of Antoine Laurent Lavoisier*, London, 1965, p. 138) lists this among the “historically significant” books relating to Lavoisier's work. Very rare. This copy came from the library of William Bigland, author of *The mechanic's guide, or a treatise on the laws of mechanics, as they relate to wheel machines* (London, 1797). Only the 1789 first issue is listed by Bolton, Ferchl, Poggendorff, and Watt. Not in Blake, Duveen, Ferguson, Ferguson Coll., Morgan, Sondheimer, Waller, Wellcome, etc. (D.S.B., VI, 385; Edelstein, 1148; Partington, III, 738; Smith, 233; Thornton & Tully, 172)

HIGGINS, William

A Comparative View of the Phlogistic and Antiphlogistic Theories. With inductions. To which is annexed, an analysis of the human calculus, with observations on its origin, &c. By William Higgins, of Pembroke College, Oxford. The Second Edition. . . .

London: Printed for J. Murray, No. 32, Fleet-Street. 1791.

First edition, second issue. 8vo. 3 leaves, xiv, 316 pp., 1 leaf (errata). Very good copy, uncut with wide margins, in contemporary boards, rebounded in unlettered early-nineteenth-century green cloth. Lacks 6 leaves (pp. 179–190), which have been supplied in neat nineteenth-century manuscript. Inscribed in ink on recto of half title: “William Bigland his Book 1791.”

ALTHOUGH THE title states that this is the second edition, it is merely the sheets of the first issue (London: J. Murray, 1789) with a new title page. Even the half title is identical to that of the first issue. The second issue is reproduced in

T. S. Wheeler and J. R. Partington, *The Life and Work of William Higgins Chemist* (Oxford: Pergamon Press, 1960). This copy came from the library of William Bigland (fl. 1791), who published *The Mechanic's Guide, or a treatise on the laws of mechanics, as they relate to wheel machines* (Margate, 1797; Wellcome, II, 167). Both issues of Higgins's book are rare. (Cole, 649; D.S.B., VI, 385; Edelstein, 1148; Partington, III, 738)

HIGGINS, William

An Essay on the Sulphuret of Lime, as a Substitute for Pot-Ash; or a New Method of Bleaching. To which is added, the process of discovering adulterated pot-ash. By William Higgins, M.R.I.A., Professor of Chemistry and Mineralogy to the Dublin Society.

Dublin: Printed by William Sleater, No. 28, Dame-street. (Printer to the Dublin Society.) 1800.

First edition in book form. 8vo. (in 4s). 19, (1) pp. Mint copy, unpressed and uncut with wide margins, in brown quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A REPRINT OF the article Higgins published in the *Transactions of the Royal Dublin Society* for 1799. The text is different from the work of similar title: *An Essay on the Theory and Practice of Bleaching* (Dublin, 1799; Cole, 650). Higgins describes the preparation of a so-called sulphuret of lime by boiling a mixture of powdered sulphur, slaked lime, and water. The resulting solution, “pretty nearly the colour of small beer” (p. 6), contained a complex mixture of calcium polysulphides. By steeping previously washed linen in this solution for 12 to 18 hours, followed by steeping it for a similar period in a solution of oxymuriate of lime (calcium chloride), Higgins showed that the use of potash (which was expensive and in short supply) for bleaching could be circumvented. At the end he describes his method for as-saying the purity of potash. Rare. (Partington, III, 737)

HIGGINS, William

Experiments and Observations on the Atomic Theory, and Electrical Phenomena. By William Higgins, . . .

London: Printed for Longman, Hurst, Rees, Orme, and Brown. 1814.

First edition (London issue). 8vo. 3 leaves, 180 pp. With the cancellandum (sign. K5–K6, pp. 137–140), and cancellands bound between pages 178–179. Woodcut symbols for the elements (p. 171) and line diagrams in text. Fine copy in mid-nineteenth-century half morocco, ribbed cloth sides with large pictorial stamp in gilt of the Athenaeum Library (London) on front cover.

PUBLISHED SIX years after the first volume of John Dalton's *New System of Chemical Philosophy* (Manchester, 1808), in this work Higgins claimed to have anticipated the chemical atomic theory in his *Comparative View* (London, 1789). He states (p. 10): "I cannot with propriety or delicacy say that Mr. Dalton is a plagiarist, although appearances are against him. Probably he never read my book; yet it appears extraordinary that a person of Mr. Dalton's industry and learning should neglect one of the few works that were expressly written on the subject of theory." Partington (III, 749–754), who discusses the question in detail, concludes that Dalton conceived his atomic theory independently of Higgins but allows that Higgins deserves credit for his ingenious views of forces between particles, for his implicit recognition of multiple proportions, and for his rudimentary foreshadowing of some aspects of modern views on reaction mechanism. Printed by Graisberry and Campbell, Dublin; copies with the London imprint are identical except for the reset title page. (Bolton, 530; Cole, 653; D.S.B., VI, 386; Duveen, 294; Edelstein, 1150; Gartrell, 790; Partington, III, 738; Poggendorff, I, 1102; Smith, 233; Watt, I, 495t; Wellcome, III, 262; Wheeler Gift, 722)

HIGGINS, William

A Syllabus of a Course of Chemistry, for the year 1802. By William Higgins . . .
Dublin: Printed by Graisberry & Campbell, 10, Back-Lane. 1801.

First edition. 8vo. 1 leaf, v, (1), 88 pp. Very fine copy in original speckled calf, spine gilt-ruled, dark-green morocco label. Bound with: Wade, Walter, *Syllabus . . . on Botany* (Dublin, 1802); Lynch, James, *Syllabus (on) Natural and Experimental Philosophy* (Dublin, 1802); and Peall, Thomas, *Syllabus . . . on the Veterinary Art* (Dublin, 1802). Engraved armorial bookplate: Earls of Granard.

THE FIRST printed syllabus of the course on chemistry that Higgins planned to deliver in 1802 in the laboratory of the Dublin Society (founded 1731; later the Royal Dublin Society). In forty-one lectures he covers elementary theory, inorganic and organic compounds (including minerals, metals and nonmetals, acids, alkalies, salts, and newly isolated elements), and their use in the arts and manufactures. The four works gathered in this collective volume are preceded by a general title page: "A Collection of Syllabuses of Lectures in Chemistry, Botany, Experimental Philosophy, and the Veterinary Art, read at The Dublin Society, in the Year 1802" (Dublin: Printed by Graisberry & Campbell, 10, Back-Lane, 1802). The British Library has all these works separately but not this very rare collective issue with the general title. (Cole, 654; D.S.B., VI, 386; Edelstein, 1152;

Partington, III, 738; Wheeler & Partington, *The Life and Work of William Higgins Chemist* [1960], pp. 19, 43)

HILDEBRANDT, Georg Friedrich

Chemische und mineralogische Geschichte des Quecksilbers . . .
Braunschweig: im Verlag der Schulbuchhandlung. 1793.

First edition. 4to. x, 476 pp. Occasional very minor foxing; otherwise good copy in original dark-blue marbled boards, dark-red morocco label.

HILDEBRANDT (1764–1816), M.D. (Göttingen, 1783), became professor of medicine, chemistry, and physics at the University of Erlangen. In this book, his first, he presents a detailed history of mercury and its compounds, with reference to the works of earlier chemists (e.g., Paracelsus, Basil Valentine, Becher, and Stahl), as well as those of more recent authors (e.g., Crell, Macquer, Priestley, Scheele, and Lavoisier). "An excellent monograph with numerous lists of books and papers" (Ferguson). Hildebrandt also published one of the earliest German textbooks to use the new theory of chemistry of Lavoisier, entitled *Anfangsgründe der Chemie* (Erlangen, 1794; Bolton, 530; Cole, 655). Without listing the title, Partington mentions the present work. Scarce. Not in Blake, Bolton, Cole, Duveen, Neu, Smith, etc. (Edelstein, 1154; Ferchl, 234; Ferguson, I, 404; Partington, III, 638; Poggendorff, I, 1102; Waller, 11164; Waring, 475; Wellcome, III, 263)

HILL, John

Fossils arranged according to their obvious characters; with their history and description; under the articles of form, hardness, weight, surface, colour, and qualities; the place of their production, their uses, and distinctive English, and Classical Latin names. By J. Hill, M.D., Member of the Imperial Academy.

London: Printed for R. Baldwin, in Pater-noster-Row; and P. Elmsly, in the Strand. 1771.

First edition. 8vo. (in 4s). 420 pp., 8 leaves (index). With large folding table facing page 122. Fine copy in contemporary speckled calf, rebaked, with maroon morocco gilt-lettered label.

A DETAILED AND comprehensive work, in the introduction of which the author states: "The purpose here is to lay down an arrangement of Fossils; founded on their obvious characters, and sensible qualities: according to which they may be known, and disposed in method; without the skill of Chemistry, or the fatigue of experiments: without furnaces, or aqua fortis. . . . In this method nothing will be

admitted as an article of distinction, but what is to be perceived at once, by the sight, smell, taste, or touch." Hill uses the term *fossil* to mean minerals, and despite his admonition that no chemical tests are used to characterize them, the book is nevertheless of chemical interest, as comments are made inter alia on analytical techniques and chemical reactions. Many tables of minerals are included. One of Hill's scarcer works. Not in Bolton, Cushing, Duvveen, Ferguson, Ferguson Coll., Morgan, Neu, Osler, Smith, Waller, etc. (D.S.B., VI, 401; Ferchl, 235; Partington, III, 214; Poggendorff, I, 1104; Watt, I, 497j; Wellcome, III, 265)

HILL, John

An History of Animals. Containing Descriptions of the Birds, Beasts, Fishes, and Insects, of the Several Parts of the World; and Including Accounts of the several Classes of Animalcules, visible only by the Assistance of Microscopes. In these the Characters, Qualities, and gores of the several Creatures are described, the Names by which they are commonly known, as well as those by which Authors, who have written on the Subject, have called them are explained: and each is reduced to the Class to which it naturally belongs. . . . By John Hill, M.D. . . .

London: Printed for Thomas Osborne, in Gray's-Inn. 1752.

First edition. Folio. 4 leaves, 584 pp., 2 leaves (index). With 28 full-page copperplates (by B. Cole) containing figures of animals. Margins of few leaves neatly repaired; otherwise very good copy, in half calf antique, marbled boards, maroon labels, spine dated.

THE THIRD and final volume, covering animals (complete in itself), of the three-volume set entitled *A General Natural History*. "Hill's principal achievement in zoology is the third volume . . . on animals. A large section is devoted to microscopic animals, and some of the names Hill coined for these animals still stand, such as 'paramecium.' He also included a brief section devoted to fossil animals and demonstrated familiarity with current views on fossils" (D.S.B.). Of chemical interest on luminescence is discussion of the glowworm under the name "Cantharis" (p. 53). The male is described as a small black beetle and the female as the glowworm with no wings, but "the last three joints of the body are of a yellowish colour on the under surface and these appear ignited or flaming in the dark" (Harvey). (D.S.B., VI, 401; Freeman, 166; Harvey, 545; Neu, 1946; Roller & Goodman, 1, 541; Watt, I, 497c; Wellcome, III, 264)

HILL, John

A History of Fossils. . . . With their Virtues and Uses, as far as hitherto certainly known, in Medicine and Mechanics: illustrated by a General Review of the Knowledge of the Ancients, and the Discoveries and Improvements of later Ages in these Studies. . . . By John Hill.

London: Printed for Thomas Osborne, in Gray's-Inn, Holbourn. 1748.

First edition. Folio. 6 leaves, 1–228, 333–592, 457–654 pp., 3 leaves (index). Pagination irregular but complete. With large folding printed table at the end and 12 engraved plates (by B. Cole). Minor embrowning of a few leaves; otherwise fine copy in original unlettered mottled calf, covers ruled in gilt. Signature of Charles Mason (1728–1786), astronomer, on half title (see D.N.B.). Armorial bookplate (eighteenth century): Stanesby Alchorne, Tower of London. Alchorne was assay-master to the British Mint.

DEDICATED TO DR. Peter Shaw, this is the first volume (complete in itself) of a three-volume set entitled *A General Natural History*, covering minerals, plants, and animals. The volume on plants appeared in 1751 and that on animals in 1752. "Minerals are well described, with descriptions often based on microscopic examination; and they are divided into series, classes, orders, genera, and the equivalent of species" (D.S.B.). Of chemical interest are long sections on metals, salts, sulphur, organic substances (asphalt, naphtha, petroleum), etc. Three different printers were employed in this volume (see index), which accounts for the irregular pagination. This copy has an interesting provenance, having belonged to Charles Mason, who is best remembered for his collaboration with Jeremiah Dixon in 1763 in establishing the Mason-Dixon Line along the southern border of Pennsylvania (see D.S.B., IX, 164). (D.S.B., VI, 401; Hoover, 421; Neu, 1946; Poggendorff, I, 1104; Wellcome, III, 264)

HILL, John

The History of Plants. . . . With their Virtues, and Uses as far as hitherto certainly known, in Medicine and Mechanics: illustrated by a General Review of the Knowledge of the Ancients, and the Improvements and Discoveries of later Ages in these Studies. Including the History of the Materia Medica, Pictoria, and Tinctoria of the Present and Earlier Ages. . . . By John Hill, M.D. . . .

London: Printed for Thomas Osborne, in Gray's-Inn, Holbourn. 1751.

First edition. Folio. xxvi, 642 pp., 4 leaves (index). With 16 full-page copperplates (by B. Cole) containing figures of plants and their parts. Fine copy, in original speckled calf, rebacked, maroon morocco label.

THE SECOND volume (complete in itself) of the three-volume set entitled *A General Natural History*, covering plants. The volume on minerals had appeared in 1748 and that on animals followed in 1752. In this work, his first botanical publication, Hill introduced the Linnaean system of classification into England. Complete descriptions of all types of plants are given, with their chemical, medicinal, and toxicological properties. Hill was aware of the action of light in stimulating the movement of plants, and Partington (III, 214) describes him as a “man of ability [whose] botany was in advance of his time.” As it appeared before the publication of the *Species plantarum* (1753) by Linnaeus, the “starting point of the modern nomenclatural system” (Henry), the present work has no significance for modern nomenclature despite the enormous amount of research Hill carried out in order to write this volume. (D.S.B., VI, 401; Eales, 1545; Freeman, 1672; Henry, II, 92; Nissen, 881; Osler, 2969; Pritzel, 4061; Watt, I, 497c; Wellcome, III, 264)

HILL, John

A Review of the Works of the Royal Society of London; containing Animadversions on such of the Papers as deserve Particular Observation. In Eight Parts: under the several Heads of Arts, Antiquities, Medicine, Miracles, Zoophytes, Animals, Vegetables, Minerals. By John Hill, M.D. . . . London: Printed for R. Griffiths, at the Dunciad in St. Paul's Church-Yard. 1751.

First edition. 4to. viii, 265, (3) pp. Fine copy, in original gilt-ruled speckled calf, richly gilt spine, brown label.

SHORTLY BEFORE 1751, Hill attempted to get himself elected to the Royal Society but was blackballed by several fellows whom he had abused in print. The result of his rejection was this satirical treatise in which he ridiculed certain of the earlier papers that had appeared in the *Philosophical Transactions*. Especially vituperated was Martin Folkes (1690–1754), president of the Royal Society, to whom the volume is facetiously dedicated. To quote Professor Augustus De Morgan (1806–1871): “This once well-known work is, in my judgement, the greatest compliment the Royal Society ever received. . . . Sir John Hill's book is droll and cutting satire. He was very able and very eccentric, and he successfully hoaxed the Royal Society.” His non-election hurt him deeply, and this scurrilous attack created many enemies for Hill. It is likely that his meritorious works would have been better received had he borne his disappointment in secret. (Blake, 211; D.S.B., VI, 401; Duveen, 295; Eales, 1548; Ferguson Coll., 323; Neu, 1949; Partington, III, 214; Smith, 234; Wellcome, III, 264)

HILL, John

Theophrastus's History of Stones. With an English Version and Critical and Philosophical Notes, Including the Modern History of the Gems, &c. described by that Author, and of many other of the Native Fossils. By John Hill. To which are added, Two Letters: One to Dr. James Parsons, F.R.S., on the Colours of the Sapphire and Turquoise. And the other, to Martin Folkes, . . . President of the Royal Society upon the Effects of different Menstruums on Copper. Both tending to illustrate the Doctrine of the Gems being coloured by Metal-line Particles.

London: Printed for C. Davis, against Grays-Inn in Holbourn, Printer to the Royal Society. 1746.

First edition. 8vo. xxiii, (1), 211, (1) pp. Fine copy, in contemporary calf, rebounded with original gilt-ruled spine laid on, maroon morocco label.

THE ONLY English translation of this classic work on minerals, “the earliest essay in Petrography” (Geikie), by Theophrastus (ca. 374–ca. 286 B.C.), the favorite pupil of Aristotle. The list of subscribers includes Henry Baker, Mendez da Costa, Peter Shaw, and Hans Sloane. The Greek text is translated into English on opposite pages. Originally trained as an apothecary, Hill (1716–1775) possessed undoubted scientific ability, but his sometimes libelous non-scientific works involved him in numerous squabbles (see D.N.B.). He published many works on medicine and especially on botany. After being made a knight of the Swedish order of Vasa, he styled himself “Sir John.” In this book (his first) he displays considerable knowledge of chemistry and mineralogy in the extensive footnotes. His letter to Martin Folkes (pp. 174–190) describes chemical experiments he had carried out on the dissolution of copper in acids and alkalis. French (Paris, 1754) and German (Nuremberg, 1770) translations appeared. (D.S.B., VI, 401; Duveen, 294; Hoover, 784; Partington, I, 128; Wellcome, III, 265)

HILL, John

Theophrastus's History of Stones. With an English Version, and Notes, Including the Modern History of the Gems described by that Author; and of many other of the Native Fossils. To which are added, Two Letters: I. On the Colours of the Sapphire and Turquoise. II. Upon the Effects of different Menstruums on Copper. Both tending to illustrate the Doctrine of the Gems being coloured by Metalline Particles. The Second Edition; Enlarged by the Addition of a Greek Index of all the Words in Theophrastus. Also Observations on the New Swedish Acid, and of the Stone from which it is obtained; and with an Idea of a Natural and Artificial Method of Fossils. By Sir John Hill.

London: Printed for the Author, in St. James's-Street, etc. 1774.

Second edition. 8vo. viii, 342 pp., 23 leaves. Fine copy, in contemporary tree calf, rebacked, original maroon morocco label.

TO THIS essentially unchanged reprint of the first edition (London, 1746) Hill has "added a Greek Index of all Theophrastus's Words, . . . also the Account of a new Acid, from a Stone first produced in Sweden" (preface). He describes the acid as being made by distilling a mixture of fluorspar (calcium fluoride) and oil of vitriol (concentrated sulphuric acid). This would yield hydrogen fluoride, which reacts with water to produce hydrofluoric acid. Hill notes the corrosive action of the acid on his glass apparatus, forming a gelatinous film (i.e., a mixture of hydrated silica and hydrofluosilicic acid), a reaction first discovered by Scheele in 1771. The extensive appendix contains Hill's suggestions for classifying minerals. The two letters at the end (to James Parsons and Martin Folkes) are reprinted as in the first edition but omit the names of the recipients. (Cole, 1269; Duveen, 295; Neu, 4022; Partington, I, 128; Smith, 478; Ward & Carozzi, 2168; Wellcome, III, 265)

HJORTZBERG, Nicolaus

Dissertatio Physico Medica de Virtute Aëris Fixi Antiseptica. . . Praeside . . . Andrea E. Barfoth, . . . Examini Publico Submittit die XIX Junii . . . MDCCLXXVII. Nicolaus Hjortzberg. Auctor & Respondens.

Lund: Typis Berlingianis. (1777).

First edition. 4to. 14 pp. Fine, wide-margined copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A DISSERTATION IN which the antiseptic properties of carbon dioxide are investigated. Presented by Hjortzberg under the direction of Andrea Barfoth, one of the dedicatees is the famous chemist Johan Gottschalk Wallerius. The au-

thor traces the history of carbon dioxide (fixed air) from the time of Helmont, Becher, Stahl, Juncker, Boerhaave, and others, and discusses the researches of Hales, Macbride, Priestley, and more recent investigators. Rare. Unknown to the usual bibliographers.

HOEFER, Jean Chrétien Ferdinand

Histoire de la Chimie depuis les temps les plus reculés jusqu'à notre époque; comprenant une analyse détaillée des manuscrits alchimiques de la Bibliothèque Royale de Paris; un exposé des doctrines cabalistiques sur la pierre philosophale; l'histoire de la pharmacologie, de la métallurgie, et en general des sciences et des arts qui se rattachent à la chimie, etc. Par le Dr. Ferd. Hofer. . . .

Paris: Au Bureau de la Revue Scientifique, rue Jacob, 36; Chez L. Hachette, . . . 1842, 1843.

First edition. 2 vols., 8vo., in 1. I (1842): x, (2), 510 pp. II (1843): viii, 518 pp. Good copy in contemporary gilt-ruled green quarter calf, marbled boards, rebacked in cloth with the original spine laid down. Inscription in ink on first free endpaper: "Ex libris Prof. Jean Sabrazes Bordeaux, 1926."

A CLASSIC HISTORY of chemistry, now largely superseded by more recent histories. "A work of great research, especially in regard to earliest authentic records as derived from ancient manuscripts . . . a valuable compendium" (Bolton). "C'est vraiment une histoire de l'Alchimie, et la plus substantielle qui ait paru à ce jour" (Caillet). Only the first volume is in the Wellcome Library. Hofer (1811–1878) studied medicine (M.D., Paris, 1840), was physician of the Faculty of Paris, and became well known for his diligent historical research and publications in chemistry, mineralogy, botany, and zoology. (Bolton, 119; Caillet, 5200; Duveen, 297; Ferchl, 237; Ferguson Coll., 327; Morgan, 386; Partington, IV, 246; Poggendorff, I, 1119; Wellcome, III, 282)

HOEFER, Jean Chrétien Ferdinand

Histoire de la Chimie par Ferdinand Hofer. Deuxième Édition, revue et augmentée. . . .

Paris: Librairie de Firmin Didot Frères, Fils et Cie. Imprimeurs de l'Institut, rue Jacob, 56. 1866, 1869.

Second edition. 2 vols., 8vo. I (1866): x, (2), 542 pp. II (1869): 2 leaves, 2 pp., 2 leaves, 615, (1) pp. With 15 woodcut figures in text. Very fine copy, with fore- and lower edges uncut, in modern dark-blue cloth, gilt-lettered maroon morocco labels.

THE GREATLY enlarged final and best edition of this standard history of chemistry, the first volume of which is particularly important for its emphasis on the alchemical writers. The second volume contains valuable material on

the antecedents of the chemical revolution, as well as on the revolution itself. At the end of volume II is a long chapter on the epochal researches of Humphry Davy, including his isolation of potassium and sodium, demonstration that chlorine is an element and not a compound with oxygen, the nature of iodine, etc. (Bolton, 119; Caillet, 5200; Duveen, 297; Edelstein, 1161; Ferchl, 237; Ferguson Coll., 328; Partington, IV, xviii; Smith, 236)

HOEFER, Jean Chrétien Ferdinand

Histoire de la Physique et de la Chimie depuis les temps les plus reculés jusqu'à nos jours par Ferdinand Hofer.

Paris: Librairie Hachette et Cie, 79, Boulevard Saint-Germain, 79. 1872.

First edition. 8vo. 2 leaves, 561, (1) pp., 1 leaf (blank). Woodcut figures in text. Fine copy with fore- and lower margins uncut, in original green quarter calf, marbled boards, spine gilt-lettered.

THE HISTORY of physics, its laws, and the physical properties of matter occupy the first half of this work. The second half is a condensation of Hofer's *Histoire de la chimie* (Paris, 1866–69), in which the period covered is updated to include the important researches of Frankland, Kolbe, Williamson, and Wurtz. (Bolton, 119; Edelstein, 1162; Ferchl, 237; Smith, 236)

HOEFER, Jean Chrétien Ferdinand

Nomenclature et Classifications Chimiques suivies d'un lexique historique et synonymique comprenant les noms anciens, les formules, les noms nouveaux, le nom de l'auteur et la date de la découverte des principaux produits de la chimie; par Ferd. Hofer, . . .

Paris: Chez J.-B. Baillièrre . . . 1845.

First edition. 12mo. (in 6s), vii, (1), 184 pp. Old stamp on title page (École de Physique et de Chimie); otherwise very good copy in contemporary green quarter calf, marbled boards, spine gilt-lettered. Bookplate: Franz Sondheimer.

A HISTORY of the development of chemical nomenclature, beginning with Guyton de Morveau. Hofer gives the classifications of Guyton de Morveau, Lavoisier, Thenard, Berzelius, Ampère, Baudrimont, Dumas, Gerhardt, Liebig, and others, as well as his own. The sixty-two-page lexicon in tabular form contains data on most of the elements and compounds known in 1845, with dates of their discovery and names of the discoverers. The designations for elements, inorganic and organic compounds, chemical formulas, earlier names, and other details are given. The book is noteworthy for containing recognizable chemical formulas and rudimentary equations. Oxygen is assigned an atomic

weight of 100.00, and hydrogen, 12.50. Translations of this work were published in Italian (Modena, 1847) and Spanish (Madrid, 1853). (Bolton, 61; Cole, 657; Edelstein, 1163; Ferchl, 237; Hirsch, III, 231; Poggendorff, I, 1119; Sondheimer, 736)

HOFFMANN, Friedrich

An Essay on the Nature and Properties of Water. Shewing its prodigious use; and proving it to be an universal medicine, both for preventing and curing the diseases to which the human body is subject. . . .

London: Printed for L. Davis and C. Reymers, opposite Gray's-Inn Gate, Holbourn, Printers to the Royal Society. 1761.

First English edition. 4to. 2 leaves, 43, (1) pp. Half title has "Price One Shilling." Very good copy, uncut with wide margins, in modern blue cloth-backed boards.

A WORK ON the chemical, physical, and medicinal properties of rain and mineral waters, in which numerous tests for the analysis of dissolved gases and salts are described. Waring (p. 758) lists an 8vo. edition of similar title: *Essay on Water, proving it to be an universal medicine for preventing and curing diseases*, (London, 1761), possibly the second edition. This may be a translation of *Dissertatio de aqua medicina universali* (Halle, 1712), or *Dissertatio de aqua natura ac virtute in medendo* (Halle, 1716). Waring cautions, however, that Hoffmann also published several other dissertations on water and its uses, so that the origin of this English version is uncertain. Rare. Unknown to Duveen and Partington and not in Wellcome. (Blake, 216)

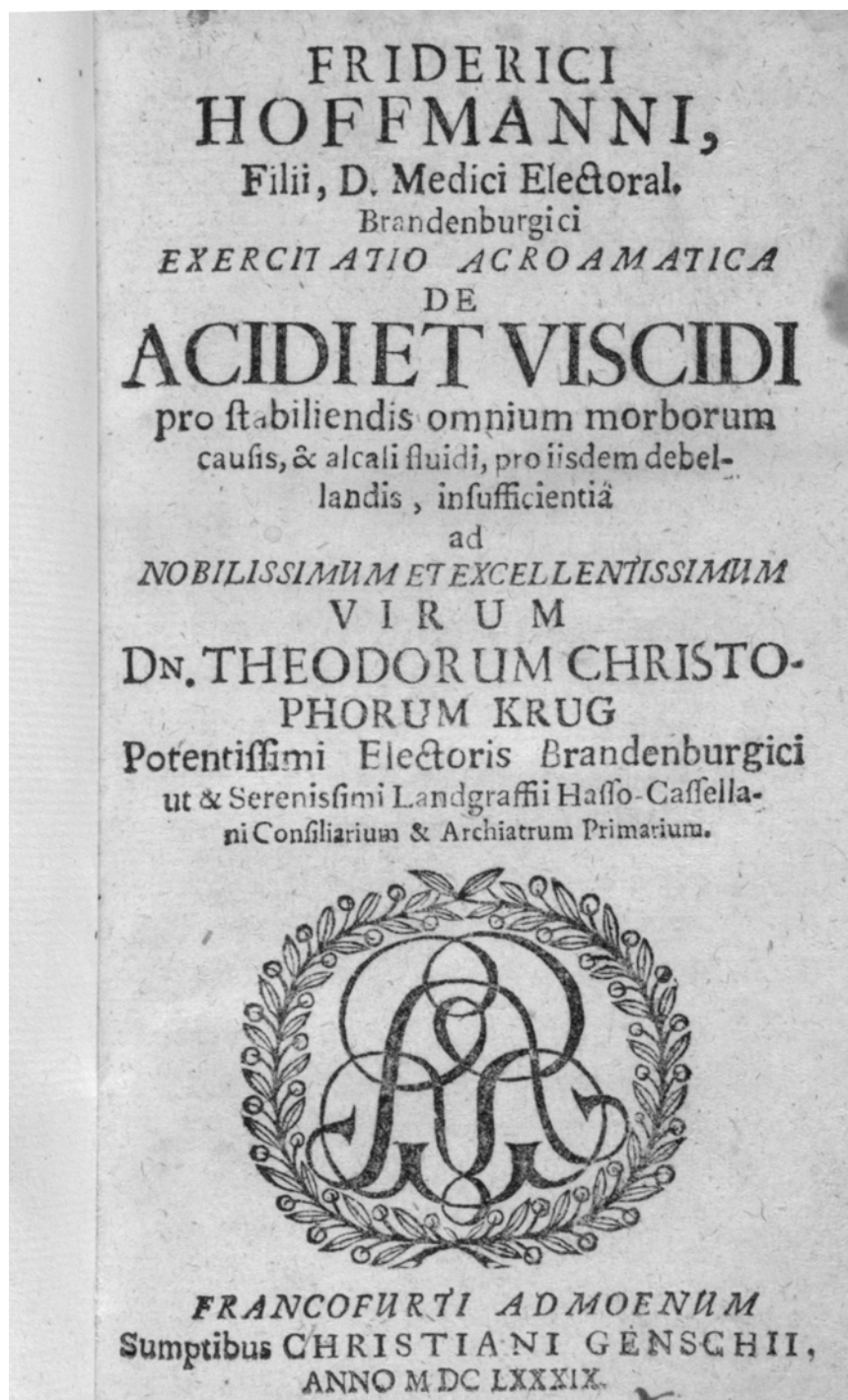
HOFFMANN, Friedrich

Exercitatio Acroamata de Acidi et Viscidi pro stabiliendis omnium morborum causis, & alcali fluidi, pro iisdem debellandis, insufficientia ad . . . Theodorum Christophorum Krug . . .

Frankfurt: Sumptibus Christiani Genschii. 1689.

First edition. 8vo. 4 leaves, 72 pp. Woodcut printer's device on title page. Fine copy in half vellum antique, patterned boards.

AN IMPORTANT treatise by "one of the most distinguished physicians of the 17th–18th century" (Ferguson). In this work Hoffmann completely revised his ideas on chemistry. "Hoffmann's inaugural dissertation (*De Cinnabari Antimonii*, 1681) was presented under Wedel, from whom he learnt the iatrochemical theories of Sylvius. After his visit to England, when he met Boyle and Sydenham, Hoffmann repudiated these views in his *Exercitatio de acidi et viscidis . . . debellandis insufficientia* (1689), giving his views on the composition of body fluids" (Partington). He here opposes



Hoffmann, Friedrich. Exercitatio Acroamata de Acidi et Viscidi. Frankfurt, 1689.

the opinions of Cornelius Bontekoe and specifically refers to the researches of Robert Boyle on human blood (1684). Hoffmann cites the works of numerous iatrochemists, including Bohn, Borrichius, Etmuller, Hartmann, Helmont, and Tachenius. A German translation appeared (Halle, 1696). (Ferchl, 240; Ferguson, I, 409 [not in Young Coll.]; Gmelin, *Geschichte der Chemie*, II [1798], 173; Krivatsy, 5794; Partington, II, 692; Wellcome, III, 283)

HOFFMANN, Friedrich

Exercitatio Medico-Chymica de Cinnabari Antimonii, ejusque eximiis viribus, usuque in morbis secretiori, quo ipso via ex illa veram panaceam conficiendi aperitur. Adjecta sunt experimenta ac ratiocinia varia curiosa.

Leyden: Apud Petrum Vander Aa, Bibliopolam. 1685.

Second (first Leyden) edition. 12mo. 157, (1) pp., 3 leaves. Engraved title page (by A. Schoonebeck, dated 1684). Very good copy, in original gilt-ruled calf, rebound. Signature of Walter Pagel, medical and chemical historian, dated 1954 on first flyleaf.

A PUPIL of Wedel in Jena, then of Caspar Cramer in Erfurt, Friedrich Hoffmann the younger (1660–1742) graduated M.D. at Jena (1681) for this dissertation on the medical virtues of cinnabar (i.e., mercuric sulphide, not antimony sulphide as the title suggests). Hoffmann comments on the “increase in weight of metals on calcination, which he says was observed by Tachenius, whose explanation as a fixation of acid from the wood fire he rejects, since the increase occurs on calcination by solar light or by solution in acid and precipitation. He thought it was due to fixation of igneous corpuscles. He mentions experiments of Kunckel on calcining lead, and of Boyle on calcining tin and lead” (Partington). The first edition (Jena: Krebs, 1681), a shorter work of only fifty-one pages, does not contain the additional experiments mentioned in the title of this, the first complete edition. (Duveen, 297; Ferchl, 241; Ferguson, I, 408; Ferguson Coll., 329; Krivatsy, 5795; Partington, II, 692; Waring, 236; Wellcome, III, 283)

HOFFMANN, Friedrich

Exercitatio Medico-Chymica de Cinnabari Antimonii, . . . Editio secunda.

Frankfurt am Main: Sumptibus Christiani Genschii. 1689.

Third (so-called second) edition. 8vo. 106 pp., 3 leaves (last 2 blank). Woodcut printer's device on title page. Contemporary unidentified signature on page 7 (D. D'annebault); otherwise very good copy, in modern marbled boards, maroon morocco label.

A REPRINT of the Leyden (1685) edition and hence designated in the title the second edition; this printing is unknown to the usual chemical bibliographers. (Krivatsy, 5796; Wellcome, III, 283)

HOFFMANN, Friedrich

Observationum Physico-Chymicarum Selectiorum Libri III. In quibus multa curiosa experimenta et lectissimae virtutis medicamenta exhibentur, ad solidam et rationalem chymiam stabiliendam praemissi.

Halle: Prostat in Officina Libraria Rengeriana. 1722.

First edition. 4to. 14 leaves, 378 pp., 11 leaves. Title page in red and black, with engraved vignette. Some leaves with minor foxing; otherwise very good copy, in original blind-ruled calf, contemporary paper label on spine.

HOFFMANN MADE many valuable contributions to chemistry, which are collected for the first time in this volume. “Like his colleague Stahl, he kept his medicine and chemistry quite separate” (Partington, who discusses some of his experiments). An account of chemiluminescence and Boyle's English phosphorus is given (pp. 335–339). The darkening of silver salts (p. 350) by light is described, which makes this book important in the history of photography. Partington (IV, 713) confirms that this observation is originally due to Hoffmann, though his emphasis is on his student Johann Heinrich Schulze (1687–1744), who more critically reported a similar photochemical experiment in 1727. Partington notes: “Schulze must have known of the earlier (1722) experiment of his teacher, Hoffmann.” The book is dedicated to the Royal Society of London and its president, Sir Isaac Newton. (Blake, 217; Bolton, 537; Duveen, 298; Ferchl, 241; Harvey, 435; Neu, 1977; Partington, II, 692; Smith, 238; Wellcome, III, 284)

HOFFMANN, Friedrich

Observationum Physico-Chymicarum Selectiorum Libri III. . . .

Venice: Ex Typographia Balleoniana. 1740.

First Venice edition. 4to. 8 leaves, 192 pp. Pages 129–192 mispaginated 229–292. Woodcut on title page and historiated woodcut capitals. Text in double columns. Very good copy in original vellum.

A FINELY PRINTED edition of Hoffmann's most important chemical works, the first to appear in Italy. The text originally appeared at Halle in 1722. Unlike his colleague Stahl, Hoffmann denied the presence of phlogiston in metals, and he opposed the iatrochemical theories of Sylvius and Tachenius. He first distinguished between magnesia and lime

and showed that nitrates and sulphates react quite differently. He also demonstrated that the base from which alum is derived is not the same as that from which chalk originates. Ferguson (I, 409) lists a Venice (1740) edition having the same mispagination, with the imprint "Apud Sebastianum Coleti," apparently a variant. Not in the usual chemical bibliographies. (Blake, 217)

HOFFMANN, Friedrich

Opera Omnia Physico-Medica denuo revisa, correctae & auctae, in sex tomos distributa; quibus continentur doctrinae solidis principiis physico-mechanicis, & anatomicis, atque etiam observationibus clinico-practicis superstructae . . . Cum vita auctoris et ejus praefatione de differente medicinae . . . Geneva: Apud Fratres de Tourne. 1748.

Second collected edition. 6 vols., folio, in 3. I: 6 leaves, xxxvi, 476 pp. II: 2 leaves, 355, (1) pp. III: 2 leaves, 584 pp. IV: 6 leaves, 588 pp. V: 2 leaves, 374 pp. VI: 2 leaves, 346 pp. Fine engraved portrait of Hoffmann (by Petit, 1739) in volume I. Title page of volume I in red and black, with engraving of commemorative medal of Hoffmann (D. Sornique sculp.). Title pages of volumes II–VI with large woodcut. Fine, handsome set, in original calf, strongly rebacked in morocco, dark-green morocco labels, spines dated. Bookplate: Sir John Russell Reynolds, Bart., President of the Royal College of Physicians, London. Wellcome Library release stamps.

HOFFMANN'S VOLUMINOUS works are here collected, with a life by Johann Heinrich Schulze (first edition: Geneva, 1740). His most important medical works are in the first three volumes, while the last three "include articles and monographs on medical consultations, chemical analyses, and therapeutical indications" (D.S.B.). This set has a distinguished provenance, having once belonged to Sir John Russell Reynolds (1880–1964), pioneer of radiology and inventor of the Russell Reynolds cineradiographic unit (see Munk, V, 346–347). Reynolds left this set to the Wellcome Library, from which it was sold in 1986. The first edition has identical pagination (see Waller, 4814). (Blake, 217; Bolton, 537; D.S.B., VI, 460; Watt, I, 503v; Wellcome, III, 285)

HOFFMANN, Friedrich

Operum Omnium Physico-Mediorum Supplementum in duas partes distributum; quibus continentur opera varia quae in magna operum collectione desiderantur. . . . Geneva: Apud Fratres de Tourne. 1749.

First edition. 2 vols., folio, in 1. I: 4 leaves, 63, (1) pp., 4 leaves, 313, (1) pp., 3 leaves. II: 2 leaves, 240 + 32 pp., 2 leaves, 80 + 131, (1) pp. Title page of first part in red and black, large woodcut on title to each part. Fine copy, in original calf, strongly rebacked in morocco, dark-green morocco label, spine

dated. Bookplate: Sir John Russell Reynolds, Bart., President of the Royal College of Physicians, London. Wellcome Library release stamp.

THE FIRST supplementary volume to the *Opera Omnia Physico-Medica* (Geneva: de Tourne, 1748), bound uniformly with that work. Some of Hoffmann's famous works are contained in this volume, including commentaries on his differences with Georg Ernst Stahl on the practice of medicine and therapeutics, medical politics, and his 1695 discourse on the fundamentals of medicine derived from the laws of nature. A second edition appeared (Geneva: de Tourne, 1754). (Blake, 217; Bolton, 537; D.S.B., VI, 460; Garrison-Morton, 72; Watt, I, 503v; Wellcome, III, 285)

HOFFMANN, Friedrich

Operum Omnium Physico-Mediorum Supplementum Secundum, in tres partes distributum; quibus continentur opera varia quae in magna operum collectione et primo supplemento desiderantur. . . . Geneva: Apud Fratres de Tourne. 1753, 1760, 1753.

First, second and first editions. 3 vols., folio, in 2. I (1753): 6 leaves, 78, *79–*90, 79–754 pp. With 2 full-page engraved plates (facing pp. 421 and 571). II (1760): 2 leaves, 628 pp. III: (1753): 2 leaves, 194 pp. Minor embrowning of few leaves; otherwise fine copy, uncut with wide margins, strongly bound in maroon half morocco, cloth boards, green morocco labels, spines dated. Old stamp of Medical Society of London on title pages. Wellcome Library release stamps, verso of title pages.

THE SECOND and final supplementary volumes to the *Opera Omnia Physico-Medica* (Geneva: de Tourne, 1748), containing the remaining works by Hoffmann on chemistry, balneology, and medicine. Volume II of this set is the second edition, and volumes I and III are first editions. A second edition of the three volumes appeared (Geneva: de Tourne, 1760). The *Opera Omnia* with the two supplements contain virtually all that was known at the time about medicine and the medical applications of chemistry. Hoffmann was "one of the most distinguished physicians of the 17th–18th century" (Ferguson). Partington discusses Hoffmann's chemical and balneological researches in detail. (Blake, 217; Blocker, 195; Bolton, 537; D.S.B., VI, 460; Ferguson, I, 409 [not in Young Coll.]; Garrison-Morton, 72; Partington, II, 693; Waller, 4816; Watt, I, 503v; Wellcome, III, 285)

HOFFMANN, Friedrich

Opus de Methodo Medendi, juxta seriem Wallaeianam, annexis fundamentis astrologicis, ex veterum ac recentiorum scriptis concinnatum, dogmaticis, Paracelsicis, Helmontianis, Harveianis principiis & propriis observationibus illustratum, . . . chymicis flosculis adornatum, cum praefatione . . . Johannis Michaelis.

Leipzig: Impensis Christiani Kirchneri, Bibliop. Literis Christiani Michaelis. 1668.

First edition. 4to. 8 leaves, 448 pp., 16 leaves (index). Signatures of 2 early owners on title page; otherwise very good copy, in original calf, gilt.

THE FIRST and one of the most important works by Friedrich Hoffmann the elder (1626–1675), whose son was the famous Friedrich Hoffmann the younger (1660–1742). The senior Hoffmann was physician to the administrator of Magdeburg and also practiced at Halle. In this work of pharmaceutical chemical interest Hoffmann includes considerable excerpts from the writings of J. B. van Helmont, cites over 230 other authors, and provides an extensive index. The preface is by Johann Michaelis (1606–1667), professor of medicine at Leipzig. (Krivatsy, 5789 [imperf.]; Partington, II, 240, 320; Waller, 4649; Wellcome, III, 283)

HOFFMANN, Friedrich, and SHAW, Peter

New Experiments and Observations upon Mineral Waters: directing their farther use for the preservation of health, and the cure of diseases. By Dr. Friderick Hoffman, . . . Extracted from his several essays upon this subject, and illustrated with notes, by Peter Shaw, M.D. . . .

London: Printed for J. Osborn and T. Longman, at the Ship in Pater-noster-Row. 1731.

First edition. 8vo. viii, 230 pp., 5 leaves. Very fine copy, in modern boards, maroon leather label.

PARTINGTON STATES that “Hoffmann’s experiments on mineral waters are important,” and he discusses them in detail, describing the physical tests and chemical reagents employed. According to Ferchl, this scarce work is a translation of *De praecipuis Germaniae medicalis fontibus et de rarum examine chymico-mechanico* (1724). However, in the preface (p. vii), Peter Shaw (1694–1764) says that Hoffmann’s “Discourses upon Mineral Waters . . . were originally publish’d separate, at different times; but afterwards revised, improved, and collected into one Volume; and in the Year 1726 reprinted at Ulme, in 8vo. They are here contracted, methodized, and more particularly fitted to our Country, by a few additional Notes and Illustrations; so as to prepare the way for a particular Examination of the Mineral Waters of England.” Shaw’s notes are valuable, and he

has dedicated this work to the distinguished physician Dr. Richard Mead. (Blake, 217; Ferchl, 240; Ferguson, II, 381 [not in Young Coll.]; Partington, II, 693; Waring, 775; Wellcome, III, 284)

HOFFMANN, Friedrich, and SHAW, Peter

New Experiments and Observations upon Mineral Waters, . . . The second edition. To which is added, by way of appendix, an Enquiry into the Contents, Virtues, and Uses of the Scarborough Spaw-Waters; with farther directions for examining any other mineral water. By Peter Shaw, M.D. London: Printed for T. Longman, in Pater-noster-Row. 1743.

Second edition. Two vols., 8vo., in 1. I: x, 194 pp., 7 leaves (index). II: ii, 166 pp., 4 leaves (index), 1 leaf (advertisement, with 6 woodcuts of seals). Very good copy, in original gilt-ruled calf, rebacked, green morocco label.

THE GREATLY enlarged final and best edition, which reprints the text of the first edition (1731), except the appendix. The “Appendix is here dropt, and its place supplied by larger and more distinct Directions for executing the Design; with a Specimen of a more rigorous Enquiry than what Dr. Hoffman has given [of] a Plan for the particular Examination of the Mineral Waters of England” (preface). The second part comprises the second issue (not edition) of Shaw’s *An enquiry into . . . the Scarborough Spaw-Waters* (London, 1734). The same sheets as the 1734 first issue are used, omitting the title page, dedication to Dr. Richard Mead, and preface. This section merely has a separate divisional title page. The advertisement leaf lists mineral waters sold in London and Scarborough by John Fiddes. (Blake, 217; Duveen, 298; Neu, 1976; Partington, II, 693; Waring, 775; Wellcome, III, 284)

HOFFMANN, Johann Moritz

Acta Laboratorii Chymici Altdorfini, Chymiae fundamenta, operationes praecipuas & tentamina curiosa, ratione & experientia suffulta, complectentia.

Nuremberg & Altdorf: Apud Haeredes Joh. Dan. Tauberi. 1719.

First edition. 4to., 2 parts in 1 vol. I: 4 leaves, 288 pp. II: 54 pp., 7 leaves. Frontispiece portrait of Hoffmann (by Wolfg. Philipp Kilian). Title page in red and black, with copperplate vignette (library scene). This copy has a second title page (different proof) following the first, printed similarly in red and black from a different setting of type, but omitting the engraved vignette. Divisional title to part II has a woodcut version of the library vignette, and page 43 is a divisional title with the same woodcut vignette. Fine copy in original vellum, old manuscript title on spine.

HOFFMANN (1653–1727) studied medicine (M.D., Altdorf, 1675) and in 1682 became first professor of chemistry at Altdorf University. In 1685 he established a chemical laboratory in the university for teaching the various operations of chemistry, and the present work covers the subjects of his lectures. In the second part, entitled “Auctuarium notas, observationes, et experimenta,” Hoffmann discusses the literature of chemistry with comments on the value of the works cited, together with further information on chemical processes and recent discoveries. “One of the first works issued dealing with researches conducted in a chemical laboratory” (Bolton). At the end (pp. 43–54) is a reprint of Hoffmann’s *Laboratorium novum chemicum apertum medicinae cultoribus* (Altdorf, 1683). Altdorf University was the only progressive German university in the late seventeenth century, and it was responsible for initiating the kind of institute functioning side by side with the university that is so conspicuous a feature of modern research. (Blake, 218; Bolton, 538; Ferchl, 243; Ferguson, I, 410; Partington, II, 302; Poggendorff, I, 1122; Waller, 11165; Wellcome, III, 288)

HOFMANN, August Wilhelm von

The Chemical Laboratories in Course of Erection in the Universities of Bonn and Berlin. Report addressed to the Right Honourable the Lords of the Committee of Her Majesty’s Most Honourable Privy Council on Education. By A. W. Hofmann, LL.D., F.R.S. Reprinted from Thirtieth Report of the Science and Art Department of the Committee of Council on Education. Presented to both Houses of Parliament by Command of Her Majesty. London: Printed by W. Clowes and Sons, Stamford Street and Charing Cross. 1866.

First separate edition. 4to. viii, 72 pp. With 22 woodcut illustrations in text (maps, plans, elevations, etc). Very good copy, uncut with wide margins, in original blue cloth, front cover gilt-lettered. Presentation copy to the secretary of the Royal Institution, London, from the Council on Education, Kensington Museum; with handwritten letter dated 29 January 1867 signed by the assistant secretary, S. MacLeod, attached to free endpaper. Bookplate: Franz Sondheimer.

HOFMANN PUBLISHED this extensive account of the building of the laboratories at the universities of Bonn and Berlin in order to persuade the British Parliament to build a similar laboratory in London. His efforts soon resulted in the foundation of the Royal College of Chemistry. In 1872 the college moved to South Kensington and merged with the Royal School of Mines. This important work led to the rapid education of chemists in Germany and Great Britain and to the preeminence of those countries in promoting chemical industry in nineteenth-century Europe. (Bolton, 119–120; Smith, 238)

HOFMANN, August Wilhelm von

Contributions to the History of the Phosphorus-Bases. By August William Hofmann, F.R.S. . . . London: Printed by Taylor and Francis, Red Lion Court, Fleet Street. 1861.

First separate edition. 4to. 1 leaf, 125, (1) pp. Pristine copy, uncut with wide margins, in original printed wrappers; bound in mottled half calf antique, cloth boards, gilt-lettered and dated spine. Presentation copy, inscribed in ink by Hofmann on front wrapper: “A M. Berthelot. Hommage de l’Auteur.”

A BEAUTIFUL ASSOCIATION copy from one great chemist to another. Reprinted from the Royal Society *Philosophical Transactions* (Part II, 1860), these three papers deal with various aspects of the chemistry of the (then) recently discovered organic derivatives of phosphine and phosphonium compounds. Hofmann (1818–1892) here first uses Gerhardt’s new atomic weights. At the end he thanks Johann Peter Griess (1829–1888), discoverer of diazo compounds, for his assistance. When he received this copy from Hofmann, Pierre Eugène Marcellin Berthelot (1827–1907) was only thirty-four years old and was just starting his distinguished career, which Partington describes as “astonishing in its volume, originality, and importance.” (Ferchl, 239; Partington, IV, 441, 467; Smith, 238; Sondheimer, 739; Sotheran, Cat. 800 [1926], 11108 [“Scarce”])

HOFMANN, August Wilhelm von

The Faraday Lecture for 1875. The Life-Work of Liebig in experimental and philosophic chemistry; with allusions to his influence on the development of the collateral sciences and of the useful arts. A discourse. Delivered to the Fellows of the Chemical Society of London in the Theatre of the Royal Institution of Great Britain, on March the 18th, 1875. By A. W. Hofmann, F.R.S., V.P.C.S. . . . London: Macmillan and Co. 1876.

First book edition. 8vo. 1 leaf, 145, (1) pp. + 6 pp. (facsimile letter). With actual photographic portrait of Liebig mounted as frontispiece. Fine copy in original brown cloth, front cover and spine gilt-lettered. Presentation copy, inscribed by Hofmann on verso of first free endpaper: “Mr. Edward Paley with Dr. Hofmann’s affectionate regards.” Bookplate: Franz Sondheimer.

HOFMANN, WHO was originally Liebig’s assistant and became his lifelong friend, states (p. 6): “Let me . . . frankly declare to you my deep-rooted conviction that Liebig’s is the name and figure alone to stand beside Faraday’s in the representation of our century to future generations of mankind.” A “laudatory but valuable discussion of Liebig’s personality and contributions to organic chemistry” (D.S.B.). At the end is a facsimile of a letter in English from Liebig to Faraday dated 19 December 1844. (Bolton, 219; D.S.B.,

VIII, 350; Edelstein, 1457; Paoloni, 842; Partington, IV, 297; Smith, 239; Sondheimer, 745)

HOFMANN, August Wilhelm von

On Ammonia and its Derivatives. A Lecture delivered to the Members of the Chemical Society of London, by A. W. Hofmann, L.L.D., F.R.S. . . .

London: Walton and Maberly, Upper Gower Street, and Ivy Lane, Pater-noster-Row. 1859.

First separate edition. 8vo. 1 leaf, 116 pp. Very good copy, in contemporary half calf, ribbed cloth, spine gilt-lettered. Signature in ink of Edmund J. Mills (nineteenth-century English organic chemist) on first free endpaper.

BORN IN Giessen, Hofmann (1818–1892) was one of the most distinguished organic chemists of the nineteenth century. In 1843 he was an assistant to Liebig. On Liebig's recommendation, in 1845 Hofmann came to England, where he was appointed professor at the College of Chemistry in London. He was elected F.R.S. in 1851. Returning to Germany in 1865, Hofmann succeeded Mitscherlich in Berlin and was succeeded by Frankland in London. The present important work reprints a discourse delivered to the Chemical Society of London on 17 June 1858. Hofmann shows that the hydrogen atoms of ammonia can be successively replaced by alkyl or aryl groups to yield primary, secondary, and tertiary amines. Similarly, by reaction of ammonia with organic acids, corresponding amides are produced. The many reactions of these compounds are discussed to illustrate the theory of types in organic chemistry. (D.S.B., VI, 462; Duveen, 298; Partington, IV, 440; Sondheimer, 738; Sotheran, Cat. 800 [1926], 11102 ["Scarce"])

HOFMANN, Carl

Diatriba Chymico-Medica de Acido Vitrioli Vinoso antehac sub praesidio Ill. Friderici Hoffmanni disputata . . .

Nuremberg: Apud Wolg. Maur. Endteri Haeredes, filium Mayeriam huiusque filium. 1733.

First edition. 4to. 1 leaf, 44 pp. Woodcut headpiece and initial. Fine, crisp copy, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

THIS WORK was originally presented as a dissertation under the direction of the celebrated professor of chemistry and medicine at Halle, Friedrich Hoffmann. The author describes the preparation of diethyl ether (acidum vitrioli vinosum) by the reaction of ethyl alcohol with sulphuric acid. He gives a history of this compound, with numerous references to earlier and contemporary chemists. Boyle and Newton are mentioned several times. Friedrich Hoffmann

“regarded alcohol as mainly a compound of water and oil . . . sulphuric acid removes the water and leaves the oil in the form of ether. . . . A mixture of alcohol and ether was long used in medicine as ‘liquor anodynus minerali Hoffmanni,’ or ‘Hoffmann’s drops’” (Partington). The mixture became “a popular panacea” (D.S.B.). In addition to ether, the preparations of ethyl chloride and ethyl nitrate are described. Scarce. Not in Bolton, Duveen, Edelstein, Ferguson, Ferguson Coll., Smith, Waller, Wellcome, etc. (Blake, 216; D.S.B., VI, 460; Ferchl, 240; Neu, 1982; Partington, II, 700; Poggendorff, I, 1122; Waring, 423)

HOFSTETER, János Ádám

Dissertatio Solennis de Cinnabari Nativa. . . . pro Loco in Ordine Professorum rite obtinendo publice tuebitur Johannes Adamus Hofsteter, M.D. . . . Respondente Paulo Dons, Nidrosiensi . . . Die (blank) Februar. Anni. MDCCXIV.
Copenhagen: Typis Johannes Seb. Martini. (1714).

First edition. 4to. 37, (1) pp. Fine copy in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A RARE AND important study on cinnabar (native mercuric sulphide), including its use in goldmaking and alchemy. Hofsteter (1660–1716?), professor and royal physician, studied medicine at Jena under Augustin Heinrich Fasch (1639–1690). Especially interested in the medicinal and chemical properties of cinnabar and mercury, he published a work on these substances in German (Leipzig, 1708; Waring, 497). In the present tract Hofsteter refers (p. 33) to Ehd de Naxagoras and his *Chymischer oder Alchymischer Particular-Zeiger . . . vom Gold- und Silber-machen* (Rostock, 1706), which he attributes to a “germanicum auctoris incogniti.” He also refers to J. J. Becher’s *Chymischer Glücks-Hafen* (Frankfurt, 1682). (Waller, 4839)

HOGHELANDE, Ewald von

Historiae aliquot transmutationis metallicae ab Ewaldode Hoghelande conscriptae, pro defensione alchymiae contra hostium rabiem. Adjecta est venerab. viri Raymundi Lullii vita, & alia quaedam.

Cologne: Sumptibus Bernardi Gualtherii. 1604.

First edition. 8vo. 55, (1) pp. Woodcut on title page. Fine, crisp copy in contemporary blind-ruled vellum with remains of ties. Bound with: Indagine, J. ab, *Introductiones apotelesmaticae in physiognomiam . . .* (Ursel, 1603).

A VERY RARE work praising alchemy, in which examples are cited of the transmutation of mercury into gold. “Some writers identify Theobald and Ewald von Hohelande or Hoghelande from Middleburg in Seeland, while others keep them distinct. . . . On the assumption that they are the

same, Theobald is regarded as a writer who having first written against alchemy afterwards brought forward evidence in support of it. The first work was entitled *De Alchemiae difficultatibus* . . . Cologne, 1594. . . . The second is *Historiae aliquot transmutationis* . . . Cologne, 1604. . . . The third is *Merces Alchymistarum*, 1610" (Ferguson). Mellon (I, No. 51) illustrates the title page of the *De Alchemiae* (1594), which is similar to the title page of the present work, and gives the author as Theobald de Hoghelande. In the present 1604 edition the author's name is given as Ewald de Hoghelande. The fact that both editions were printed at Cologne, with similar title-page layouts, suggests that Theobald and Ewald are the same man. Thorndike (V, 647–648) discusses this work, which describes "successful instances of transmutation . . . [and] appended a life of Raymond Lull intended to rebutt the false assertions of Eymeric and Guibert." A translation into German, by Joachim Tancke, appeared (Leipzig, 1604). Not in Bolton, Duveen, Edelstein, Ferguson Coll., Hoover, Mellon, Neu, Rosenthal, Sondheimer, Waller, etc. (Ferchl, 244; Ferguson, I, 412 [not in Young Coll.]; Partington, II, 100; Waite, 289; Watt, I, 504i; Wellcome, I, 3271)

HOGHELANDE, Theobald von

Abhandlung von denen Hindernissen bey der Alchimie. Darin gezeiget wird, was ein Liebhaber dieser Kunst zu wissen, and zu meiden hat, wenn er zur Vollkommenheit gelangen will. Aus dem Lateinischen in das Deutsch übersetzt.

Gotha: Verlegts Christian Mevius. 1749.

Second (first Gotha) edition. 8vo. 15 leaves, 176 pp. Title in red and black. Woodcut capitals, head- and tailpieces. Very good copy in original reddish-brown mottled boards.

THE TRANSLATION into German, by Joachim Tancke (1557–1609), of *De alchemiae difficultatibus liber* (Cologne, 1594), the first edition of which appeared as *Von der Irrwegen der Alchimisten* (Frankfurt, 1600). Caillet refers to the first German translation, erroneously, as published at Leipzig, 1604, but that edition was the German translation of *Historiae aliquot transmutationis metallica* (Cologne, 1604). Latin editions of this rare alchemical work were reprinted in Zetzner's *Theatrum Chemicum* and Manget's *Bibliotheca Chemica Curiosa*. Not in Baumer, Blake, Duveen, Edelstein, Guaita, Mellon, Neu, Partington, Rosenthal, Waite, Waller, Watt, Wellcome, etc. (Bolton, 120; Caillet, 5211; Ferchl, 244; Ferguson, I, 411; Ferguson Coll., 330; Smith, 239)

HOLLAND, Isaac

Curieuse und rare Chymische Operationes, worinnen nicht allein einige bisshero unbekante Geheimnisse die rechte Universal-Tinctur zu erlangen, angezeigt; sondern das Fundament aller solcher Operationen, so in Ausziehung des Saltz und Oels aus denen Mineris besteht, auf eine gar deutliche Weise gezeiget wird. Allen Liebhabern der Chymie . . . aus einem alten Autographo MSCto des Autoris heraus gegeben von R.H.C.

Leipzig & Gardeleben: In Verlegung Ernst Heinrich Campen, privilegirten Buchhändler der alten Marck. 1714.

First edition. 8vo. 8 leaves, 400 pp. Title page in red and black. Alchemical symbols and small woodcuts of chemical apparatus in text. Fine copy, in late-nineteenth-century vellum. Engraved Rosicrucian bookplate dated 1900 on front pastedown endpaper.

A COLLECTION OF the alchemical experiments of Isaac Holland, describing methods for preparing the universal tincture and the philosopher's stone. Cryptically identified only by the letters R. H. C. on the title page, the editor of this work states that the experiments were copied from an old manuscript written by Isaac. These experiments must have been carried out after Paracelsus had died in 1541, as he is mentioned in the *Vorrede* (p. 8). Isaac is reputed to have been skillful in enameling. In his *L'Arte Vetraria* (1612, p. 96), Antonio Neri states that he received a process for making imitation gems "from Isaac Hollandus during my sojourn in Flanders." The "gems" were made of glass colored with various metal oxides. Very rare. Not in Duveen, Edelstein, Ferguson Coll., Neu, etc. (Bolton, 993; Ferchl, 247; Ferguson, I, 412; Partington, II, 206; Wellcome, III, 332)

HOLLAND, Johann Isaac

Opera Mineralia, sive de Lapide Philosophico, omnia, duobis libris comprehensa. Nunquam antehac edita, ac nunc primum ex optimis manuscriptis Teutonicis exemplaribus fidelissime in Latinum sermonem translata, a P.M.G.

Middelburg: Excudebat Richardus Schilders, Ordinum Zelandiae Typographus. 1600.

First edition. 8vo. 8 leaves, 431, (1) pp. Many small woodcut figures of chemical apparatus in text. Occasional minor foxing; otherwise very good copy, in contemporary vellum. From the library of the noted chemical historian Dr. Ernst Darmstaedter, with his stamp on front pastedown, and with Wellcome Library withdrawal stamp on verso of title.

A VERY RARE alchemical treatise in two parts, on the preparation of the philosopher's stone and the transmutation of metals (especially lead, mercury, and silver) into gold. The chemical processes described follow the tradition of Geber,

and the experiments are considered by A. E. Waite to be the “most plain and explicit in the whole range of Hermetic literature.” It is not certain whether there were two Isaacs: Isaac of Holland and his son, John, or whether there was only one person of that name. Some historians place the author(s) as early as the mid-fifteenth century, but the mid-sixteenth century is more likely. Ben Jonson, in *The Alchemist* (London, 1610), states: “The spirit of dead Holland, living Isaac you’d swear were in him.” This suggests that Johann Isaac was still living in 1610. The work enjoyed a great reputation in the seventeenth and early-eighteenth centuries, with Boyle, Glauber, Kunckel, and Boerhaave praising it highly. A second edition appeared (Arnheim, 1616; Hoover, 443). (Bolton, 993; Duveen, 300; Edelstein, 1183; Ferchl, 247; Ferguson, I, 412–413; Ferguson Coll., 352; Neu, 2073; Partington, II, 205; Smith, 240; Waite, 123, 289; Wellcome, I, 3431)

HOLLAND, Johann Isaac

Sammlung unterschiedlicher bewährter Chymischer Schriften, namentlich: Job. Isaaci Hollandi Hand der Philosophen, Opus Saturni, Opera Vegetabilia, Opus Minerale, Cabala, de Lapide Philosophico, nebst einem Tractat von den Irrgängen derer Alchymisten, Auctoris incerti, neue und verbesserte Auflage, mit gehörigem Fleisse übersehen, und mit einem Verzeichnüs derer in jeglichem Tractat befindlichen wichtigsten Materien vermehret, wie auch mit nöthigen Kupfern gezieret.

Vienna: In Verlag bey Joh. Paul Krauss, Buchhändler. 1773.

Second edition. 8vo. 8 leaves, 762 pp. Pagination omits pages 129–138, but collation complete. With 16 full-page copperplates and 24 small woodcuts in text, mainly of chemical apparatus. Fine, unpressed copy, uncut, in original speckled boards.

THE “NEW and corrected” second edition, and the last published, of the collected works of Holland. The first collected edition, by the same publisher, J. P. Krauss, appeared in Vienna in 1746 with the same pagination, including the omitted pages 129–138 (Ferguson, I, 413–414). The first eight leaves of the present edition are printed on thicker and whiter paper than the rest of the volume, suggesting that this is, in fact, the second issue of the 1746 edition. Ferguson points out that in the Young Collection copy the pages 129–138 pagination error occurs, and pages 224–225 are doubled, which is not the case in this copy. Ferguson gives a detailed list of the contents and states that the 1746 edition “is a reprint of the edition of 1667.” The text and contents of the Frankfurt (1667) edition, however, are different, although approximately the same ground is covered (see Smith, 240). Rare. Not in Duveen, Edelstein, Ferchl, Ferguson, Neu, Smith, Wellcome, etc. (Bolton, 994; Caillet,

5421; Duncan, 6745; Mellon, 157; Partington, II, 206; Stillman, 371; Sudhoff, *Archiv. Geschichte der Medizin*, 27 [1933], 50)

HOLM, Carl Johann

Dissertatio Chemica de Sulphate Ammoniacae & Magnesia. . . Praeside Mag. Johanne Gadolin, . . . Pro gradu philosophiae Publicae Censurae subjicit Carolus Johannes Holm, Stip. Archenb. Nyland. In Auditorio Majori d. XV Maji MDCCCX.

Åbo: Typis Frenckellianis. (1805).

First edition. 4to. 1 leaf, 8 pp. Mint copy, in maroon quarter cloth antique, marbled boards, spine labeled: Gadolin. 11 Dissertations. 1792–1805.

A DISSERTATION on the history, preparation, and physical and chemical properties of ammonium sulphate and magnesium sulphate (Epsom salt), presented by Holm under the direction of Gadolin, professor of chemistry at Åbo. Quantitative directions are given for preparing freezing mixtures with these two salts. The formation of solid double salts is also described. Rare. Unknown to the usual bibliographers.

HOLMES, J. H. H.

A Treatise on the Coal Mines of Durham and Northumberland; with Information relative to the Stratifications of the Two Counties: and containing Accounts of the Explosions from Fire-Damp, which have occurred therein for the last Twenty Years; their Causes, and the Means proposed for their Remedy, and for the general Improvements of the Mining System, by new methods of Ventilation, &c. By J. H. H. Holmes, Esq., F.S.A. With Plates.

London: Printed for Baldwin, Cradock, and Joy. 1816.

First (only) edition. 8vo. 22 pp., 1 leaf (list of plates), 259 pp., 2 leaves (advertisements). With 7 engraved plates by Middlemist (including frontispiece and map). Fine copy, uncut and unpressed, in the original boards. Bookplate of the Australian Agricultural Company, 1824, on the front pastedown endpaper.

HOLMES DEDICATED this book to the duke of Northumberland, one of the vice presidents of the Society of Arts and patron of the society established at Sunderland for preventing accidents in coal mines. Written primarily to alleviate the suffering caused to miners by the frequent explosions of firedamp (mainly methane), the author here gives one of the earliest accounts of Sir Humphry Davy’s miners’ lamp, just invented. Plate VII (facing p. 199) illustrates three versions of Davy’s lamp and Stephenson’s lamp. Plate VI (facing p. 113) depicts three versions of Dr. Clanny’s lamps, plus Brandling’s and Dr. Murray’s lamps. A full

description of Davy's lamps did not appear until 1818. Holmes also discusses the geology of Durham and Northumberland mines. In his discussion of safety lamps, the author contends that Dr. Clanny was the inventor of the first miners' safety lamp and that Davy merely improved it. Partington (IV, 62) points out that "before Davy's work some lamps for use in mines had been invented," and he cites those of von Humboldt and Clanny, indicating that "Clanny's lamp was never used in mines." A rare book. Not mentioned by Bolton, Duveen, Ferchl, Partington, Poggendorff, Smith, Waller, Wellcome, etc. (Sotheran, Cat. 672 [1907], item 1972 ["Rare"]; Watt, I, 507z)

HOLSTIUS, Johannes

Dissertatio Chemica, de Silica ex Solutione Alkalina per Calcem Praecipitata, . . . praeside Mag. Job. Gadolin, . . . pro gradu philosophico publice examinandam proponet Johannes Holstius, Ostrobotniensis. In Auditorio Majori die XIX Junii MDCCXCVIII. . .

Åbo: Typis Frenckellianis. (1798).

First edition. 4to. 2 leaves, 18 pp. Mint copy, top edge cut, fore- and lower edge uncut; in maroon quarter cloth antique, marbled boards, spine labeled: Gadolin. 11 Dissertations. 1792–1805.

A DISSERTATION DESCRIBING twenty quantitative experiments on the precipitation of colloidal silica by treating alkaline solutions of potassium silicate or sodium silicate with acids (e.g., carbonic, hydrochloric, nitric, and sulphuric). Carried out by Holstius under the direction of Gadolin, professor of chemistry at Åbo, this investigation was one of the earliest studies on the preparation of pure silica (silicon dioxide). (Partington, III, 235)

HOMASSEL

Cours Théorique et Pratique sur l'Art de la Teinture en Laine, Soie, Fil, Coton, fabrique d'Indiennes en grand et petit teint, suivi de l'art du teinturier-dégraisseur et du blanchisseur, avec les expériences faites sur les végétaux colorans. Par le Citoyen Homassel, . . .

Paris: Chez Courcier. An VII. (1799).

First edition. 8vo. xvi, 400 pp. Fine, crisp copy, in contemporary quarter calf gilt, mottled boards, orange morocco label gilt.

A CLASSIC WORK on the chemistry of dyeing and bleaching, written during the flourishing period of Hellot and Berthollet. Homassel (dates unknown) was "Chef des Teintures de la manufacture nationale des Gobelins" (1778–1787). In the prefatory letter to Docteur Sacombe he modestly describes himself as "un simple artiste en teinture." He spent thirty years of research experimenting on the tech-

niques of dyeing, the results of which are presented in this book. It is a milestone work on the dyes and dyeing processes used in France in the second half of the eighteenth century. Second (Paris, 1807; 2nd issue, 1809), third (Paris, 1818), and fourth (1857) editions appeared, attesting to the importance of this work. Smith (p. 241) lists only the third edition. The first edition is very rare. Not in Blake, Bolton, Duveen, Ferchl, Ferguson Coll., Neu, Partington, Poggendorff, Waller, Watt, etc. (Edelstein, 3150; Lawrie, 334; Wellcome, III, 294)

HOME, Francis

An Essay on the Contents and Virtues of Dunse-Spaw. In a Letter to my Lord ——— By Francis Home, M.D.

Edinburgh: Printed by R. Fleming, for A. Kincaid and A. Donaldson. 1751.

First edition. 8vo. (in 4s). 216 pp. Very fine copy on thick paper, uncut with wide margins, in contemporary quarter calf, marbled boards, brown morocco label.

ONE OF Home's earliest works, this essay on the mineral waters of Dunse (Scotland) is written in the form of a letter to a Scottish lord whose name is nowhere revealed. After describing the history and location of the spring, Home gives a detailed chemical analysis of the waters. References are made to analytical tests employed by Boyle, Duclos, Guidott, Hoffmann, Rochas, Shaw, et al. The medicinal properties of the waters are compared with those of Aix, Bath, Pyrmont, Scarborough, etc. An account is given of the beneficial effects received by several patients on drinking these waters. A scarce work, unknown to Home's biographer in D.N.B. (Blake, 220; Duveen, 302; Edelstein, 1188; Neu, 1990; Waring, 789; Watt, I, 508q)

HOME, Francis

Experiments on Bleaching. By Francis Home, M.D. . . .

Edinburgh: Printed by Sands, Donaldson, Murray, & Cochran. For A. Kincaid and A. Donaldson. 1756.

First edition. 8vo. 1 leaf (blank), vi, 330 pp. Fine copy in full modern polished calf (by Sangorski and Sutcliffe, London). Bound with: Home, Francis, *The principles of agriculture and vegetation* (Edinburgh, 1757).

HOME (1719–1813) studied medicine at Edinburgh (M.D., 1750), served as surgeon of dragoons in the Seven Years' War, and became professor of materia medica at Edinburgh (1768–1798). In addition to medicine, on which he published several works, he was very interested in the practical aspects and uses of chemistry. The present book is important as it is the first scientific study of chemical processes employed in bleaching. Written at the request of the board

of trustees for the improvement of fisheries and manufactures in North Britain, the text was read to and the 135 experiments described herein were performed before “the bleachers of this country.” The book was published in response to a petition by the bleachers. Home attempted to explain the hardness of certain waters, and his experiments proved the effectiveness of adding lime to the lye and the increased speed of bleaching by employing dilute sulphuric acid in souring. His use of volumetric analysis is described. For this work Home received a gold medal from the above-mentioned board of trustees. (Cole, 659; Edelstein, 3154; Ferchl, 248; Neu, 1991; Partington, III, 141; Ron, 547; Singer, *History of Technology*, IV, 246; Sotheran, Cat. 725 [1912], 9418 [“Rare”]; Watt, I, 508q)

HOME, Francis

Essai sur le Blanchiment des Toiles, Traduit de l'Anglois de M. Home.

Paris: Chez Ganeau, Libraire, rue Saint Severin, aux Armes de Dombes. 1762.

First French edition. 12mo. xxx, (2), 412, (4) pp. Small ornamental woodcut on title. Light damp staining on some leaves, and title page with 2 short tears (no loss); otherwise good copy in tan calf antique, maroon label, spine decorated and dated in gilt.

THE SOLE French translation of Home's *Experiments on Bleaching* (Edinburgh, 1756). The anonymous translator has added a history of bleaching and a comprehensive index that are not in the English edition. The approbation is signed by Macquer and dated 10 January 1762. (Edelstein, 3153; Ferchl, 248; Ron, 546)

HOME, Francis

Ensayo sobre el Blanqueo de los Lienzos, segun se practica en Irlanda, Escocia, y Olanda: varios metodos de conocer las aguas gordas, y de endulzarlas, ya para el use de la vida, o ya para otros fines; y reflexiones sobre el modo de mejorar las Manufacturas de Lienzo: Publicado en Ingles por el Doctor Home, Profesor de Medicina en Edimbourg; y traducido al Castellano por la version Francesa, de orden de la Real Junta General de Comercio, Moneda, y Minas, y con aprobacion de S.M., por Don Miguel Geronimo Suarez, . . .

Madrid: en la Imprenta de Pedro Marin. 1779.

First Spanish edition. 8vo. 4 leaves, 360 pp. Occasional contemporary underlining in faded brown ink on a few pages; otherwise fine copy in original vellum, manuscript title on spine.

THE FIRST edition in Spanish of Home's *Experiments on Bleaching* (Edinburgh, 1756), translated from the French edition (Paris, 1762) by Don Miguel Geronimo Suarez. A German translation also appeared: *Versuche im Bleichen* (Leipzig, 1777). (Edelstein, 3152; Ron, 545)

HOME, Francis

The Principles of Agriculture and Vegetation. By Francis Home, M.D. . . .

Edinburgh: Printed for G. Hamilton & J. Balfour. 1757.

First edition. 8vo. viii, 179, (1) pp. Fine copy in full modern polished calf (by Sangorski and Sutcliffe, London). Bound with: Home, Francis, *Experiments on bleaching* (Edinburgh, 1756).

A MILESTONE IN the history of chemical literature, being the first book devoted exclusively to explaining the principles underlying agriculture from a chemical standpoint. “The *editio princeps* of all subsequent works on agricultural chemistry” (C. A. Browne, *A Source Book of Agricultural Chemistry* [1944, pp. 117–126]). In the introduction Home states: “The principles of all external arts must be deduced from mechanics or chymistry, or both together. Agriculture . . . though it depends very much on the powers of machinery . . . has a greater dependence on chymistry. Without a knowledge in the latter science, its principles can never be settled.” Home “laid the foundation on which modern agricultural science is based” (Fussell). Although explained in terms of the then-prevailing phlogiston theory, Home was the first person to attempt to establish a rational system of agriculture and plant nutrition. For this work he was awarded the gold medal of the Edinburgh Society for encouraging arts, sciences, manufactures, and agriculture. (Fussell, 36; Knight, 114; McDonald, 210; Partington, III, 141 [wrong date: 1758]; Singer, *History of Technology*, IV, 39; Watt, I, 508r)

HOME, Francis

The Principles of Agriculture and Vegetation. By Francis Home, M.D. . . .

London: Printed for A. Millar in the Strand, and A. Kincaid and J. Bell, at Edinburgh. 1759.

Second edition. 8vo. viii, 207, (1) pp. Very fine copy, in original speckled calf, spine gilt-ruled, maroon morocco label. Neat signature in ink of Alexr. Brodie (18)19 on title page.

THE FIRST London edition of this classic work, containing material additional to that in the rare first edition (Edinburgh, 1757). The third edition (Dublin, 1759) was followed by another third edition (London, 1762; Perkins, 816; Smith, 241) and a later third edition (London, 1776; Blake,

220). The present second edition is the earliest in the Wellcome Library and in the Library of the Ministry of Agriculture and Fisheries, London. (Ferchl, 248; Fussell, *Early Agricultural Works*, 1930, p. 13; Fussell, *More Old English Farming Books*, 1950, p. 36; Watt, I, 508r; Wellcome, III, 295)

HOME, Francis

I Principi dell'Agricoltura, e della Vegetazione. Opera dell'Inglese Signor Francesco Home, . . . coll'aggiunta di due Memorie sulla maniera di preservare dalla corruzione il Formento; Ora messa in Italiano, accresciuta dal Traduttore di una nuova Prefazione, di annotazioni, ed in fine di alcuni articoli riguardanti il modo di difendere, e guarire dalle malattie contagiose i Bestiami grossi, e dalla marcigione le Pecore. Dedicata all'Altezza Serenissima di Francesco III. . . . Milan: Nella Stamperia di Antonio Agnelli. 1763.

First Italian edition. 8vo. 4 leaves, xxxvi, 239, (1) pp. Several small wormholes in blank margins and front cover, and 1 very slightly affecting text (but not legibility) of first 8 pages; otherwise very good copy in original vellum.

THE FIRST appearance of Home's *Principles of agriculture and vegetation* (Edinburgh, 1757) in Italian, translated by Bernardino Danielli from the French edition (Paris, 1761). Danielli has added a twenty-four-page preface and footnotes to the text. Translations of two French memoirs (Paris, 1759 and 1760), which were not in the English editions, plus three chapters on livestock are added at the end. The colophon is dated 18 December 1762. Not in the usual bibliographies, unknown to C. A. Browne, and not in the British Library.

HOOFNAIL, John?

The Art of Drawing, and Painting in Water-Colours. Whereby a Stranger to those Arts may be immediately render'd capable of Delineating any View or Prospect with the utmost Exactness; of Colouring any Print or Drawing in the most Beautiful Manner; and of taking off Medals instantly, by various Ways, never before made publick: Intermix'd with several curious Receipts for the Use of Painters, Statuaries, Founders, &c. With Instructions for making Transparent Colours of every Sort; partly from some Curious Personages in Holland, France and Italy; but chiefly from a Manuscript of the Great Mr. Boyle; particularly a Receipt of that Gentleman's, for making a Blue Colour equal to Ultramarine. The Second Edition, with large Additions. London: Printed for J. Peele, at Locke's-Head in Amen-Corner, Pater-noster-Row. (Price one Shilling.) 1732.

Second edition. 8vo. 70 pp., 1 leaf (index). This copy lacks 1 leaf (i.e., pp. 3–4: dedication or preface?). Woodcut head- and tailpieces. Very good, crisp copy, in contemporary unlettered calf. Bound with: 2 similar works (by Hoofnail?).

THE ANONYMOUS author purports to have used a manuscript by Robert Boyle containing recipes for making colors from organic and inorganic materials. Section VII (p. 48), entitled "A fine Blue from Mr. Boyle," describes a preparation from the leaves of rue. Section VIII (pp. 48–53), "Of Mr. Boyle's transparent Blue, equal to Ultramarine," describes preparations from "the Cyanus or blue Cornbottle-flower, which abounds in almost every Cornfield." According to Fulton, the author was possibly John Hoofnail, who published *New practical improvements . . .* (London, 1738), based on Boyle's *Experiments and considerations touching colours* (London, 1664). The present second and enlarged edition was unknown to Fulton, who describes only the first edition (London: J. Peele, 1731; 3 leaves, 64 pp.; Fulton No. 372). Extremely rare. Not traced in available bibliographies.

HOOFNAIL, John?

The Method of Learning to Draw in Perspective made easy and fully explained. As also, the Art of Painting upon Glass, and Drawing in Crayons, with Receipts for making them after the French and Italian Manner. Likewise, a New and Curious Method of Japaning, either upon Glass, Wood, or any Metal, so as to imitate China; and to make black or gilt Japan-Ware, as Beautiful and Light as any brought from the East-Indies; with proper Directions for making the hardest and most transparent Varnishes. And particularly the Way to cast Amber in any Shape. Chiefly from the MSS. of the Great Mr. Boyle. The Second Edition.

London: Printed for J. Peele, at Locke's-Head in Amen-Corner, Pater-noster-Row. (Price One Shilling.) 1732.

Second edition. 8vo. 2 leaves, iv, 9–58, 3 leaves (pagination erratic, collation complete). With 5 woodcut engravings in text. Woodcut capitals and headpieces. Bound with: 2 similar works (by Hoofnail?).

AN INTERESTING book of secrets for artists, describing the preparation of pigments from inorganic compounds. Also described are techniques for varnishing, etching, gilding, and other procedures, reputedly taken from unpublished manuscripts of Robert Boyle that the anonymous author acquired. Fulton, who gives no details of pagination or collation, attributes this work to John Hoofnail and states that the first edition also appeared in 1732, with another in 1735. Extremely rare. (Fulton, 373)

HOOFNAIL, John

New Practical Improvements, and Observations on Some of the Experiments and Considerations Touching Colours, of the Honourable and Judicious Robert Boyle, Esq; so far as they relate to Tinctures and Pigments; intended for the Use of Gentlemen and Ladies that amuse themselves with Painting in Water Colours, as well as Designers and Limners, &c. By John Hoofnail.

London: Printed for R. Gosling at the Crown and Mitre against Fetter-Lane in Fleet-Street. (Price One Shilling.) 1738.

First edition. 8vo. vi, (2), 64 pp. Fine, crisp copy, in original calf, gilt, brown morocco label. Bound with: An imperfect copy (lacks sign. A) of Hoofnail, J., *The Geometry of Landskips and Paintings Made Familiar and Easie* (London? Date?), 28 pp. From the library of John Stuart (1713–1792), Marquess of Bute, Prime Minister (1760–63), Sotheby auction, London, 3 July 1961 (lot 265).

IN THE preface (p. v) Hoofnail states: “I have offered nothing in the following sheets, but what I have myself experienced.” He speaks very highly of Boyle and intends this work to be only in the nature of a supplement and amplification of Boyle’s *Experiments and Considerations touching Colours* (London, 1664). Fulton mentions that there was a second edition in 1742 (?) and a reissue entitled *The Painter’s Companion* in 1762. Other issues of that title appeared in 1764, 1799, and 1815. The book is of considerable chemical interest throughout. At the end (pp. 59–63) is “The Preparation of Prussian Blue sent from Germany to John Woodward, M.D.” Most of Hoofnail’s works were published anonymously, but to the present he put his name. (Fulton, 376; Lawrie, 336; Smith, 242; Watt, I, 511e; Wellcome, III, 296)

HOOFNAIL, John?

The School of Miniature, erected for the Instruction of the Ignorant, the Improvement of Proficients, and the general Information of such as are pleased with Pictures in Small. Herein are contained the most expeditious and infallible Ways of Drawing without being taught; and all the Methods of Colouring, Stippling, &c. Illustrated by Numbers of Practical Processes upon each Head or Article; particularly useful to those who would Copy in Colours from a Print. To the Whole are annexed many valuable Receipts for preparing the Colours, which are peculiar to this Kind of Painting; communicated by the best Italian and other Masters. As also, the Preparation of an excellent Polished Gold and Shell Gold. Published from an Old MSS.

London: Printed for S. Harding at the Bible and Anchor on the Pavement in St. Martin’s-Lane, and Sold by

H. Whitridge under the Royal-Exchange. Price One Shilling. 1733.

First edition. 8vo. 92 pp. Woodcut engraving in text. Very good copy. Bound with: 2 similar works (by Hoofnail?).

DEDICATED by the anonymous author “To All Connoisseurs and Artists in Painting; and particularly to the Fair Ladies who Understand and Practice in Miniature.” This book of secrets for artists is of chemical interest for the preparation and composition of the pigments described. At the end (pp. 74–90) are “Secrets of an Italian for making Carmine and Ultramarine” and also secrets of gilding in gold or silver. Possibly by John Hoofnail, this work remained completely unknown to Fulton. The “Old MSS” mentioned in the title probably refers to an unpublished manuscript by Robert Boyle (now lost). Extremely rare. Not traced in the usual bibliographies.

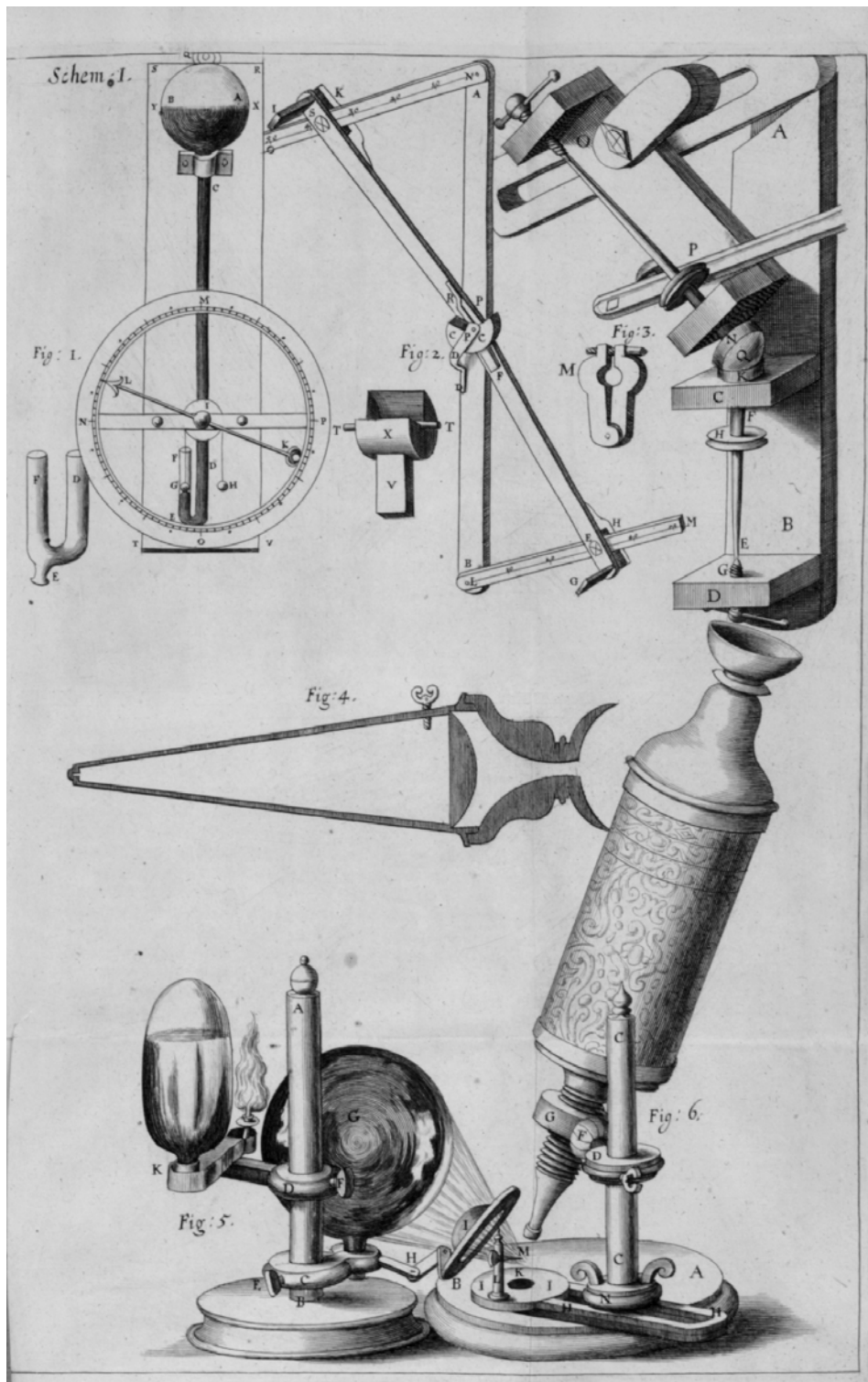
HOOKE, Robert

Micrographia: or some Physiological Descriptions of Minute Bodies made by Magnifying Glasses. With Observations and Inquiries thereupon. . . .

London: Printed by Jo. Martyn, and Ja. Allestry, Printers to the Royal Society, and are to be sold at their Shop at the Bell in St. Paul’s Church-Yard. 1665.

First edition, first issue. Folio. 18 leaves, 246 pp., 5 leaves (index). Title page in red and black, with arms of the Royal Society. With 38 copperplates (many folding). Corner of license leaf before title neatly repaired; otherwise fine, tall, wide-margined copy, in quarter calf antique, marbled boards, maroon morocco label, gilt.

THE FIRST large work to illustrate microscopical objects, and one of the “most important books ever published in the history of science” (Keynes). The plates were engraved by Hooke. It contains the invention of the compound microscope and the wheel barometer, the explanation of the twinkling of the stars, important investigations on the refraction of light, and a passage first suggesting homogeneous immersion objectives for microscopes. Hooke also observed here the cells in plants, marking the origin of modern cellular morphology. The book is of fundamental importance in the development of several sciences, and Hooke presents many ingenious ideas and concepts. He puts forth the idea that a certain part, or component, of the air is responsible for combustion, though he is not clear as to how to verify it. The presence of oxygen in the atmosphere was thus foreshadowed more than a century before its isolation by Priestley. Educated at Oxford, Hooke (1635–1703) was an experimental genius. An assistant first to Thomas Willis and then to Robert Boyle, Hooke became



Hooke. Micrographia. London, 1665.

curator of experiments to the newly formed Royal Society (F.R.S., 1663), and later (1677–82) its secretary (see D.N.B. and D.S.B.). The second issue appeared in 1667. (Dibner, 187; D.S.B., VI, 483–485; Garrison-Morton, 262; Horblit, 50; Keynes, *Hooke*, 6; Krivatsy, 5958; P.M.M., 147; Sparrow, 105; Waller, 10845; Wellcome, III, 296; Wing, H2620)

HOOKE, Robert

Philosophical Experiments and Observations of the late Eminent Dr. Robert Hooke . . . Publish'd by W. Derham, F.R.S.

London: Printed by W. and J. Innys, Printers to the Royal Society, at the West End of St. Paul's. 1726.

First edition. 8vo. 4 leaves, 391, (1) pp., 4 leaves. With 4 copperplates (2 folding) and many woodcut illustrations in the text. Numerous woodcut capitals, head- and tailpieces. Fine copy, in original gilt-ruled calf, rebacked, maroon label. Armorial bookplate (partly covered) of Charles Balguy (1708–1767), physician (see D.N.B.).

THIS WORK was edited by William Derham (1657–1735), a friend of Hooke and author of *The artificial clockmaker* (1696), from papers that were not used by Richard Waller when he edited Hooke's *Posthumous works* (1705). Waller had intended to use these materials for a second volume of the *Posthumous works*, but he died before he could complete it. This volume thus fills the place of a second volume projected by Waller. These are mostly minor works but nevertheless first editions of a number of interesting pieces by Hooke. In addition, there are previously unpublished letters from Leeuwenhoek, Evelyn, Wallis, Stephen Gray, and Cotton Mather, which Derham obtained with the Hooke papers. Several papers contain matters of chemical interest: e.g., air condensed by tartar, artificial air (i.e., chemically prepared gases), nature of earths and salts, opium, making of inks, preparation of phosphorus, and germination of metals in ores. (Blake, 220; Cole, 660; Cushing, H446; D.S.B., VI, 488; Eales, 617; Keynes, *Hooke*, 36; Osler, 3002; Partington, II, 551; Poggendorff, I, 1138; Wellcome, III, 297; Wheeler Gift, 262)

HOOKE, Robert

The Posthumous Works of Robert Hooke, M.D., S.R.S. . . . Containing his Cutlerian Lectures, and other discourses, read at the Meetings of the Illustrious Royal Society. . . . To these Discourses is prefixt the Author's Life . . . Published by Richard Waller, . . .

London: Printed by Sam. Smith and Benj. Walford, . . . at the Princes Arms in St. Paul's Church-Yard. 1705.

First edition. Folio. 4 leaves, xxviii, 572 pp. (pp. 211–276 omitted in pagination), 6 leaves. Title in red and black. With 15 superb copperplates (some folding), including 6 plates of fossils. Fine copy, with the half title, in full paneled calf antique, with original maroon lettering label.

A COLLECTION OF many of Hooke's most important observations and inventions, containing material of chemical interest. These lectures, read by Hooke to the Royal Society, were published after his death by Richard Waller. Waller's biography of Hooke remains the standard contemporary source of his life. The works contained in this volume include further elaborations of his theory of gravity, in which it has been claimed that he anticipated Newton; astronomical observations on the movements of the sun; the tails of comets; electricity; descriptions of various scientific instruments; and the largest section, his writings on earthquakes. The latter is, in fact, a general discursive work on geology and paleontology and represents the most advanced paleontological thinking of the seventeenth century. Hooke's views foreshadowed the theory of evolution. He also demonstrated how the polyhedral forms of crystals could be built up from the packing of bullets, which is the basis for the claim that he anticipated Steno in the law of constancy of interfacial angles. The book is dedicated to Sir Isaac Newton and the Royal Society. "A splendid folio volume" (Knight). (Blake, 220; D.S.B., VI, 486; Harvey, 129; Hoover, 426; Keynes, *Hooke*, 25; Partington, II, 551; Ward & Carozzi, 1114; Wellcome, III, 296 [imperf.]; Wheeler Gift, 227; Zittel, 19)

HOPE, Thomas Charles

Summary of a Memorial to be presented to the Right Honourable the Lord Provost, Magistrates, and Council, respecting the Institution of a Professorship of Practical Chemistry in the University of Edinburgh. By Dr. Hope, Professor of Chemistry. (Edinburgh, 1833).

First edition. 8vo. 17, (1) pp. Very good copy in marbled boards antique, printed paper label on spine.

HOPE (1766–1844) succeeded Joseph Black as professor of chemistry at Edinburgh in 1799 and is "remembered chiefly for his contributions to the discovery of strontium and for his conclusive demonstration that water reaches its maximum density just above its freezing point. . . . His teaching was seriously weakened by a failure to provide facilities for, or to encourage, practical work" (D.S.B., VI, 495). The present memorial was written and distributed to the University Council in response to the proposal by Hope's assistant, David Boswell Reid (1805–1863), for the establishment of a chair of practical chemistry to be held by Reid,

who issued his own memorial. Hope strongly opposes the establishment of such a chair on the grounds that it would interfere with his own work and that practical work, while important, was not by itself "of sufficient magnitude and importance." Another underlying objection is that a new chair would rob Hope's chair of emoluments and thus weaken its scope and status. At the end, the tract is dated 3 May 1833. The Wellcome Library copy is bound with Reid's *Remarks on Dr. Hope's "Summary,"* followed by *Remarks on an additional statement by Dr. Hope,* dated 15 May 1833 (Wellcome, IV, 497). Very rare. Not in British Library. (Wellcome, III, 299)

HOPPE-SEYLER, Ernst Felix Immanuel

Traité d'Analyse Chimique appliquée à la Physiologie et à la Pathologie guide pratique pour les recherches cliniques. Par F. Hoppe-Seyler . . . Traduit de l'allemand sur la quatrième édition et annoté par F. Schlagdenhauffen . . .
Paris: Librairie F. Savy. 1877.

First French edition. 8vo. 2 leaves, iv, 544 pp. Woodcuts in text. Fine copy in original quarter calf, marbled boards, spine gilt-ruled.

THE GERMAN biochemist and physiologist Hoppe-Seyler (1825–1895) established the first biochemical research laboratory at the University of Strassburg (then under German occupation), where he and his students made many important discoveries. He studied hemoglobin (see Garrison-Morton, 873), demonstrating that it binds loosely with oxygen to form oxyhemoglobin, which releases its oxygen to body tissues. He also showed that carbon monoxide is toxic because it displaces the oxygen of oxyhemoglobin and forms a strong bond with hemoglobin. Hoppe-Seyler carried out important research on many other biochemicals (e.g., chlorophyll, cholesterol, choline, fatty acids, and lecithin). His student Friedrich Miescher's "discovery of nuclein in 1869 marks the starting point of research that led to the later recognition of the role of deoxyribonucleic acids (DNA) in heredity" (D.S.B.). Hoppe-Seyler founded the *Zeitschrift für physiologische Chemie* in 1877 to promote biochemistry as a distinct branch of chemistry. The present book is the French translation of the fourth edition of *Handbuch der physiologisch- and pathologisch-chemischen Analyse*, (Berlin, 1875; D.S.B., VI, 506; Smith, 243). The translator, Schlagdenhauffen, professor of pharmacy at Nancy, has added important notes to this standard handbook of analytical biochemistry for clinical and research work. Rare. Not in the usual bibliographies. (Bolton, 542)

HORN, Georg

Arca Mosis sive Historia Mundi. Quae complectitur Primordia Rerum Naturalium omniumque artium ac scientiarum.
Leyden & Rotterdam: Ex Officina Hackiana. 1668.

First edition. 8vo. 17 leaves, 220 pp., 10 leaves. Engraved title page (dated 1669) and woodcut printer's device on printed title. Fine copy in original mottled calf, spine gilt.

A VERY RARE book about which Ferguson (*Books of Secrets*) states: "During the whole course of my investigations into this literature I have not come across any book more curious, less known, and scarcer, than one which was written by George Horn. His name has been familiar to me for years as the editor of the works of Geber, but until the present little volume came into my hands I had not thought of him as an author." Ferguson, writing in 1894, devotes almost a whole page to a description of this work and notes: "Of the arts and sciences the only one which gets any attention is . . . chemistry, and to it is devoted a large proportion of the whole book, pp. 176–220, or exactly one-fifth. . . . This is a valuable section, for in it Horn describes the apparatus, the operations, and the products, and thus gives an excellent resume of the theoretical chemistry of the middle of the seventeenth century. Altogether the *Arca Mosis* is one of the most original books which I have met with." Horn (1620–1670), born in Bohemia, traveled to Holland, where he became tutor to an English youth and accompanied him to England. Returning to Holland he occupied the chair of history, politics, and geography at Harderwick. About 1648 he became professor of history at Leiden. A very learned man of wide reading, Horn was much interested in alchemy and chemistry and expressed his views concisely in his several works. For further details see Ferguson. "Petit opuscule d'une grande rareté" (Caillet). Not in Duveen, Ferchl, Wellcome, etc. (Caillet, 5258; Edelstein, 1203; Ferguson, I, 417 [not in Young Coll.]; Ferguson Coll., 332; Ferguson, *Books of Secrets*, II, 3rd suppl., 49–50; Guaita, 403; Krivatsy, 5984; Watt, I, 516x)

HORN, Georg

Historiae Naturalis et Civilis, ad nostra usque tempora, libri septem.

Leipzig: Sumptibus Johannis Lüderwald, Bibliopol. Magdeb. Literis Samuelis Krebsii. 1679.

First edition, 3rd issue. 12mo. 11 leaves, 374 pp. Engraved title page. Fine copy in original vellum. Bound with: Horn, Georg, *Introductio in historiam universalem* (Gotha, 1679).

THE SHEETS of the first issue (Leyden: L. de Haes, 1670) were reissued by J. E. Hahn for J. and F. Lüderwald at Leipzig in 1671. The present third issue (the second from

Leipzig) has a reset printed title and an engraved title. Apart from these two leaves, the book comprises the sheets of the original issue. The preface is dated from Leyden, 27 May 1670. In addition to its natural history interest, the book contains many chapters of chemical importance. Topics discussed include elements, fire, air, water, earth, salts, metals, alchemy, gems, and stones. Each subject is covered in a separate chapter. Krivatsy (5986) and Waller (12299) list the 1670 Leyden issue, and Wellcome (III, 300) cites the same issue and that of Leipzig, 1671. Watt (I, 516x) lists both issues and is the only bibliography located that cites the present very rare third issue.

HORN, Georg

Introductio in Historiam Universalem, qua profectioribus memorialis liber esse potest, curante Friderico Rudolphi, Sereniss. Duc: Sax: ab Archiv. Impressa.

Gotha: Sumptibus Salomonis Reyheri. Typis Christophori Reyheri. 1679.

First edition. 12mo. 4 leaves, 135, (1) pp., 12 leaves. Fine copy. Bound with: Horn, Georg, *Historiae naturalis et civilis* (Leipzig, 1679).

A BRIEF SURVEY of world history and geography from the time of the ancient Babylonians, Persians, Egyptians, et al., to the mid-seventeenth century. The book is of some scientific interest, with references to North and South America, the “incredible” hordes of gold and silver in Peru (p. 131), the discovery of Nova Albion (i.e., California) by Sir Francis Drake in 1580 (p. 134), etc. Very rare. Not recorded in the usual bibliographies.

HORNBY, Thomas

Dissertation on Lime, and Its Use and Abuse in Agriculture; embracing a View of Its Chemical Effects, Illustrated by Collateral Remarks and Observations. By Thomas Hornby, Member of the Royal College of Surgeons, London, and Surgeon, York. Second Edition. (Quotation in Latin from Sydenham, and quotation in English from Garnett.) London: J. Harding, etc. 1814.

Second edition. 4to. 1 leaf, 32 pp., 2 leaves (advertisements). Fine copy in modern blue boards.

AN INTERESTING essay on the use of quicklime and slaked lime in agriculture. Also covered are the uses of other calcium-containing compounds: e.g., limestone (calcium carbonate) and gypsum (calcium sulfate). The book is almost entirely chemical in content. There are references to the works of Nehemiah Grew, William Hunter, Sir John Sinclair, Abbé Fontana, Count Morozzo, Chaptal, and several other contemporary scientists. Surprisingly, the author

does not mention the works of either Archibald Cochrane (Earl of Dundonald) or Sir Humphry Davy on agricultural chemistry, although these were well-known books. No reference to the first edition has been found. The dedication to Baldwin Wake, M.D., in this second edition is signed “Petergate (York), October, 1813.” Presumably, the first edition appeared at the end of 1813 or the beginning of 1814. No biographical information on the author, Hornby, has been found. As indicated in the title, Hornby was a member of the Royal College of Surgeons, London, and was a surgeon in York. In addition to his ability as a surgeon, he must also have been a competent chemist with a genuine interest in agriculture, as this work attests. A third edition appeared in 1821 (see Sotheran, Catalogue 725 [1912], item 9459). These editions must have been scarce even as early as 1824, for Watt gives the wrong date (1815) and does not mention that three editions had appeared by 1824. Very rare. Not in Bolton, C. A. Browne, Duveen, Ferchl, Morgan, Partington, Poggendorff, Smith, Waller, Wellcome, etc.

HORNBY, Thomas

Dissertation on Lime, and its Use and Abuse in Agriculture; embracing a view of its chemical effects, illustrated by collateral remarks and observations. By Thomas Hornby, . . . London: Printed for J. Harding, 36, St. James's-Street: sold by J. & G. Todd, J. Wolstenholme, & R. Spence, York; & M. Turner, Beverley. 1814.

Second edition. 8vo. (in 4s). 1 leaf, 32 pp., 2 leaves (advertisements). Fine copy in modern blue boards.

AN ESSAY on the agricultural use of calcium compounds (e.g., gypsum, limestone, quicklime, and slaked lime), with references to the works of Nehemiah Grew, William Hunter, Sir John Sinclair, Fontana, Morozzo, Chaptal, and other contemporary scientists. Surprisingly, the author does not mention the well-known works of Archibald Cochrane (Earl of Dundonald) or Sir Humphry Davy on agricultural chemistry. The dedication to Baldwin Wake is signed “Petergate (York), October, 1813.” Presumably the first edition appeared at the end of 1813 or beginning of 1814. Hornby, a member of the Royal College of Surgeons (London) and a surgeon in York, must also have been a competent chemist with a genuine interest in agriculture, as this work attests. A third edition was published in 1821 (Perkins, 822). Watt gives the wrong date (1815) and does not mention that three editions had appeared by 1824. Rare. Not in Browne, Fussell, McDonald, Wellcome, or the usual chemical bibliographies. (Perkins, 821; Watt, I, 515x)

HORNE, Henry

Essays concerning Iron and Steel: the first containing Observations on American Sand-Iron: the second, Observations, founded on Experiments, on Common Iron-Ore, with the Method of reducing it first into Pig or Sow-Metal, and then into Bar-Iron; on the Sort of Iron proper to be converted into good Steel, and the Method of refining that Bar-Steel by Fusion, so as to render it fit for the more curious Purposes: with an Account of Mr. Reaumur's Method of softening Cast-Iron; and an Appendix, discovering a more perfect Method of Charring Pit-Coal, so as to render it a proper Succedaneum for charred Wood-Coal. . . .

London: Printed for T. Cadell. 1773.

First edition. 12mo. iv, 223, (1) pp. Fine copy in the original quarter calf, marbled boards, crimson morocco label.

AN EXCELLENT examination of the English iron industry, from the crucial period when techniques of coke smelting and cupola furnace resmelting were developed to produce high-grade iron and steel. It is also an important contribution to the history and chemistry of smelting on both sides of the Atlantic. The author quotes correspondence he had with Jared Eliot, of Killingworth, Connecticut, who sent him samples of "the first iron that was ever made in America. . . . This black sand (from which the iron was made) is a treasure that has long lain hidden from the world, and is what may render the colonies more valuable to Great Britain." The first American steel was made by Eliot's son in a steel furnace "erected several years before the Act of Parliament prohibiting them in the plantations." Clearly a man of great practical experience and initiative, Horne is enthusiastic about the potentialities of American ore. No biographical information on the author has been located. Unknown to C. S. Smith (*History of . . . Steel*). Not in Annen, Blake, D.S.B., Tylecote, Wellcome, or the usual chemical bibliographies. (Bolton, 543; Ferchl, 250; Ferguson Coll., 333; Honeyman, 1704; Hoover, 430; Roller & Goodman, 556; Sabin, 33031; Sotheran, Cat. 832 [1932], 6478 ["Rare"]; Watt, I, 516g)

HORNOT, Antoine

Traité des Odeurs, suite du Traité de la Distillation. Par M. Dejean, Distillateur.

Paris: Chez Nyon, Guillyn, Saugrain. 1764.

First edition. 12mo. viii pp., 2 leaves, 528 pp. Fine copy in original mottled calf, spine richly gilt, maroon morocco label.

A VALUABLE TREATISE on the preparation of perfumes, scents, sweet-smelling cleansing agents, skin lotions, and similar toiletries. Dedicated to the Countess De Coeslin, this is a sequel to Hornot's *Traité raisonné de la distilla-*

tion (Paris, 1753). Techniques described for preparing perfumes include processes still employed (e.g., distillation, infusion, extraction, and expression). A significant work on eighteenth-century organic chemical technology, which passed through several later editions. (Edelstein, 734; Ferchl, 118; Smith, 244; Wellcome, II, 443)

HORNOT, Antoine

Traité Raisonné de la Distillation, ou la Distillation reduite en Principes. Par M. Dejean, Distillateur. Quatrième édition. Revue, corrigée & beaucoup augmentée par l'Auteur. Paris: Chez Guillyn, Saugrain, Bailly. 1778.

Fourth edition. 12mo. 479, (1) pp. Fine, crisp copy, in original mottled calf, spine richly gilt. Eighteenth-century signature in ink on page 9 ("Durande"), possibly that of Jean François Durande (d. 1794), professor of botany at Dijon and coauthor with Guyton de Morveau and Maret of *Éléments de Chymie* (Dijon, 1777-1778).

THE NAME "Dejean" is a pseudonym for the celebrated distiller Antoine Hornot (1728-1797). The book (first edition: Paris, 1753) deals with techniques of distillation and discusses stills made of glass, earthenware, tin, and tinned copper. Numerous recipes for the preparation of brandy, spirits, and liqueurs are described. "The earliest work of the eighteenth century devoted entirely to distillation" (Forbes). Duveen (p. 164) lists another "quatrième édition" (Paris, 1777), with different names in the imprint and different pagination. Bolton, Caillet, Ferchl, Forbes, and Neu cite other editions. A note in the Wellcome catalogue describing this edition states: "With 'Avec approbation' on t.p. and (author's?) signature and Marseilles stamp on p. 1." In this copy the signature and Marseilles stamp (dated 1778) are on page 9. Very scarce. (Forbes, 224; Smith, 244; Wellcome, II, 442)

HORST, Gregor

Gregori Horsti, D. Observationum Medicinalium Singularium Libri IV. Priores. I. de Febribus. II. de Morbis Capitis. III. de Morbis Pectoris. IV. de Morbis Viscerum concoctionis. His accessit epistolar. & consultationum Medicar. à CL. Germaniae Medicis potissimum, & aliis, cum auctore communicatarum, lib. primus. Editio Nova: cui Auctuarium Pharmaceuticar. Exercitationum, Galenicum, & Spagyricum, recens additum.

Ulm: Typis Saurianis. 1628.

Second edition? 4to. 8 leaves, 584 pp., including finely engraved title page. With full-page portrait of Horst aged 46, engraved by Lucas Kilian, on verso of fourth leaf. Apart from a few quires being browned in places, a fine copy in contemporary vellum.

AN INTERESTING pharmaceutical chemical work, pages 305–347 (“De chymicis quibusdam”) being dedicated to the famous chemist Joachim Tancke (1557–1609), with references to the writings of Libavius, Quercetanus, Hartmann, Etzler, Fludd, Drebbel, et al. The letters and consultations include Horst’s correspondence with Fabry von Hilden, Bauhin, Sennert, Fludd, and others. Very scarce. Not in the usual early chemical and medical library catalogues. The first edition appeared three years earlier (Ulm, 1625), according to Watt. (Watt, I, 517t; Wellcome, I, 3312)

HORST, Gregor

Physica Medica de Casu quodam admirando et singulari, ex quo subsequencia problemata deducuntur. I. An corpus humanum post mortem aliquot septimanis colore & habitu floridum, incorruptum, absque putredine incipiente, naturaliter, nullo artificio accedente, durare possit? II. An fluxus sanguinis cadaveris humani occisi tam in principio coedis, quam post aliquot septimanis praesentiam interfactoris indicet? Accessit brevis responsio ad eundem casum à Facultate Medica Viennensis Academiae conscripta.

Wittenberg: Typis Meisnerianis, Impensis Clement. Bergeri Anno 1606.

First edition. Sm. 8vo. 4 leaves, 125, (1) pp. Paper slightly browned (characteristic of this period); otherwise a fine copy in old calf, spine gilt-lettered. Pages printed within ruled borders.

HORST (1578–1636), a physician of great reputation, termed the German Aesculapius, was born in Torgau. He became professor of medicine in Wittenberg, then in 1608 occupied a similar post in Giessen and later at Ulm. A learned writer, he published several medical and pharmaceutical works. In the present book he questioned whether the flowing of the blood of a slain corpse indicates the presence of the slayer, a belief that was then current. He maintained that philters and amatory cups were not natural but diabolical. This work was published the same year as the author received the M.D. degree from Basel. His writings continued to be sufficiently esteemed for an edition of his collected works, in three volumes, in 1660. Pages 77–104 (“De mixtis in anere”) are of chemical importance, with references to the writings of Galen, Avicenna, Carden, Scaliger, Fernelius, Piccolomini, et al. Pages 83–87 discuss the four Aristotelian elements and their properties, and pages 87–90 discuss the possibility of the transmutation of the elements. Thorndike (VII, 344) briefly mentions this very rare work. Not in Cushing, Duveen, Ferchl, Ferguson, Garrison-Morton, Neu, Osler, Partington, Waller, Wellcome, etc. (Watt, I, 517s)

HOTTINGER, Solomon

Brontologia Specialis, potiora Fulminis Adjuncta, Fulgur, Tonitru & Ictum Fulmineum . . . Praeside Solomone Hottingero, . . . Pro consequendo examine philosophico sustinebunt. Jacobus Pestaluzius. Rodolphus Müllerus. Job. Felix Corinodius. Erhardus Dürstelerus. Huldricus Ringglinus. Rodolphus Körnerus. Mauritius Zellerus. Ad diem (blank) Decembr. H.L.Q.S.

Tiguri (Zurich): Typis Henrici Bodmeri. 1700.

First edition. 4to. 16 leaves (unpaginated). Fine copy in quarter maroon morocco antique, marbled boards, spine gilt-lettered and dated, with contemporary gilded paper wrapper bound in.

A DISSERTATION OF chemical and meteorological interest, in which the sound of thunder is explained as being due to the explosive reaction between the nitro-aerial particles of the air, sulphurous exhalations from the earth, and particles of fiery matter—rather like the explosion of gunpowder. Ingenious (or absurd) as this hypothesis may now seem, it must be borne in mind that at the time the relationship between lightning and thunder was not understood. Poggendorff (I, 1147) and Ferchl (p. 250) mistakenly call him Samuel, stating that the author was professor of physics at the Gymnasium in Zurich. In addition to this very rare work, to which no bibliographical reference has been found, Hottinger (1649–1713) published a work on the Baden hot springs, *Thermae . . . Badenses* (Baden, 1702), and books on physics (see Poggendorff).

HOUGHTON, Thomas

The Ancient Laws, Customs and Orders of the Miners in the King's Forrest of Mendipp In the County of Somerset.
London: Printed for William Cooper at the Pellican in Little Britain. 1687.

First edition. 12mo. 1 leaf, 7, (1) pp. Fine copy. Bound with: Houghton, Thomas, *Rara Avis in Terris* (London, 1681), and 2 other works by Houghton.

A TECHNICAL ADDENDUM to the *Rara Avis*, which covers the laws, customs, and orders of miners working in the lead mines of the Mendip Hills in Somersetshire. The smelters of lead ore are informed (pp. 4–5) “that if any Lord or Officer hath once given Licence to any man to build, or set up any Hearth or Washing-house, to wash, cleanse or blow Oar, he that once hath leave shall keep it for ever, or give it to whom he will, so that he doth justly pay his Lott Lead, which is the tenth pound, which shall be blown at the Hearth or Hearths, and also that he doth keep it tennantable as the Custome doth require.” The tenth and final law relates to fatalities: “That if any man by means of Misfortune take his death . . . the Workmen . . . are bound to fetch him

out of the Earth, and to bring him to Christian Burial at their own costs and charges, although he be forty Fathome under the Earth." Extremely rare. Not in Wing. (Cooper, 207; Hoover, 435; Watt, I, 519i)

HOUGHTON, Thomas

The Compleat Miner: or a Collection of the Lawes, Liberties, Ancient Customs, Rules, Orders, Articles and Privileges of the severall Mines and Miners in the Counties of Derby, Gloucester, and Somerset: together with the Art of Dialling, and levelling Grooves, and with an Explication of the Terms of Art used in this Book.

London: Printed for William Cooper at the Pellican in Little Britain. 1688.

Second edition. 12mo. 6 leaves (i.e., title page of the 1688 edition and signatures F1–F5, unpaginated). Fine copy. Bound with: Houghton, Thomas, *Rara Avis in Terris* (London, 1681), and 2 other works by Houghton.

AN EXTRACT from the second edition of the *Rara Avis* (London, 1688), renamed *The Compleat Miner*, containing "An explanation of the Miners Terms of Art." It is interesting to note that, despite the statement on the title page of the 1681 edition, this part was not added to all copies. Hence this addition from the 1688 second edition. The glossary includes forty-six definitions of terms used by miners, some of which are still employed. Extremely rare. This extract has the title page of the 1688 edition. Only three copies are listed by Wing: in the British Library; Queen's University, Kingston, Ontario; and the Folger Library. (Cooper, 207; Watt, I, 519h; Wing, H2926)

HOUGHTON, Thomas

The Lawes and Customs of the Miners in The Forrest of Dean, In the County of Gloucester.

London: Printed for William Cooper at the Pellican in Little Britain. 1687.

First edition. 12mo. 22 pp. (including title page). Fine copy. Bound with: Houghton, Thomas, *Rara Avis in Terris* (London, 1681), and 2 other works by Houghton.

A LIST OF the mining laws in force in Gloucestershire from the time of King Edward III (1312–1377). These laws were applied to miners in the "Forrest of Dean and the Castle of Saint Briavells." The forty-one laws range in extent from Chepstow Bridge and Gloucester Bridge and "the half of Newent, Rosse-Ashe, Monmouths Bridge, and so far in the Seasome as the blast of a Horn or the voice of a Man may be heard." These laws applied to the mining of sea coal, lead ores, etc. The final leaf contains advertisements of *The Compleat Miner* (1688), by Houghton, and *Fodinae*

Regales (1670), by Sir John Pettus. Rare. (Cooper, 207; Ferguson, I, 423 [not in Young Coll.]; Hoover, 435; Watt, I, 519h; Wing, H2929)

HOUGHTON, Thomas

Rara Avis in Terris: Or the Compleat Miner, in two Books; the first containing, The Liberties, Lawes and Customs of the Lead-Mines, within the Wapentake of Wirksworth in Derbyshire; in fifty nine Articles, being all that ever was made. The second teacheth, The Art of dialling and levelling Grooves; a thing greatly desired by all Miners; being a subject never written on before by any. With an Explanation of the Miners Terms of Art used in this Book. . . . By Thomas Houghton.

London: Printed for William Cooper at the Pellican in Little Britain. 1681.

First edition, second issue. 12mo. 4 leaves, 105, (7) pp. Full-page woodcut (p. 102). Fine copy in contemporary mottled calf, blind-ruled spine unlettered. Bound with: 3 other works by Thomas Houghton.

DEDICATED "To all Miners and Maintainers of Mines within the Wapentake of Wirksworth, or elsewhere: The Author wisheth Happiness and Prosperity in Lead-Mines." An expert on the laws of mining and its techniques, Houghton (fl. 1680) signs his dedication "From my Lodging in Warwick-lane, near the Colledge of Physitians, London. Novemb. 12, 1680." The first part (60 pp.) discusses fifty-nine articles on the legalities of lead mining in Derbyshire, which were originally drawn up on 10 October 1665. The second part describes dialing and the first account of leveling grooves for miners, with examples and numerical tables. Sir Isaac Newton owned a copy of this work, most copies of which were read to pieces by miners, hence its rarity. The title page of the first issue (Wing, H2933; no priority) omitted the name of William Cooper in the imprint; otherwise the two issues are identical. Parts of the text were reprinted in the English edition of Alvaro Alonso Barba (London, 1738). (Annan, 61; Cooper, 208; Ferguson, I, 423 [not in Young Coll.]; Ferguson Coll., 335; Harrison, 809; Hoover, 435; Roller & Goodman, 558; Sotheran, Cat. 672 [1907], 2008; Ward & Carozzi, 1124; Watt, I, 519h; Wing, H2934)

HOWARD, Edward Charles

On a New Fulminating Mercury . . . from the Philosophical Transactions.

London: Printed by W. Bulmer and Co. 1800.

First edition. 4to. 1 leaf, 35, (1) pp. Engraved plate (foremargin cropped). Author's presentation inscription in ink to the Royal Institution of Great Britain, 1800, on verso of title. Old stamp of Royal Institution on bottom margin of title. Fine copy in

maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

AUTHOR'S OFFPRINT announcing the discovery and preparation of mercury fulminate, which was later developed and is still used as a detonator for modern high explosives (e.g., cordite, dynamite, guncotton, and trinitrotoluene). "Alfred Nobel (1833–96), between 1859 and 1866, showed that nitroglycerine, alone or absorbed in kieselguhr, could safely be made to explode with great violence if a small quantity of mercury fulminate . . . was exploded in contact with it" (Singer). "Howard's original method is still the source of mercury fulminate" (Sidgwick). Howard (1774–1816), third brother of the twelfth duke of Norfolk, also invented the vacuum pan for evaporating sugar syrup, patented in 1812. Although Howard did not live to see the application of mercury fulminate as a detonator, his discovery enabled the development of practical high explosives, which have been of inestimable value in peace and war. A rare and very important milestone publication in chemistry and technology. Not in the usual early chemical bibliographies. (A. J. Ihde, *The Development of Modern Chemistry*, 1964, p. 452; Partington, IV, 257; J. Read, *Explosives*, 1942, p. 130; N. V. Sidgwick, *The Organic Chemistry of Nitrogen*, 1945, p. 338; C. Singer et al., *A History of Technology*, 1958, vol. V, pp. 285, 296; Watt, I, 520a; Wellcome, III, 306)

HUBER, François, and SENEBIER, Jean

Mémoires sur l'influence de l'air et de diverses substances gazeuses dans la germination de différentes graines, par les Cns. François Huber, . . . et Jean Senebier . . .
Geneva: Chez J. J. Paschoud, Libraire. IX (1801).

First edition. 8vo. xiii, (1), 230 pp., 1 leaf (advertisements). Few tiny wormholes in spine; otherwise very good copy in original half calf, gilt, marbled boards.

A PHYTOCHEMICAL WORK of some importance describing numerous experiments on the germination of seeds in gases (e.g., oxygen, nitrogen, hydrogen, and carbon dioxide) and mixtures of these gases. In the preface the celebrated Swiss plant physiologist Senebier (1742–1809) states that the results of these carefully controlled experiments were reviewed by the Swiss physiologist De Saussure (1767–1845) for his approval before being included in this book. Huber (1750–1831), a wealthy Swiss citizen who was almost totally blind, carried out many of the experiments in collaboration with Senebier. Earlier Huber had published *Nouvelles observations sur les abeilles* (Geneva, 1792), the "first classic work on Bees" (Eales, 2065). Senebier "was particularly close to Francois Huber, with whom he conducted experiments" (D.S.B.). (Ferchl, 251; D.S.B., XII, 309; Poggendorff, I, 1152)

HÜBNER, Johann, and ZINCKE, Georg Heinrich

Curieuses und Reales Natur- Kunst- Berg- Gewerck- und Handlungs-Lexicon. Darinne nicht nur die in der Physic, Medicin, Botanic, Chymie, Anatomie, Chirurgie und Apothecker-Kunst, wie auch in der Mathematic, Astronomie, Music, Mechanic, Bürgerlichen und Kriegs-Bau-Kunst, Artillerie, Schiffahrten, etc. . . . gebräuchliche Termini technici oder Kunst-Wörter, nach Alphabetischer Ordnung ausführlich beschrieben werden . . . ingleichen im Jure und vor Gerichten vorfallende . . . Nebst einem ausführlichen Vorbericht Herrn Johann Hübners. Neue Auflage, verbessert . . . von Georg Heinrich Zincken . . .

Leipzig: In Johann Friedrich Gleditschens Handlung. 1762.

Third edition? 8vo. 20 leaves, 1,176 pp. (unpaginated) in 2,352 columns. With engraved frontispiece (J. D. Phillippin geb: Sysangin sc.), title page in red and black, woodcut head- and tailpieces. Very good copy in original calf, gilt, red label.

HÜBNER (1668–1731), rector of the Johanneum at Hamburg, wrote the preface to the first truly German encyclopedia, the *Reales Staats- und Zeitungs-Lexicon* (Leipzig, 1704), compiled by Philipp Balthasar Sinold von Schütz. Paul Jakob Marperger (1656–1730) compiled a supplement to the *Lexicon*, the *Curieuses und Reales Natur-, Kunst-, . . . Handlungslexicon* (Leipzig, 1712), to which Hübner also wrote a preface. The supplement covered the sciences, arts, and commerce. Zincke expanded the supplement (Leipzig, 1746) and included much updated information on chemistry. Chemical symbols appear in column 461 and elsewhere in this volume. The *Lexicon* is in some respects an abbreviated German equivalent of later editions of John Harris's *Lexicon Technicum* (first: London, 1704, 1710). Although compiled by Marperger and enlarged by Zincke, this work is usually associated with Hübner. (Collison, *Encyclopaedias*, 99–100; Roller & Goodman, I, 561)

HUMBOLDT, Friedrich Heinrich Alexander von

Expériences sur le Galvanisme, et en général sur l'irritation des fibres musculaires et nerveuses, de Frédéric-Alexandre Humboldt; Traduction de l'Allemand, publiée, avec des additions, par J. Fr. N. Jadelot, médecin.

Paris: De l'Imprimerie de Didot Jeune. Chez J. F. Fuchs, Libraire, rue des Mathurins, No. 334. An VII. 1799.

First French edition. 8vo. xvi, 530 pp., 1 leaf (errata). With 8 folding engraved plates (containing 89 figures). Very fine copy in original tree calf, gilt dentelles on covers, spine richly gilt.

THE GREAT German scientist Humboldt (1769–1859) carried out extensive experiments at Jena on galvanism and its



Hübner and Zincke. Curieuses und Reales . . . Handlungs-Lexicon. Leipzig, 1762.

chemical effect on animals and plants. His observations were published in *Versuche über die gereizte Muskel- und Nerven-faser . . .* (Posen & Berlin, 1797, 2 vols.; D.S.B., VI, 554). The German edition is here translated by the French physician Jadelot, who has expanded the original text with numerous notes on the medical applications of galvanism. "After describing Cotugno's electro-physiological experiment, p. 26, the author discusses various galvanic phenomena and refutes Volta's theory, holding that the galvanic and the electric fluid are not identical" (Wheeler Gift Cat.). Partington discusses the content and importance of this work. (Caillet, 5323; Ekelöf, 645; Gartrell, 262; Morgan, 394; Mottelay, 330; Partington, IV, 18; Sotheran, Cat. 725 [1912], 9562; Waller, 11379; Wellcome, III, 314; Wheeler Gift, 616)

HUMBOLDT, Friedrich Heinrich Alexander von

A Geognostical Essay on the Superposition of Rocks, in both Hemispheres. By Alexandre de Humboldt. Translated from the original French.

London: Printed for Longman, Hurst, Rees, Orme, Brown, and Green, Pater-noster-Row. 1823.

First edition in English. 4 leaves, 482 pp. Fine copy in contemporary half calf, marbled boards, gilt-lettered tan morocco label, spine gilt-ruled and tooled in blind.

THE ENGLISH translation of *Essai géognostique sur le gisement des roches dans les deux hémisphères* (Paris, 1823), a masterly written and richly documented survey of European and American rock formations, which "practically marked the conclusion of Humboldt's literary activity in geology" (Zittel). According to Woodward, Humboldt introduced in this work the names "Jurassic" and "Jura formation." The book is of considerable chemical interest, with numerous references to minerals and their chemical composition. The publications of many contemporary geologists, mineralogists, and chemists are cited. D.S.B. lists this among Humboldt's "most important works." (Brit. Mus. Cat. [Nat. Hist.], II, 890 ["wanting"]; D.S.B., VI, 554; Hoffman, *Gesch. d. Geognosie*, pp. 171-172; Sabin, 33711 [French ed.]; Sotheran, Cat. 795 [1925], item 8119 ["Scarce"]; Wellcome, III, 314; Woodward, 62; Zittel, 66)

HUMBOLDT, Friedrich Heinrich Alexander von

Ueber die unterirdischen Gasarten und die Mittel ihren Nachtheil zu vermindern. Ein Beytrag zur Physik der praktischen Bergbaukunde von Friedrich Alexander v. Humboldt.

Braunschweig: bey Friedrich Vieweg. 1799.

First edition. 8vo. viii, 384 pp. With 3 folding copperplates. Fine copy in contemporary marbled boards. Bookplate: Franz Sondheimer.

HUMBOLDT ENTERED the Mining Academy at Freiberg in 1791 and worked as a Prussian mining official for several years. This important book contains interesting sections on the chemical analysis of subterranean atmospheres and on respiration underground. Humboldt describes (pp. 249-329) his safety lamp, which operated by being entirely isolated from the air. It preceded Sir Humphry Davy's safety lamp by twenty years. The author also describes (pp. 337-374) his invention of a gas mask and respiration apparatus for miners. The plates show detailed representations of these contrivances. Partington discusses Humboldt's safety lamp but says that "it would burn only for a short time." (Bolton, *First Supplement*, 220; D.S.B., VI, 554; Partington, IV, 62; Poggendorff, I, 1157; Sondheimer, 760)

HUMBOLDT, Friedrich Heinrich Alexander von

Versuche über die chemische Zerlegung Luftkreises und über einige andere Gegenstände der Naturlehre von Alexander von Humboldt. Mit zwei Kupfern.

Braunschweig: bei Friedrich Vieweg. 1799.

First edition. 8vo. 2 leaves, 258 pp., 1 leaf (advertisement). With 4 large folding printed tables and 2 large folding plates. Very good copy, uncut, in original speckled boards, rebaked in early-nineteenth-century green pebbled cloth. From the library of Nicolaus Cornelis de Fremerij (1770-1844), professor of chemistry, pharmacy, medicine, and natural history at the University of Utrecht, with his signature in ink on first flyleaf. Bookplate: Royal Meteorological Society. This copy came from the library of Professor Franz Sondheimer but does not carry his bookplate.

AN IMPORTANT book on eudiometry, containing experimental data on the chemical composition of air and various gases (e.g., oxygen, carbon dioxide, nitrogen dioxide, and sulphur dioxide) and on the oxidation of phosphorus. At the end (pp. 255-258) is a letter by Humboldt to the brother of A. J. Garnerin (the first man to descend by parachute from a balloon in 1797) on the analysis of air gathered 1,300 meters above Paris. Humboldt collaborated with Gay-Lussac and "used Volta's method of explosion with hydrogen in a eudiometer to determine the composition of atmospheric air" (Partington [III, 78], who does not mention the present book). (Bolton, 547; D.S.B., VI, 554; Ferchl, 252; Neu, 2012; Poggendorff, I, 1157; Smith, 245; Sondheimer, 759; R. Watermann, *Alexander von Humboldt und die chemische Erforschung der "Gesundheit der Luft," Centaurus*, VIII [1963], 48-68)

HUNT, Robert

The Poetry of Science, or Studies of the Physical Phenomena of Nature. By Robert Hunt, . . .

London: Reeve, Benham, & Reeve, King William Street, Strand. 1848.

First edition. 8vo. xxiv, 463, (1) pp. Very fine copy, in contemporary dark-blue calf, both covers with double gilt rules and large blind-stamped arabesques of leaves and flowers, spine richly gilt.

A COMPREHENSIVE REVIEW of all branches of science. "An attempt has been made in this volume to link together those scientific facts which bear directly and visibly upon Natural Phenomena, and to show that they have a value superior to their mere economic applications, in their power of exalting the mind to the contemplation of the Universe" (preface). Subjects covered include general properties of matter, motion, gravitation, molecular forces, crystallogenic forces, solar and terrestrial heat, light, actinism and chemical radiations (including photography), electricity, magnetism, chemical forces and phenomena, time and geological phenomena, and vegetable and animal life. Hunt first exposed Herschel's method of photography on glass (invented in 1839), and, as the foremost authority at the time, he lent his support to Herschel's claims for the invention. This book "contains many quaint interpretations of luminescence" (Harvey, citing the American edition [Boston, 1850]). Wellcome (III, 316) lists the second edition (London, 1849). (Gernsheim, *Incunabula of British Photographic Literature*, 684; Harvey, 237; Roller, 281; Sotheran, Cat. 672 [1907], 2031)

HUNT, Robert

Researches on Light: an Examination of all the Phenomena connected with the Chemical and Molecular Changes produced by the Influence of the Solar Rays; embracing all the known Photographic Processes, and New Discoveries in the Art. By Robert Hunt, . . .

London: Printed for Longman, Brown, Green, and Longmans, Pater-noster-Row. 1844.

First edition. 8vo. vii, (1), 303, (1) pp. + 32 pp. (advertisements, dated February 1845). Folding engraved frontispiece of solar and linear spectra (partly hand-colored), and woodcut diagrams in text. Very good copy, uncut, in original blind-stamped brown publisher's cloth.

THE FIRST history of photography, in which Hunt (1807–1887), F.R.S. (1854), a pioneer in the chemistry of photographic reactions, gives "every one his full share in these discoveries" (preface). As first secretary and later president of the Royal Cornwall Polytechnic Society, Hunt published

the first treatise on photography, namely, *Popular treatise on the art of photography* (Glasgow, 1841). In the introductory chapter of the present work he describes the "Progress of the Inquiry until the Announcement of the Discoveries of M. Daguerre and Mr. Henry Fox Talbot." Hunt improved Talbot's method of developing and called his process "fluorotype." He gives an account of all known photographic processes and their chemical principles and discusses (pp. 275–278) "the probability of producing coloured pictures by the solar radiations." His own experiments are described in which rudimentary colored photographs were produced; however, they were not faithful to the colors of the original subjects. A landmark book in the history of photography and chemistry. Hunt became professor of experimental physics at the School of Mines and published several important books, including three editions of Ure's *Dictionary of Arts*. (Bolton, 547; D.N.B., X, 277; Roller, 281; Sotheran, Cat. 672 [1907], 2033; Wellcome, III, 316)

HUNT, Robert

Researches on Light in its Chemical Relations; embracing a consideration of all the photographic processes. By Robert Hunt, F.R.S. Second edition.

London: Longman, Brown, Green, and Longmans. 1854.

Second edition. 8vo. xx, 396 pp. + 24 pp. (advertisements, dated March 1854). Folding engraved frontispiece of solar and linear spectra (partly hand-colored), and woodcut diagrams in text. Very good copy, uncut, in original blind-stamped brown publisher's cloth.

THE EXPANDED and largely rewritten second edition of this classic work, containing "thousands of experiments" (preface) and improvements not in the first edition of 1844. The first genuine colored photographs are described (pp. 337–342), formed by the action of light on silver plates coated with a mixture of silver chloride and other salts (e.g., chlorides of calcium, copper, iron, nickel, sodium, strontium, and uranium). These colored photographs, developed by Niepce de St. Victor, show that forward-thinking scientists were attempting to render photographs of objects in their natural colors as long ago as the early 1850s. The frontispiece is a reengraved version of that in the first edition. (Bolton, 547; Cole, 665; Roller, 281; Sotheran, Cat. 672 [1907], 2034)

HUNTER, Alexander

Georgical Essays: by A. Hunter, M.D., F.R.S. . . .

York: Printed by A. Ward, for J. Dodsley, . . . T. Cadell, . . . J. Robson, . . . T. Durham, . . . and W. Creech. 1777.

Second edition. 8vo. 2 leaves, 530 pp., 4 leaves (last blank). With 3 large folding engraved plates. Top edge of title leaf

repaired; otherwise fine, crisp copy in original gilt-ruled quarter calf, marbled boards, maroon morocco label, gilt.

ORIGINALLY PUBLISHED in four small octavo volumes (1770–1772), the second edition is superior because it contains several additional papers. Hunter (1729–1809), physician (M.D., Edinburgh, 1753) and author, practiced at York from 1763 and established York Lunatic Asylum. He contributed to and edited *Georgical Essays*, in connection with the Agricultural Society, and also edited Evelyn's *Sylva* (York, 1776) with his own notes, as well as other works. Elected F.R.S. in 1777 and F.R.S.E. in 1790, Hunter was made an honorary member of the Board of Agriculture founded in 1793. "Hunter has a good word to say for Home's work. The problems of agriculture for him depended upon chemistry, and he compares vegetable and animal substances. . . . The whole gamut of plant structure is attempted and these essays are a precise guide to the progress plant physiology had so far made" (Fussell). Other contributors to this work include Thomas Percival and Thomas Henry, who discuss gases, lime, and other chemical topics. "Described at end as vol. 1 but this edition was not continued" (Wellcome). Not in Blake, Browne, D.S.B., Knight, Perkins, Watt, or the usual chemical bibliographies. (Fussell, *More Old English Farming Books*, 1731–1793, London, 1950, pp. 92–93; Higgs, 4869; Kress, B48; McDonald, 213; Wellcome, III, 316)

HUTTON, Charles

A Mathematical and Philosophical Dictionary: containing an explanation of the terms, and an account of the several subjects, comprised under the heads Mathematics, Astronomy, and Philosophy both Natural and Experimental: with an historical account of the rise, progress, and present state of these sciences: also Memoirs of the Lives and Writings of the most Eminent Authors, both ancient and modern, . . . By Charles Hutton, LL.D., F.R.S. . . .

London: Printed for J. Johnson, in St. Paul's Church-Yard; and G. G. and J. Robinson, in Pater-noster-Row. 1795.

First edition. 2 vols., 4to. I: viii, 650 pp. II: ii, 756 pp. With 37 copperplates and numerous woodcuts in text. Fine copy in original tree calf, rebounded, spines richly gilt, maroon and green morocco labels. Armorial bookplates: Sir John William Lubbock.

THE FIRST comprehensive dictionary of the mathematical and physical sciences after the *Lexicon Technicum* (London, 1704, 1710) of John Harris. Of value for the scientific and biographical information it contains, this work is a digest of the knowledge of the period. Hutton (1737–1823), F.R.S. (1774), for many years was professor of mathematics at the Royal Military Academy at Woolwich. A scholar of out-

standing ability, he calculated the mean density of the earth (1778) and, with George Shaw and Richard Pearson, edited an abridgment of the *Philosophical Transactions, 1665–1800* (London, 1809, 18 vols.). This copy has an important provenance, having belonged to the celebrated astronomer and mathematician Sir John William Lubbock (1808–1865), F.R.S. (1829), on whom see the D.N.B. Some copies (e.g., Wellcome) have the title page of volume I dated 1796. (D.S.B., VI, 577; Houzeau & Lancaster, 9396; Knight, 76; Poggendorff, I, 1163; Roberts & Trent, 169; Watt, I, 530n; Wellcome, III, 322)

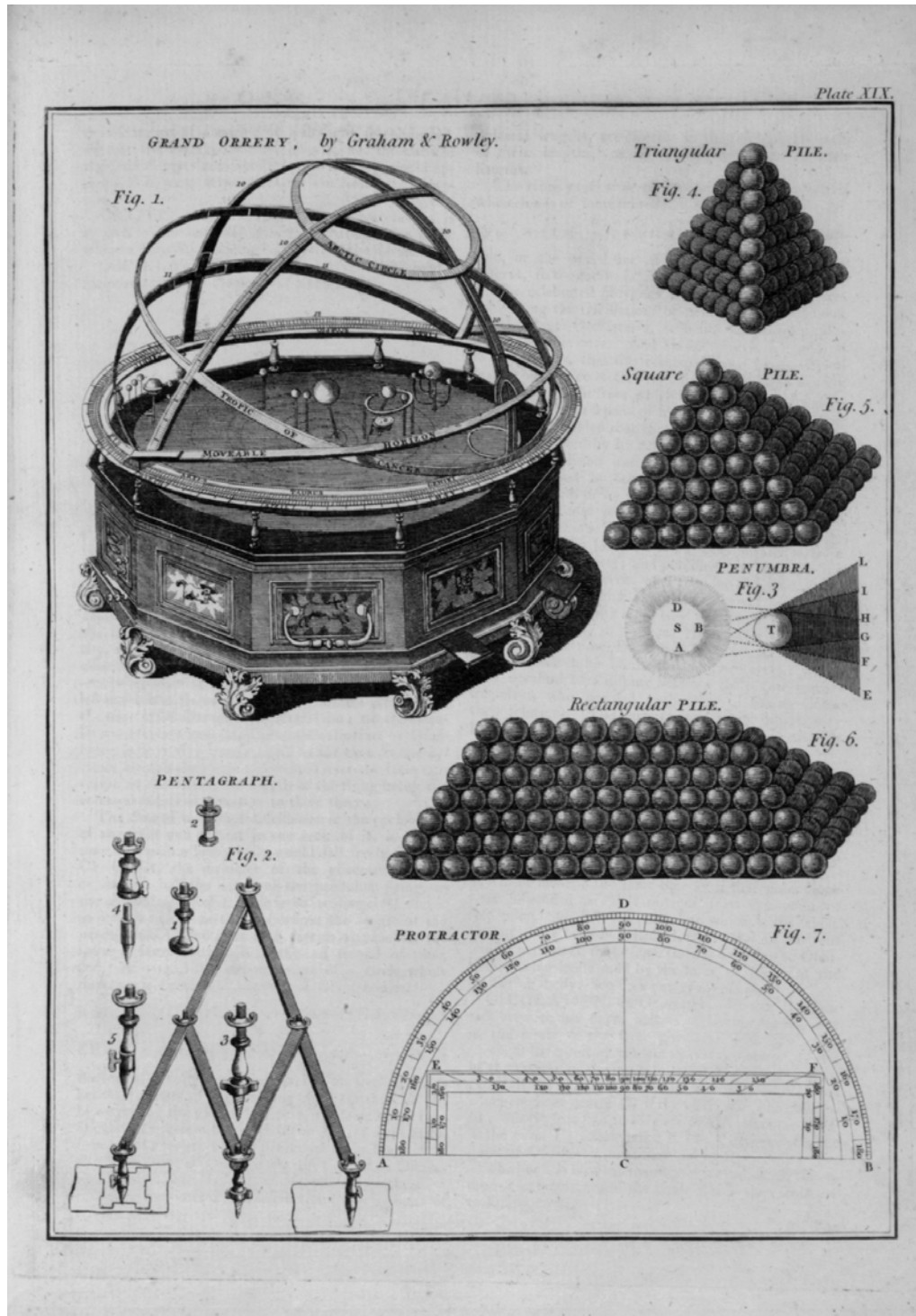
HUTTON, Charles

A Philosophical and Mathematical Dictionary: containing an explanation of the terms, and an account of the several subjects, comprised under the heads Mathematics, Astronomy, and Philosophy both Natural and Experimental; with an historical account of the rise, progress, and present state of these sciences; also Memoirs of the Lives and Writings of the most Eminent Authors, both ancient and modern, . . . By Charles Hutton, LL.D. . . . A New Edition, with numerous additions and improvements. . . .

London: Printed for the Author; F. C. and J. Rivington, J. Cuthell; Law and Whittaker, etc. 1815.

Second edition. 2 vols., 4to. I: viii, 760 pp. II: 2 leaves, 628 pp. With 41 copperplates and numerous woodcuts in text. Fine copy in contemporary gilt-ruled calf, rebounded, maroon and green morocco labels, spines dated. Large armorial crest of East India College in gilt on each cover. With engraved armorial bookplate of East India College, Herts., presenting this copy to Joseph A. Dorin, May 1820, as a prize for "First in His Class in Mathematics" and signed in ink by C. W. Le Bas. Prof. Joseph Alexander Dorin (1802–1872) was a notable Indian official in the Bengal branch of the East India Company and a reorganizer of Indian finance (see D.N.B.). Charles Webb Le Bas (1779–1861) was principal of the college (see D.N.B.).

THE FINAL edition of this dictionary of physical and mathematical sciences, enlarged and updated to include the latest information on the subjects covered. Of chemical importance are sections on acids, alkalies, elements, equivalents, galvanism, gases, etc. The plates illustrate topics of interest in chemistry, physics, etc. (e.g., Montgolfier's balloons, guns, barometers, thermometers, magnets, electrical generators, voltaic piles, vacuum pumps, microscopes, and telescopes). "Still of much value for the biographical and other information it contains, much of which cannot be found elsewhere" (Zeitlinger). (Poggendorff, I, 1163; Soth-eran, Cat. 825 [1931], 396; Watt, I, 530n)



Hutton, Charles. Mathematical and Philosophical Dictionary. London, 1795.

HUTTON, Charles

Tracts on Mathematical and Philosophical Subjects; comprising, among numerous important articles, the theory of bridges, with several plans of recent improvement. Also the results of numerous experiments on the force of gunpowder, with applications to the modern practice of artillery. In three volumes.

By Charles Hutton, LL.D. and F.R.S., &c. . . .

London: Printed for F. C. and J. Rivington, &c. 1812.

First edition. 3 vols., 8vo. I: x, (2), 485, (1) pp. II: 2 leaves, 384 pp. III: 2 leaves, 383, (1) pp. Mezzotint portrait frontispiece of Hutton (age 75, 1812; engraved by C. Turner, from a painting by H. Ashby), in volume I. With 6 folding engraved plates in volume II, and 4 plates (3 folding; Mutlow sc.) in volume III. Woodcut figures in text. Fine copy in contemporary half calf, marbled boards, maroon labels, spines gilt-ruled and dated.

A presentation copy, inscribed on the title page of volume I in ink when Hutton was 82: "The Astronomical Society of London. From the Author, March 3, 1820." Bound with this copy in volume I is "A Letter from Dr. Hutton to the Marquis De Laplace, on several Astronomical and Philosophical Subjects" (4 leaves), from *Philosophical Magazine*, February 1820, inscribed in ink by Hutton on the recto of the first leaf exactly as he wrote on the title page of volume I.

HUTTON RECEIVED the Copley Medal of the Royal Society for his paper "The Force of Fired Gunpowder and the Velocities of Cannon Balls" (1778), which is of chemical interest. This and other papers on the density of the earth, cubic equations, infinite series, etc., are contained in the present work. (D.S.B., VI, 577; Knight, 160; Poggendorff, I, 1163; Watt, I, 530p)

HUTTON, James

A Dissertation upon the Philosophy of Light, Heat, and Fire. In seven parts. By James Hutton, M.D. & F.R.S.E.

Edinburgh: Printed for Messrs Cadell, Junior, and Davies, London. 1794.

First edition. 8vo. (in 4s). 2 leaves, xx v, 326 pp., 1 leaf (blank). Very fine copy, unpressed and uncut with wide margins, in original blue boards backed in modern gilt-ruled calf, maroon morocco label.

BEST REMEMBERED for his classic *Theory of the Earth* (Edinburgh, 1795, 2 vols.), Hutton (1726–1797) laid the foundations of modern geology. According to Partington (III, 628), who cites Hutton's *Chymical Dissertation concerning Phlogiston, or the Principle of Fire*, contained in his *Dissertation on Different Subjects in Natural Philosophy* (Edinburgh, 1792), this author "asserted that phlogiston is material but weightless, and is of the nature of heat and light." Partington nowhere mentions the present work, which Hutton intended to be a refutation of the antiphlo-

gistic hypothesis of Lavoisier and his coworkers. As Duveen states, this book "mentions Black several times, but Lavoisier never even once." Hutton was completely unconvinced by the antiphlogistic theory (discussed on p. 146 onwards), and, although he does not refer to Lavoisier's work by name, the text clearly shows that he was familiar with it. Hutton points out (pp. 214–215) that the reaction of metals with sulphur rather than oxygen could be used to support the phlogiston theory. An important book that shows that Lavoisier's antiphlogistic explanation of combustion and other chemical reactions was not universally accepted in Great Britain even as late as the last decade of the eighteenth century. (Cole, 666; D.S.B., VI, 587; Duveen, 304 ["rare work"]; Neu, 2029; Poggendorff, I, 1162; Smith, 246; Thornton & Tully, 175; Ward & Carozzi, 1195; Watt, I, 530s; Wolf, II, 212)

HUTTON, James

Dissertations on Different Subjects in Natural Philosophy. By James Hutton, M.D.

Edinburgh: Printed for A. Strahan, and T. Cadell, London. 1792.

First edition. Large 4to. 2 leaves, 40 + 696 pp. Fine copy, in quarter calf antique, boards, with crimson gilt-lettered morocco label, and spine dated. From the library of Professor Franz Sondheimer (b. 1926), with his bookplate on the front paste-down endpaper.

DEDICATED TO Joseph Black, the present volume contains the important contributions to the physical sciences of James Hutton (1726–1797), who is mainly known for his work in geology. The book "is of considerable interest to the historian of science. The conclusions he reached in this work were often original and sometimes supported by experiments he had carried out himself. . . . Part 2 is entitled 'A Chymical Dissertation Concerning Phlogiston, or the Principle of Fire.' . . . Hutton accepted the major advances made by Lavoisier, but took the view that the concept of calorique had been too hastily rejected. He did not accept Lavoisier's concept of calorique; in fact he strongly opposed it. His view was that heat, light, and electricity were all modifications of what he called 'solar substance.' Hutton also considered phlogiston to be some form of the solar substance, a principle of inflammability, without gravity, which could be transferred from one substance to another. He claimed that phlogiston was actually formed by vegetative matter and decomposed during the process of breathing and burning" (D.S.B.). Part 1 deals with meteorology and includes Hutton's important theory of rain, temperatures, saturated or nearly saturated with moisture. Part 3 contains Hutton's theory of matter, which, as pointed out

by Playfair, is closely related to that of Boscovich but conceived independently. This part also contains many references to phlogiston, as well as chapters on heat, light, and electricity. Hutton's concept of phlogiston is discussed by Partington and McKie, *Annals of Science*, 3, 366–368 (1938). Rare. (D.S.B., VI, 585–587; Osler, 3038; Partington, III, 628; Poggendorff, I, 1162; Smith, 246; Sotheran, Cat. 672 [1907], item 2054 [“Rare”]; Watt, I, 530t)

HUXHAM, John

Medical and Chemical Observations upon Antimony. By Doctor Huxham.

London: Printed for John Hinton, at the King's-Arms, in Newgate-Street. 1756.

First edition. 8vo. 2 leaves, 78 pp., 1 leaf (advertisements). Neat old signature (“Robt. Dimsdale”) on title; otherwise good copy in modern boards, printed paper label on front cover.

AN EXCELLENT account of the chemistry of antimony compounds, for which the author was awarded the Copley medal of the Royal Society in 1755. A pupil of Boerhaave, Huxham (1692–1768) was an eminent physician at Plymouth, Devonshire, and in 1739 he was elected F.R.S. The text of this first edition in book form originally appeared in the *Philosophical Transactions* (1754, xlviii, 832). Copies exist in two states: 1) as here with dedicatory leaf to George, Earl of Macclesfield, president, and Council of the Royal Society, leaf signed A, half title present, and advertisement at end for second edition of *Essay on fevers*; 2) without half title and dedication leaf. A German translation appeared (Leipzig, 1759; Ferchl, 253). (Blake, 227; Blocker, 204; Duveen, 306; Ferguson, I, 425 [not in Young Coll.]; *Heirs of Hippocrates*, 821; Neu, 2031; Partington, II, 759; Roller & Goodman, I, 570; Smith, 246; Waring, 237; Wellcome, III, 323)

HUXHAM, John

Medical and Chemical Observations upon Antimony. . . .

London: Printed for J. Hinton. 1767.

Second edition. 8vo. 78 pp. Very good copy in gilt-ruled half calf antique, marbled boards, maroon morocco label.

AN EXCELLENT account of the chemistry of antimony compounds, for which the author was awarded the Copley Medal of the Royal Society, 1755. A pupil of Boerhaave, Huxham (1692–1768) was an eminent physician at Plymouth, Devonshire, and was elected F.R.S., 1739. The text originally appeared in the *Philosophical Transactions* (1754, xlviii, 832), and the first edition in book form was pub-

lished two years later (London, 1756). A German translation appeared (Leipzig, 1759; Ferchl, 253). The first edition is listed by Blake, 227; Blocker, 204; Duveen, 306; Ferguson, I, 425 (not in Young Coll.); *Heirs of Hippocrates*, 519; Neu, 2030; Smith, 246; Watt, I, 531d. A third edition appeared (London, 1777; Blake, 227). The present second edition, the last to be corrected and updated by Huxham, is much rarer than the first. (Partington, II, 759 [wrong date; 1757]; Waring, 237; Wellcome, III, 323)

HUXHAM, John

Medical and Chemical Observations upon Antimony. The Second Edition. By John Huxham, M.D. . . .

London: Printed for J. Hinton, at the King's Arms, in Paternoster-Row. 1767.

Second edition. 8vo. 78 pp. Very good copy in gilt-ruled half calf antique, marbled boards, red morocco label, spine dated.

FOLLOWING THE title page is an advertisement in which Huxham gives directions for making his “Essentia, or Vinum Antimonii.” Antimony sulphide ore (stibnite) was first roasted to remove sulphur, and the resulting impure antimony tetroxide (“glass of antimony”) was finely ground in a mortar, steeped in Madeira wine for two weeks, and then used as a medicine for purging. The second edition, rarer than the first, was the last to be corrected by Huxham. A third edition appeared (London, 1777; Blake, 227). (Partington, II, 759 [wrong date: 1757]; Waring, 237; Wellcome, III, 323)

HUYGENS, Christiaan

The Celestial Worlds Discover'd: or, Conjectures Concerning the Inhabitants, Plants and Productions of the Worlds in the Planets. Written in Latin by Christianus Huygens, and inscrib'd to his Brother Constantine Huygens, Late Secretary to his Majesty K. William. London: Printed for Timothy Childs at the White Hart at the West-end of St. Paul's Church-Yard. 1698.

First English edition. 8vo. vi, 160 pp. With 5 folding plates. Early ownership signatures on title and following page; otherwise very good copy in original mottled calf, rebounded, gilt-ruled spine, maroon morocco label.

BORN IN The Hague, Huygens (1629–1695) studied at Leiden and Breda. He traveled extensively, visiting England on several occasions, where he was elected F.R.S. (1663), and corresponded with most of the great scientists of the period. Newton was profoundly impressed by his genius. Huygens founded the wave theory of light, discovered the

ring around Saturn and the satellite Titan, invented the pendulum clock, and made many other important discoveries. The first edition of this work, *Kosmotheros* (The Hague, 1698), was immediately translated into this English edition. Although primarily on astronomy, the book contains references to chemical subjects (e.g., metals, ores, combustion, fire, gunpowder, glass, Boyle's experiments on air, and phosphorescence). The thesis of the work is that as there "must be life on other planets. . . the plant and animal worlds of other planets are very like those of the earth . . . the inhabitants . . . would have a culture similar to man's and would cultivate the sciences" (D.S.B., VI, 611). Partington (vol. II) refers to Huygens several times but not this title. (Babson, 353; Knight, 40; Roller & Goodman, 1, 575; Sotheran, Cat. 725 [1912], 9631 ["Rare"]; Thorndike, VII, 635; Wing, H3859)

HUYGENS, Christiaan

The Celestial Worlds Discover'd: or, Conjectures Concerning the Inhabitants, Plants and Productions of the Worlds in the Planets. Written in Latin by Christianus Huygens, and inscrib'd to his Brother Constantine Huygens, Late Secretary to his Majesty King William. The Second Edition, Corrected and Enlarged.

London: Printed for James Knapton, at the Crown in St. Paul's Church-Yard. 1722.

Second English edition. 8vo. vi, 162 pp. With 5 folding engraved plates, 1 cropped with some loss (facing p. 15). Neat contemporary signature ("John Grymes Junr.") on title page. Joints cracked; otherwise very good copy in original unlettered paneled calf.

THE SECOND English edition by an anonymous translator, based on the updated edition of *Kosmotheros* (Leoburg, 1704). The texts of this and the first English edition (London, 1698) are almost identical: comparison reveals that only very minor alterations and additions have been made. The plates are either identical to, or slightly reworked versions of, those in the first English edition. (Cushing, H558; Morgan, 399; Wellcome, III, 324)

IAMBlichus

Iamblichus de mysteriis Aegyptiorum, Chaldaeorum, Assyriorum. . . (and numerous other works).

(Colophon:) Venice: in aedibus Aldi, et Andreae Socerimense Novembri. 1516.

Second Aldine edition. Folio. 175 numbered leaves, 1 unnumbered leaf (p. 175 misnumbered 177). Roman letter. Large woodcut Aldine anchor device on title page, repeated on verso of final (otherwise blank) leaf. Capital spaces with guide letters. Fine, crisp copy, with wide fore- and lower margins, in eighteenth-century quarter vellum, boards, morocco label.

THE BEAUTIFULLY printed final and best edition, containing more texts than the first (Aldus, 1497), from the press of Aldo Manuzio and Andrea Torresano. These celebrated mystical and magical works by the famous Syrian neo-Platonist Iamblichus (ca. 250–ca. 325) were translated by Marsilio Ficino (1433–1499), who dedicates the volume to Cardinal Giovanni de Medici. The contents are discussed by Partington, who states that Iamblichus wrote “his most celebrated work . . . ‘On the Mysteries’ . . . in which Abammon, an Egyptian priest . . . replies to Anebo. . . . The work was well known to the Arabs. It is ascribed to Iamblichus in a note in the best MS. and is now thought to be his, composed about A.D. 300–304.” Several of the texts are of medical and scientific interest (e.g., *De somniis*, by Synesius, and *Pimander*, by Hermes Trismegistus). Other authors included are Proclus, Porphyrius, Pythagoras, and Xenocrates. Ficino has also included some of his own writings: e.g., *De triplici vita*, *De voluptate*, *De sole et lumine*, and *De magis*). The book discusses inter alia stones and minerals, metals, and spices and is of chemical interest. Caillet describes this edition as an “ouvrage de superbe impression . . . fort rare et recherché.” (British Library, *S.T.C. Italian Books, 1465–1600*, p. 338; Brunet, III, 493; Caillet 3893, 5489; Ferguson Coll., 339; Guaita, 1462; Osler, 2583; Partington, I, 231; Thorndike, I, 307; Watt, II, 541q)

IAMBlichus

Iamblichus de Mysteriis Aegyptiorum Chaldaeorum, Assyriorum. Proclus in Platonicum Alcibiadem de Anima, atque Daemone. Idem de Sacrificio & magia. Porphyrius de Divinis atq; daemonib. Psellus de Daemonibus. Mercurii Trismegisti Pimander. Eiusdem Asclepius.

Lyons: Ioan. Tornaesium. 1552.

Sm. 8vo. 543 pp. With historiated woodcut capitals and woodcut printer's devices on title page and verso of final leaf. Good copy in contemporary vellum, from the library of Giulio Durante.

EDITED AND translated by Marsilio Ficino (1433–1499), with the exception of the Hermetic treatise entitled *Asclepius*. This last is here (p. 473) mistakenly described as a Latin translation by Lucius Apuleius Madaurensis. It is sometimes erroneously attributed to him and has been transmitted with his philosophical writings. The works in this volume are of some alchemical interest, and they are discussed by Partington (I, 237 et seq., chapter XII, “The Hermetic Books”). Later editions, with apparently identical pagination, are in Wellcome (Lyons, 1570) and Durling (Lyons, 1577). See Wellcome, I, 3384, and Durling, 2566, respectively. Very rare. This edition is not in the British Library or Adams. An important association copy, having come from the library of Giulio Durante (fl. 1599), with his signature in ink on the title page: Julij Durante. Durante was a famous sixteenth-century Italian physician who published books on the baths of Viterbo (Perugia, 1595) and the plague (Venice, 1600).

IDESTAM, Gustaf

Tentamen Chémico-Mineralogicum de Granatis, complectens Analysin Granati Orijerviënsis. . . . Praeside Mag. Johanna Gadolin, . . . Pro gradu philos. Publico examini subijcit Gustavus Idestam, Satacundensis. In Auditorio quod Atrio, . . . die XXVI Junii MDCCCXIX.

Åbo: Typis Frenckellianis. (1819).

First edition. Folio. 1 leaf, 39, (1) pp. Mint copy, uncut, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A DISSERTATION ON the chemical analysis of garnet-type minerals (i.e., complex silicates containing aluminum, calcium, iron, magnesium, and manganese), presented by Idestam under the direction of Johan Gadolin (1760–1852), professor of chemistry at Åbo. Data are given for the analysis of different types of garnet investigated, and the researches of Bergman, Crell, Haüy, Klaproth, Rose, Vauquelin, et al., are cited. Unknown to the usual bibliographers.

IDSTRÖM, Anders Fredric

Tentamen Chemicum sistens Analysin Fossilis recens reperti. . . . Publico examini deferent Mag. Laur. P. Walmstedt, . . . et Andreas Fred. Idström, Stip. Sparfeld. Suderm. Ner. In Audit. Gust. D. XVI Octobris MDCCCXIII.

Uppsala: Excudebant Stenhammar et Palmblad. (1813).

First edition. 4to. 1 leaf, 9, (1) pp. Very fine copy, uncut with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.



Iamblichus. Iamblichus de mysteriis Aegyptiorum. Venice, 1516.

A DISSERTATION ON the physical properties and chemical analysis of a recently discovered white, microcrystalline aluminosilicate mineral containing iron, manganese, and tin, presented by Idström under the direction of Lars Peter Walmstedt (1782–1858), professor of mineralogy at the University of Uppsala. Details of the analysis of the mineral are presented, and its composition is given in tabular form. The works of Haüy, Werner, et al., are mentioned. Unknown to the usual bibliographers.

IGNATIUS, Benedictus Jacobus

Observationes Chemico-Physicae de Originaria Corporum Mineralium Electricitate, . . . praeside Dn. Petro Adriano Gadd, . . . Publicae disquisitioni submittit Benedictus Jac. Ignatius, Wiburgensis. In Auditorio Majori Die XIII Junii Anni MDCCLXIX.

Åbo: Impressit Joh. Christoph. Frenckell. (1769).

First edition. 4to. 14 pp. Fine, crisp copy, in maroon quarter cloth antique, marbled boards, spine labeled: Gadd. Nine Dissertations. 1759–1778.

A DISSERTATION ON physical chemistry and physics by Ignatius (1746–1803), presented under the direction of Pehr Adrian Gadd, professor of chemistry, physics, and economics at Åbo, Finland. The author discusses the magnetic and electrical properties of over 128 minerals, which are classified into five categories according to their ability to be magnetized or hold an electrostatic charge. The works of Bergman, Boyle, Cronstedt, Du Fay, Gilbert, Guericke, Rinman, Wallerius, et al., are cited. Rare. Not in Waller, Watt, Wellcome, Wheeler Gift, etc. (Bolton, 466; Ekelöf, 37; Ferchl, 169; Partington, III, 179; Poggendorff, I, 826)

IGNIS ARDENS

The Tinder Box, being a geological, mineralogical, metallurgical, mechanical, chemical, and comical essay: by Ignis Ardens, Knight, Companion of the most ancient, noble, and thrice honourable Order of The Tinder Box; Knight of the Order of The Siliceous Stone; Knight of the Order of Le Briquet; Honorary Associate of The Sons of Fire, at Terra [sic] del Fuego; and Professor of Pyrotechny in Pyrites College, Solfaterra. . . .

London: Published by William Marsh. 1832.

First edition. 8vo. vii, (1), 40 pp. With lithographed frontispiece (containing 4 figures). Very good copy, in original blue wrappers with printed label on front cover; bound in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

DEDICATED “To the occupants of the Infernal Regions, who render up themselves to sulphureous flames, each morning’s dawn.” The identity of the pseudonymous “Ignis Ardens” is unknown, but he was obviously a man of learning as well as humor. Of interest in the history of chemical technology, this work describes the origin of the several components used in tinderboxes: metals, flints, tinder, matches, etc. Even the cost of the time expended in “striking a light” is estimated. Despite its humorous method of presentation, the valuable information contained in this very rare work is of historical importance. Only three copies could be traced in N.U.C.: University of Oklahoma, Norman; Harvard University (Graduate School of Business, Administration Library); College of Physicians, Philadelphia. Unknown to the usual chemical bibliographers.

IKALEN, Joseph

Dissertatio Chemica de Sulphate Magnesia. . . . Praeside Mag. Johanne Gadolin, . . . Pro gradu philosophico publicae censurae modeste subjicit Josephus Ikalen, Tavastensis. In Auditorio Majori die VI Jun. MDCCCV. . . .

Åbo: Typis Frenckellianis. (1805).

First edition. 4to. 2 leaves, 10 pp. Mint copy, in maroon quarter cloth antique, marbled boards, spine labeled: Gadolin. 11 Dissertations. 1792–1805.

A DISSERTATION ON magnesium sulphate (Epsom salt), tracing its history from its discovery in 1695 by Nehemiah Grew to the time of publication of this work, presented by Ikalen under the direction of Gadolin, professor of chemistry at Åbo. The researches of Bergman, Crell, Hoffmann, Neumann, et al., are cited. The preparation of pure magnesium sulphate, its chemical reactions, and its crystallographic habit are also described, as are its composition based on the analyses of Bergman, Kirwan, Richter, and Wenzel. Warning (p. 553), who erroneously lists this work under “Magnesia and Its Carbonate,” also wrongly gives the title as *De Magnesia* and the author as “J. Skalen.” Not in the usual bibliographies.

ILLUSTRIMUM

Illustrium in re medica virorum Matthaei Curtii Papiensis ad tyrunculos dosandi methodus. Bartholomaei Montagnanae conclusiones de compositione, & dosi medicamentorum. Benedicti Victorii Faventini breve compendium de dosibus medicinarum. Gulielmi Rondoleti de materia medicinali, & compositione medicamentorum brevis methodus.

Padua: (Hieronymus de Gibertis). 1556.

First edition. 8vo. 4 leaves, 102 folios. Large woodcut on title page and historiated woodcut capitals in text. Roman letter.

Fine, crisp copy, in original limp vellum (remains of ties). The "endpapers" comprise wide fragments of a fourteenth- or early-fifteenth-century manuscript, with capitals in red and blue. From the Edward Clark Streeter library, with pictorial bookplate.

AN IMPORTANT pharmacological treatise, containing four works: I. Matteo Corti (1475–1542), *Ad tyrunculos dosandi methodus*; II. Bartolomeo Montagnana (d. 1470), *Conclusiones de compositione . . . medicamentorum*; III. Benedetto Vittori (1481–1561), *Breve compendium . . .*; IV. Guillaume Rondelet (1507–1566), *De materia medicinali . . .* All of the authors were celebrated physicians, the first three in Italy and Rondelet in France. Their works appeared here for the first time. Both Galenical and iatrochemical materia medica are described, and the present work represents a transition from naturally occurring medicines to the chemical preparations recommended by Paracelsus and his followers. A desirable association copy that belonged to the famous physician Edward Clark Streeter (1874–1947), coauthor and friend of John F. Fulton, who published a "biographical appreciation" of Streeter in 1948 (see Waller, 17833). Manget (*Bibliotheca Scriptorum Medicorum*, 1731, I, pt. 2, p. 156) lists only later editions: Padua, Paulum Mejetum, 1579, 4to.; Lyons, Johan. Mareschallum, 1584, 8vo. Very rare. (British Library, *S.T.C. Italian Books, 1465–1600*, p. 207; Durling, 2525; Watt, I, 278p; Wellcome, I, 3389)

IMISON, John

The School of Arts; or, An Introduction to Useful Knowledge, being a compilation of real Experiments and Improvements, in several pleasing Branches of Science, on the following subjects, viz. Mechanics, Electricity, Pneumatics, Hydrostatics and Hydraulics, Optics, Clock and Watch-making, and Astronomy. The Miscellaneous Articles contain the most approved Art of Drawing, Etching, Engraving, Mezzotint Scraping, Aquatinta, Crayon Painting, Gilding on Glass, Pots, &c. Silvering Looking Glasses, &c. Lackering, Varnishing, Soldering, Casting in Plaster, &c. Cements, Glues, Metals for Speculums, with the whole Process of grinding, &c. Staining wood, A Composition for Ornaments, Objects for the Microscope, &c. &c. &c. &c. The Second Edition, With very considerable Additions. By John Imison.

London: Printed for the Author, and sold by J. Murray, Fleet-Street. N.d. (ca. 1786).

Second edition. 8vo. xv, (1), 318, (10), 112, "133–176" pp., 2 leaves (errata). Pagination skips, but text complete. With 24 engraved plates (J. Lodge sc.). Very good copy in original calf, red morocco label. Bookplate: William Leatham (1815–1889), author and member of Parliament (see D.N.B.).

A SCARCE AND popular book of experiments and instruction in science and technology (first: London, 1785; Watt, II, 533o) by Imison (d. 1788), a printer, mechanic, optician, and watch- and clockmaker in Manchester. There are numerous references to applied chemical topics. Imison describes "the most valuable improvements in arts and sciences," including the steam engine of Boulton and Watt, Cooke's drill plough, and Herschel's telescope. "His best work" (D.N.B.). Other editions with this title appeared in 1787 and 1796 (Duveen, 305; Neu, 2034). (Honeyman, 1741; Wellcome, III, 327)

IMISON, John, and WEBSTER, Thomas

Elements of Science and Art: being a Familiar Introduction to Natural Philosophy and Chemistry. Together with their application to a variety of elegant and useful arts. By John Imison. A New Edition, considerably enlarged, and adapted to the improved state of science. . . .

London: Printed for J. Harding, J. Murray, Messrs. Cadell and Davies, Longman and Rees, Vernor and Hood, S. Bagster, J. Walker, J. Scatcherd, B. Crosby, and T. Hurst. 1803.

First edition with this title. 2 vols., 8vo. I: vii, (1), 639, (1) pp. II: xii, 637, (1) pp. With 32 engraved plates by Lowry (2 plates numbered IV, but they are not duplicates). Fine copy in contemporary blind-ruled polished calf, rebaked, with original gilt-ruled spines laid down, dark-blue morocco labels. With the Carberry Tower Library (Midlothian) labels and armorial bookplates of John Elphinstone (1807–1860), thirteenth Baron Elphinstone, on flyleaves (see D.N.B.).

ALTHOUGH BASED ON *The School of Arts* by John Imison, this "new edition" has been completely rewritten, augmented, and updated to include "the latest discoveries and improvements" and "many essential articles have been introduced" (preface) by Thomas Webster. It is thus so altered from the original by Imison as to constitute a totally new work. The second volume is essentially a treatise on theoretical and practical chemistry. Later editions appeared in 1808 and 1822. (Cole, 669; Poggendorff, I, 1169, II, 1277; Roller, 288; Wheeler Gift, 649)

IMPERATO, Ferrante

Historia Naturale . . . nella quale . . . si tratta della diversa condition di Minere, Pietre pretiose, & altre curiosita. Con varie Historie di Piante, & Animali, sin' hora date in luce. In questa Seconda Impressione aggiuntovi da Gio: Maria Ferro . . . alcune Annotationi alle Piante . . .
Venice: Presso Combi, & La Nou. 1672.

Second edition. Folio. 4 leaves, 696 pp., 4 leaves. Title in red and black, with large copperplate. Double-page folding engraving of Imperato's library and museum, and 128 large



Imperato. Historia Naturale. Venice, 1672.

woodcuts in text. Elaborate woodcut capitals, head- and tailpieces. Fine copy, in original calf, rebacked, black morocco label. From the library of the celebrated physician and zoologist Sir Thomas Molyneux (1661–1733), F.R.S., with his signature (p. 1).

THE ENLARGED second and best edition (first: Naples, 1599) of the famous natural history museum formed by the Neapolitan pharmacist Imperato (1550–1625) and his son Francesco, with additions by the editor, Giovanni Maria Ferro. The impressive double-page copperplate is a reversed copy of the woodcut plate in the 1599 edition. It is reproduced by Philip Hofer (*Baroque Book Illustration*, plate 76). In the preface it is claimed by Imperato that the catalogue was made by Niccolo Antonio Stigliola (Stelliola) in collaboration with the author. Stelliola, friend of Galilei, was the author of one of the earliest treatises on the telescope (1627). Divided into twenty-eight books, the catalogue contains five books on minerals and metals and nine books on alchemy and iatrochemistry (discussed by Partington), the remainder being on animals and plants. (Hoover, 440; Hunt, 321; Krivatsy, 6134; Nissen, 2111; Partington, II, 95; Pritzel, 4433; Thorndike, VII, 249; Waller, 10854; Watt, II, 533t; Wellcome, III, 328)

IMPERIALE, Giovanni

Musaeum Historicum et Physicum . . . In primo illustrium literis virorum imagines ad vivum expresse continentur. Additis elogiis eorundem vitas, et mores notantibus. In secundo animorum imagines, sive ingeniorum naturae, differentiae, causae, ac signa physice perpenduntur. . .
Venice: Apud Juntas. 1640.

First edition. 2 parts in 1 vol., 4to. 8 leaves, 212 pp.; 219, (1) pp., 12 leaves (last blank). Engraved title page and 57 full-page portraits engraved by Andrea Salmincio, a pupil of Giovanni Luigi Valesio. Historiated woodcut capitals and large woodcut printer's device above colophon. Fine copy, in original mottled calf, rebacked, maroon morocco label. From the Ashburnham Library, with gilt armorial crest on both covers.

THE SON of the celebrated physician Joannes Baptista Imperiale (1568–1623), Imperiale provides in this excellent work details on the lives of 106 important scientists, physicians, and philosophers. Much of the information is not available in more modern biographies. An account of the author's father, with portrait, is given (pp. 191–195). Other biographies include Arnald of Villanova, Andreas Vesalius, Bernardo Telesio, Fortunius Licetus, Gabriel Naudé, Girolamo Fracastoro, Julius Caesar Scaliger, Giovanni Baptista Porta, Raymund Lull, Jacob Gaffarel, and Ulysses Aldrovandus. Over one-half of the biographies are accompanied by engraved portraits. The portrait of Bernardinus Tomitanus (p. 47, 1st part) is not printed (as usual),

and in this copy a portrait of Gerardus Tuningius is substituted in its place. This work is discussed by Moreri (*Dictionnaire*, Paris, 1712, III, 578). (British Library, *Italian*, 442; Cushing, 106; Ferguson Coll., 340; Krivatsy, 6135; Osler, 6686; Waller, 16011; Watt, II, 533t; Wellcome, I, 3394)

INDAGINE, Joannes ab

Introductiones apotelesmaticae in physiognomiam, complexiones hominum, astrologiam naturalem, naturas planetarum. Cum periaxiomatibus de faciebus signorum et canonibus de ae-gritudinibus hominum: omnia nusquam fere ejusmodi tractata compendio. Quibus ob similem materiam accessit Gulielmi Grataroli Bergomensis opuscula de memoria reparanda, augenda, conservanda: de praedictione morum naturarumque hominum: de mutatione temporum, ejusque signis perpetuis, et Pomponii Gaurici Neapolitani tractatus de symmetriis, lineamentis & physiognomia, ejusque speciebus, &c.

Ursel: Apud Cornelium Sutorium, impensis Lazari Zetzneri. 1603.

First Zetzner edition. 8vo. 387, (1) pp. Woodcut printer's device on title page and numerous large woodcuts in text. Leaves slightly browned; otherwise a fine copy in contemporary blind-ruled vellum, with remains of ties. Bound with: Hoghelande, Ewald von, *Historia aliquot transmutationis metallica* (Cologne, 1604).

INDAGINE (fl. 1522) was a priest at Steinheim near Frankfurt. "The *Introductiones* . . . combine astrology with physiognomy and chiromancy . . . We should regard it as a congeries of tractates . . . [it] proved quite popular with the reading public" (Thorndike [V, 65–66], who lists numerous editions from the first of 1522 to 1672). The present edition contains the works of Gratarolo on memory, prediction of death, and astrological changes with time (pp. 179–312); also the writings of Mizaldus on the eleven signs of the movement of the earth; and extracts from the works of Pomponius Gauricus (ca. 1480–1530). Pages 281–312 are of some alchemical interest. Rare. Waller (no. 19783) lists a later Zetzner edition (Strassburg, 1630). (Watt, II, 533d; Wellcome, I, 3402)

INGELMAN, Benedict Samuel

De Ratione Arsenici in Corpore Venenato Explorandi Dissertatio Chemica, . . . praeside Jona Alb. Engeström, . . . pro laurea Censurae publicae subicit Benedictus Samuel Ingelman, . . . In Auditorio Chemico d. VIII Junii MDCCCXIV.

Lund: Litteris Berlingianis. (1814).

First edition. 4to. 16 pp. Fine copy, uncut with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated. Bound with: Hansson, Johann Peter, *Dissertatio . . . de simplicitate hydrogenii* (Lund, 1814).

AN INTERESTING dissertation on the toxicology and analysis of poisons containing arsenic, presented by Ingelman under the direction of the professor of chemistry and physics at Lund, Jöns Albin Engeström (1787–1846). Six inorganic reagents are described for detecting the presence of arsenic in aqueous solutions. Procedures are also given for the detection and estimation of arsenic in minerals, body fluids and tissues, etc. At the end a process is described for reducing arsenic compounds to metallic arsenic by the use of electric current from a voltaic pile. Rare. (Poggendorff, I, 670)

INGENHOUSZ, Jan

Experiments upon Vegetables, discovering Their great Power of purifying the Common Air in the Sun-shine, and also of Injuring it in the Shade and at Night. To which is joined, A new Method of examining the accurate Degree of Salubrity of the Atmosphere. By John Ingenhousz, . . .

London: Printed for P. Elmsly, in the Strand; and H. Payne, in Pall Mall. 1779.

First edition. 8vo. lxxviii, 302 pp., 9 leaves (index). With detailed folding copperplate containing 13 figures (T. Bowen sct.). Very fine copy in contemporary half calf, marbled boards, rebound with original gilt-ruled spine laid down, black label.

ONE OF the great books in the history of chemistry, in which the discovery of photosynthesis and respiration in plants is first announced. By means of several hundred elegant experiments the Dutch naturalist Ingenhousz (1730–1799) proved that, when exposed to light, the green parts of plants absorb and chemically fix the carbon from the carbon dioxide of the atmosphere and give off oxygen. Plants do not have this ability in the dark, and they then release carbon dioxide to the air. Ingenhousz thus demonstrated that all animal life is ultimately dependent on plant life. The dedication to Sir John Pringle is dated from London, where Ingenhousz had worked. In the “advertisement” (p. lxii) the author states that he intends to publish a French translation, and this appeared several months later (Paris, 1780). (Cole, 671; Dibner, 29; D.S.B., VII, 12; Duveen, 305 [“Extremely rare”]; Garrison–Morton, 103; Henrey, II, 39; Horblit, 55; Norman, 1141; Partington, III, 278; Wellcome, III, 329)

INGENHOUSZ, Jan

Expériences sur les Végétaux, spécialement sur la Propriété qu'ils possèdent à un haut degré, soit d'améliorer l'Air quand ils sont au soleil, soit de le corrompre la nuit, ou lorsqu'ils sont à l'ombre; auxquelles on a joint une Méthode nouvelle de juger du degré de salubrité de l'Atmosphère. Par Jean Ingenhousz, . . . Traduit de l'Anglois, par l'Auteur.

Paris: Chez P. Fr. Didot le jeune, Libraire-Imprimeur de Monsieur, Quai des Augustins. 1780.

First French edition. 8vo. lxxviii, 333, (3) pp. With folding copperplate containing 16 figures (Autor inv., Poisson Sc.) and 2 ornamental woodcut headpieces. Very good copy in original marbled calf, spine richly gilt (with small repair).

THE FRENCH translation by Ingenhousz of his classic *Experiments upon Vegetables* (London, 1779), with a few minor additions. The plate drawn by the author is based on the original in the English edition but illustrates three more pieces of apparatus. The “approbation” dated 15 June 1780 is signed by Lebegue de Presle, and the “permission” is dated 18 August 1780. This and other editions of this work are discussed by Julius Wiesner, *Jan Ingenhousz sein Leben und sein Wirken als Naturforscher und Artz* (Vienna, 1905), and by Howard S. Reed, *Chronica Botanica* (Waltham, 1949), vol. 11, no. 5/6, pp. 285–396. (Blake, 229; Cole, 672; D.S.B., VII, 15; Edelstein, 1227; Henrey, II, 40; Smith, 247; Wellcome, III, 329)

INGENHOUSZ, Jan

Expériences sur les Végétaux, spécialement sur la Propriété qu'ils possèdent à un haut degré, soit d'améliorer l'Air quand ils sont au soleil, soit de le corrompre la nuit, ou lorsqu'ils sont à l'ombre; auxquelles on a joint une Méthode nouvelle de juger du degré de salubrité de l'Atmosphère. Par Jean Ingenhousz, . . . Traduit de l'Anglois, par l'Auteur. Nouvelle Édition, Revue et Augmentée.

Paris: Chez Théophile Barrois le jeune, Libraire, quai des Augustins, no. 18. 1787, 1789.

First 2-vol. French edition. 8vo. I: cxii, 384 pp., 2 leaves. With unsigned folding copperplate containing 16 figures. II: 2 leaves, lvi, 509, (3) pp. Half title in volume II, not required in volume I. Fine set in contemporary half calf, marbled boards, with large unidentified armorial crest in gilt on all covers, red and green morocco labels.

THE FINAL and most complete edition in French, comprising the third edition of volume I (second: Paris, 1785; Pritzel, 4435) and the first edition in any language of volume II. Prepared by Ingenhousz himself, this treatise provides an updated version of the 1780 French edition together with an entire second volume of supplementary material

that he had intended to publish shortly after the first appearance of volume I, as is stated in the “avant-propos” (p. xii). Ingenhousz had continued his researches on photosynthesis and plant respiration after his initial discoveries in 1779 and had made important new findings that are recorded herein. He had also been involved in bitter controversies with Priestley, Senebier, and others, as this edition reflects. The plate is a reengraved version of that in the 1780 first French edition. The rare second volume has “Tome Second” in the title; the first volume is not numbered. (D.S.B., VII, 15; Edelstein, 1228; Partington, III, 278)

INGENHOUSZ, Jan

Versuche mit Pflanzen, wodurch entdeckt worden, dass sie die Kraft besitzen, die atmosphärische Luft beim Sonnenschein zu reinigen, und im Schatten und des Nachts über zu verderben, nebst einer neuen Methode die Reinigkeit der Atmosphäre genau abzumessen. Aus dem Englischen. . . . Leipzig: in der Weygandschen Buchhandlung. 1780.

First German edition. 8vo. 176 pp., 12 leaves. With unsigned folding copperplate containing 13 figures. Very fine copy, in original half calf, speckled boards, spine gilt-ruled, orange label. Bookplate: Ex Bibliotheca Seminarii episcopalis ad S. Hippolitum.

THE GERMAN version of *Experiments upon Vegetables* (London, 1779), omitting the dedication to Sir John Pringle. A faithful and close translation of the English original, the name of the translator is nowhere indicated. The German translation by J. A. Scherer (Vienna, 1786–1790, 3 vols.; Blake, 229) is sometimes cited as the first edition. Very rare. Not in the British Library, Bibliothèque Nationale, Library of Congress, Wellcome, etc. (D.S.B., VII, 15; Wiesner, 245)

INGENHOUSZ, Jan

Nouvelles Expériences et observations sur divers Objets de Physique. Par Jean Ingenhousz, . . .

Paris: Chez P. Théophile Barrois le jeune, Libraire, quai des Augustins, no. 18. 1785, 1789.

First French edition. 2 vols., 8vo. I (1785): xxxvii, (1), 498 pp. With 4 unsigned folding copperplates. II (1789): xx, 574 pp. With 2 folding copperplates (1 colored), folding printed table (facing p. 173), and woodcut (p. 334). Half title in volume II, not required in volume I. Fine copy in original half calf, marbled boards, maroon labels (joints cracked but firm).

AN IMPORTANT collection of memoirs by the discoverer of plant photosynthesis. The first volume, dedicated to Benjamin Franklin, contains the contributions of Ingenhousz to electricity and is preceded by an exposition of Franklin's

system. Included is a description of the electrical machine invented by Ingenhousz, in which he first used glass plates instead of glass cylinders. Other memoirs deal with the physical and chemical properties of air, the phlogiston theory, magnetism, gunpowder, and the thermal conductivity and combustion of metals. The first volume was to have appeared in 1781 but was so delayed by the printer that a German edition of the first part on electricity was published in 1781, together with the remaining memoirs in 1782 and a second German edition in 1784. The delay in printing this French edition gave Ingenhousz an opportunity to make significant revisions and add new material. The second volume, published four years later and rarely found with the first, begins with observations on the use of the microscope, followed by microscopical studies of the green parts of plants (including algae), eudiometry, electricity, Franklin's letter to the author on chimneys and their construction, and memoirs on manganese and platinum. Only the first volume is cited by Cole, Duveen, Edelstein, Poggendorff, Wellcome, and Wiesner. (D.S.B., VII, 15; Ferchl, 254; Gartrell, 275; Partington, III, 278; Sotheran, Cat. 773 [1919], 1794 [“Rare”]; Watt, II, 534h)

INGENHOUSZ, Jan

Nouvelles Expériences et Observations sur divers Objets de Physique. Par Jean Ingenhousz, . . .

Paris: Chez P. Théophile Barrois le jeune, Libraire, quai des Augustins, no. 18. 1785.

First French edition. 8vo. xxxvii, (1), 498 pp. With 4 unsigned folding copperplates. Very fine copy in original half calf, mottled boards, spine richly gilt, crimson label.

ANOTHER COPY of this collection of memoirs, complete by itself and in essentially mint condition. (Cole, 673; Duveen, 306; Edelstein, 1229; Poggendorff, I, 1170; Wellcome, III, 329; Wiesner, 247)

INGENHOUSZ, Jan

Vermischte Schriften physisch-medicinischen. Inhalts. Uebersetzt und herausgegeben von Nicolaus Carl Molitor. Zweyte, verbesserte und mit ganz neuen Abhandlungen vermehrte Auflage. . . .

Vienna: gedruckt und verlegt bey Christian Friderich Wappler. 1784.

Second German edition. 2 vols., 8vo. I: xx, 452 pp. II: viii, 553, (1) pp. With 5 folding copperplates (1 hand-colored, A. Amon Sc.). Very good copy in late-nineteenth-century half cloth, marbled boards. Bookplate: Mary Osgood Legacy, April 1885 (Harvard Library duplicate).

INGENHOUSZ PUBLISHED his *Vermischte Schriften* (Vienna, 1782); however, Molitor, the translator and editor of the present edition, points out that the printer so mishandled the original edition that it was very poorly produced. Molitor (1754–1826), professor of chemistry and medicine at Mainz, translated these collected essays from the French manuscript by Ingenhousz of his *Nouvelles expériences et observations sur divers objets de physique*. The first volume of the French edition was not published until the following year (Paris, 1785). The second volume of this German edition contains a letter in French of 1784 on fixed air (carbon dioxide), sent by Jean Senebier to Ingenhousz (pp. 477–480). This is followed by an extensive response in French by Ingenhousz (pp. 481–508), on water impregnated with fixed air. The colored plate in this German edition was again used in the first French edition of 1785. (Bolton, *First Supplement*, 222; D.S.B., VII, 15; Ferchl, 254; Poggendorff, I, 1170; Sotheran, Cat. 789 [1924], 5230; Wiesner, 246–247)

INSTRUCTION

Instruction Generale pour la Teinture des Laines et Manufactures de laine de toutes couleurs, & pour la culture des drogues ou ingrediens qu'on y employe.

Paris: De l'Imprimerie de François Muguet, Imprimeur du Roy & de Monseigneur l'Archevesque, rue de la Harpe, à l'Adoration des trois Rois. 1671.

First edition. 12mo. Woodcut crest of Louis XIV on title page. 175, (1) pp., 8 leaves. Very fine copy, in original speckled calf, spine richly gilt.

THE FIRST systematic technical treatise for the French dyeing industry, which was largely responsible for that industry attaining worldwide preeminence. Three hundred seventeen recipes and technical instructions are contained herein. Edelstein considered it the second greatest book on the chemistry and technology of dyeing after the *Plictho de Lart de Tentori* (Venice, 1548) by Gioanventura Rosetti (fl. 1540). The work is attributed to the French finance minister Jean Baptiste Colbert (1619–1683), assisted by D'Albo. Colbert initiated massive reorganization and regulation of all French industry. The regulations for dyeing included division of dyers into two groups: those who could work only with permanent colors and those who could work only with fugitive colors. The chemicals each group could employ were also specified. A pirated edition appeared the same year, poorly printed on cheap paper (Paris, "F. Muguet," 1671; Ron, 566), which was followed by a folio edition (Paris, F. Muguet, 1688; Goldsmith, I83) and a later printing (Rouen, J. B. Besongé, 1699; Ron, 567). An English

translation with the title *The Whole Art of Dying* (London, 1705) incorporated this work together with others. Very rare. (Duveen, 306; Edelstein, *Thirteen Key Books in Dyeing*, No. 2; Edelstein, 3168; Goldsmith, I82; Lawrie, 126; Neu, 2037; Ron, 565)

INSTRUCTION

Liberté. Egalité. Instruction sur la Fabrication du Salpêtre Brut.

(Paris?, n.d., 1790?).

First edition. 8vo. 26 pp., 1 leaf. With large folding copperplate of chemical process equipment (Delarbre delinea vit, N. Ransonnette Sculpsit). Very good copy, in old vellum. Bound with: Lavoisier, A. L., *L'Art de fabriquer le salin et la potasse* (Paris, 1779), and several other works on saltpeter.

A DETAILED TRACT on the large-scale production of saltpeter for gunpowder manufacture. It is well known that immediately after the revolution in 1789, the newly founded republic was very short of gunpowder. French scientists were asked to suggest ways of producing saltpeter as quickly as possible, and a spate of short publications ensued. In this work every aspect of saltpeter manufacture is described, from its generation (in the earth, manures, caves, etc.) to the crystallization of the pure product. The equipment necessary for manufacturing saltpeter is illustrated in the plate together with a leaf of explanation of the component parts of the three pieces of apparatus. Very rare and apparently unrecorded. There is no colophon, and no indication of author, place of publication, or date.

IRVINE, William

Essays, chiefly on Chemical Subjects. By the late William Irvine, M.D. F.R.S.Ed. Lecturer in Materia Medica and Chemistry in the University of Glasgow; and by his son, William Irvine, M.D.

London: J. Mawman. 1805.

First edition. 8vo. xxxii + 490 pp. Very good copy in contemporary dark-blue half calf, marbled boards, spine gilt-lettered. From the library of Professor Franz Sondheimer, with his bookplate on the front pastedown endpaper.

IRVINE (1743–1787), M.D. (Glasgow), was lecturer on materia medica and chemistry in the University of Glasgow and assisted Joseph Black in his experiments to determine the latent heats of ice and steam. The present work comprises Irvine's papers edited by his son, William Irvine (1776–1811), M.D. (Edinburgh), who was a physician to the forces, published observations on diseases in Sicily, and died in Malta. The biographies of William Irvine, father

and son, are in the D.N.B. Irvine senior did not accept Black's doctrine of latent heat, but supposed that the heat absorbed in melting was due to the greater capacity for heat of water as compared with ice. These alternative theories were discussed by physicists and chemists for several decades. Divided into three parts, this work comprises twenty essays on physical and chemical topics (e.g., heat, cold, evaporation, fermentation, fertility of soils, cements, diamond, water, and sulphur). Irvine carried out some pioneering studies on photosynthesis in plants and had a clear conception of an absolute zero of temperature. Andrew Kent (*An Eighteenth Century Lectureship in Chemistry*, Glasgow, 1950, pp. 140–150) devotes an entire chapter to Irvine, stating that he was an “expert and energetic practical worker . . . an ardent and original experimentalist . . . [who] . . . ranks with any who have headed the department of Chemistry.” Irvine died on 9 July 1787 at only forty-four years of age, and on 11 July the *Glasgow Mercury* lamented the loss of “one of the first Chemists in Europe.” Irvine's memory has been overshadowed by the “giant figure of Joseph Black” (Kent). Rare. Not in Duveen, Ferguson, Morgan, Smith, Waller, Wellcome, etc. (Bolton, 550; Ferchl, 255; Partington, III, 154; Pogendorff, I, 1172; Watt, II, 535y)

ISACCHI, Giovanni Battista

Inventioni . . . Nelle quali si manifestano varij Secreti, & utili avisi a persone di guerra, e per i tempi di piacere. . .
Parma: Appresso Seth Viotto. 1579.

First edition. 4to. 8 leaves, 170 pp., 5 leaves. Roman and italic letter. Woodcut printer's device on title and colophon. With 44 woodcuts in text (mostly full page), including portrait of Isacchi (age 44) and arms of dedicatee, Cornelio Bentivoglio. Historiated woodcut capitals, head- and tailpieces. Near-fine copy in blue half morocco, cloth boards (by Whitman Bennett, N.Y.), spine gilt-lettered and dated, original limp vellum covers bound in. Note in ink on front flyleaf dated 1626 and ex libris of Claude Pellot (1619–1683), first president of the Parlement de Rouen, at foot of title.

A RARE BOOK of considerable chemical interest containing over fifty inventions and secrets on gunpowder formulations, weapons, mechanical devices, and surveying methods. Many inventions relate to the art of war, but others are for industrial as well as leisure purposes. Most remarkable are recipes for making fireworks for military and festive use. The unusual strong cutting of the blocks (three signed C. R. by the blockcutter) is considered by Mortimer to be similar to that used in the figures in *Thesaurus artificiosae memoriae* (Venice, 1579), by Cosma Rosselio. Isacchi (1536?–after 1596), an engineer of Reggio, was in charge of the decorations for festivities in Bologna, Mantua, Novel-

lara, and Reggio. In 1596 he became the chief of artillery for Duke Alfonso of Mantua. (Adams, I–190; British Library, *S.T.C. Italian Books, 1465–1600*, 341; Brunet, III, 460; Cockle, 547; Ferguson Coll., 342; Hodgkin, *Rariora*, III, 8; Mortimer, 242; Philip, 1020.1; Riccardi, I, 651; Tiraboschi, *Modenese*, III, 51–52; Weil, Cat. 2 [1944], 149)

ITTERSCHLAGEN, Georg Christian

Gebeime Scheidung der Metallen und derselben Nutzbarkeit. . .
(Braunschweig?). 1774.

First edition. 8vo. 9 leaves, 45, (1) pp. Fine, crisp copy in quarter calf antique, marbled boards, spine gilt-lettered; with old marbled blue wrappers bound in.

DEDICATED TO Christian Friedrich Carl, margrave of Anspach and Bayreuth, Ferguson says that very little is known about Itterschlagen or this work. The author (fl. 1773–1800) lived at Riga and later at Walk. Itterschlagen challenges Reaumur's invention of porcelain in the present book and claims the discovery as his own. He manufactured porcelain articles and here offers them for sale as the “finest genuine porcelain.” For plagiarizing the invention of porcelain from Reaumur, Itterschlagen has been severely criticized by J. L. ab Indagine (*Chemisch-physicalische Nebenstunden*, 1780, p. 125). Very rare. Unknown to most chemical bibliographers. (Ferchl, 255 [wrong date: 1704]; Ferguson, I, 429–430; Wellcome, III, 334)

IZARN, Joseph

Explication du Nouveau Langage des Chimistes, pour tous ceux qui, sans s'occuper de la science, voudroient profiter de ses découvertes. Par Jh. Izarn, . . .
Paris: Baudouin, Imprimeur de l'Institut national, . . . 1803.

First edition. 8vo. xii, 148 pp. With 1 folding copperplate. Fine copy in contemporary half calf, mottled boards, maroon lettering label, spine gilt-ruled. This copy has bound in 8 large folding tables extracted from Fourcroy's *Éléments d'histoire naturelle et de chimie*, (ca. 1793). From the library of Professor Franz Sondheimer, with his bookplate on the front pastedown endpaper.

AN INTRODUCTION to the new definitions in chemistry. The second half of the book (pp. 65–148) consists of two lists of synonyms arranged in opposite columns: one an alphabetical list of the old names, the other the new designations. Despite its references to Lavoisier, whom Izarn describes as “le génie immortel,” this work is not mentioned by Duveen and Klickstein in their *Bibliography of Lavoisier* (1954), nor does it appear in Duveen's *Supplement* (1965),

although on page 106 he refers to another work by this author. Izarn (1766–1834), professor of chemistry and physics at Paris, also published works on galvanism, meteorites, and other subjects. Very rare. Not in D.S.B., Edelstein, Ferguson, Ferguson Coll., Partington, Smith, Waller, Watt, Wellcome, etc. (Bolton, 551; Duveen, 306; Ferchl, 255; Poggendorff, I, 1174; Sondheimer, 768)

IZARN, Joseph

Manuel du Galvanisme, ou Description et Usage des divers Appareils Galvaniques employés jusqu'à ce jour, tant pour les Recherches Physiques et Chimiques, que pour les applications Médicales. Par Joseph Izarn . . . Ouvrage mis au nombre de ceux qui doivent former les bibliothèques des Lycées.

Paris: Levrault, Schoell et C. nie, rue de Seine S.G., no. 1295. An XIII. (1805).

First edition, second issue. 8vo. 2 leaves, xxii, 304 pp. With 6 folding engraved plates (containing 125 figures). Very good copy in quarter calf antique, marbled boards, black morocco labels. The "1884 International Electrical Exhibition" copy, held at the Franklin Institute, Philadelphia; with the Memorial Library bookplate (presented by Dr. J. Norris, Sept. 1884), and the exhibition rubber stamp in several places.

THE FIRST ISSUE (Paris, J. F. Barrau & Dumotiez, 1804); Ekelöf, 729) appeared the previous year. The same sheets were reissued (as here) with the cancel title page with the above imprint. The stub of the first-issue title page is visible in this copy. A valuable book that traces the history of galvanic electricity from the early experiments of Sulzer (1767) and Cotungo (1786) through those of Galvani, Volta, Ritter, Humboldt, Aldini, Mojon, and others, including Izarn himself. In his monograph on Oersted (1961), Bern Dibner draws attention to Izarn's account (p. 120) of a procedure based on Romagnosi and Mojon for determining the action of galvanism on a magnetic needle: this experiment being performed pre-Oersted. Of chemical interest are descriptions of the construction of voltaic piles; the electrolysis of water (by Wollaston, Pittaro, and Aldini); the passing of electrical charges through rarefied gases, causing them to become luminous; and the action of electricity on various metals, nonmetals, solutions of salts, etc., to determine their conductivity and chemical reactivity. Most

bibliographies cite the first issue of 1804; the 1805 issue appears to be rarer. (Ferchl, 255; Gartrell, 801; Mottelay, 349; Poggendorff, I, 1174; Roller & Goodman, I, 583; Ronalds, 255; Smith, 249; Wellcome, III, 335; Wheeler Gift, 664a)

IZARN, Joseph

Des Pierres tombées du Ciel, ou Lithologie atmosphérique, présentant la marche et l'état actuel de la science, sur la phénomène des pierres de foudre, pluies de pierres, pierres tombées du ciel, etc.; plusieurs observations inédites, communiquées par MM. Pictet, Sage, Darcet et Vauquelin; avec un essai de théorie sur la formation de ces pierres. Par Joseph Izarn, médecin, professeur de physique, . . .

Paris: Chez Delalain Fils, . . . 1803.

First edition. 8vo. viii, 421, (1) pp. With 1 folding printed table (providing details of meteorites throughout recorded history). Very good copy in contemporary quarter calf, spine gilt, mottled boards, maroon lettering label. Bound with: Thilorier, Jean Charles, *Genèse philosophique, . . . sur les pierres tombées du ciel.* (Paris, 1803).

AT THE beginning of the nineteenth century the origin of meteorites was an actively discussed subject. Following the investigations of Howard and Vauquelin (cf. Partington, III, 554), La Place expressed the wish to have the reality of the phenomenon of meteors and meteorites firmly established. Written under the auspices of La Place and dedicated to him, this work assembles the documentation on the subject for the first time. It is divided into three sections, in the first of which Izarn gathers all the facts and opinions published in France since 1700. In the second section he critically examines these opinions, and in the third the author propounds his own theories. On pages 61–71 one of Lavoisier's earliest reports on meteorites, read on 15 April 1769, is reprinted. A rare work, important in the history of astrochemistry. Not in Bolton, D.S.B., Duveen, Edelstein, Ferguson, Ferguson Coll., Partington, Smith, Sondheimer, Waller, Wellcome, etc. (Adams, *The Birth and Development of the Geological Sciences*, 123–124; Caillet, 5426; Duveen, *Supplement to Bibliography of Lavoisier*, 106; Ferchl, 255; Poggendorff, I, 1174; Watt, II, 538k)

JACK, Gilbert

Gilberti Jacchaei Institutiones Physicae. Editio nova, auctior & emendatio.

Leyden: Excudebat Vidua Joannis Patii, Sumptibus Isaaci & Jacobi Commelini. 1624.

Second edition. 8vo. 8 leaves, 286 pp., 1 leaf (colophon). Large woodcut printer's device on title page, repeated on colophon. Historiated woodcut capitals and headpieces. Diagram on page 184. Small strip cut from blank top margin of title page; otherwise very good copy in original unlettered vellum.

JACK (Jacchaeus, 1578?–1628), a Scottish metaphysical and medical writer from Aberdeen, became professor of philosophy at Leyden (1604–28), where he received his M.D. degree in 1611 (see D.N.B.). He published *Institutiones medicae* (Leyden, 1624, 1631; Wellcome, I, 6907, 3439), another edition (Leyden, 1653; Watt, II, 253). His *Institutiones physicae* (first: Leyden, 1624) was reprinted with corrections and additions the same year (as here) and passed through later editions (e.g., Amsterdam, 1644; Poggendorff, I, 1175; and Jena, 1646). Mainly Aristotelian in scope, it is divided into nine “books” on natural phenomena, minerals, metals, salts, vacuum, fermentation, fire, etc. Thorndike (VII, 390–91) discusses the contents. Extremely rare. This edition not located in the usual bibliographies.

JACKSON, Joseph

An Essay Concerning a Vacuum. Wherein is endeavoured to be Demonstrated, that a Vacuum Interspersum runs thro' the World, and is more or less in all Bodies. By Joseph Jackson, A Lover of the Corpuscular Philosophy. Second Edition.
London: Printed for the Author, in the Year 1702.

Second edition. Sm. 8vo. 10 pp., 1 leaf (blank), pp. 3–50. Very good copy in contemporary full paneled calf, tastefully re-backed, with gilt-lettered maroon morocco label, spine dated in gilt.

AN INTERESTING scientific contribution to the mechanical, physical, and chemical theories of the vacuum. The author, on whose life nothing has been found, published *Enchiridion Medicum* (London: T. Sowle, 1695; Wing, J85), an immensely popular book that appeared in numerous subsequent editions, and also this essay on the vacuum, the first edition of which appeared in 1697, published by Andrew Bell (Wing, J85A: 5 copies). Jackson refers to Aristotle and Lucretius, whom he quotes in the original Latin verses with John Evelyn's translation. He further mentions the theories and experiments of Descartes, Galilei, Torricelli, Sir Isaac Newton, and Robert Boyle, whom he describes as “the greatest Patron of Mechanical Philosophy.” The circulation of the blood is also mentioned. As indicated on the title page, the second edition was printed for the au-

thor (no doubt at his expense), which accounts for its great rarity. No copy of the second edition has been traced in any available bibliography.

JACOB, William

An Historical Inquiry into the Production and Consumption of the Precious Metals. By William Jacob, Esq., F.R.S. . . .
London: John Murray, Albemarle Street. 1831.

First edition. 2 vols., 8vo. I: xvi, 380 pp. II: xii, 416 pp. Very good copy, uncut, in original blind-stamped purple cloth, spines gilt-lettered.

A COMPLETE SURVEY of the subject from ancient times to the early nineteenth century, including the role of precious metals on economies around the world. Several chapters cover the discovery and extraction of gold, silver, and other metals from mines in North and South America. “Perhaps the best work on the subject” (Zeitlinger, quoting McCulloch). An American edition appeared (Philadelphia, 1832; Morgan, 401; Smith, 250). Jacob (1762?–1851), F.R.S. (1807), was M.P. for Rye (1808–12) and comptroller of corn returns (1822–42). In addition to the present work he published *Travels in Spain* (1811) and wrote on statistics, corn trade, corn laws, etc. (Hoover, 447; Sotheran, Cat. 734 [1913], 9704 [“Scarce”]; Wellcome, III, 338)

JACOBI, Franz

Descriptio Methodi Mercurium Sublimatum Corrosivum tutius copiosiusque exhibendi.
Monasterii Westphalorum (Münster): Sumptibus Philippi Henr. Perrenon. 1772.

First edition. 8vo. 24 pp. Woodcut ornament on title. Woodcut head- and tailpieces. Fine copy, uncut with wide margins, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A TRACT ON the pharmaceutical uses of corrosive sublimate (i.e., mercuric chloride, HgCl₂), with references to the writings of Boerhaave, Hoffmann, et al. On page 24 Jacobi (ca. 1732–1785) states that he completed the work on 10 January 1772. It was reprinted (or reissued?) in 1785 (24 pp.; see Blake). Waring (p. 500) cites only the 1785 version. Very rare. Not in the usual bibliographies. (Blake, 232)

JACOTOT, Pierre

Cours de Physique Expérimentale et de Chimie; à l'usage des écoles centrales, et spécialement de l'École Centrale de la Côte d'Or. Par Pierre Jacotot, . . .
Paris: Chez Richard, Caille et Ravier, et à Dijon, Chez Coquet, . . . An IX (1801).

First edition. 2 vols., 8vo. I: 13 leaves, 387, (1) pp. II: 2 leaves, xvi, 403, (1) pp. With 61 folding copperplates (by P. F. Tardieu). Fine copy in contemporary mottled calf, spines richly gilt, red and green gilt-lettered labels.

JACOTOT (1755–1821) was professor of chemistry, physics, and astronomy at the Central School and Lyceum in Dijon. This is apparently his only published work, and it is rare. The first volume deals mainly with physics and related subjects, but the second volume is entirely chemical and throws considerable light on the contents of a course of chemistry at the turn of the nineteenth century. There is a table of the old and new chemical nomenclature at the end of volume II (pp. 377–403). Not in Blake, Bolton, Duveen, Edelstein, Ferguson, Ferguson Coll., Morgan, Neu, Partington, Smith, Waller, Watt, Wellcome, etc. Poggendorff and Ferchl mention the work but presumably had not seen it, as they give the wrong date, “1805.” (Ferchl, 256; Poggendorff, I, 1182)

JACQUIN, Joseph Franz

Lehrbuch der allgemeinen und medicinischen Chemie. Zum Gebrauche seiner Vorlesungen entworfen von Joseph Franz Freyh. von Jacquin.

Vienna: bey Carl Ferdinand Beck. 1810–1813.

Fourth edition. 2 vols., 8vo. I: 8 leaves, 459, (1) pp. II: 4 leaves, 592 pp. Very fine copy in the original blue boards, with maroon labels.

THE GREATLY enlarged final and best edition of this celebrated textbook, which first appeared in Vienna, 1793. The author's father, Nicolas Joseph Edler von Jacquin (1727–1817), published the original work as *Anfangsgründe der medicinisch-practischen Chemie* (Vienna, 1783; 2nd ed., 1785). This was “enlarged and modified by his son and successor at Vienna, Joseph Franz, . . . [and] the work became a widely known textbook of general chemistry. It appeared in several editions and determined the direction of chemical instruction in Austria for two generations” (D.S.B.). Scarce. Not in Duveen, Edelstein, Ferguson, Ferguson Coll., Morgan, Neu, Smith, Waller, Watt, Wellcome, etc. (Bolton, 552; Ferchl, 257; Partington, III, 147; Poggendorff, I, 1185)

JACQUIN, Joseph Franz

Elements of Chemistry. By Joseph Francis Jacquin, . . . Translated from the German.

London: Printed by J. W. Myers, for W. West, . . . 1799.

First English edition. 8vo. xi, (i), 415, (1) pp. With folding copperplate (Lowry sculpt.) depicting 8 figures. Superb copy in pristine condition, bound in the original tree calf, spine gilt-ruled, with red gilt-lettered label. Nineteenth-century armorial bookplate: Edward Parker of Browsholme.

THE RARE first English edition, translated by Henry Stutzer, from the *Lehrbuch der allgemeinen und medicinischen Chemie* (Vienna, 1793, 2 vols., 8vo.). Son of Nicolas Joseph Jacquin (1727–1817) and nephew of Jan Ingenhousz, Jacquin (1766–1839) was professor of chemistry and botany in Vienna. “Jacquin was credited by Lavoisier with having made a valuable contribution to the history of flame and combustion: the twelfth chapter of the latter's *Opusculum* is devoted to Jacquin and his work” (Duveen). Of particular interest is the “Description of Woulfe's Apparatus for Compound Distillation” (pp. 382–405). Peter Woulfe (1727?–1803 or 1805), a British chemist and mineralogist “invented Woulfe's bottle which passed gases through liquids (1st convenient method for producing concentrated solutions of soluble gases, and for purifying insoluble gases from soluble impurities)” (*World Who's Who in Science*). Two- and three-necked Woulfe bottles are illustrated in the plate. The second and third English editions of this excellent textbook appeared in 1800 and 1803, respectively. Not in Blake, Ferchl, Ferguson, Sondheimer, Waller, Wellcome, etc. (Bolton, 552; D.S.B., VII, 58; Duveen, 307; Edelstein, 1244; Ferguson Coll., 347; Morgan, 402; Neu, 2054 [different imprint]; Partington, III, 147; Smith, 251; Watt, II, 541i)

JACQUIN, Joseph Franz

Elements Chemiae Universae et Medicae, praelectionibus suis Accommodata. Ex lingua Germanica in Latinam versa. (Conimbricæ Coimbra): Typis Academicis. 1807.

First Portuguese edition. 2 vols., 8vo. I: viii, 336 pp., 1 leaf (errata). II: 2 leaves, 242 pp., 9 leaves. With folding copperplate depicting 8 figures. Volume I (at p. 26) has a folding plate tipped in, which is a neat manuscript in ink showing the table of affinities of Geoffroy. Some pencil annotations on a few margins and some occasional minor staining of several leaves; otherwise a very good copy in contemporary tree calf, spines richly gilt, with gilt-lettered crimson labels.

THE VERY rare first Portuguese printing of this important work, being the second edition in Latin (first Latin: Vienna, 1793) of the *Lehrbuch der allgemeinen und medicinischen Chemie* (Vienna, 1793, 2 vols., 8vo.). In volume II (pp. 201–212) there is a good account of the phlogistic hypothesis, and on pages 213–242 Woulfe bottles and their uses in preparing solutions of various gases are described. Unknown to the usual early chemical bibliographers.

JACQUIN, Nicolas Joseph Edler von

Anfangsgründe der medicinisch-practischen Chymie, zum Gebrauche seiner Vorlesungen.

Vienna: gedruckt bei Christian Friederich Wappler. 1783.

First edition. 8vo. 8 leaves, 526 pp., 9 leaves. Few minor stains; otherwise a very good copy in modern brown calf, spine gilt

lettered and dated. From the library of Professor Franz Sondheimer, with his bookplate on first free endpaper.

PARTINGTON DESCRIBES this as "a good text-book." "A further contribution by Jacquin to chemistry is a chemistry textbook which he designed specifically for the instruction of pharmacists and physicians" (D.S.B.). "The book is interesting for being in German, in compliance with the request of the Emperor in 1783, that lectures in the University should be delivered in German. . . . The course begins with plants, passes to animals, and closes with minerals. A short course of assaying completes the book. . . . The classification of inorganic substances throws light on the amount of knowledge then possessed" (Ferguson). Scarce. Not in Duveen, Neu, Smith, Waller, Wellcome, etc. Bolton (p. 552) lists only the second edition (Vienna, 1785), which is the edition in the Young Collection. The third edition appeared in 1791. (Blake, 232; D.S.B., VII, 58; Edelstein, 1245; Ferchl, 257; Ferguson, I, 432 [not in Young Coll.]; Partington, III, 146; Poggendorff, I, 1185; Sondheimer, 771)

JACQUIN, Nicolas Joseph Edler von

Examen Chemicum Doctrinae Meyerianae de Acido Pingui, et Blackianae de Aere Fixo, respectu calcis. Autore Nicolao Josepho Jacquin . . .

Vienna: Joannem Paulum Kraus. 1769.

First edition. 8vo. 96 pp. Fine copy in contemporary vellum. From the library of Professor Franz Sondheimer, with his bookplate on the front endpaper.

JACQUIN (1727–1817) was professor of chemistry, mining, and metallurgy in Schemnitz, then, until 1797, professor of chemistry and botany in Vienna. Of the present book Ferguson says: "His most important contribution to chemistry was his defence of Black's fixed air against Meyer's 'Acidum pingue' with the title: *Examen chymicum [sic] doctrinae Meyerianae de acido pingue . . .*, 1769." Meyer held the erroneous belief that, on calcination, limestone absorbed an oily acid (so-called acidum pingue) from the fire, rather than losing carbon dioxide (fixed air) and forming quicklime. Jacquin repeated Black's experiments, confirmed his results, and in the present work made Black's theory of the formation of alkalis widely known in Germany. For a discussion of the significance of this important book, see Partington (III, 146–147). A German translation appeared in 1770. Jacquin "was violently attacked by the followers of Meyer, but thirty years later Black's view was taught as an established fact and a part of chemical doctrine by Jacquin's son, Joseph Franz, who succeeded his father at Vienna" (Ferguson). A "milestone" work in the history of the discovery of the composition of alkalis. Not in Cushing, Duveen, Edelstein, Ferguson Coll., Morgan,

Neu, Osler, Smith, Waller, Watt, etc. (Blake, 232; Bolton, 552; Ferchl, 257; Ferguson, I, 432 [not in Young Coll.]; Partington, III, 146; Poggendorff, I, 1185; Sondheimer, 770; Wellcome, III, 340)

JAEGER, Georg Friedrich

Dissertatio Inauguralis de Effectibus Arsenici in Varios Organismos nec non de indicis quibusdam veneficii ab arsenico illati. Quam praeside Carolo Fried. Kielmeyer . . . Pro gradu doctoris medicinae publice defendet die (blank) Januarii MDCCCVIII. Auctor Georgius Friedericus Jaeger Stuttgardianus.

Tübingen: Litteris Schrammianis. (1808).

First edition. 8vo. 78 pp., 2 leaves (last blank). Fine copy, printed on bluish paper, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated, with original yellow wrappers bound in.

THE DOCTORAL dissertation of the celebrated German physician, chemist, and paleontologist Jaeger (1785–1866), presented at the University of Tübingen under the direction of Carl Friedrich Kielmeyer (1765–1844), professor of chemistry, pharmacy, and physiology (see D.S.B., VII, 366). From 1822 until 1842, Jaeger was professor of chemistry and natural history at the Stuttgart Obergymnasium. He was particularly interested in the effects of arsenic compounds on plants and animals. The present work describes the results of administering various small quantities of arsenious oxide and other arsenic compounds to plants and animals (e.g., crustaceans, insects, fish, amphibians, reptiles, birds, and mammals). Jaeger's "principal contributions were to paleontology" (D.S.B.). An important biochemical and toxicological work. Rare. Not in the usual chemical and medical bibliographies. (D.S.B., VII, 60; Waring, 257)

JÄGER, Christian Friedrich

Kurtze doch gründliche Beschreibung der vortrefflichen Eigenschaften, des Edlen Bemeinen Saltzes; und dessen gedoppelten herrlichen Nutzens, in dem Menschlichen Leben: neben einer ohnpartheischen Anzeige, wieweit die Königlich-Preuszische Salzbronnen zu Hall im Hertzogthum Magdeburg, andere Salz-Quellen Teutschlands, Theils an reichlichem Ertrag, Theils . . . Entworfen durch C.F.I.VI. Christian-Erlang: Gedruckt bey Johann Andreas Lochmann. 1708.

First edition. 4to. 6 leaves, 32 pp. Woodcut initials, head- and tailpieces. Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A LEARNED TREATISE in seventeen chapters on different types of salts and saline mineral waters, with particular

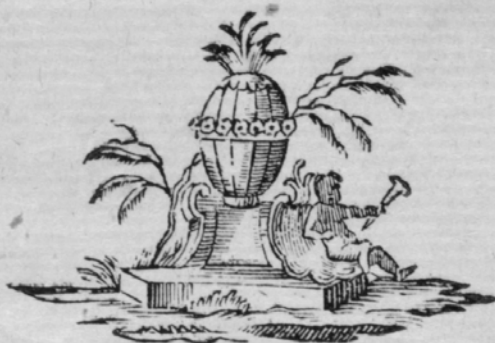
EXAMEN CHEMICUM

DOCTRINÆ MEYERIANÆ DE ACIDO
PINGUI, ET BLACKIANÆ DE AERE
FIXO, RESPECTU CALCIS.

AUTORE

NICOLAO JOSEPHO JACQUIN

S. C. R. & A. MAJESTATI in re metallurgica
& monetaria a consiliis, Chemiæ & Botanices
Professore, Societatis Helveticæ Physico - medi-
cæ, Lusatiensis, & Agriculturæ Styriacæ
membro.



VINDOBONÆ,
APUD JOANNEM PAULUM KRAUS,
BIBLIOPOLAM.

MDCCLXIX.

emphasis on the salts found at Halle in Saxony. The chemical and medical uses of salts and the manufacture of hydrochloric acid and other compounds are discussed, with references to earlier and contemporary chemists. On pages 20–22 there is a report on different kinds of salts abstracted from the *Philosophical Transactions of the Royal Society*, 1675 et seq. Very rare. No reference to the author or this important work has been located in available bibliographies.

JAMESON, Robert

A Treatise on the External Characters of Minerals. By Robert Jameson, . . .

Edinburgh: Printed at the University Press, for Bell & Bradfute, Guthrie & Tait, and W. Blackwood, and Longman, Hurst, Rees & Orme, London. (1805).

First edition. 8vo. (in 4s). 4 leaves, 84, 4, 32 pp. With 2 unsigned folding copperplates of crystal shapes (containing 35 figures). Joints cracked; otherwise very good copy in original gilt-ruled half calf, marbled boards.

ALTHOUGH PRIMARILY on the characterization of minerals by their external appearance, this work is also of some physico-chemical interest. The text is preceded by Abraham Gottlob Werner's "Tabular View of the Generic External Characters of Minerals," which was published separately in 1804. The Scottish mineralogist Jameson (1774–1854) attended Edinburgh University and in 1800 went to the Bergakademie in Freiberg to study under Werner, who greatly influenced his ideas on the origin of rocks and minerals. Returning to Scotland, Jameson became regius professor of natural history and keeper of the museum at Edinburgh. As Werner's leading British disciple, he founded the Wernerian Society in 1808. A considerably enlarged second edition of the present work appeared in 1816, and a third edition in 1817. Partington (III, 705) mentions Jameson and two of his other books. (D.S.B., VII, 70; Hoover, 450; Poggendorff, I, 1189; Ward & Carozzi, 1198; Watt, II, 541v; Wellcome, III, 344)

JAMESON, Robert

A Treatise on the External, Chemical, and Physical Characters of Minerals. By Robert Jameson, . . .

Edinburgh: Printed by Neill & Company, for Archibald Constable and Company, Edinburgh; and Longman, Hurst, Rees, Orme & Brown, London. 1817.

Third edition. 8vo. xv, (1), 314 pp., 1 leaf (advertisements). With woodcut frontispiece and 7 engraved plates of crystal shapes (containing 84 figures, nos. 66 and 67 duplicated) by E. Mitchell. Very fine copy in original gilt-ruled calf, maroon label.

THE GREATLY enlarged final and best edition of this treatise on minerals and their physical and chemical properties. Terms employed by Werner and Haüy are explained with their French, German, and Latin equivalents. Thirty-six important works on mineralogy from Agricola to Larmarck are listed. The external shapes of minerals includes a detailed discussion of Haüy's crystallography. The section on chemical analysis (pp. 283–304) covers the action on minerals of air, water, and acids, with details on techniques using the blowpipe. A short chapter at the end deals with the electrical, magnetic, and phosphorescent properties of minerals. The frontispiece depicts Wollaston's goniometer, Nicholson's hydrometer, and Brewster's goniometer. (D.S.B., VII, 71; Hoover, 451; Ward & Carozzi, 1200; Wellcome, III, 344)

JARAVA, Juan de

Della Filosofia Naturale di Giovan Sarava, Libri Quattro. Dove Platonicamente, & Aristotelicamente si discorreno tutte le principali materie fisiche, le prime cagioni, & gli effetti loro, & i fini. Et in particolare si ragiona del mondo, delle meteorologie, de' metalli, & virtù, & proprietà delle pietre. Tradotta di Spagnuolo in volgare da Alfonso di Ulloa. . . . Venice: Per Plinio Pietrasanta. 1557.

First Italian edition. 8vo. 155, (1) pp., 2 leaves. Woodcut printer's device on title page and historiated woodcut initials in text. Fine copy in contemporary unlettered pasteboards. From the library of the prince of Liechtenstein, with armorial bookplate.

A SURVEY OF natural philosophy, which originally appeared in Spanish (Antwerp, 1546). This Italian translation was made by Alfonso di Ulloa (d. ca. 1580). Of chemical interest are the descriptions of metals, minerals, precious stones, and salts (pp. 99–156). The remainder of the text covers natural history, physiology, physics, cosmology, astronomy, meteorology, rivers, and oceans. Jarava (fl. 1546), naturalist and physician to Eleanor of Austria, Queen of Portugal, wrote several books on natural sciences and translated Fuch's *Historia Stirpium* into Spanish (Antwerp, 1557). Duveen gives the author's name as Giovanni Sarava and erroneously states that the present edition is "unknown to the bibliographers." A second Italian edition appeared (Venice, 1565; Neu, 2062). Very rare. Not in the usual bibliographies. (British Library, *S.T.C. Italian Books, 1465–1600*, p. 346; Duveen, 530; Menendez y Pelayo, *La Ciencia Española*, II, 375; Palau, 123115; Picatoste, *Bibl. científ. Española*, 386)

JARS, Antoine Gabriel

Voyages Métallurgiques, ou Recherches et Observations sur les Mines & Forges de fer, la Fabrication de l'acier, celle du fer-blanc, & plusieurs mines de charbon de terre, faites depuis l'année 1757 jusques & compris 1769, en Allemagne, Suède, Norwege, Angleterre & Ecosse. Suivies d'un Mémoire sur la circulation de l'air dans les Mines, & d'une Notice de la Jurisprudence des mines de charbon dans le Pays de Liege, la Province de Limbourg & le Comté de Namur. . . .
Lyons: Chez Gabriel Regnault. 1774.

First edition, first issue. 4to. xxxii, 416 pp. With 10 folding copperplates (Louis le Grand Sculp.). Fine copy in original calf, rebacked, maroon morocco label, gilt.

AN ENCYCLOPEDIA, lavishly illustrated, and valuable account of mining and metallurgical chemistry in eighteenth-century Europe. The son of a copper-mine owner, Jars (1732–1769) traveled all over Europe on behalf of the French government in order to gain firsthand knowledge of mining and metallurgical practices. He was “probably the first professional French metallurgist . . . to bring about the modernization of industrial practices to meet the challenge offered by the drastic developments occurring in England” (D.S.B.). Of considerable chemical interest, the book deals with the extraction of all kinds of metals from their ores, as well as the manufacture of various industrial chemicals, alloys, ceramics, coinage, etc. Jars died at the early age of thirty-seven, after a sunstroke and short illness. He left detailed and extensive notes, which his brother (also a metallurgist) collated and compiled into the present volume. The work was reissued shortly after with a Paris imprint and later expanded to three volumes. (D.S.B., VII, 78; Ferchl, 258; Ferguson Coll., 350; Honeyman, 1755; Hoover, 452; Partington, III, 101; Poggendorff, I, 1192; C. S. Smith, *Sources for the History of the Science of Steel*, 1968, pp. 121, 191, 280; Watt, II, 543g)

JARS, Antoine Gabriel

Voyages Métallurgiques, ou Recherches et Observations . . . Tome premier (second, troisième).
Paris: Chez L. Cellot, Cl.-Ant. Jombert, aîné, L.-Alex. Jombert, jeune. 1774, 1780, 1781.

First edition, second issue, of volume I. First issue of volumes II and III. 3 vols., 4to. I: xxxii, 416 pp. (N.B. Pagination skips from sign. Zz4, to Aaal: i.e., pp. 363–369, but text complete). With 10 folding copperplates (Louis le Grand Sculp.). II: xxviii, 612 pp. (N.B. Pp. xxv–xxviii misbound between pp. 610–611). With 28 folding copperplates (Benard direxit). III: viii, 568 pp. With 14 folding copperplates (Benard direxit). Fine, complete set, in original full tree calf, spines gilt, maroon morocco labels.

THE FIRST volume comprises the same sheets as the Lyons first issue, but with a reset title page bearing the words *Tome premier* and with different imprint. The title leaf of this Paris issue is attached to the stub of the Lyons title leaf. The two issues are otherwise identical, including the mispagination in volume I. The wording of the titles of volumes II and III is also different, in order to cover the contents of each volume. In the preface of volume II, the editor (Jars' brother) says that he had accompanied the author on some of his travels. He states that in volumes II and III he has gathered all of his brother's manuscripts on metals, sulphides, salts, and other subjects and has added notes of his own to bring the treatise up-to-date. At the end of the third volume there is a long section on the laws and customs of the mines in Cornwall, Devonshire, and Derbyshire. “Ouvrage très estimé” (Brunet). Complete sets of this monumental work are rare. (D.S.B., VII, 78; Ferchl, 258; Honeyman, 1755; Hoover, 452; Partington, III, 101; Poggendorff, I, 1192; Smith, 252; Sotheran, Cat. 832 [1932], 6495; Watt, II, 543g)

JEAMSON, Thomas

Artificiall Embellishments. Or Arts Best Directions How to Preserve Beauty, or to Procure it. . . .
Oxford: Printed by William Hall. 1665.

First edition. 8vo. 8 leaves, 192 pp. Fine copy with wide fore-margins (some uncut), in contemporary blind-ruled paneled calf, rebacked in matching calf, maroon morocco label.

A RATHER RACILY written early work on cosmetics and medicinal preparations, of chemical interest. According to Ferguson (*Books of Secrets*) this book was rare in 1911, and he describes the copy formerly owned by Heber, which collates the same as this copy. Anthony Wood (*Athenae Oxonienses*, London, 1692, vol. II, column 846) states that Jeamson received the doctor of physick degree from Wadham College, Oxford, 9 July 1668. Wood says that the book sold well, and “I think it was printed a second time.” No such edition is known to Wing. Jeamson died in Paris in July 1674 and was buried there. Although the author tried to conceal his connection with this work by signing the dedication (to an unknown lady, “A. E.”) with the initials “M. S.,” the publisher let out the secret, and thereafter Jeamson was popularly nicknamed “artificial embellishments.” Very rare. Not in Cushing, Krivatsy, Wellcome, or the usual chemical bibliographies. (Ferguson Coll., 48; Ferguson, *Secrets*, II, 7th Suppl., 50–52; Madan, 2705; Watt, II, 543r; Wing, J503)

JERLING, Daniel

Specimen Academicum de Pulvere Nitrato, quod consentiente Ampliss. Senatu Philos. Upsal. sub moderamine . . . Dn. Laurentii Arrhenii, . . . Publice examinandum sistit . . . Daniel Jerling Sudermannus. In Audit. Gust. Maj. d. 22 Junii 1726. . . .
Uppsala: Literis Wernerianis. (1726).

First edition. 8vo. 3 leaves, 26 pp., 2 leaves. Woodcut capitals, head- and tailpieces. Leaves lightly embrowned; otherwise good copy in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

A DISSERTATION BY Jerling (fl. 1720) on the manufacture of gunpowder for various applications, presented under the direction of the professor of history at Uppsala, Lars Arrhenius. The purification of niter (potassium nitrate) from different sources is described, and formulations with sulphur and charcoal are given. Also included is a history of gunpowder from its original invention in China to its rediscovery as a propellant in 1380 by Berthold Swarz in Germany. An interesting work that provides a valuable insight into early-eighteenth-century explosives manufacture. Very rare. Unknown to the usual bibliographers.

JESSOP, Francis

Propositiones Hydrostaticae ad illustrandum Aristarchi Samii Destinatae, et quaedam Phaenomena Naturae generalia. . . .
London: Prostant apud Sam. Smith ad insignia Principis, & Hen. Faithorn, ad insigne Rosae in Coemeterio D. Pauli. 1687.

First edition. 4to. 1 leaf (imprimatur), 2 leaves (title, dedication), 30 pp. With 4 woodcut diagrams in text. Few blank fore-edges restored; otherwise good copy in quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A SERIES OF propositions on the principles of hydrostatics, based on the attractions between small spheres or bubbles, suggestive of the atomic theories developed in the eighteenth century. Published the same year as Newton's *Principia*, although not mentioning that work, the book is of interest in the history of physics, chemistry, and related sciences. The final page is signed: Broom Hall, 14 October 1687. The theories of Aristarchus of Samos, Ptolemy, and other natural philosophers are discussed (pp. 19–30), and there are references to Boyle (pp. 20, 27), Torricelli (pp. 23, 26), Descartes (pp. 24, 26), and Newton (p. 28). Jessop (dates unknown) also wrote on gases (*Phil. Trans.*, 1675, X, 391) and identified four different kinds of "damps" in Yorkshire mines (see Partington, III, 109). Newton owned a copy of the present work. (Harrison, 850; Sotheran, Cat. 676 [1907], 2150; Watt, II, 547k; Wing, J701)

JOEPSER, Jacob Joseph

Isagoge, seu Manuctio ad Vitam Longiorem: variis, de tuenda, reparandaque valetudine, dissertationibus illustrata: & selectis, tum veterum, tum recentiorum medicorum scitis placitisque stabilita . . .
Nuremberg: Sumtibus Michaelis & Johan. Friderici Endterorum. 1680.

First edition. 4to. 16 leaves, 688 pp., 13 leaves. With elaborate engraved allegorical frontispiece, dated 1679. Fine copy, unpressed and uncut with wide margins, in eighteenth-century half calf, gilt, red boards, green morocco label.

AN IATROCHEMICAL and medical guide to living a long, healthy, and productive life. Joepser (1627–1695), a Nuremberg physician, covers every aspect of the preservation of health, including food, drink, and exercise. Chapter XII (pp. 393–431) contains a history of alchemy and transmutation (mentioning Roger Bacon, Lull, Basil Valentine, and Michael Maier) and iatrochemistry, in which the works of Croll, van Helmont, Paracelsus, Quercetanus, Sendivogius, Zwelfer, and others are cited. Quoting Hermes Trismegistus, Joepser discusses the nature of the philosopher's stone, the philosopher's mercury, and related subjects. There are numerous directions for preparing chemical medicines and remedies throughout. (Krivatsy, 6226; Manget, *Bibliotheca Scriptorum Medicorum*, II, xxvi; Parkinson & Lumb, 1347; Watt, II, 548m; Wellcome, III, 356)

JOHN, Georg Bernhard

Disputatio Physica de Barometro, . . . sub praesidio Dn. Rudolphi Jacobi Camerarii, . . . Pro obtinendo gradu magisterii in aula philosophorum ad diem (blank) Julii, defendendam suscipit Georg-Bernhardus John, Lustnav. . . .
Tübingen: Typis Georg-Henrici Reisi. 1693.

First edition. 4to. 1 leaf, 18 pp. Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

AN IMPORTANT dissertation on mercury barometers and their construction and use, with at least seven references to Robert Boyle and *The Spring and Weight of the Air*. In addition the works of Borelli, Grew, Huygens, Papin, Senguerd, Sinclar, Sturm, Torricelli, et al., are cited. Of chemical interest are descriptions of the behavior of various compounds when they are placed in the vacuum above the mercury in a barometer. The praeses was R. J. Camerarius (1665–1721), professor of botany at Tübingen. Very rare and completely unknown to W. E. Knowles Middleton (*History of the Barometer*, 1964). No bibliographical reference to John or this work has been found.

JOHN, Johann Friedrich

Chemische Tabellen der Pflanzenanalysen oder Versuch eines Systematischen Verzeichnisses der bis jetzt zerlegten Vegetabilien nach den vorwaltenden näheren Bestandtheilen geordnet and mit Anmerkungen versehen von Joh. Friedr. John, . . .

Nuremberg: bei Johann Leonhard Schrag. 1814.

First edition. Folio. 1 leaf, x + 94 pp., 1 leaf (blank). Fine copy, in original blue boards, 2 gilt-lettered red labels.

A COMPREHENSIVE WORK on the chemical analysis of plants and their products, arranged in alphabetical order in tabular form. Some of the analyses were carried out by John himself, and Partington states that this and the companion volume on animal products are “valuable in the history of organic chemistry.” Numerous references to earlier and contemporary literature are given. Ferchl, copying Poggendorff, erroneously dates this work 1813. Rare. Not in the usual chemical libraries. (Bolton, 556; Ferchl, 259; Partington, III, 601; Poggendorff, I, 1197)

JOHN, Johann Friedrich

Chemische Tabellen des Thierreichs. Oder systematische Uebersicht der Resultate aller bis jetzt zerlegten Animalien, mit Rücksicht auf die wichtigsten medicinischen Thatsachen, welche aus der Chemie entlehnt sind; einige wichtige chemische Erscheinungen der Zoochemie und Eigenschaften der animalischen Körper, und die Literatur. . . .

Berlin: In der Maurerschen Buchhandlung. 1814.

First edition. Folio. viii + 138 pp. Fine copy in original blue boards, 2 gilt-lettered red labels.

THE COMPANION volume to *Chemische Tabellen der Pflanzenanalysen* (Nuremberg, 1814), in which John presents in tabular form the chemical analyses of products from the animal kingdom. Copious references to earlier and contemporary literature are cited. At the end of this copy is a table of about the same period (in German), inserted after page 138, on the solubility of numerous inorganic and organic substances in various solvents (e.g., acids, alcohol, ether, and water). Rare. Not in Wellcome or the usual chemical libraries. (Bolton, 556; Ferchl, 260; Partington, III, 601; Poggendorff, I, 1197)

JOHN, Johann Friedrich

Chemische Untersuchungen mineralischer, vegetabilischer und animalischer Substanzen. Fortsetzung des chemischen Laboratoriums. . . .

Berlin: Bei Friedrich Maurer. 1810.

First edition. 8vo. xxvi, 292, (2) pp. Very fine (almost mint) copy, in original half calf, gilt, marbled boards, tan label.

THE SECOND of six volumes of memoirs on analytical chemistry by John. Dedicated to Friedrich Wilhelm III, this volume contains the results of his analyses of a vast number of substances from the mineral, vegetable, and animal kingdoms. As in all of his books, there are numerous references to the researches of other European chemists, especially those of Germany, France, and Britain. In 1817 John first discovered that a strontium sulphide phosphor he had made luminesced sky blue, whereas his barium sulphide phosphor luminesced reddish-violet (see E. N. Harvey, *History of Luminescence*, 323, 346). This and similar discoveries led over a century later to the development of phosphors used in color television. Bolton (p. 556) lists this work as one of five volumes in duodecimo format. (Ferchl, 259; Partington, III, 601; Poggendorff, I, 1197; Szabadvary, 152)

JOHN, Johann Friedrich

Chemisches Laboratorium. Oder Anweisung zur chemischen Analyse der Naturalien. Nebst Darstellung der nöthigsten Reagenzien . . . Mit einer Vorrede von Martin Heinrich Klaproth, . . .

Berlin: Bei Friedrich Maurer. 1808.

First edition. 8vo. xii, 522 pp., 1 leaf. With 2 engraved plates of chemical apparatus (1 folding). Fine, crisp copy, in contemporary half calf, marbled boards, rebacked in calf antique, red morocco label.

THE FIRST of six volumes of analytical memoirs with varying titles, each complete in itself, which John (1782–1847) published between 1808 and 1821. Professor of chemistry and pharmacy at Frankfurt and later at Berlin, John was the author of numerous papers and books. He isolated metallic manganese in a purer state than was previously known and investigated its oxides, as well as carrying out researches on organic chromates, zinc ores, native silver, copper, arsenic, etc. He was especially interested in pathological chemistry and biochemistry. Partington discusses John's numerous researches, stating that he “was unusually industrious.” Not in Duveen, Edelstein, Ferguson, Smith, Wellcome, etc. (Bolton, 556; Ferchl, 259; Morgan, 409; Partington, III, 601; Poggendorff, I, 1197; Sotheran, Cat. 734 [1913], 9809; Szabadvary, 152)

JOHN, Johann Friedrich

Tableaux Chimiques du Règne Animal, ou aperçu des résultats de toutes les analyses faites jusqu'à ce jour sur les animaux; ouvrage dans lequel on trouve les principaux faits médicaux du ressort de la chimie; les phénomènes les plus importants de la zoochimie (chimie physiologique); les propriétés des substances animales; et enfin la bibliographie chimique de ce Règne. Par Jean-Frédéric John . . . Traduit de l'allemand, par Stéphane Robinet; avec des notes sur les analyses les plus récentes.

Paris: Chez L. Colas, Imprimeur-Libraire . . . Gabon, libraire . . . 1816.

First French edition. 4to. 4 leaves, viii, 224 pp. Old signature stamp on title page (T. Mayor, D.Ch.) and occasional very minor foxing; otherwise fine copy complete with half title, in original gilt-ruled half vellum, patterned blue-green boards, green morocco label.

THE FRENCH translation of John's *Chemische Tabellen des Thierreichs* (Berlin, 1814), by the pharmaceutical chemist Stéphane Robinet (1796–1869). Dedicated by Robinet to the famous chemist L. N. Vauquelin (1763–1829), whose initials have been transposed to “N. L.” in the dedication. Robinet has added a brief preface in which he praises John's work and states that this French translation was carried out to offer “savans française un ouvrage d'un genre nouveau.” Robinet also published *Examen chimique des fruits du Lilas* (Paris, 1824), *Essai sur l'affinité organique* (Paris, 1826), and other works. Rare. Not in Partington, Wellcome, or the usual bibliographies. (Ferchl, 449; Poggendorff, II, 666)

JOHNSON, Cuthbert William

The Farmer's Encyclopaedia, and Dictionary of Rural Affairs; embracing all the Most Recent Discoveries in Agricultural Chemistry. Adapted to the comprehension of unscientific readers. Illustrated by wood engravings of the best modern agricultural implements. By Cuthbert W. Johnson, Esq., F.R.S. . . .

London: Longman, Brown, Green, and Longmans. 1842.

First edition. 8vo. iv, 1320 pp. + xvi, 16 pp. (advertisements, dated October and December 1842). Numerous tables and woodcut figures in text. Very good copy, uncut, in original blind-stamped green cloth.

ALTHOUGH EDUCATED as a barrister, Johnson (1799–1878), F.R.S. (1842), published several important books on agriculture, some of which were translated into other languages (see D.N.B.). The present treatise includes a great deal of information on agricultural chemistry. In the preface the author mentions the help he has received from Thomas Brande, James F. W. Johnston, Justus von Liebig, and other

chemists. Included are many entries of bibliographical and historical interest on earlier writers on the subjects covered in this work. The author also collaborated with his younger brother, George William Johnson (1802–1886), a barrister, and jointly published books on agricultural chemistry. Not in the usual bibliographies. (Perkins, 875)

JOHNSON, Joseph

A Catalogue of Books, written by Joseph Priestley, LL.D. F.R.S. Ac Imp. Petrop. R.

Paris. Holm. Taurin., Ital. Harlem. Aurel. Med. Paris. Cantab. Americ. et Philad. Socius. and printed for J. Johnson, Bookseller, St. Paul's Church-Yard, London, 1804.

First edition. 8vo. 8 leaves (unsigned and unpaginated). Fine, crisp copy, in maroon half morocco antique, marbled boards. Bound with: Belsham, Thomas, *Zeal and Fortitude in the Christian Ministry* . . . (London, 1804).

A USEFUL CATALOGUE of the published works of Priestley as they were available for sale in 1804, by Priestley's publisher, Joseph Johnson (1738–1809). Johnson also published the works of Erasmus Darwin, William Cowper, Horne Tooke, and other authors (see D.N.B.). Ninety-four items are listed, with three more in the press. Titles range from *The History and Present State of Electricity* (5th ed.) to *A General History of the Christian Church*, dedicated to the president of the United States, Thomas Jefferson. The catalogue is important because it lists the format and price of most of the items. It was printed by “Bryer, Printer, Bridge-Street, Blackfriars.” The work by Belsham with which this copy is bound was printed by “R. Taylor, Printer, Black-Horse-Court, Fleet-Street.” Extremely rare. Unknown to Crook (the bibliographer of Priestley) and not mentioned by any bibliography.

JOHNSON, Thomas

Quaestiones Philosophicae in Justi Systematis Ordinem Dispositae; Auctoribus Adductis, et Singulis in proprias Hypotheses dispertitis. Editio Tertia, prioribus Auctior, & ad Usus Philosophicos Accommodatior. Ad calcem sub-jicitur Appendix de Legibus Disputandi. Opera Tho. Johnson, A.M. . . .

Cambridge: Impensis Gul. Thurlbourn Bibliopolae. Prostant apud Beecroft Londini, & apud Fletcher & Clements Oxonii. 1741.

Third edition. 8vo. (in 4s). 1 leaf, vi pp., 2 leaves, 246 pp., 1 leaf (advertisements). Printer's woodcut device on title page. Light marginal foxing on a few leaves at the end; otherwise very good copy in original calf, brown morocco label, covers slightly scuffed. Unidentified engraved eighteenth-century bookplate, with motto: Nil Invita Minerva.

JOHNSON (d. 1737), a classical scholar and fellow of Magdalene College, Cambridge (M.A., 1728), was an editor of Stephens' *Thesaurus Linguae Latinae* (1734–35) and of Puffendorf's *De Officio et Civis* (1735). The present book in eleven chapters comprises questions and propositions on chemistry, physics, natural history, meteorology, mechanics, hydrostatics, optics, astronomy, logic, etc. The *Appendix de legibus disputandi* is taken from Adrian Heereboord's *Praxi logica*. A valuable feature is the extensive bibliography for each subject covered. Works by Boyle, Boerhaave, Freind, Hooke, Rohault, and others are cited in chapter III ("Questions on chemistry"). Topics questioned include the identity of the five elements, universal solvent, possibility of transmutation of metals, dissolution of solids by solvents, chemical nature of fermentation, laws of attraction in crystallization, and relationship between evaporation and specific gravity of liquids. To each of these questions two sets of references are given: one answering in the affirmative, the other in the negative. "A most useful manual" (Lowndes). The second edition (Cambridge, 1735; Wellcome, III, 360) is a shorter book. Not in the usual bibliographies.

JOHNSON, William

Lexicon Chymicum. Continens Vocabula Chimica in priore Libro omissa, multis vocabulorum Chymicorum Characteribus adjectis e Basilio Valentino, Theophrasto Paracelso, Oswaldo Crollio, aliisque Authoribus Chymicis collectis. . . . Lib. Secundus.

London: Excudebat G. D. Et prostant venales apud L. Sadler, ad insigne Leoniis aurati, in vico vulgo vocato Little Brittan. 1653.

First edition. 8vo. 4 leaves, pp. 1–8, 8 leaves (Vita Paracelsi), pp. 9–86, 1 leaf (blank), 6 leaves (Characteres vocabulorum Chymicorum), 1 leaf (Errata), 1 leaf (Imprimatur). Title page within woodcut border. Fine copy in contemporary vellum. Bound with: Johnson, William, *Lexicon Chymicum* (London, 1652).

THE DEDICATION to the *Lexicon Chymicum* (1652) is dated 12 August 1651, and the book was printed shortly thereafter. Its immediate popularity prompted Johnson to bring out this *Liber Secundus* in 1653, to which he added the life of Paracelsus, corrected errors in the 1652 edition, and included many additional chemical and medical terms. The woodcut chemical symbols (6 pp.) at the end are especially interesting. This second volume is much rarer than the first, and although Wing lists them together, it is not always bound with the 1652 edition. Bolton, D.S.B., Edelstein, Watt, etc., do not mention this edition. Duveen states that the title page is printed in red and black, but in this copy it

is printed in black only. (Duveen, 310; Ferguson, II, 439 [not in Young Coll.]; Ferguson Coll., 355; Neu, 2081; Partington, II, 128; Thornton & Tully, 156; Wellcome, III, 361; Wing, J855)

JOHNSON, William

Lexicon Chymicum. Cum Obscuriorum Verborum, et Rerum Hermeticarum, tum Phrasium Paracelsicarum, in Scriptis ejus: et aliorum Chymicorum, passim occurrentium, planam explicationem continens. . . .

London: Excudebat G. D. impensis Gulielmi Nealand, apud quem prostant venales sub Signo Coronae, in vico vulgo vocato Duck-lane. 1652.

First edition. 8vo. 9 leaves (2nd blank), 250 pp., 2 leaves (blank). Title in red and black, with woodcut border. Fine copy in contemporary vellum. Bound with: Johnson, William, *Lexicon Chymicum. Lib. Secundus* (London, 1653).

THE FIRST comprehensive chemical dictionary to be published in England and a milestone in the history of chemical literature. It was preceded by the much briefer *Chymicall Dictionary*, appended to *A New Light of Alchymie* (London, 1650) by Sendivogius. Although styled a "lexicon," it is, in fact, a dictionary of chemistry and chemical operations. In addition to merely defining chemical terms, Johnson (ca. 1610–1665) illustrates the words by describing the processes to which they apply. An iatrochemist and follower of Paracelsus, he became "operator" (i.e., resident practical chemist) to the Royal College of Physicians in 1648 and in 1654 was given the freedom of the Society of Apothecaries. He died as the result of dissecting a plague victim in 1665. His book became very popular, revised editions appeared, and it was reprinted by Manget (*Bibliotheca Chemica Curiosa*, 1702, vol. I, p. 217). (Bolton, 63; D.S.B., VII, 150; Duveen, 310; Edelstein, 1258; Ferguson, I, 439 [not in Young Coll.]; Ferguson Coll., 355; Neu, 2081; Partington, II, 128; Sotheran, Cat. 800 [1926], 11165 ["Rare"]; Thornton & Tully, 156; Waite, 289; Watt, II, 550u; Wellcome, III, 361; Wing, J855)

JOHNSON, William

Lexicon Chymicum. Cum Obscuriorum verborum, et Rerum Hermeticarum, tum Phrasium Paracelsicarum, in Scriptis ejus: et aliorum Chymicorum, passim occurrentium, planam explicationem continens. . . .

London: Excudebat G. D. impensis Gulielmi Nealand, apud quem prostant venales sub Signo Coronae, in vico vulgo vocato Duck-lane. 1657.

Second edition. 8vo. 6 leaves, 228 pp. Title within woodcut border. Fine, crisp copy, in original overlapping vellum. Old

inscription on title ("Collegii Societatis Jesu Coloniae, 1675"), and later stamp on page 1 ("Gymnasial-Bibliothek zu Koeln").

A CLOSE (possibly pirated) reprint of the first edition (London, 1652), and the earliest printing known to Ferchl. This edition is mentioned by Mercklin but was not seen by Ferguson. Despite the London imprint, it was probably printed abroad. Another edition with a Nealand imprint appeared (London, 1660; Wing, J857). There was also an edition revised and corrected by Johann Christoph Vogel-sang (Frankfurt and Leipzig, 1678). (Bolton, 63; D.S.B., VII, 150; Duveen, *Supplement*, 187; Ferchl, 260; Ferguson, I, 439 [not in Young Coll.]; Mercklin, *Lindenius renovatus*, 1686, p. 379; Smith, 256; Wing, J856)

JOHNSTON, James Finlay Weir

The Chemistry of Common Life. By James F. W. Johnston . . .
Edinburgh and London: William Blackwood and Sons. 1855.

First edition in book form. 2 vols., 8vo. I: viii, 352 pp. II: vi, 466 pp. With 113 woodcuts and 3 maps. Fine copy in contemporary dark-blue half calf, pebbled cloth, spines gilt-ruled, maroon morocco labels.

A COMPREHENSIVE INTRODUCTION to chemistry intended to be used as a "manual in schools" as well as by the general public. Originally published in parts, the work was completed just before Johnston died in September 1855. Dedicated to his friend Sir David Brewster, the book is described as an attempt "to render popular some of the more immediately applicable results of that branch to which I have myself been now long devoted." The thirty-three chapters cover numerous topics, beginning with "The Air we Breathe." Other subjects discussed are "the Soil we Cultivate," "the Beverages we Infuse (including tea and coffee)," "the Liquors we Ferment (including beer and wine)," "the Narcotics we Indulge in (such as tobacco and opium)," etc. The work concludes with an explanation of the circulation of matter in the human body. The many attractive illustrations add to the immediate appeal of the book. An American edition appeared (New York, 1855; Edelstein, 1260), as well as editions in Chinese, Dutch, German, Hungarian, Russian, and Swedish. Not in Browne, Duveen, Edelstein, Morgan, Roller & Goodman, Smith, Waller, etc. (Bolton, 559; Cole, 690; Ferchl, 260; Partington, IV, 254; Perkin, 894 [vol. I only]; Poggendorff, I, 1198; Sondheimer, 778)

JOHNSTON, James Finlay Weir

Contributions to Scientific Agriculture. . . .
Edinburgh and London: William Blackwood and Sons. 1849.

First edition. 8vo. 231, (1) pp. Near-mint copy, uncut, in original blind-stamped green cloth, spine gilt-lettered.

A GATHERING OF articles presented to the Agricultural Chemistry Association of Scotland. From 1843 until 1848 Johnston supervised a laboratory in Edinburgh in which the various Scottish soils, manures, limestones, and other minerals were carefully analyzed to establish their agricultural value for members of the association. The result was that Scottish farmers became convinced of the usefulness of agricultural chemical research. Very scarce. Not in Perkins, Wellcome, or the usual bibliographies. (Ferchl, 260; Poggendorff, I, 1192)

JOHNSTON, James Finlay Weir

Experimental Agriculture being the Results of Past, and Suggestions for Future Experiments in Scientific and Practical Agriculture. . . .
Edinburgh and London: William Blackwood and Sons. 1849.

First edition. 8vo. xvi, 265, (1) pp., 1 leaf (advertisements of books by Johnston and others). Bright, crisp copy, uncut, in original blind-stamped green cloth, spine gilt-lettered, contents in pristine condition.

A SIGNIFICANT REVIEW of earlier work on agricultural chemistry, with suggestions for future experiments to determine the optimal conditions for growing crops. Numerous detailed laboratory and field trials are described, with and without the addition of known quantities of chemical and natural fertilizers and various minerals. Johnston was one of the first chemists in Great Britain to carry out truly scientific and quantitative agricultural chemical experiments. The book forms a sequel to his important *Lectures on agricultural chemistry and geology*, and it greatly stimulated further productive research on this subject. Not in Browne, D.S.B., Knight, Waller, or the usual bibliographies. (Bolton, 560; Cole, 691; Ferchl, 260; Poggendorff, I, 1198; Sotheran, Cat. 734 [1913], 9837; Wellcome, III, 361)

JOHNSTON, James Finlay Weir

Lectures on Agricultural Chemistry and Geology. . . . With an Appendix, containing suggestions for experiments in practical agriculture.

Edinburgh and London: William Blackwood and Sons. 1841–44.

First edition, second issue. 8vo. 16, 434, (2), 437–911, (1) pp., 1 leaf, 116, xx pp. Few woodcuts in text. Printed on thin paper and bound up from parts as issued, in contemporary blind-stamped patterned mauve cloth, gilt-lettered morocco label.

SECOND ISSUE of one of the author's most important books, comprising the sheets of the first issue (with title page dated 1841), plus a reset title page dated 1844. Johnston (1796–1855), who studied chemistry in Switzerland under Berzelius, became professor of chemistry and mineralogy (1833–55) at the newly founded University of Durham. He also served as chemist to the Agricultural Society of Scotland and was elected fellow of the Royal Societies of London and Edinburgh. Johnston was one of the most distinguished chemists of the time, and he successfully sought to apply recent scientific discoveries to agriculture and manufactures. Most of his writings achieved great stature, especially in America, and were translated into many foreign languages. Surprisingly, C. A. Browne (*Source Book of Agricultural Chemistry*, 1944) does not mention this milestone work. Poggendorff (I, 1198) and Ferchl (p. 260) list only the second edition (1847), and Smith (p. 256) lists only New York editions (1858, 1864). Not in Duveen, Edelstein, Ferguson Coll., Morgan, Sondheimer, Waller, Wellcome, etc. (Bolton, 560; Partington, IV, 254; Perkins, 901)

JOHNSTON, James Finlay Weir

Lectures on Agricultural Chemistry and Geology. . . . With an Appendix, containing suggestions for experiments in practical agriculture.

Edinburgh and London: William Blackwood and Sons. 1844–42.

Second edition, first issue, of volume I; so-called second edition of volume II. 2 vols., 8vo. I: 12 pp., 2 leaves, 434, 116 pp. II: 5 leaves, pp. (435)–911, (1), xx. Fine copy in contemporary half calf, marbled boards, spines richly gilt, dark-blue morocco labels gilt. Armorial bookplate (nineteenth century) in each volume: Alington.

THE FIRST edition was issued in parts, and the present edition is actually the first to appear in book form. The first volume has been completely reset but is a close paginary reprint of the first edition. The appendix has also been com-

pletely reset. Although the title page of volume II states "second edition," the volume is made up of sheets of the first edition. For a description of the contents of this work, see the first edition.

JOHNSTON, James Finlay Weir

Lectures on Agricultural Chemistry and Geology. . . .

Edinburgh and London: William Blackwood and Sons. 1847.

Second edition in book form. 8vo. xx, 1117, (1) pp. + 2, 14 pp. (adverts.). Fine, crisp copy, uncut, in original blind-stamped tan cloth, rebacked, original gilt-lettered spine laid on.

THE BEST edition of this monumental work on agricultural chemistry, which "presents on the whole a very correct view of the actual state of our knowledge in regard to the subjects of which it treats. . . . The book is based on the author's constant employment in the prosecution of scientific agriculture by researches in the laboratory and observations in the field" (preface). "Johnston was notably successful in stimulating interest in the application of science to agriculture" (D.S.B., XII, 233). A "meritorious book" (Partington, who lists the 1842 edition). Scarce. Not in C. A. Browne, Duveen, Edelstein, Morgan, Perkins, Smith, etc. (Bolton, 561; Ferchl, 260; Poggendorff, I, 1198; Wellcome, III, 361)

JOHNSTON, James Finlay Weir

On the Use of Lime in Agriculture. By James F. W. Johnston. . . .

Edinburgh and London: William Blackwood and Sons. 1849.

First edition. 8vo. 3 leaves, 259, (1), xxii, 8 pp. (publisher's catalogue of agricultural books). Woodcut figures in text. Very good copy in the original unlettered dark-green ribbed cloth.

THE FIRST definitive chemical work on the practical use of lime-based chemicals in agriculture, the result of seven years' observations and deductions. The author describes the applications to soils of calcium carbonate, calcium hydroxide, calcium phosphate, and calcium sulphate. One of Johnston's rarer works. Not in Bolton, Browne, D.S.B., Duveen, Edelstein, Ferchl, Ferguson Coll., Morgan, Partington, Poggendorff, Smith, Sondheimer, Waller, Wellcome, etc. (Perkins, 902; Sotheran, Cat. 676 [1907], 2179)

JOHNSTON, James Finlay Weir, and CHURCH, Arthur Herbert

The Chemistry of Common Life. By the late James F. W. Johnston . . . A New Edition revised, and brought down to the present time by Arthur Herbert Church.
Edinburgh and London: William Blackwood and Sons. 1879.

First edition edited by Church. 8vo. xxvi, 592, 6 pp. (advertisements). 102 woodcut figures in text. Very good copy in original stamped cloth, spine gilt-lettered.

JOHNSTON'S "last and best work" (D.N.B.). An exposition of the chemistry of everyday life, which achieved great popularity. The first edition, in two volumes, appeared in 1853–55, just before Johnston died. In his preface Church says that he "had the opportunity of consulting Professor Johnston's private and corrected copy of the 'Chemistry of Common Life'" (p. vii). These corrections, plus the additions of Church, are incorporated into the present edition. Topics covered include air, water, soil, plants, food, beverages, tobacco, narcotics, dyes, human biochemistry, and environmental recycling. Scarce. Not in Duveen, Edelstein, Ferchl, Ferguson Coll., Morgan, Poggendorff, Smith, Sondheimer, Waller, etc. (Bolton, 559; Partington, IV, 254)

JONA, Sven

Disputatio Physica de Principiis Corporis Naturalis Intrinsecis . . . sub praesidio . . . Svenonis Ioniae . . . Pro gradu in Philosophia . . . Brynolphus Thomae Cygnaeus Wermelandus . . . 9 Feb. . . .
Uppsala: Excudebat Eschillus Matthiae. 1629.

First edition. 4to. 8 leaves (unpaginated). Title within ornamental woodcut frame, signed AF; probably sixteenth century (from stock bought from Germany?). Very minor damp stain; otherwise fine copy in marbled boards antique, spine gilt-lettered and dated.

A DISSERTATION ON the intrinsic principles and nature of matter, presented to the Royal Academy of Uppsala by B. T. Cygnaeus under the direction of Jona. In twenty-one paragraphs the Aristotelian concept of the four elements (air, earth, fire, water), and their conversion into one another, are covered. References are made to the works of Aristotle, Diogenes, Democritus, Epicurus, Empedocles, Heraclitus, Zabarella, et al. Of chemical interest are discussions of atomic theory, fire, heat and cold, gold, transmutation, structure of inorganic and organic matter, etc. Very rare. Untraced in the usual bibliographies.

JONES, Henry Bence

The Royal Institution: its founder and its first professors. By Dr. Bence Jones, Honorary Secretary.
London: Longmans, Green, and Co. 1871.

First edition. 8vo. x, 431, (1) pp., + 32 pp. (advertisements). Few small woodcut figures in text. Very good copy in original mauve cloth, rebaked, with most of the original gilt-lettered spine laid on.

AN AUTHORITATIVE account of the history of the Royal Institution, from its founding by Count Rumford in 1799 to the time of Faraday. Scarce. Not in Cushing, D.S.B., Duveen, Edelstein, Ferguson Coll., Partington, Poggendorff, Smith, Waller, etc. (Bolton, *First Supplement*, 32; Ferchl, 261; Osler, 6100)

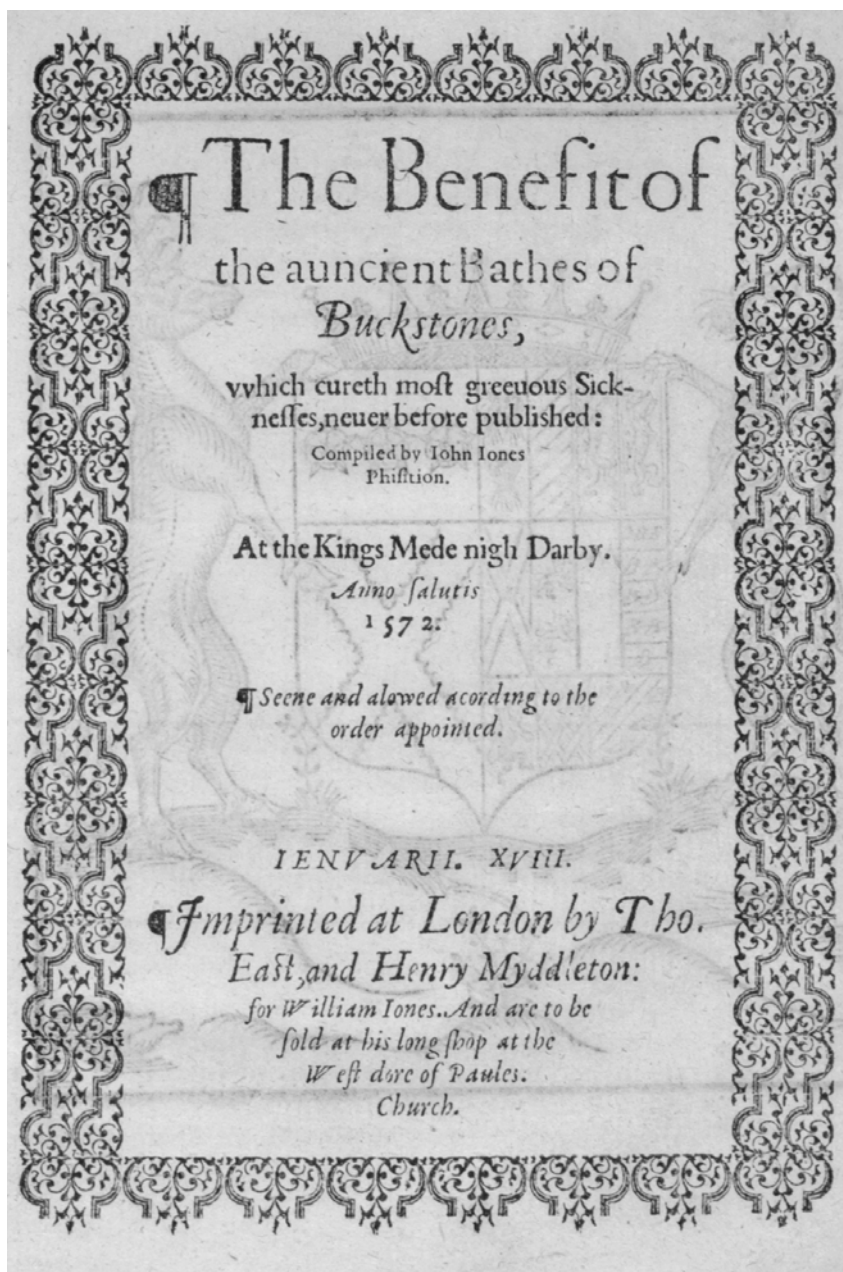
JONES, John

The Benefit of the auncient Bathes of Buckstones, which cureth most greevous Sicknesses, never before published: compiled by John Jones Phisition. At the Kings Mede nigh Darby. Anno salutis 1572. Seene and allowed according to the order appointed. Jenuarii. XVIII.

Imprinted at London by Tho. East, and Henry Myddleton: for William Jones. And are to be sold at his long shop at the West dore of Paules Church. (1572).

First edition. 4to. 8 leaves, 20 numbered folios, 4 leaves. Title page with ornamental woodcut border, full-page woodcut coat of arms on verso of title, and woodcut initials. Printed mostly in black letter. Very good copy in full vellum antique, spine gilt-lettered.

JONES (fl. 1562–1579), a physician, between 1572 and 1574 published *A briefe, excellent, and profitable discourse, of the naturall beginning of all growing and living things, etc.* in four parts, each of which appeared separately with different names in the imprints. The present work on the mineral waters of Buxton is of chemical interest, as it discusses their alum, sulphur, bitumen, iron, and copper content and compares them with the waters of Bath. Jones cites numerous chemical authors, including Georg Agricola, Fallopio, and Arnoldus de Villanova. He studied at Oxford and Cambridge, practiced at Bath and Buxton, and published medical works. His biography is in the D.N.B. John Floyer (1649–1734) reprinted an extract of this work in *An Enquiry into the right Use and Abuses of the hot, cold, and temperate Baths in England* (London, 1697), on which see Osler, 2613. Not in the usual early chemical bibliographies. Rare. (Durling, 2609; New S.T.C., 14724a.7 [only two copies outside Great Britain]; Waring, 786 [misdated "1752" for 1572]; Watt, II, 553b; Wellcome, I, 3476)



Jones, John. Benefit of the auncient Bathes of Buckstones. London, 1572.

JONES, Thomas P.

Conversations on Natural Philosophy, in which the Elements of that Science are familiarly explained. . . . By the Author of Conversations on Chemistry, &c. . . . By Dr. Thomas P. Jones . . .

Philadelphia: Published and Sold by Grigg and Elliot, No. 9 North Fourth Street. 1836.

Second edition. 8vo. 215, (1) pp. With 23 line-engraved plates (unsigned), each containing several figures. Very good copy in original speckled calf, spine gilt-ruled, brown morocco label.

JONES (1773 or 1774–1848) emigrated from England to the United States (ca. 1809), eventually becoming professor of natural philosophy and mechanics at the Franklin Institute, Philadelphia. Later he was superintendent of the U.S. Patent Office. He published two well-received textbooks: *Conversations on Natural Philosophy* (first: Philadelphia, 1826) and *New Conversations on Chemistry* (Philadelphia, 1831). Both were based on Mrs. Jane Marcet's deservedly famous works, in which "Mrs. B." (Marcet) instructs her two young pupils, "Caroline" and "Emily." Jones knew much more about physics than did Marcet and has made numerous corrections and additions. A useful glossary of terms completes the work. For a biography of Jones, see W. D. Miles, *American Chemists and Chemical Engineers* (1976, pp. 254–255). This edition not located in the usual bibliographies.

JONES, William

Physiological Disquisitions; or, Discourses on the Natural Philosophy of the Elements. I. On Matter. II. On Motion. III. On the Elements. IV. On Fire. V. On Air. VI. On Sound and Music. VII. On Fossil Bodies. VIII. On Physical Geography; or, the Natural History of the Earth. IX. On the Weather. By William Jones, F.R.S. Rector of Paston, in Northamptonshire; and Author of An Essay on the First Principles of Natural Philosophy.

London: J. Rivington, G. Robinson, D. Prince, Mess. Merrils, W. Keymer, Mrs. Drummond, and W. Watson. 1781.

First edition. 4to. 5 leaves, xxvii, 627 pp. With 9 engraved plates (2 folding). Very good copy, with wide margins, bound in contemporary speckled calf, strongly rebacked, spine gilt-lettered. From the library of Aylmer Bourke Lambert (1761–1842), celebrated botanist, F.R.S. (1791), on whom see the D.N.B., with his signature in ink on the front pastedown endpaper.

AN INTERESTING work on a variety of scientific subjects, by William Jones (1726–1800), vicar of Nayland, Suffolk, 1777. He was one of the most eminent links between the

Churchmanship of the Non-Jurors and that of the Catholic Revival. Educated at Charterhouse and University College, Oxford, he was greatly interested in the discoveries in science then being made and defended the right of the ordinary man to think as freely in matters of science as that exercised by the man of science to do so in matters of religion. His biography appears in the D.N.B.

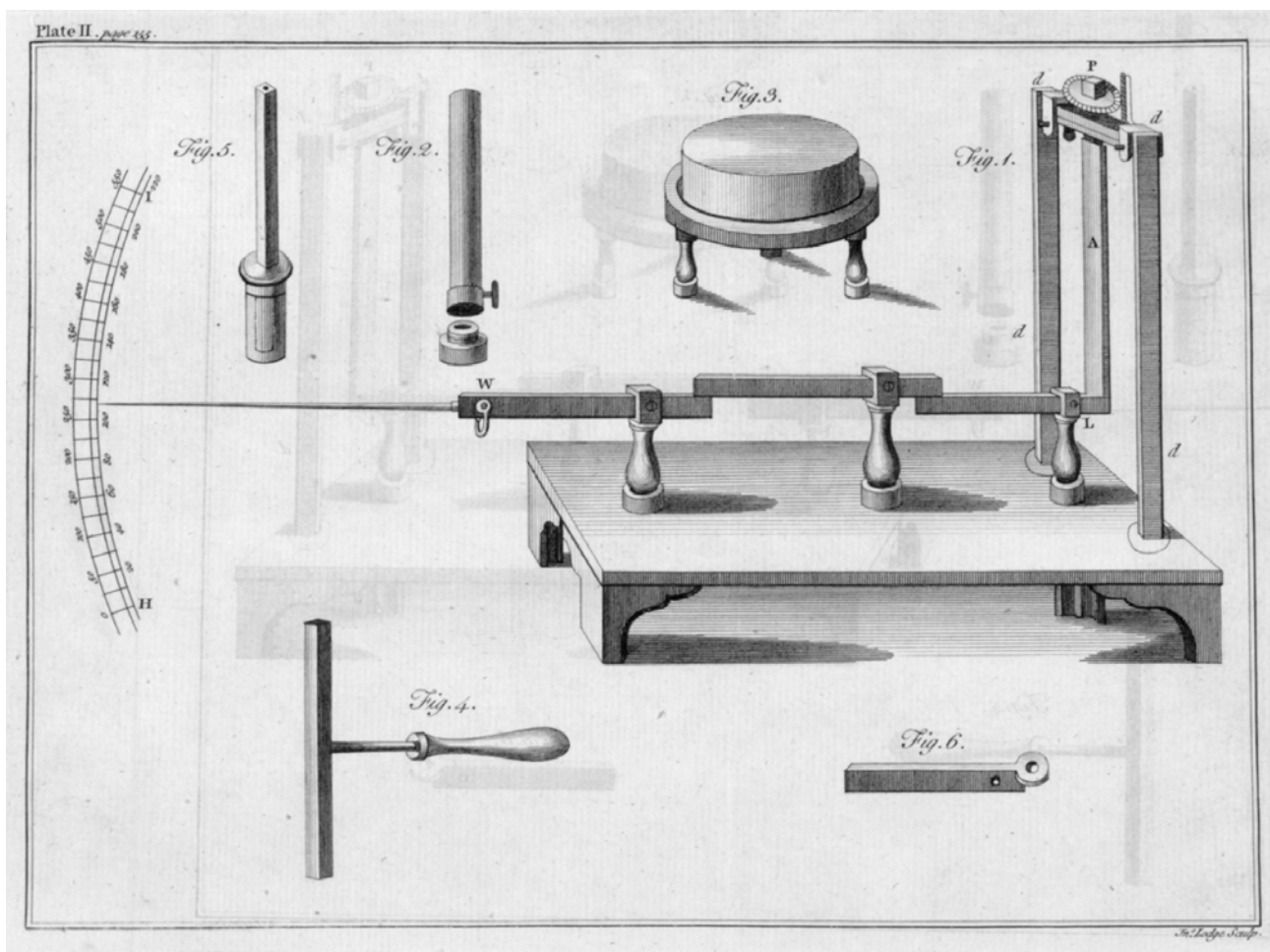
The present work is an expanded version of his earlier *Essay on the First Principles of Natural Philosophy* (Oxford, 1762). The discourses on the elements, fire, nature and properties of air, and fossil bodies are of chemical interest. Jones discusses the nature of acids, alkalies, salts, spirits, metals, phlogiston, the *tria prima*, calcination, etc., with references to Hales, Boerhaave, Crawford, Amontons, Papin, Becher, Stahl, Shaw, et al. The discourse on air covers chemically prepared gases, with references to the work of Van Helmont, Boyle, Lavoisier, Priestley, Ingenhousz, et al. There are several references to electricity. Rare. (Watt, II, 555f; Wheeler Gift Catalogue, 500)

JONSON, Benjamin

The Alchemist. A Comoedie. Acted in the yeere 1610. By the Kings Maiesties Seruants. The Author B. I. . . .
London: Printed by William Stansby. 1616.

First collected edition. Folio (in 6s). Signatures Eee1–Kkk3 (i.e., pp. 601–678). Fine copy, in half calf antique, marbled boards, dark-brown, gilt-lettered morocco label.

THE FIRST authoritative text of this famous play in which the processes and deceits of the alchemists are lampooned, extracted from the very rare first collected edition of Jonson's *Workes* (London: W. Stansby, 1616; S.T.C., 14751). The great dramatist and poet Ben Jonson (1573?–1637) attended the press while the first collection was being printed and introduced many changes and corrections to the text of the first edition, which had appeared four years earlier (London: Thomas Snodham, 1612; S.T.C., 14755). The title page of that edition is reproduced by John Read (*The Alchemist in Life, Literature and Art*, London, 1947, plate 10). The play is fully discussed by Read (pp. 39–47). Jonson was friends with many of the great men of the time, including Francis Bacon, Kenelm Digby, John Donne, and William Shakespeare (see D.N.B.). (Keynes, *Bibliotheca Bibliographici*, 2903; Watt, II, 549a)



Jones, William. *Physiological Disquisitions*. London, 1781.

JONSTON, John

An History of the Wonderful Things of Nature: set forth in ten severall classes. Wherein are contained I. The Wonders of the Heavens. II. Of the Elements. III. Of Meteors. IV. Of Minerals. V. Of Plants. VI. Of Birds. VII. Of Four-footed Beasts. VIII. Of Insects, and things wanting blood. IX. Of Fishes. X. Of Man. Written by Johannes Jonstonus. And now rendred into English by a Person of Quality.

London: Printed by John Streater, living in Well-Yard near the Hospitall of St. Bartholomew's the Lesse, and are to be sold by the BookSellers of London. 1657.

First edition in English. Folio (in 4s). 8 leaves, 354 pp., 1 leaf (advertisements, verso blank). Title in red and black. Title leaf backed; otherwise a very good, crisp copy, in mid-eighteenth-century tree calf, spine gilt, with maroon label.

THE ENGLISH translation, by John Rowland, of the *Thaumatographia Naturalis* (Amsterdam, 1632). Ferguson

(*Books of Secrets*, I, part 6, pp. 12–14) describes Jonston as “a student of natural history and an author of marked importance” and adds that this English translation is “of considerable rarity” (he was speaking in 1888). The book is now extremely rare, and Ferguson refers to this edition as “a notable work” (*Secrets*, II, 3rd supplement, p. 45). Although many topics of interest in natural history are discussed, the book is of considerable chemical importance. Metals, minerals, stones, chemical phenomena, etc., are described, as are salts, glassmaking, semiprecious and precious gems, and alchemical concepts. Despite its obvious chemical interest and importance, neither Jonston nor this work are mentioned by Bolton, Duveen, Edelstein, Ferchl, Ferguson, Partington, Smith, Waller, Watt, etc. (Eales, 407; Neu, 2088; Thorndike, VII, 310; Thornton & Tully, 138; Wellcome, III, 366; Wing, J1017)

JONSTON, John

Naturae Constantia: seu diatribe in qua, per posteriorum temporum cum prioribus collationem, mundum, nec ratione sui totius, nec ratione partium, universaliter & perpetuo in pejus ruere, ostenditur.

Amsterdam: Apud Guiljelmum Blaeu. 1632.

First edition. Sm. 8vo. 3 leaves, 164 pp. Signatures L1–L2 (pp. 161–164) wrongly numbered 179–182. Fine copy in contemporary speckled calf, spine richly gilt, maroon morocco label.

JONSTON (1603–1675), born in Sambter, a small Polish town, was originally of Scottish origin. After spending most of his life traveling throughout Europe, he settled at his country seat in Silesia. Interested in medicine and natural sciences, he graduated from the universities of St. Andrews, Cambridge, and Leiden. This, the author's first work, deals with the structure of the world and its continents, oceans, minerals, metals, plants, and animals. Pages 36–38 cover metals, with references to Cardan, Caesalpinus, Fallopio, Sennert, et al. A remarkable amount of information is included in this tiny volume, which was translated into English as *An History of the Constancy of Nature* (London, 1657). A very rare book, which was unknown to Caillet, Ferchl, Poggendorff, Thornton & Tully, and Thorndike, and which is not in Neu, Osler, Waller, Wellcome, etc. Even Crellin (Jonston's biographer in the D.S.B.) gives the wrong date of publication (1652 for 1632). (D.S.B., VII, 164; Watt, II, 551d)

JONSTON, John

Naturae Constantia: seu diatribe, in qua, per posteriorum temporum cum prioribus collationem, mundum, nec ratione sui totius, nec ratione partium, universaliter & perpetuo in pejus ruere, ostenditur.

Amsterdam: Apud Joannem Janssonium. 1634.

Second edition. 12mo. 132 pp. Fine copy in original overlapping vellum. From the library of John Hay (1626–1697), Marquis of Tweeddale, with engraved armorial bookplate on front endpaper. Bound with: J. Jonston, *Thaumatographia naturalis* (Amsterdam, 1633).

THE FIRST Jansson edition, being a reprint of the first edition (G. Blaeu, 1632). An extremely rare edition, to which no reference has been found in the usual bibliographies.

JONSTON, John

Thaumatographia Naturalis, in decem classis distincta, in quibus admiranda I coeli II elementorum III meteororum IV fossilium V plantarum VI avium VII quadrupedum VIII exanguium IX piscium X hominis.

Amsterdam: Apud Guiljelmum Blaeu. 1632.

First edition. 12mo. 6 leaves, 501 pp., 1 leaf. Fine copy in the original overlapping vellum. With seventeenth-century ownership signature in ink on verso of second flyleaf: "James Morray empt: Leyde 25 ffbris (?) 1662."

THE FIRST extensive work by Jonston in which he discusses the wonders of nature in ten categories, as listed in the title. It is an important book in the history of medicine and many of the sciences, including chemistry, physics, and metallurgy. Ferguson (*Books of Secrets*, I, part 6, pp. 12–14; 3rd supplement, pp. 45–46) discusses this work in detail and calls Jonston "an author of marked importance." The first edition is very rare, and Ferguson (3rd supplement) says that he had "not seen it." He describes the second edition of 1633 only. Other editions were published at Amsterdam in 1661 and 1665, and an English translation appeared in 1657. Apparently unknown to J. K. Crellin, Jonston's biographer in the D.S.B. Not in Caillet, Cushing, Duveen, Edelstein, Ferguson, Ferguson Coll., Osler, Partington, Smith, Waller, etc. (Ferchl, 261; Neu, 2087; Poggendorff, I, 1202; Thornton & Tully, 138; Watt, II, 551d; Wellcome, I, 3477)

JONSTON, John

Thaumatographia Naturalis, in classes decem divisa: in quibus admiranda coeli, elementorum, meteororum, fossilium, plantarum, avium, quadrupedum, exanguium, piscium, hominis. Editio secunda priore auctior.

Amsterdam: Apud Joannem Janssonium. 1633.

Second edition. 12mo. 3 leaves, 578 pp., 1 leaf. Fine copy in original overlapping vellum. From the library of John Hay (1626–1697), Marquis of Tweeddale, with engraved armorial bookplate on front endpaper. Bound with: J. Jonston, *Naturae constantia* (Amsterdam, 1634).

THE FIRST Jansson edition, being a close reprint of the first edition (G. Blaeu, 1632). Not in the usual early chemical bibliographies. Rare. (Ferguson, *Books of Secrets*, II, 3rd supplement, 45–46; Thorndike, VII, 310; Thornton & Tully, 138; Watt, II, 551d; Wellcome, I, 3478)

JORDAN, Johann Ludwig

Disquisitio Chemica Evictorum Regni Animalis ac Vegetabilis Elementorum. In Certamine Literario Civium Academiae Georgiae Augustae Die IV. Iunii MDCCXCIX. . . . Göttingen: Typis Christian. Dieterich. (1799).

First edition. 4to. iv, 88 pp. Fine, large paper copy, in original unlettered blue boards.

A PHYSICIAN AT Clausthal and later warden of the mint and lecturer on chemistry in the mining school there, Jordan (1771–1853) published papers on chemistry, mineralogy, and metallurgy in Crell's, Scherer's, and Schweigger's journals. He was awarded a prize by the University of Göttingen for the present work, in which are described his analyses of the component parts of animals and plants. There are many references to the researches of contemporary chemists and biologists (e.g., Crell, Fourcroy, Lavoisier, Macquer, Senebier, Spallanzani, and Vauquelin). The preparations of many compounds are described (e.g., acids: sulphuric, hydrochloric, nitric, acetic, tartaric; and salts: sodium and potassium carbonates). Not in the usual bibliographies. (Ferchl, 261; Ferguson, I, 439–440; Poggendorff, I, 1202)

JORDEN, Edward

A Discourse of Naturall Bathes, and Minerall Waters. Wherein first the originall of Fountaines in generall is declared. Then the nature and differences of Minerals, with examples of particular Bathes from most of them. Next the generation of Minerals in the earth, from whence both the actuall beate of Bathes, and their vertues are proved to proceede. Also by what meanes Minerall Waters are to be examined and discovered. And lastly, of the nature and uses of Bathes, but especially of our Bathes at Bathe in Sommersetshire. . . .

London: Printed by Thomas Harper. 1631.

First edition. 4to. 4 leaves, 92 pp. Faint signature of Thomas Smith, M.D., Oxford (seventeenth-century physician) on title, and some neat underlining of text, with occasional early marginal annotations; otherwise very good copy, in quarter calf antique, marbled boards, spine gilt-lettered and dated.

JORDEN (1569–1632) was educated at Oxford, became M.D. (Padua, ca. 1591) and fellow (1597) of the Royal College of Physicians, first practiced in London, but then moved to Bath, where he died and is buried in Bath Abbey. He possessed considerable knowledge of chemistry, and this work is almost entirely chemical in content, with numerous descriptions of experiments for analyzing the waters to determine their composition. There are many references to Agricola, Bacci, Fallopius, Libavius, et al. Jordan gives an excellent account of contemporary chemistry and analyti-

cal techniques. "In his method for the analysis of mineral waters, Jordan shows himself to have been one of the outstanding analytical chemists of the early seventeenth century" (A. G. Debus, in *Toward a History of Geology*, 1969). Augmented editions appeared in 1632, 1633, 1669, and 1673. (Ferchl, 261; Ferguson Coll., 358; Munk, I, 114; Partington, II, 528, 607; Poggendorff, I, 1202; S.T.C., 14791; Watt, II, 556e; Wellcome, I, 3484)

JORDEN, Edward

A Discourse of Naturall Bathes, and Minerall Waters. Wherein first the originall of Fountaines in generall, is declared. Then the nature and differences of Minerals, with examples of particular Bathes from most of them. Next the generation of Minerals in the earth, from whence both the actuall heat of Bathes, and their vertues are proved to proceed. Also by what meanes Minerall Waters are to be examined and discovered. And lastly, of the nature and uses of Bathes, but especially of our Bathes at Bathe in Sommersetshire. The second Edition in many points enlarged. By Ed. Iorden, D. in Physick.

London: Printed by Thomas Harper. 1632.

Second edition. 4to. 4 leaves, 142 pp. Very good copy in blind-stamped paneled calf antique, maroon morocco label.

THE FINAL edition from the author's pen, which appeared after he died in January 1632. The first edition (London, 1631) of ninety-two pages has been revised and greatly enlarged by over 50 percent. The dedication to Lord Cottington, chancellor of the Exchequer, ends with the statement: "And to mee it will bee no small encouragement to devote my selfe and my best endeavours to your service. So I humbly take my leave this 23 Aprilis, 1632." It is probable that this is a misprint, as the identically worded dedication in the 1631 edition is dated 23 Aprilis, 1631. Debus has discussed the chemistry in this work in detail. Very rare. Not in Duveen, Ferguson Coll., Partington, Waring, Wellcome, etc. (Blocker, 215; A.G. Debus, *Chymia*, vol. 8 [1962], 53–56; Krivatsy, 6276; Parkinson & Lumb, 1354A; S.T.C., 14792; Ward & Carozzi, 1223; Watt, II, 555e)

JOSSE, François

De la Chaleur Animale, et de ses divers rapports, d'après une explication nouvelle des phénomènes calorifiques, avec l'examen de l'opinion de différens Auteurs modernes sur le même sujet; par F. Josse, de Rennes.

Paris: Chez Gabon, . . . Barrois, jeune, . . . Moutardier, . . . L'Auteur, . . . An IX—1801.

First edition. 8vo. 8 leaves, xiv, (1), 16–352 pp. (p. 16 as "2" and p. 77 as "7"). With 1 unsigned copperplate. Very good copy,

unpressed and uncut, in half calf antique, marbled boards, maroon morocco label, spine dated, original brown wrappers bound in. From the library of Denis I. Duveen, with penciled note.

AN INTERESTING and little-known work on respiration, animal heat, and combustion, published by Josse (1777–1837) as an attempt to supplement Lavoisier's theory of the formation of *fluides élastiques*. Chapters 2, 3, and 4 comprise extracts, with some added footnotes, from Lavoisier's *Traité élémentaire de chimie* (Paris, 1789). Other authors extensively quoted include J. F. Blumenbach, M. J. Brisson, A. F. Fourcroy, and E. Goodwyn. To this copy Denis Duveen has added a comment on the front pastedown endpaper: "Note the references to Lavoisier in the Avant-Propos. Pages 23–68 are long quotations from L's works and should form a new D & K quote." A brief analysis of this book is given by C. H. Wilkinson (*Elements of Galvanism, in Theory and Practice*, London, 1804, vol. I, pp. 172–174). (Cole, 697; Duveen, *Supplement to a Bibliography of the Works of Lavoisier*, 1965, p. 113; Mendelsohn, *Heat and Life*, Cambridge, 1964, p. 199)

JOSSIUS, Nicander

Tractatus Novus, utilis & jucundus, de voluptate et dolore, de risu et fletu, somno et vigilia, deque fame & siti, . . . Cui accesserunt Antonii Laurentii Politiani, de risu, ejusque causis et effectis, dilucide ac philosophice tractatis, libri duo. . . Frankfurt: Typis Wolffgangi Richteri, sumptibus Joannis Theobaldi Schönwetteri. 1603.

First Frankfurt edition. 8vo. 446 pp., 1 leaf (blank). Ornamental woodcut initials. Some leaves slightly embrowned (characteristic of period); otherwise crisp copy in contemporary vellum. Bound with: Bacci, Andrea, *De gemmis et lapidibus pretiosis* (Frankfurt, 1603).

A COLLECTION OF essays by Jossius (Nicandro Jossio, fl. 1580), a philosopher from Venafro near Naples, dealing with questions of psychology: pleasure and pain, laughing and weeping, sleep and vigil, hunger and thirst. The first edition appeared in quarto format (Rome, 1580: see Durling, 2615; Waller, 5200; Wellcome, I, 3495). Of chemical and pharmacological interest are discussions of painkilling and sleep-inducing drugs from plants. The present Frankfurt edition, edited by Schönwetter, is the first to contain the second part (pp. 301–446, with separate divisional title page), by Antonio Laurentino, on the cause and effect of laughter. A very rare book, unknown to the usual bibliographers. (Manget, *Bibliotheca Scriptorum Medicorum*, 1731, II, pt. 1, p. 31)

JOURNAL DE LA SOCIÉTÉ DES PHARMACIENS DE PARIS

Nos. xxx (le Année) No. 1.—IIIe Année No. VII. Paris: Chez Quillau. 1797–1799.

First edition. 4to. 499, (1) pp. Fine copy in contemporary quarter calf, marbled boards.

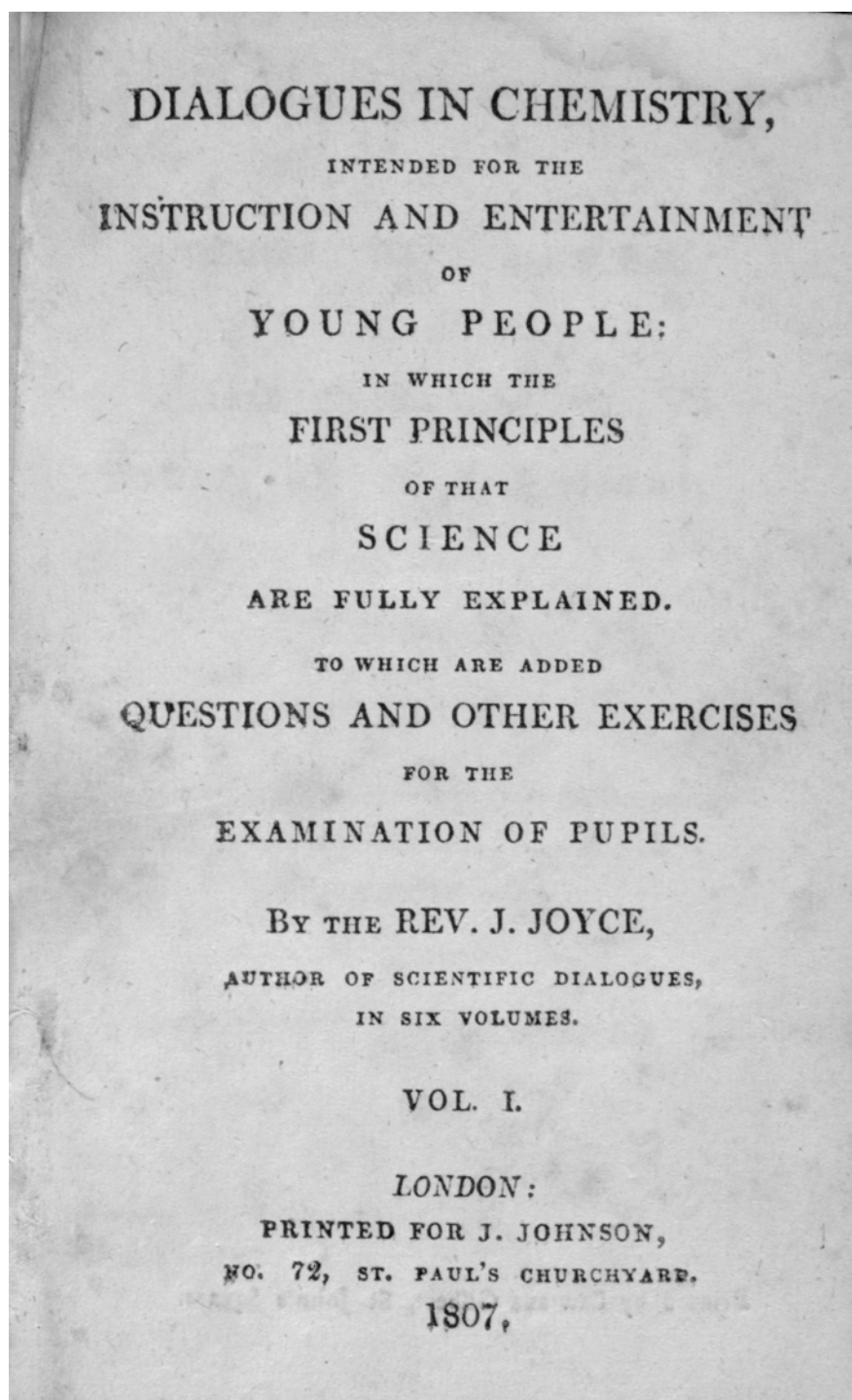
ALL PUBLISHED of this important journal, which was subsequently incorporated into the *Annales de Chimie*. It is the first French journal of pharmacy. Fourcroy was editor in chief, with Vauquelin, Parmentier, and others as assistant editors. Fourcroy and Vauquelin were the most prolific contributors. Others included Guyton-Morveau, Parmentier, Coulomb, Chaptal, and Humboldt. "On 2 October 1796 the Société des Pharmaciens elected Berthollet, Guyton, Fourcroy and other eminent scientists as *associés libres*. Fourcroy was formally admitted on 5 January 1797, and gave an eloquent . . . address on the relation between pharmacy and chemistry. He believed that chemistry had originated in the pharmaceutical laboratory, and indicated some of the valuable chemical discoveries made by pharmacists such as Rouelle and Scheele. . . . Fourcroy maintained that in the course of his work the pharmacist could obtain results of value to chemistry. These results should be published. . . . Later in the year (1797) the Society founded the *Journal de la Société des Pharmaciens de Paris*, . . . The first number appeared on 3 June 1797, and publication of this useful journal continued, at first fortnightly and later monthly, until 6 December 1799. It was then amalgamated with *Annales de Chimie*, which had ceased publication in 1793 and resumed in 1797" (Smeaton, who lists copies at the Bibliothèque Nationale, Royal Society of Medicine [London], and Royal College of Surgeons [London]). Rare. Not in Bolton, Duveen, Edelstein, Ferchl, Neu, Smith, Waller, etc. (Blake, 237; Smeaton, *Fourcroy Chemist and Revolutionary*, Cambridge, 1962, No. 114)

JOYCE, Jeremiah

Dialogues in Chemistry, intended for the Instruction and Entertainment of Young People: in which the First Principles of that Science are fully explained. To which are added questions and other exercises for the examination of pupils. . . London: Printed for J. Johnson. 1807.

First edition. 2 vols., 12mo. I: 6 leaves, 288 pp. II: 2 leaves, 297 pp., 11 leaves. With 6 engraved plates of chemical apparatus (S. Porter sculp.). Fine, crisp set, in original green quarter morocco, marbled boards, original printed paper labels on spines.

AN INTRODUCTORY textbook obviously inspired by Jane Marcet's *Conversations on Chemistry*. Like Marcet's first



Joyce. Dialogues in Chemistry. London, 1807.

edition (London, 1806), the first edition of Joyce's work is very rare, most copies having been literally "read to pieces." Dedicated to Humphrey [*sic*] Davy, the book was extremely popular, and a fourth edition appeared in 1822. In the "advertisement," the author recommends that the reader study this book before "attending Mr. Davy's Analytical Course" of chemistry at the Royal Institution. The text, in dialogue form between the tutor (Joyce) and two students (Charles and James), is based on the works of Henry and Thomson. Author of several educational books, Joyce (1763–1816), a minister, and for many years secretary to the Unitarian Society, was tutor to Lord Stanhope's sons at Chevening. It was during this period that he was incarcerated in the Tower of London with Horne Tooke on a charge of high treason. After twenty-three weeks without trial he was released in 1794 on the acquittal of Hardy and Horne Tooke (see D.N.B.). Unknown to the usual bibliographers. (Bolton, 563; Watt, II, 557u)

JOYCE, Jeremiah

Dialogues in Chemistry, intended for the Instruction and Entertainment of Young People: in which the first Principles of that Science are fully explained. To which are added questions and other exercises for the examination of pupils. . . . A new edition corrected, with additions. . . .
London: Printed for J. Johnson, No. 72, St. Paul's Church-Yard. 1809.

Second edition. 2 vols., 12mo. I: 7 leaves, 288 pp. II: 2 leaves, 300 pp., 12 leaves. With 8 engraved plates (S. Porter sculp.). Fine copy in original half calf, spine rebacked in gilt-ruled calf antique.

CONTAINING THE same plates and essentially the same text as the first edition (London, 1807), to this edition Joyce added a two-page preface, updated notes, and corrected misprints. The dedication to "Humphrey" Davy (in the 1807 edition) has been changed to "Humphry." Although there is a copy in the British Library, this edition is not in the usual bibliographies.

JOYCE, Jeremiah

Dialogues in Chemistry, intended for the Instruction and Entertainment of Young People: in which the First Principles of that Science are fully explained. . . . Corrected and very much enlarged; with an account of all the late discoveries.
London: Printed for Baldwin, Cradock, and Joy; and R. Hunter, successor to J. Johnson. 1816.

Third edition. 2 vols., 12mo. I: xiv, 360 pp. II: iv, 342 pp. With 8 engraved plates of chemical apparatus (S. Porter sculp.). Fine, crisp set, in original green quarter morocco, marbled boards, original printed paper labels on spines.

ENLARGED AND updated edition, containing "a summary view of all the New Discoveries, which have been made since the . . . first publication" (advertisement, dated 1 January 1816). The author discusses the recent discoveries of Davy (isolation of sodium and potassium), Dalton (atomic theory), et al. Smith (p. 258) lists only volume 2 of the New York (1818) edition, "from the third London edition" (i.e., present edition). Very rare. Not in the usual bibliographies.

JOYCE, Jeremiah

Dialogues on the Microscope, intended for the Instruction and Entertainment of Young Persons, desirous of investigating the wonders of the minuter parts of creation: containing an account of the principles of vision; and of the construction and management of the most improved and generally useful microscopes; with their application to the discoveries made by them in the different kingdoms of the natural world. . . .
London: Printed for J. Johnson and Co. 1812.

First edition. 2 vols., 12mo. I: xii, 232 pp. II: vi, 235, (1) pp., 8 leaves. With 10 engraved plates (S. Porter sculp.). Very good set, in original green quarter sheep (worn), marbled boards, remains of original printed paper labels on spines. From the Whipple Collection, with book label on front pastedown endpaper of each volume. The first free endpapers are inscribed in pencil: "E. W. Benson. The gift of Lady Mansfield." Edward White Benson (1829–1896), archbishop of Canterbury, is listed in the D.N.B.

AN INTRODUCTORY work on the microscope, in the form of a dialogue between a father and his two sons, Charles and James. Of some chemical and biochemical interest, including discussions on the crystallization of ice and snow, various salts, bones, chyle, blood, luminescence of insects, metals, etc. The author admits his indebtedness to the works of Adams, Baker, Grew, Hill, Hooke, Leuwenhoeck, Shaw, Swammerdam, et al. Rare. (Roper, 51)

JOYCE, Jeremiah

Letters on Natural and Experimental Philosophy, Chemistry, Anatomy, Physiology, and other branches of science pertaining to the material world. Addressed to a youth settling in the metropolis. . . .
London: Printed for J. Johnson and Co. 1810.

First edition. Large 12mo. xvi, (ii), 431, (1) pp. With folding frontispiece and 18 plates (engraved by Cooper). Fine copy in contemporary polished calf, covers ruled in gilt, spine richly gilt.

DEDICATED TO Abraham Rees (1743–1825), editor of *The New Cyclopaedia*, the present work comprises forty-one "letters" covering mechanics, hydrostatics, pneumatics, acoustics, optics, astronomy, electricity, galvanism, magnetism,

chemistry, mineralogy, anatomy, physiology, and botany. Written for "My young Friend," these letters give an excellent survey of the topics covered. Very scarce. Not in Ekelöf, Knight, Mottelay, Wheeler Gift, etc. (Watt, II, 557u)

JUGEL, Johann Gottfried

Dicta Philosophica, oder General-Physik dieser sichtbaren Welt, von der Generation aller Dinge, aus der wahren Prima Materia, besonders aber der Geschöpfe im mineralischen Reich; der Creaturen Auf- und Untergang, wie such deren Verherrlichung daraus zu erkennen; den Grund zu den höchsten Geheimnissen der Natur zu erlangen; alle geheime Wirkungen offenherzig zu betrachten, dass dadurch der so lang verborgene Nutzen mit Augen zu sehen und zu begreifen. Nach einer sechs and zwanzig jährigen Untersuchung, aus lauter natürlichen Erfahrungen dargestellt, von Johann Gottfried Jugel, der geheimen Naturwissenschaftlichen Cultore.

Breslau: bey Johann Ernst Meyer. 1764.

First edition. 8vo. 316 pp., 1 leaf. Lacks blank leaf at the end. Very good copy, bound in modern crimson half morocco, patterned boards, with two crimson gilt-lettered labels.

A WORK ON the generation of metals, minerals, salts, etc., which compose the substance of the physical world. It is divided into 767 paragraphs, and although the author discusses physics, biology, and other sciences, the book is almost entirely chemical in content. Rare. Not in Bolton, Duveen, Ferguson Coll., Guaita, Hoover, Neu, Partington, Poggendorff, Rosenthal, Smith, Waller, Watt, Wellcome, etc. (Caillet, 5675; Ferchl, 262; Ferguson, I, 440–441)

JUGEL, Johann Gottfried

Höchstnützlichtes Berg- und Schmelztz-Buch. In Zwey Theile getheilet. In dem ersten Theil wird gehandelt von der wahren Natürlichen Erzeugung derer Mineralien und Metallen in denen Adern der Erden, samt ihren besondern Eigenschaften, auch wie dieselben zu erfinden seyn. In dem andern Theil wird gehandelt von dem schlechten Zustande des ietzigen Berg-Wesens . . . Nebst einem Anbange, daraus zu sehen, die Fürtreflichkeit derer in Schlesien befindlichen edlen und sehr reichen Gold- und Silber-haltigen Ertz-Gebürgen . . .

Berlin: Zu finden bey Johann Andreas Rüdiger. 1743.

First edition. 8vo. 189, (1) pp. With 5 folding copperplates depicting smelting operations and furnaces. Fine copy, uncut with wide fore- and lower margins, in contemporary boards, ink lettering on spine. Bound with: Jugel, J. G., *Vollkommener und grundlicher Bericht von Gold- und Silber-Drath-Ziehen . . .* (Lubeck, 1744). Bookplate: Dr. A. Wurm.

JUGEL (1707–1786), director of mining activities in Prussia, was highly esteemed for his knowledge of chemistry, min-

eralogy, mining, and ironmaking. A prolific author, he published at least thirty-six books on metallurgical chemistry, assaying, smelting, alchemy, and related subjects. The present work, divided into two parts, deals with the mining of metal ores and the techniques used for extracting and purifying metals. An appendix (pp. 163–189) covers the extraction of gold and silver from German ores, with historical details. Poggendorff and Ferchl state, erroneously, that this work is in two volumes, undoubtedly because it was published simultaneously with a companion volume, as here. (Ferchl, 262; Ferguson, I, 440; Poggendorff, I, 1208; Roller, 301)

JUGEL, Johann Gottfried

Das Redende Orakel, in seiner Natursprache, welches das Geheimniss der wirkenden Natur im mineralischen Reiche entdeckt, um dadurch zu nähern Erkenntnissen und Nutzen desselben zu gelangen; in dreyzehn Versuchen, aus überzeugenden Naturerfahrungen bewiesen, und in ein und dreyszig Grundsätzen, Beweisen, Erklärungen, Erfahrungen, Schlüssen und Anmerkungen der Welt zur fernern Prüfung dargestellt von Johann Gottfried Jugel. Leipzig: verlegt Johann Paul Krauss, Buchhändler in Wien. 1773.

First edition. 8vo. xvi, 432 pp. Few leaves embrowned; otherwise very good copy in quarter morocco antique, marbled boards, spine gilt-ruled and dated, maroon morocco label, with original plain wrappers bound in.

AFTER 1771 Jugel lived in Berlin and, owing to his knowledge of chemistry, he became a member of the Rosicrucian Society. The present work discusses the supposed composition of metals, as well as their physical and chemical properties. Despite their alchemical and occult interpretation by Jugel, his observations contain valid experimental information on the chemistry of minerals, metals, and assaying methods. (Caillet, 5680; Kopp, *Die Alchemie*, II, 255–256; Wellcome, III, 371)

JUGEL, Johann Gottfried

Sehr geheim gehaltene und nunmehr frey entdeckte experimentirte Kunst-Stücke die schönsten und raresten Farben zu verfertigen; ingleichen die Vergoldung und Versilberung, sowohl kalt, als im Feuer, auf Metall, Glas und Porcellain, den feinsten gelben und weissen Tombac, rare Compositionen der Edalgesteine, Glasuren, Holz- und Stein-Vergoldung zu machen . . . Den Chemicis, Mahlern, Goldschmieden, Lackirern, und andern Natur- und Kunst-Liebbabern zum Nutzen und Vergnügen herausgegeben. . . . Neueste und durchgängig verbesserte und vermehrte Auflage. Zittau und Leipzig: bey Johann David Schöps. 1789.

Third edition? 2 vols., 8vo. I: 5 leaves, 288 pp. II: 306 pp., 9 leaves (index). With a folding copperplate frontispiece in each volume. Very good copy, uncut with wide margins, in modern unlettered marbled boards.

THE FINAL and best edition of a book of secrets on the arts of gold and silver gilding, lacquering, varnishing, and the making of dyes and pigments for coloring all kinds of metals, glass, porcelain, wood, and other materials. Processes are described that can be carried out at ambient or elevated temperatures. The second volume contains a long appendix on the supposed generation of gold in the earth (pp. 125–306) and is alchemical in content. There are two prefaces in the first volume: one dated from Zittau, November 1752, and the other, May 1768. (Ferchl, 262; Ferguson, I, 441–442)

JUGEL, Johann Gottfried

Vollkommener und gründlicher Bericht von Gold- und Silber-Drath-Ziehen, Vergulden, Platten und Spinnen, wie auch von Schmelzung der Metalle allen Manufacturen, Silber-Treibern, Gold-Scheidern, Drath-Ziehern, Drath-Plattern, Gold- und Silber-Stückern und Pose-mentirern &c. zu einem Muster vorgestellt von Lejisugo. Mit Kupffern. Lubeck: bey Johann Benjamin 8 Rüdiger. 1744.

First edition. 8vo. 7 leaves, 248 pp. Fine copy, uncut with wide fore- and lower margins. Bound with: Jugel, J. G., *Höchstnützlich Berg- und Schmelz-Buch* (Berlin, 1743).

PUBLISHED UNDER the anagrammatical pseudonym “Lejisugo” (i.e., “Jugel” and “Iso”), this work describes technological processes for gold and silver plating, gilding, and wire- and threadmaking. Despite the statement on the title (“Mit Kupffern”), the book was issued without plates, and none were ever bound with this copy, which is complete and undisturbed in its original binding. (Ferchl, 262; Poggendorff, I, 1208)

JUNCKEN, Johann Helfrich

Chymia Experimentalis Curiosa, sive medicus praesenti seculo accommodandus per veram philosophiam spagiricam, rerum naturalium veris fundamentis exornandus, & faciliiori omnis generis morbos curandi methodo illustrandus continet medicaminum essentialia, fabricandi fundamina, . . . Quo virorum clarissimorum Helmontis, Sylvii, Tackenii, Volckameri, Ettmulleri, Ludovici Wedelii, . . . Editio postrrema cum indicibus & priori auctior.

Frankfurt: Apud Hermannum à Sande, typis Balt. Christophori Wustii, Jun. 1684.

Third edition? 8vo. 10 leaves, 840 pp., 2 leaves (index). Title in red and black. Date shaved at bottom of title page; otherwise good copy in unlettered, blind-ruled calf antique. From the

library of John Bostock (1773–1846), Liverpool physician and friend of John Dalton, with his signature in ink on recto of second flyleaf. Armorial bookplate: Buchan Hepburn (1739–1819), baronet of Smeaton Hepburn, agricultural writer (see D.N.B.).

JUNCKEN (Jungken, Junken, Jüngken, or Juengken, 1648–1726), M.D., Heidelberg (1671), was physician to various noblemen and *physicus ordinarius* at Frankfurt. The present work on experimental pharmaceutical chemistry (first: Frankfurt, 1681) contains numerous descriptions of experiments, formulations, and prescriptions. Further editions followed in 1682, 1694, 1701, and 1702. Four editions are listed by Partington (II, 303), but not this. Duveen lists the first issue (?) of 1683, with identical pagination. An interesting “association copy,” having belonged to Dr. John Bostock, who, in 1817, abandoned medicine for science, lectured at Guy’s Hospital, and became vice president of the Royal Society in 1832. The first edition (1681) is listed by Cushing, Edelstein, Ferguson (not in Young Coll.), Partington, Poggendorff, and Watt. (Duveen, 314; Ferchl, 262; Neu, 2103; Smith, 259; Wellcome, III, 370)

JUNCKEN, Johann Helfrich

Chymia Experimentalis. Sive, Naturalis Philosophia Mechanica: ubi prior pars Generosiorum Remediorum fabricam ex Triplici Regno . . . Pars altera eadem Medicamenta . . . Adjectis Monitis Medicis affectus Puerorum concernentibus. Nec non Experimentis Rerum Naturalium Principia . . . Editio prioribus longe auctior.

Frankfurt: Apud Johannem Maximilianum à Sande. 1701.

Sixth? edition, first issue. 4to. 4 leaves, 830 pp., 5 leaves. With beautiful allegorical frontispiece depicting chemical apparatus and human figures. Title page in red and black, with large woodcut ornament. Occasional wormholes in margins and text (not affecting legibility); otherwise very good copy, in original blind-ruled calf, maroon label.

THE CONSIDERABLY enlarged and most complete edition of this important iatrochemical work. “The book is to a large extent drawn from other authors. . . . It observes the division into animal kingdom, vegetables, minerals and metals; then adds another part on medicaments . . . to which [this] edition adds further sections on . . . experiments concerned with the principles of natural phenomena. . . . A distinct chapter on phosphorus first appears in this edition at pp. 103–108” (Thorndike). Juncken discusses the composition of metals, and especially that of lead, tin, gold, silver, and mercury. The second issue of 1702 is listed by Blake, Bolton, and Watt. The baroque frontispiece by Johann Stridbeck is one of the most artistic to appear in a work on chemistry. (Ferchl, 262; Ferguson, I, 444 [imperf.]; Partington, II, 303; Wellcome, III, 370)

JUNCKER, Johann Helfrich

Lexicon Chymico-Pharmaceuticum, in duas partes distinctum, ubi pars prior continet selectos processus chymicos potissimum hactenus magis usuales & originaliter à medicorum, non verò pharmacopolarum laboratoriiis prodeuntes, pars altera exhibet composita pharmaceutico-Galenica, tam hactenus usualia, quàm alia his subordinata, & correctiora dicta. Editio altera, novitatibus nonnullis auctior reddita, & quidem cum praefamine, de contractioribus pharmacopoliis, juxta modernae rei medicae statum, ritè instituendis, atque medicorum non tantum privatam medicamentorum chymicorum elaborationem, sed & dispensationem, à pharmacopoliis hinc inde acriter impugnatam, concernente, &c.

Nuremberg: Apud Johannem Fridericum Rüdigerum. 1716.

Third edition. 8vo. 24 leaves, 275, (1) pp., 6 leaves, 535, (1) pp., 20 leaves (last blank). Title in red and black, across 2 pages. Occasional minor browning (owing to quality of paper); otherwise fine copy in contemporary vellum, maroon morocco label.

AN EARLY and valuable dictionary of pharmaceutical chemistry in two parts, the first of which (pp. 1–275) describes the preparation of recognizable chemical compounds. The second part (**Q** pp. 1–535) comprises directions for the preparation of medicines made from natural products (plants and animals), minerals, and various chemicals described in the first part. Very popular with apothecaries and physicians, the first edition of 1693 was reissued in 1694, the second of 1698 was reissued in 1699, and the third of 1709 was reissued in 1716 (as here). This is the best edition, being the greatly enlarged and corrected version and the last to appear during the author's lifetime. Other editions followed in 1729, 1732, and 1738. All are rare, and Partington states: "I have not seen any of these." Other editions are listed by Bolton, Ferguson, Heym, Neu, Partington, Poggendorff, Watt, Wellcome, etc. (Ferchl, 262; Manget, *Bibliotheca Scriptorum Medicorum*, 1731, II, part 1, p. xxxv; Smith, 259)

JUNCKER, Johann

Conspectus Chemiae Theoretico-Practicae in Forma Tabularum Repraesentatus, in quibus physica, praesertim subterranea, et corporum naturalium principia, habitus inter se, proprietates, vires et usus itemque praecipua chemiae pharmaceuticae et mechanicae fundamenta e dogmatibus Becheri et Stahliani potissimum explicantur, eorundemque et aliorum celeberrimorum chemicorum experimentis stabiluntur . . .
Halle: Impensis Orphanotrophi. 1730.

First edition. 2 vols., 4to. I: 6 leaves, 546 pp. II: pp. 547–1086, 21 leaves (index). With engraved frontispiece portrait of

Juncker. Title page in red and black, with small engraved vignette. Woodcut capitals, head- and tailpieces, and chemical symbols (pp. 48–51). Fine copy in original speckled calf, spines richly gilt, double maroon morocco labels.

ONE OF the most important textbooks of the pre-Lavoisier period, in which Juncker (1679–1759) presents a systematic account of the doctrine of phlogiston of his teacher, Georg Ernst Stahl. "By effecting a clarification in Stahlian theory and methodology, Juncker played a significant part in the development of his mentor's ideas as a major force for reform in eighteenth century chemistry. His concern with the broader implications of Stahl's work, transcending other, more narrow approaches that focused on phlogiston, prefigured the orientation of important groups of chemists in Germany and France at mid-century" (D.S.B.). This volume contains a short history of chemistry and describes chemical symbols, instruments, operations, analysis, and metals. Juncker emphasized the importance of accurate experimental data, and, to account for the increase in weight of metals when they are calcined, he suggested that phlogiston had "levity or negative weight" (Harvey). Later, Juncker published a sequel volume (Halle, 1738) covering combustibles, acids, salts, fermentation, and putrefaction. (Blake, 238; Bolton, 565; Cole, 700; D.S.B., VII, 188; Duveen, *Supplement*, 190; Ferchl, 263; Ferguson, I, 444 [not in Young Coll.]; Harvey, 186; Partington, II, 688; Poggendorff, I, 1210; Watt, I, 559f)

JUNCKER, Johann

Conspectus Chemiae Theoretico-Practicae in forma Tabularum repraesentatus, in quibus physica, praesertim subterranea, & corporum naturalium principia, habitus inter se, proprietates, vires & usus, itemque praecipua chemiae pharmaceuticae, & mechanicae fundamenta è dogmatibus Becheri, & Stahliani potissimum explicantur, eorundemque & aliorum celeberrimorum chemicorum experimentis stabiluntur. . . .
Editio Veneta anterioribus correctior, cum indice satis locupletato. . . .

Venice: Ex Typographia Balleoniana. 1744.

First edition printed in Italy. 2 vols., 4to., in 1. I: viii, 628 pp. II: viii, 352 pp. Text in double columns. Woodcut on each title page, woodcut head- and tailpieces. Fine, crisp copy in contemporary vellum.

EXTREMELY RARE Italian edition of one of the most important chemical textbooks of the pre-Lavoisier period, in which Juncker gives a systematic account of the doctrines of his teacher, G. E. Stahl. Although absolutely complete in itself, this forms volumes 7 and 8 of an otherwise unknown Italian edition of Juncker's collected works, in which

the errors in the first edition (Halle, 1730–38) have been corrected. “By effecting a clarification in Stahlian theory and methodology, Juncker played a significant part in the development of his mentor’s ideas as a major force for reform in eighteenth century chemistry. His concern with the broader implications of Stahl’s work, transcending other, more narrow approaches that focused on phlogiston, prefigured the orientation of important groups of chemists in Germany and France at mid-century” (D.S.B.). An “excellent text-book of chemistry, which is almost a primary source for the phlogiston theory” (Partington [II, 688], who analyzes the contents). A translation appeared in French by Demachy (Paris, 1757, 6 vols., 12mo.) and in German by J.J. Lange (Halle, 1749–50–53, 3 vols., 4to.). The present Venice edition has remained unknown to the usual bibliographers.

JUNCKER, Johann

Conspectus Formularum Medicarum, exhibens tabulis XVI. Tam Methodum Rationalem, quam remediorum Specimina, ex praxi Stabliana potissimum desumta, et theriapiæ generali accommodata. . . .

Venice: Apud Jo. Gabrielem Hertz. 1741.

Second Venice edition. 8vo. viii, 214 pp. Fine, crisp copy, in modern blue boards. Bound with: Stahl, G. E., *Fundaments chymico-pharmaceutica generalia* (Venice, 1741).

A PUPIL AND staunch proponent of Stahl’s chemical and medical doctrines, Juncker (1679–1759) published a large number of dissertations and medical books (all with the general title “Conspectus”). The present work (first: Halle, 1723; Ferguson, I, 443) comprises a series of pharmaceutical chemical preparations in tabular form (sixteen tables). The first Venice edition (1727) and a later (third?) Venice edition (1776) are listed by Blake (p. 238), but not the present edition. Unrecorded by the usual bibliographers. (Wellcome, III, 372)

JUNG, Nicolaus

Exercitatio physica, responsoria ad introductum nuper, atque defensum, in Academia Francofurtana, dogma Placentinum: calorem & motum membrorum naturalem in humano corpore, adeoque vitam, non procedere ab anima rationali, sed a materia coelesti subtilissima, analoga elemento solis & stellarum fixarum . . . Praeside M. Georg Casp. Kirchmaiero, & respondente Nicolao Jungio Brandenburgensi Marchico, in Electorali ad Albim Academia, d. VII Jan. A. O. R.

M.DC.LX.

(Frankfurt-on-Oder): Litteris Haered. Melchioris Oelschlegelii. 1659.

First edition. 4to. 8 leaves (unpaginated). Fine copy, in half morocco antique, marbled boards, spine gilt-lettered and dated, with original orange wrapper bound in.

AN IMPORTANT dissertation by Jung, presented under the direction of the famous professor at Wittenberg, Georg Caspar Kirchmaier (1635–1700). In 1659 Johann Placentinus (d. 1683), professor of mathematics at the University of Frankfurt-on-Oder, published a remarkable work entitled *De calore et motu membrorum naturalem in humano corpore*. A Cartesian, the author postulated that the principle of human life derived from a subtle celestial matter and that the motion of the limbs proceeded from that celestial matter. Placentinus also asserted that newborn children fill their lungs with this matter, which sustains life. The present work correctly contends that the nature of the “matter” (i.e., oxygen) is unknown (in 1659). In addition to its importance to Descartes and his theories, this very rare work is of interest to the history of chemistry, with references to the writings of Cardan, Glauber, Paracelsus, Scaliger, et al. Unrecorded by the usual bibliographers.

JUNGHANNS, Gottfried

Aussgekläubte Bräublein Ertz Das ist Zusammen getragene Bergleufftige Wörter und Redens-Arten Erklähret von Gottfried Junghansen, Freib.

N.p. (Freiberg): Druckts und verlegt Zacharias Becker, Anno 1680.

First edition. 4to. 24 leaves (signatures A–F4), unpaginated. Large woodcut tailpieces on A3v and F4r. Paper very slightly browned; otherwise a fine copy. Bound with: Mathesius, Johann, *Berg-Postilla oder Sarepta . . .* (Freiberg, 1679).

AN EARLY dictionary of mining and metallurgical definitions and terms, of significant chemical interest. No biographical information has been found on the author, who was evidently from Freiberg. The Wellcome Library has another work by Junghanns, entitled *Unterirdische und unentbehrliche Arbeit, das edle Bergwerck zusambt denen darbey bräuchlichen Terminis oder Wörtern kürztlich entworffen von G. Junghanssen [sic]*. (Freiberg: Z. Becker, c. 1677, 4to., 24 leaves); see Wellcome, III, 373. No bibliographical reference to the present work has been found, and it is obviously of considerable rarity.

JUSTINIANUS, Leonardus

*Leonardi Iustiniani Antonii Filii Patritii Venetii ex
Universa tum Naturali, tum Morali Philosophia, nec
non Astrologia, & Dialectica Selectae Theses, quas Anno
MDCXIII. Triduum Venetijs defensas Illustris.^{mis} atque
Rever.^{mis} D.D. Patriarche, atq; Electo Aquileiae dedicavit.
(Venice?). 1613.*

First edition. 4to. 3 leaves, 22 pp., 6 leaves (last blank); i.e., signatures A–E4. Large engraved emblem on title page, and full-page armorial engraving on A3v. Historiated and other

woodcut capitals. Woodcut head- and tailpieces. Fine copy with wide margins, in modern marbled boards.

A CURIOUS WORK comprising two theses, the first of which covers natural philosophy (pp. 1–17) and the second moral philosophy (pp. 18–22). The author, a Venetian priest, discusses subjects of chemical interest (e.g., Aristotelian elements and their properties, the so-called first matter, heat and cold, dryness and wetness, and fire), with references to Plato, Aristotle, Galen, et al. Very rare, apparently unknown to the usual bibliographers.

KAEHLER, Johann Siegfried

Dissertatio Chémico-Médica de Ferro eiusque praecipuis praeparatis . . . pro gradu doctoris D. III. Jun. MDCCLXVIII. Joannes Siegfried Kaehler Tribela Lusatus . . .
Leipzig: Ex Officina Langenhemia. (1768).

First edition. 4to. 32 pp. Very good copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A DISSERTATION ON the chemistry of the compounds of iron, with their medicinal uses, by Kaehler (b. 1743), presented at the University of Leipzig. The works of many earlier and contemporary chemists are cited, but the praeses is not named. Rare. Not in the usual chemical and medical bibliographies. (Waring, 431)

KALID BEN JAZICHI

Ein Buch von der Alchimie Geheimnissen, durch Calid, den Sohn Jazichi, zusammen getragen, aber aus dem Hebräischen in die Arabische, und aus derselbigen in die Lateinische Sprach, durch einen unbekandten Authorn: Nunmehr aber auch aus solcher in unsere Teuteche versetzt.
(Vienna: 1748?).

8vo. Pages 273–320. A fragment, complete in itself, apparently extracted from Arnaldus de Villanova, *Des Weltberühmten und hochoberfahrnen Philosophi und Medici Arnaldi de Villa Nova Chymische Schrifften* (Vienna: Johann Paul Krauss, 1748), on which see Ferguson, I, 43. This is part VII of the Arnaldus work. Good copy in late-nineteenth-century half morocco, pebbled cloth, spine gilt-lettered. Bound with: *Hermetische Philosophus* (Frankfurt & Leipzig, 1709); and Söldner, *Keren Happuch* (Hamburg, 1702).

AN ESOTERIC work on the secrets of alchemy. According to Ferguson (I, 18) the first edition appeared in the *Volumine de Alchemia* (Nuremberg, 1541). Little is known of the author, who died about A.D. 704. The few details of his life are enumerated by Ferguson (I, 445–449). An English translation appeared in William Salmon's *Medicina Practica: or, Practical Physick* (London, 1692, pp. 284–334). Not in Blake, Duveen, Edelstein, Neu, etc. (Bolton, 950 [1742 ed.]; Caillet, 403 [1683 ed.]; Ferchl, 13 [1744 ed.]; Ferguson, I, 43; Smith, 260)

KANE, Robert John

Elements of Chemistry, including [sic] the most recent discoveries and applications of the science to medicine and pharmacy, and to the arts. . . . By Robert Kane, M.D., M.R.I.A. . . .

Dublin: Hodges and Smith; Longman and Co., and Simpkin and Co., London: Maclachlan and Stewart, Edinburgh. 1841.

First edition. 8vo. Xx, 1204 pp. With 236 woodcuts in text. Title page lightly foxed; otherwise very good copy, unpressed and uncut, in original blind-stamped green cloth, gilt-lettered spine. Evidently sent by the publisher to an unnamed reviewer, this copy is inscribed in ink on the half title: "With the publishers respects."

KANE (1809–1890), an Irish chemist educated at Trinity College, Dublin, was appointed professor of chemistry in Apothecaries' Hall, Dublin (1831), and professor of natural philosophy in the Royal Dublin Society (1834). He worked for three months on methyl alcohol (1836) in Liebig's laboratory at Giessen. Later he became dean of the Royal College of Science, Dublin; he was knighted (1846) and elected F.R.S. (1849). The present remarkably detailed work, one of the best textbooks to appear in the 1840s, was recommended by Faraday for his courses at Woolwich Arsenal. A second edition was published (Dublin, 1849), and an American version edited by J. W. Draper appeared (New York, 1842), which was popular in the United States. Some confusion exists as to the date of the first edition: Ferchl gives 1842, and Knight gives 1846, while Partington gives 1840 and 1842. The correct date is 1841 (as here). (Bolton, 567; Ferchl, 265; Knight, 133; Partington, IV, 346; Sotheran, Cat. 676 [1907], 2215)

KANE, Robert John

Elements of Chemistry, including the most recent discoveries and applications of the science to medicine and pharmacy, and to the arts. By Robert Kane, M.D., M.R.I.A. . . . An American edition, with additions and corrections, and arranged for the use of the universities, colleges, academies, and medical schools of the United States, by John William Draper, M.D. . . .

New York: Published by Harper & Brothers, No. 82 Cliff Street. 1842.

First American edition, first issue. 8vo. (in 4s). 704 pp. + 4 pp. (advertisements). With numerous woodcuts in text. Title page very lightly foxed; otherwise fine copy in original blind-stamped brown cloth, spine gilt-lettered. Signature in pencil on first free endpaper: "George Dock, M.D. Philadelphia." Bookplates: George Dock, M.D., and Library of the Harrisburg Academy of Medicine.

EDITED BY Draper (1811–1882), professor of chemistry at New York University, this edition of Kane's work for American readers contains additional useful notes and comments. In the preface Draper states that he has "preserved the original entire, and has only made those alterations in it which the system of instruction pursued in the United States seems to require. This work . . . is undoubtedly the best extant in the English language." A second issue appeared (New York, 1843), and editions of 1846, 1848, and 1851 followed. This

copy belonged to George Dock (b. 1860), who published *The works of Edward Jenner* (New York, 1902) and *The "Primitive physic" of John Wesley* (Chicago, 1915). (Miles, *American Chemists and Chemical Engineers*, 1976, p. 128)

KAPF, Georg Friedrich

Skizzen aus der Geschichte des schiesischen Mineralreichs. Von Friederich Kapf.
Breslau: bei E. G. Meyer. 1794.

First edition. 8vo. xiv, 1 leaf, 207, (1) pp. Very good copy in contemporary blue boards. Bound with: Wagner, Thomas von, *Ueber den Beweis der Regalität des deutschen Bergbaues* (Freiberg, 1794). From the Prince Fürstenberg library, Donaueschingen.

AN ACCOUNT of the history of the minerals and ores of Silesia, of chemical interest. There are detailed discussions on quartz, granite, basalt, coal, etc., with a section on gems (pp. 31–38), precious metals (pp. 49–50), and the more common metals (pp. 51–56). Pages 79–182 comprise eleven letters on mineralogical subjects, and on pages 197–207 Kapf suggests future projects that would be worthwhile to undertake. Kapf (1759–1797), director of mines in Berlin, also published works on cobalt ores and the Fürstenberg mines (see Ferchl). Not in Blake, Bolton, Duveen, Edelstein, Ferguson, Ferguson Coll., Hoover, Neu, Partington, Smith, Waller, Watt, Wellcome, etc. (Ferchl, 266; Poggendorff, I, 1223)

KAPP, Georg Christian Friedrich

Systematische Darstellung der durch die neuere Chemie in der Heilkunde bewirkten Veränderungen und Verbesserungen. Nebst einem Anhang über das Braunsteinmetall und dessen Oxyde als innerliche und äusserliche Heilmittel in der Arzneikunst.

Hof: bei G. A. Grau. 1805.

First edition. 8vo. xvi, 327, (1) pp. Fine copy in original mottled sheep, spine richly gilt, two tan morocco labels.

KAPP (1780–1806), a physician at Beyreuth, was well-known for his considerable interest in the New Chemistry of Lavoisier and its relevance to medicine. In his research, presented here, he attempts to apply the latest chemical discoveries to improve medical treatments. He traces the early history of oxygen, mentioning John Mayow's work in 1668, as well as frequent discussions of the researches of Lavoisier and his coworkers on respiration, animal heat, etc. Although short-lived (dying at age twenty-six), Kapp possessed a thorough knowledge of current chemical literature. A supplement at the end (pp. 289–327) is on manganese and its compounds, with suggestions for their use

in medicine. An interesting work on biochemistry, which also discusses galvanism and theories of heat. Rare. Not in Cole, Duveen, Edelstein, Neu, Partington, Smith, Waller, Wellcome, etc. (Bolton, 124; Ferchl, 266; Hirsch, III, 488; Poggendorff, I, 1223)

KARSTEN, Carl Johann Bernhard

Grundriss der Metallurgie und der metallurgischen Hüttenkunde. Entworfen vom Dr. C. J. B. Karsten.
Breslau: bei Wilhelm Gottlieb Korn. 1818.

First edition. 8vo. xvi, 535, (1) pp. Fine copy in contemporary patterned boards, gilt-lettered orange label on spine.

A COMPREHENSIVE WORK on metallurgy and metallurgical chemistry, which, according to the author's biographer in the D.S.B., had a "brilliant success" and led Karsten "to expand it into a larger handbook which appeared in 1831 as *System der Metallurgie*." With the present book, and the *System*, the author "achieved fame as a founder of scientific metallurgy." Karsten (1782–1853) occupied high government positions as a mining and metallurgical expert in Germany, and he was an independent discoverer of cadmium. The D.S.B. gives details of his life and work, and Partington (III, 603–604) discusses his chemical researches but does not mention this title. Partington states that Karsten "graduated at Rostock with a dissertation *De affinitate Chemica*, 1802, and published several memoirs on chemical affinity." He published a book on chemical philosophy (*Philosophie der Chemie*, Berlin, 1843), in which the atomic and electrochemical theories were criticized. Scarce. Not in Duveen, Edelstein, Ferguson, Ferguson Coll., Hoover, Smith, Waller, Watt, Wellcome, etc. (Bolton, 568; D.S.B., VII, 254; Ferchl, 267; Poggendorff, I, 1227; Sondheimer, 789)

KAY, John

A series of Original Portraits and Caricature Etchings, by the late John Kay, miniature painter, Edinburgh; with biographical sketches and anecdotes.

Edinburgh: Hugh Paton, Carver and Gilder to the Queen, and Her R. H. the Duchess of Kent, Adam Square. 1842.

First edition, third issue. 2 vols. 4to. I: iv, 430, iv, x pp. II: 1 leaf, 472, iv, xii pp. With numerous engravings (some folding). Very good copy, in contemporary gilt-ruled half calf, cloth boards, dark-blue morocco labels.

AN EXTENSIVE collection of portraits of eminent and minor persons by John Kay (1742–1826), posthumously published by Hugh Paton, with biographical sketches mainly by the antiquary James Paterson (1805–1876). Kay etched

nearly nine hundred plates, mainly Scotsmen, and had planned to publish a book describing his prints. Lacking the financial means, he died before his wishes could be carried out. His widow also tried unsuccessfully to have the plates published. Upon her death, Hugh Paton solicited several judges, professors, and members of the clergy to furnish biographical information. The book was finally issued in monthly parts (1837–38), dedicated to Queen Victoria, but without an index. Later in 1838 the second issue was published with new title pages and indexes. The present appears to be the third issue. A third edition was published in 1877. Portraits and biographies of chemists and physicians include Joseph Black, Vincent Lunardi, Henry Moyes, Francis Home, William Cullen, James Graham, and James Hutton.

KECKERMANN, Bartholomew

Systema Physicum, Septem Libris Adornatum, et Anno Christi MDCVII publice propositum in Gymnasio Dan-tiscano, . . . Editio tertia prioribus auctior & multo correctior. Hanau: Apud Haeredes Guilielmi Antonii. 1612.

Third edition. 8vo. 8 leaves, 828 pp. Fine copperplate half-length portrait of Keckermann on verso of title page. Woodcut printer's device on title, woodcut capitals, head- and tailpieces. Fine copy, in contemporary blind-stamped, unlettered calf, large blind-stamped ornament on each cover, rebaked with original spine laid on.

KECKERMANN (1571–1609), who studied at the Danzig Gymnasium and the universities of Wittenberg and Leipzig, taught at the universities of Heidelberg and Danzig. A brilliant scholar, although he lived only thirty-eight years, he was a prolific textbook writer and author of various “systems” of nature. His most important work, the present third and best edition of the *Systema Physicum* (first: Danzig, 1610), is divided into seven books as follows: I. Nature in general; II. Celestial bodies, elements, etc.; III. Mixtures, chemical compounds, biological phenomena; IV. Man; V. Animals, plants, minerals, metals; VI. Meteors, comets, meteorological phenomena; and VII. The planet Earth. Topics of chemical interest include discussions of air and fire, metals, minerals, salts, and Aristotelian elements. A typical product of its time, the book is a curious mixture of Aristotelian dogma, various hypotheses based on experiments, and bold conjectures on physical and chemical phenomena. This edition is discussed by Thorndike, who erroneously states that it lacks an index, but there is an “index” (table of contents) preceding the text. An interesting and rare book, which provides an insightful example of university curricula in early-seventeenth-century Germany. Not in the usual bibliographies. Poggendorff (I, 1234) men-

tions only the 1623 edition. (D.S.B., VII, 270; Thorndike, VII, 376)

KEILL, John

An Introduction to Natural Philosophy: or, Philosophical Lectures read in the University of Oxford, Anno Dom. 1700. To which are added, the demonstrations of Monsieur Huygens's theorems, concerning the centrifugal force and circular motion. By John Keill M.D., Savilian Professor of Astronomy. F.R.S. Translated from the last edition of the Latin.

London: Printed by H.W. for William and John Innys, . . . and John Osborn, . . . 1720.

First edition in English. 8vo. xii, 306 pp., 1 leaf (advertisements). Woodcut head- and tailpieces, and numerous woodcut figures in text. An excellent copy in the original paneled calf, brown gilt-lettered morocco label.

KEILL (1671–1721), mathematician and astronomer, gave the first experimental lectures on Newtonian philosophy in Oxford in 1694. He was “one of the very important disciples gathered around Newton who transmitted his principles . . . to the scientific and intellectual community, . . . Keill's role as propagator of Newtonian philosophy was carried out primarily through his major work, *Introductio ad veram physicam* (Oxford, 1702). . . . The first such lectures ever given, their attempt to derive Newton's laws experimentally did much to influence later publications” (D.S.B.). The English edition was translated from the fourth Latin edition (London, 1719), the last one corrected by the author. “It was considered his best performance . . . as an excellent introduction to Newton's *Principia*” (D.N.B.). Partington (II, 478–479) discusses Keill's chemical theories. Widely influential long after Keill died, at least six English editions appeared throughout the eighteenth century, the last in 1776. The first English edition is rare. Not in Blake, Ferguson Coll., Morgan, Partington, Poggendorff, Waller, Watt, etc. (D.S.B., VII, 276; Smith, 262 [2nd ed., 1726]; Wallis, 103; Wellcome, III, 382)

KEILL, James

Tentamina Medico-Physica, ad quasdam Quaestiones, quae Oeconomiam Animalem Spectant, accommodatae. Quibus accessit Medicina Statica Britannica. Authore Jacobo Keill . . . London: Apud Geo. Strahan ad Globum Aureum ex adverso Bursae Regiae; & W. & J. Innys, ad Insignis Principis, in Coemeterio D. Pauli. 1718.

First edition. 8vo. 2 leaves, xxiv, 149, (1); 1 leaf, xiii, (35), 48 pp. Woodcut figures in text. Fine copy in original blind-ruled calf.

KEILL (1673–1719), “younger brother of the distinguished Newtonian mathematician John Keill” (D.S.B.), attended the chemical lectures of Nicolas Lemery in Paris. After graduating M.D. (1699, Aberdeen) he practiced medicine in Northampton, was a friend of Sir Hans Sloane, and was elected F.R.S. (1712). Based on his earlier physiological studies, the present work contains five essays on the quantity of blood, velocity of blood, force of the heart, animal secretion, and muscular motion. With its own title page and pagination, the second part, *Medicina Statica Britannica*, appears here for the first time. It is a fascinating piece, as it comprises a series of physiological observations on himself, after the manner of Sanctorius. Keill belonged to the British school of iatromathematics, but the book is of some chemical interest. He “made use of the Newtonian theory of attraction in physiology (as his brother, John Keill, did in chemistry) and tried to explain the cause of diabetes” (Partington). Keill died a year later of a painful cancer of the mouth. (Blake, 241; Blocker, 218; D.S.B., VI, 37, VII, 274; Partington, II, 451; Watt, II, 563t; Wellcome, III, 381)

KEIR, James

A Treatise on the Various Kinds of Permanently Elastic Fluids, or Gases.

London: Printed for T. Cadell, in the Strand. 1777.

First edition. 8vo. viii, 108 pp. Fine copy in original calf, rebacked, spine gilt-ruled, maroon morocco label. Bound with: Macquer, Pierre Joseph, *A Dictionary of Chemistry* (London, 1777).

“THE FOLLOWING sheets are intended as an *Appendix* to the second English Edition of M. Macquer’s *Dictionary of Chemistry*, instead of the Article, *Fixable Air*, which was added to the former Edition. This subject has been lately so successfully cultivated, since the writing of that Article, that a revisal and large additions were necessary: but these not having been finished in time for insertion into their proper alphabetical place, when the second edition of the *Dictionary* was printing, and being besides too large for an additional article, the following treatise is subjoined as an *Appendix*” (preface). An engraved plate was added to the revised and enlarged second edition (London, 1779). (Bolton, 570; Smeaton, *Annals of Science*, 38 [1981], 627, No. 16; Partington, III, 298; Poggenorff, I, 1237; Roller & Goodman, II, 147; Watt, II, 563y)

KEIR, James

A Treatise on the Various Kinds of Permanently Elastic Fluids, or Gases. The Second Edition, revised.

London: Printed for T. Cadell, and P. Elmsley, in the Strand. 1779.

Second edition. 8vo. viii, 108 pp. With unsigned engraved plate of chemical apparatus. Fine copy, in original calf, gilt. Bound with: Macquer, P. J., *A Dictionary of Chemistry* (London, 1777).

KEIR (1735–1820), F.R.S. (1785), prepared this systematic account of gases to serve as an appendix to his second English edition of Macquer’s *Dictionary of Chemistry* (London, 1777). It first appeared (London, 1777; Cole, 708) without the plate and is usually bound with Macquer’s *Dictionary*, although copies were also sold separately. The present second and final edition, an enlarged and rewritten version of the first edition, is dedicated to Joseph Priestley, whose work on gases is frequently mentioned. Both Macquer and Keir revived Van Helmont’s word *gas*, and Keir abandoned the use of the word *air* (unlike Priestley) to connote substances other than common air. The plate illustrates apparatus for preparing and handling various gases. (Blake, 241; Cole, 709; D.S.B., VII, 278; Ferguson, I, 453 [not in Young Coll.]; Morgan, 508; Neville & Smeaton, *Annals of Science*, 38 [1981], 627, No. 17; Partington, III, 298)

KEKULÉ, Friedrich August

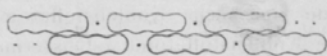
Lehrbuch der Organischen Chemie oder der Chemie der Kohlenstoffverbindungen.

Erlangen: Ferdinand Enke. 1861, 1863; Stuttgart: Ferdinand Enke. 1882.

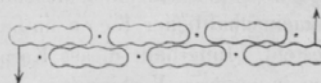
First edition. 3 vols., 8vo. I: 1 leaf (half title), ix, (1), 766 pp. Woodcuts in text. II: 1 leaf (half title), vii, (1), 744 pp. 3 engraved plates (facing pp. 498, 502, 510). III: x, 837, (1) pp. Very good, crisp copies, in contemporary half morocco gilt, pebbled boards; volumes 2 and 3 rebacked with original spines laid down.

ONE OF the greatest textbooks of organic chemistry of the nineteenth century, in which Kekulé discusses the structure of organic compounds and elaborates his hexagon structure for benzene. “It was in Ghent that Kekulé wrote most of his famous textbook, *Lehrbuch der organischen Chemie*, published in parts (*Lieferungen*), the first in 1859 (preface dated ‘Gent, 21. Mai 1859’). The volumes appeared as i and ii (Erlangen, 1861 and 1866), iii (Stuttgart, 1882, ‘unter Mitwirkung von Dr. R. Anschütz in Bonn and Dr. G. Schultz in Strassburg’), and the first part only of iv (Stuttgart, 1887). It was never completed. The book had an enormous influence” (Partington). Kekulé’s benzene ring

geschlossene Kette (einen symmetrischen Ring), die noch sechs freie Verwandtschaftseinheiten enthält.

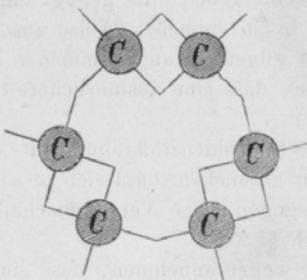


offene Kette.



geschlossene Kette.

Diese Ansicht über die Constitution der aus sechs Kohlenstoffatomen bestehenden, geschlossenen Kette wird vielleicht noch deutlicher wiedergegeben durch folgende graphische Formel, in welcher die Kohlenstoffatome rund und die vier Verwandtschaftseinheiten jedes Atomes durch vier von ihm auslaufende Linien dargestellt sind:



Von dieser geschlossenen Kette leiten sich nun, wie gleich ausführlicher gezeigt werden wird, alle die Verbindungen ab, die man gewöhnlich als aromatische Substanzen bezeichnet. Die offene Kette ist vielleicht im Chinon, im Chloranil und den wenigen Körpern anzunehmen, die zu beiden in näherer Beziehung stehen. Auch diese Körper können indess auf die geschlossene Kette bezogen und von ihr abgeleitet werden, wie dies später noch erörtert werden soll.

1589. In allen aromatischen Verbindungen kann also, als gemeinschaftlicher Kern, eine aus sechs Kohlenstoffatomen bestehende, geschlossene Kette angenommen werden, die noch sechs freie Verwandtschaftseinheiten besitzt. Man könnte sie durch die Formel: C_6A_6 ausdrücken, in welcher A eine nicht gesättigte Affinität oder Verwandtschaftseinheit bezeichnet.

Die sechs Verwandtschaftseinheiten dieses Kerns können zunächst durch sechs Atome einatomiger Elemente gesättigt werden. Sie können sich ferner alle oder wenigstens zum Theil durch je eine Affinität mehratomiger Elemente sättigen; diese letzteren müssen aber dann nothwendigerweise andere Atome mit in die Verbindung einführen, und so eine oder mehrere Seitenketten erzeugen, welche sich ihrerseits durch Anlagerung anderer Atome noch verlängern können.

structure appears in an early form on page 496 of volume 2, and the conventional hexagon is used throughout volume 3. One of the founders of structural organic chemistry, Kekulé (1829–1896) originally studied architecture at the University of Giessen, but Liebig attracted him to chemistry, and he later studied at Paris, London, and Heidelberg. His benzene ring structure led to much basic research in organic chemistry and stimulated the rapid development of the aniline dye industry. Duveen and Smith record only volumes 1 and 2, and Morgan lacks the rare part 1 (vol. 4), as here. Very scarce. Not in Edelstein, Honeyman, Waller, etc. (Bolton, 570; D.S.B., VII, 280; Duveen, 316; Morgan, 418; Partington, IV, 533–534; Poggendorff, I, 1238; Smith, 262; Sotheran, Cat. 676 [1907], 2253 [lacks vol. 1]; Thornton & Tully, 223)

KEKULÉ, Friedrich August

Die wissenschaftlichen Ziele und Leistungen der Chemie. Rede gehalten beim Antritt des Rectorats der Rheinischen Friedrich-Wilhelms-Universität am 18. October 1877 von August Kekulé.

Bonn: Verlag von Max Cohen & Sohn (Fr. Cohen). 1878.

First edition. 8vo. 29, (1) pp., 1 leaf (advertisements). Fine copy in original pink printed wrappers, bound in crimson quarter morocco antique, marbled boards, spine gilt-lettered and dated.

A SPEECH ON the scientific achievements and limitations of chemistry, with references to the researches and discoveries of Boyle, Lavoisier, Dalton, Avogadro, Dumas, Gerhardt, Laurent, Clausius, William Thomson (Lord Kelvin), et al. Kekulé discusses the atomic theory and the structure of molecules, the tetravalency of carbon, the existence of geometrical and optical isomers (referring to Le Bel and van't Hoff), physical chemistry, etc. Scarce. Not in Bolton, Duveen, Edelstein, Morgan, Partington, Waller, etc. (D.S.B., VII, 283; Smith, 262; Sondheimer, 791)

KELLNER, David

J. B. H. Wohlgegründeter Anschlag und Bedencken, wie die wilde Antimonialische Erze, wenn sie Gold- und Silberhaltig seyn, zu gute gemacht, auch über ihrer gemeinen Gehalt angereichert werden können. . . .

(Nordhausen: In Verlegung Johann Christoff Weidners Buchhl. 1690.)

First edition. 8vo. Pp. (1–7) 8–127. Title page in red and black. Fine copy, in quarter morocco antique, marbled boards, spine gilt-lettered and dated; with original marbled paper wrappers bound in.

BORN AT Gotha, Kellner (fl. mid-seventeenth to early eighteenth century) studied medicine at Helmstädt, gradu-

ating in 1670, and practiced at Nordhausen. In addition to several medical works, "Kellner's interest in scientific writing manifested itself mainly in the field of metallurgical chemistry. He wished above all to free this literature, and indeed all scientific publication, from the fantasies of alchemists. Toward this end he wrote for a lay audience and for future scientists, rather than for an exclusive circle of initiates. . . . Kellner was one of the more serious authors and was certainly so considered by his contemporaries. This judgment is justified by the tenor of most of Kellner's writings. They were . . . meant to be . . . [works on] the science of assaying" (D.S.B.). The present book discusses antimony ores. Kellner demonstrates that gold and silver in these ores preexisted in them and that these previous metals are not the result of transmutation. All of Kellner's works are rare. The brief biography of Kellner by Eulen (D.S.B., VII, 283) does not mention this title, nor is it listed by Poggendorff (I, 1240). (Ferchl, 269; Ferguson, I, 456–457; Rosenthal, 474)

KENDALL, George

An Appendix to the Unlearned Alchemist, wherein is contained the true Receipt of that Excellent Diaphoretick and Diuretick Pill, purging by Sweat and Urine; commonly known by the name of Matthew's Pill. With the Exact manner of preparing and making of it, and the particular nature and virtue of the several Ingredients, as also of the Pill. By G. Kendall, M.A. Oxon. . . .

London: Printed for Joseph Leigh, and are to be sold by him at his shop in Bazing-hall-street. And are to be sold by the Author; as also the Pill, Antidote, and Oyl of Amber, at the Green Dragon in Ave-Mary Lane. N.d. (1664).

First edition. 8vo. 4 leaves, 54 pp. Page 45 signed by George Starkey, dated 19 October 1663. Fine copy, in calf antique by Bernard Middleton. Bound with: Mathews, Richard, *The Unlearned Alchymist His Antidote* (London, 1663).

A RESPONSE TO the attack by Mrs. Anne Mathews on George Kendall, Jonathan Loddington, Ahasuerus Fromanteel, George Starkey, Ambrose Andrewes, Nathaniel Merry, et al., in *The Unlearned Alchymist* (London, 1663). Although Kendall states on the title that he was "M.A. Oxon.," Wood's *Athenae Oxonienses* (London, 1692) mentions only a bishop of the same name. This work is valuable as it gives an objective account of the manner in which Richard Mathews imparted the secret of the composition of his famous pill to the above-named gentlemen before he died. It is much less emotional than the rambling diatribe of Mrs. Anne Mathews. Starkey claims herein that he knew the secret of the composition of Mathews's pill in 1651, five years before Mathews. It appears from Starkey's statement that

Mathews may have stolen the secret from Starkey or possibly have modified it, rather than vice versa. Extremely rare. Wing cites only five copies in the United States, including this copy. Not in Krivatsy, Osler, Wellcome, or the usual chemical bibliographies. (Ferguson Coll., 363; Neu, 2126; Watt, II, 566d; Wing, K283)

KERN, Johann Gottlieb, and OPPEL, Friedrich Wilhelm von

Bericht vom Bergbau.

Leipzig: bey Siegfried Leberecht Crusius. 1772.

Second edition. 4to. viii, 312 pp. Large engraved vignette on title. With 18 folding copperplates. Very fine copy, in gilt-ruled original half calf, marbled boards, maroon label.

KERN (d. 1776), who was chief inspector and superintendent of the silver mines at Freiburg, compiled this work in 1740 for the express purpose of bringing up-to-date the *Bericht vom Bergwerck* (Zellerfeldt, 1617) of Georg Engelhard von Löhneys. The original text of Kern was revised by von Oppel (ca. 1720–1769), a mining expert at the newly founded (1765) school of the title vignette. Freiburg owed its origin to the discovery of silver mines in the thirteenth century, and its economy was based on the thirty silver and lead mines developed in the region. The Freiburg Bergakademie rapidly established itself as a leading center of mining technology, with one of the world's greatest libraries of mineralogy and mining. An early product of the academy, the present work (first: Freiburg, 1769; Poggendorff, I, 1247) covers the technical problems and their solutions as the silver mines were driven deeper into the ground. New techniques for ventilating and pumping water and shoring up mine shafts, and new equipment to make mining and smelting faster and more efficient are described and depicted in the plates. This "thoroughly practical work" (Annen) is the final and best edition. In 1913 Zeitlinger described it as being rare. (Annen, 21; Hoover, 476; Poggendorff, II, 328; Sotheran. Cat. 734 [1913], 10116)

KERNER, Arnold

D.O.M.A. Tetras Chymiatrica, Proponens Praestantiam et in Medicina Efficaciam, Auri, Mercurii, Antimonii, & Vitrioli, & Medicamentorum ex illis paratorum: Opposita Misochymis eadem sat frivole calumniantibus, ab Arnoldo Kernero Lipsensi Med. D. Philochymiatro.

Erfurt: Ex typographeo Johannis Röhböck, Impensis Johannis Birckneri Bibliopolae Erf. 1618.

First edition. 8vo. Unpaginated (signatures A–S⁸; 144 leaves, i.e., 288 pp., last 3 blank). Title within woodcut border.

Woodcut capitals, head- and tailpieces. Fine, crisp copy, in eighteenth-century gilt-ruled calf, green morocco label. From the celebrated library of John Stuart (1713–1792), third earl of Bute (see D.N.B.), with engraved armorial bookplate on verso of title leaf (Sotheby auction, July 1961).

OF KERNER (fl. 1600), a physician of Leipzig, almost nothing is known, except that he was a "zealous supporter of chemistry" (Ferguson). In this iatrochemical work Kerner describes the medicinal uses of several chemical preparations, especially those based upon gold, mercury, antimony, and vitriol. It was written as a defense of chemical medicines against those whom the author calls "misochymists" (opponents of chemical remedies). At this period there was still a vigorous battle being waged between the Galenists (proponents of medicines derived from plants and animals), and the iatrochemists, who advocated medicines prepared from minerals as well as from plants and animals. Not in Bolton, Edelstein, Partington, Waller, etc. (Duveen, 317; Ferchl, 271; Ferguson, I, 459; Ferguson Coll., 364; Neu, 2131; Waite, 290; Watt, II, 568h; Wellcome, I, 3542)

KERTZENMACHER, Petrus

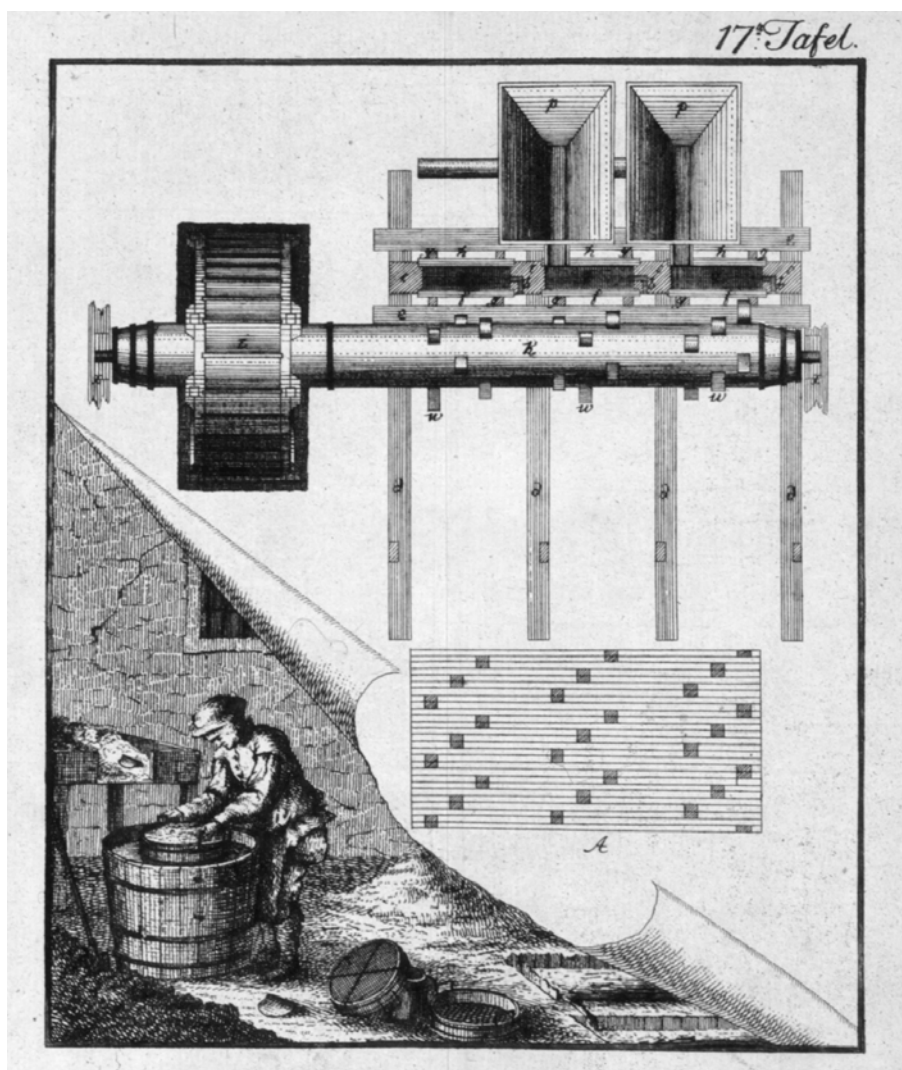
Alchimia, das ist, Alle Farben, Wasser, Olea, Salia, und Alumina, damit mann alle Corpora, Spiritus unnd Calces Prepariert, Sublimiert unnd Fixiert, zubereyten. Und wie mann diese ding nütze, auff dass Sol und Luna werden möge. Auch von Solviern unnd scheidung aller Metall, Polierung allerhandt Edelgestein, fürtrefflichen Wassern zum Etzen, scheidun unnd Solviern. Und zuletzt wie die giftige Dämpff zuverhüten, ein kurtzer bericht, &c. Cum Gratia & Privilegio Imperiali.

Franckfort am Meyn: (Colophon: Bey Christian Egenolffs Erben.) 1570.

First Frankfurt edition? 8vo. 79 folios, 1 leaf (ff. 77 and 79 misnumbered 75 and 77). Title page in red and black. Full-page woodcuts of distillation furnaces on ff. 4–8, comprising 13 figures. Half-page woodcuts (repeated) of alchemist adding fuel to a furnace on ff. 30, 40, and 70. Small figure of flask (repeated) on ff. 25, 41, 45, and 51. Black letter. Fine copy, with wide fore- and lower margins (some untrimmed), in old vellum, spine lettered in ink.

AN IMPORTANT book of secrets on chemicals that can be prepared by distillation, which originally appeared anonymously at Strassburg, 1534 (Duveen, 317). Although not entirely beyond question, the authorship of the book is usually ascribed to Kertzenmacher (Kaertzenmacher, or Kerzenmacher, fl. 1546), an alchemist of Mainz. Much of the first part is taken from the anonymous *Rechter Gebrauch d'Alchimei* (N.p., 1531). The calcination of metals, preparation of salts, and the making of solutions are described.

*Kern and Oppel. Bericht vom Bergbau.
Leipzig, 1772.*



A significant sourcebook on early-sixteenth-century chemical technology. In addition to the first and present editions, the following have been traced: Strassburg, 1538, 1539; Augsburg, 1546; Frankfurt, 1571, 1574, 1589, 1613, 1720. Very rare. Not in British Library, which has the 1538, 1574, and 1589 editions only. (Ferguson, I, 459 [not in Young Coll.], Ferguson Coll., 364; Ferguson, *Early Treatises on Technological Chemistry*, Jan. 6, 1888, p. 16; Gmelin, *Geschichte*, 1797, I, 293; Partington, II, 68; Schmieder, *Geschichte der Alchemie*, 1832, p. 280)

KERTZENMACHER, Petrus

Des berühmten Alchimisten, Petri Kertzenmachers, Alchimia, Das ist Alle Farben, Wasser, Olea, Salia und Alumina, Damit man alle Corpora Spiritus und Calces praeparirt, sublimirt, und fixirt, zu bereiten, Und wie man diese Dinge nutze, Auf dass Sol und Luna werden möge, Auch von

Solviren und Scheidung aller Metall, Polirung allerhand Edelgesteine, fürtreflichen Wassern zum Etzen, Scheiden und Solviren. Dem noch beygefüget Ein kurtzer Bericht, wie die giftigen Dämpffe zu verhüten.
Anno 1720.

First edition thus. 8vo. 9 leaves, 109, (3) pp. Title page in red and black. With 8 full pages of woodcuts (comprising 13 figures) printed entirely in red. Half-page woodcuts (repeated) of an alchemist adding fuel to a furnace (pp. 36, 50, and 95). Small woodcut figures of flasks (pp. 29, 52, 57, and 66). Good copy in original vellum, rebaked in vellum antique. Bound with: Gertz, P., *Neu-eröffnete Kunstammer* (1720), and 3 other alchemical works.

A CLOSE REPRINT of the *Alchimia* (Frankfurt, 1570), with almost identical (though reengraved) woodcuts of distillation apparatus and furnaces. This work has its own title page and pagination but forms part of the book by P. Gertz,

the signatures being continuous. The copy described by Ferguson in 1888 lacked the woodcuts. (Duveen, 244; Ferguson Coll., 365; Ferguson, *Some Early Treatises on Technological Chemistry* [1888], 29; Partington, II, 68)

KESSLER, Thomas

Vierhundert ausserlesene Chymische Process und Stücklein, theils zur innerlichen, theils zur Wund- und eusserlichen Artzney dienstlich, biss anhero in geheim verhalten: anjetzo aber mit vielen guten unnd geschwinden Handgrieffen verbessert: zu Nutzen der Hermetischen Medicin Liebhabern . . . [with] *Das dritte Hundert Ausserlesener, schöner unnd fürbindiger spagyrischer Process . . .* [with] *Das vierdte Hundert Schöner Ausserlesener Chymischer Process . . . verbesserung der Metall gerichtet . . .*

Nuremberg: In Verlegung Wolffgang Endters. 1641.

Fourth (first Nuremberg) edition, first issue. 8vo. I: 7 leaves, 188 pp., 6 leaves (last blank). II: 8 leaves, 160 pp., 2 leaves. III: 2 leaves, 96 pp., 2 leaves. Woodcut on each title page and 4 woodcuts of chemical apparatus in text. Old neat inscriptions on first title; otherwise very good copy in original vellum, manuscript title on spine.

KESSLER (fl. 1616–1630), an iatrochemist of Strassburg, published collections of chemical processes and secrets. The first edition of two hundred processes (Strassburg, 1628) was followed by the first edition to contain four hundred (Strassburg, 1632), which was reprinted (Frankfurt, 1641). The first issue of the five hundred chemical processes was published under the title *Keslerus redivivus* (Frankfurt: Johann Beyers, 1641; Duveen, 318). The first issue of the Nuremberg edition then appeared. In the second issue of the Nuremberg edition, the second issue of the five hundred processes was added (Nuremberg: W. Endter, 1645), as in the Wellcome Library copy. The book was very popular, the last edition appearing at Frankfurt in 1713. A copy of this Nuremberg (1641) edition is in the British Library. All editions are rare. (Ferguson, I, 460 [not in Young Coll.]; Wellcome, III, 388)

KHEIMB, Sigismundus Eugenius

Dissertatio Inauguralis Medica De Ferro, quam annuente inclyta Facultate Medica, in antiquissima ac celeberrima Universitate Vindobonensi Publicae Disquisitioni Submittit Sigismundus Eugenius Kheimb Styrius Cellensis. Disputabitur in Universitatis Palatio Die 5 Mensis Septembris MDCCLXXV.

Vienna: Typis Joan. Thomae Nobilis De Trattnern, S.C.R. Maj. Typogr. et Bibliop. (1775).

First edition. 8vo. 4 leaves, 56 pp. Large woodcut coat of arms on verso of second leaf. Fine copy in antique-style maroon half morocco, marbled boards, spine gilt-lettered and dated.

KHEIMB was a pupil of Franz Xaver Wasserberg (1748–1791), who translated many French and Latin works into German and wrote a good textbook of chemistry (*Institutiones Chemicæ*, Vienna, 1778–80, 3 vols., 8vo.). Although ostensibly a medical dissertation, this work by Kheimb comprises a short treatise on the preparation and pharmaceutical properties of a large number of compounds of iron. There are numerous references to the works of seventeenth- and eighteenth-century chemists (e.g., Lemery, Boerhaave, Junker, Geoffroy, Becher, and Macquer). Clear directions are given for the preparation of ferrous sulfate, ferrous hydroxide, ferrous carbonate, etc., and this work is an eighteenth-century monograph on the chemistry of iron and its compounds. This is a genuine copy of the dissertation by Kheimb, with the number 5 supplied in ink (probably by the author) on the title page to indicate the 5th of September. This work was reprinted in Wasserberg's *Fasciculus Operum minorum medicorum et dissertationum*, Vienna, 1776, part iv, and is mentioned by Waring (II, 432). No bibliographical reference has been found to this edition of 1775, which must be very rare.

KHUNRATH, Conrad

Medulla Destillatoria & Medica, das ist, Warhafftiger . . . Bericht, wie man den Spiritum Vini, durch mittel seines hinder ihm verlassenen Saltzes, item die Perlen, Corallen, deszgleichen alle andere Oliteten aus den Crescentibus, als Früchten, Resinen, und andern Sachen mehr, zum Auro potabile, und andern Arcanen dienstlich, künstlich distilliren, nachmals in quintam Essentiam, zur höchsten exaltation bringen sol. Item, etlicher herrlicher Wundbalsam . . . unnd güldener Wasser praeparationes, administrationes & effectus, wie dann das Register den Gebrauch ordentlich ausweist Durch C. C. L.

Leipzig: n.d. (1594).

First edition. 8vo. 3 leaves, 146 folios, 11 leaves (index). Title in red and black. Text in German black letter. A worn copy, some leaves stained, lacking 3 leaves of index (signatures V1, V2, and V8), in old vellum. From the library of A. T. and M. Atwood, celebrated hermeticists. Bound with: Tancke, Joachim, *Succincta & brevis artis chemiae instructio* (Leipzig, 1605).

THE GENUINE first edition, in octavo format, with preface dated Schlesswig, St. Bartholomew's day, 1594. The title page and preface are signed C. C. L.: i.e., C. C(onrathus). L(ipsiensis). There is an edition in 4to. format (4 leaves, 122 pp., 8 leaves), with preface dated Schlesswig, 1594, which Ferguson hesitatingly states "seems to be the first

edition . . . said to have been published in 1596." He also adds: "There was an edition: Leipzig, without date and printer's name, 8vo., ff. (3) 146 (11)" (i.e., present edition). The 1596 printing in 4to. format is the second edition. "Khunrath's main work . . . which seems to have been successful . . . it passed through at least eight editions, the last in 1703. [It is] based on practical experience . . . and represents a masterpiece of clear, practical prescriptions" (D.S.B.). Khunrath (d. ca. 1614), a disciple of Paracelsus, was influenced by Agricola and Gesner. Very rare; most surviving copies are imperfect. Not in British Library, etc. (D.S.B., VII, 354; Ferguson, I, 461 [not in Young Coll.]; Ferguson Coll., 368; Forbes, 153; Neu, 2140)

KHUNRATH, Heinrich

Amphiteatrum Sapientiae Aeternae Solius Verae, Christiano-Kabalisticum Divino-Magicum, nec non Physico-Chymicum, tertriunum, catholicum . . .

(Colophon:) Hanau: Excudebat Guilielmus Antonius. 1609.

First complete edition. Folio. 60 + 222 pp., 1 leaf. Pages 147–150 misnumbered 145–148, and pp. 191–192 misnumbered 192–193. Engraved frontispiece portrait of Khunrath (aged 42), conjugate with elaborate engraved title page. Ten beautifully engraved copperplates (9 folding) and 2 folding tables. Some quires embrowned (as usual); otherwise an excellent, tall, complete copy with ample margins, in contemporary calf, rebaked, with original gilt spine laid on, maroon morocco label.

"ONE OF the most important books in the whole literature of theosophical alchemy and the occult sciences" (Duveen). A much shorter version of similar title appeared (Hamburg, 1595; 24 pp., 4 plates), of which Duveen (p. 319) states that there is only one other copy known. Read (*Prelude to Chemistry*, 1936, pp. 81–83) discusses the chemical content and significance of the present work. Although the title and page 222 are dated 1602, the book was not published until 1609. Khunrath (1560–1605) had written the draft for this edition by 1602, but it remained unpublished at his death. His friend Erasmus Wohlfahrt was entrusted to edit and publish the manuscript, and he added the preface and conclusion. Most copies lack one or more plates, which are masterpieces of engraving and alchemical symbolism. Absolutely complete copies (as here) are very rare. Kangro (D.S.B., VII, 355–356) discusses this work but not this edition. The sheets of the 1609 edition were reissued (Frankfurt, 1653; Duveen, 320) with a new title page. (Brunet, III, 658; Caillet, 5747; Duveen, *Supplement*, 195 [imperf.]; Edelstein, 1287; Ferchl, 271; Ferguson, I, 463; Ferguson Coll., 366; Guaita, 1494; Hall, 90; Mellon, 62;

Partington, II, 645; Poggendorff, I, 1252; Smith, 265 [imperf.]; Waite, 290; Waller, 19829 [imperf.]; Watt, II, 569g; Wellcome, I, 3560)

KHUNRATH, Heinrich

Amphiteatrum Sapientiae Aeternae Solius Verae, Christiano-Kabalisticum Divino-Magicum, nec non Physico-Chymicum, tertriunum, catholicum: . . .

(Colophon:) Hanau: Excudebat Guilielmus Antonius. 1609.

First complete edition. Folio. 1 leaf, 60 + 222 pp., 1 leaf. Pages 147–150 misnumbered 145–148, and pages 191–192 misnumbered 192–193. Engraved portrait of Khunrath (aged 42, by J. Diricks) and elaborate engraved title page. 10 beautifully engraved copperplates (9 folding) and 2 folding tables. Very fine copy in full blind-paneled olive-brown morocco, spine gilt-lettered, all edges gilt, marbled endpapers, by Lobstein-Laurenchet.

ANOTHER COPY of this very rare alchemical classic, in which the plates have been bound at the beginning of the volume and the portrait of Khunrath (conjugate with the engraved title page in other copies) appears facing page 9 of the first part. This copy is much brighter and more attractive than most copies, as it has been expertly washed to remove the browning found in almost all copies owing to the poor quality of paper used. The fine and detailed plates in this copy are much more impressive than those in embrowned copies. Excellent discussions of this work are given by Allison Coudert, John Read, and Lynn Thorndike. (Coudert, *Alchemy: The Philosopher's Stone*, 1980, pp. 56, 91–93; Read, *The Alchemist in Life, Literature and Art*, 1947, pp. 69–71; Thorndike, VII, 273–276)

KHUNRATH, Heinrich, and ARNDT, Johann

De Igne Magorum Philosophorumque secreto externo et visibili, das ist, Philosophische Erklärung des geheimen, ausserlichen, sichtbaren Glut- und Flammenfeuers der uralten Weisen und anderer wahren Philosophen, von Heinrich Khunrath, beyder Arzneygelahrheit Doktor. Nebst Johann Arndts philosophischkabalistischen Judicio über die vier ersten Figuren des grossen Khunrathischen Amphitheaters. Neue und mit Anmerkungen versehene Auflage.

Leipzig: bey Adam Friedrich Böhme. 1783.

Second (first Leipzig) edition, 2 parts in 1 vol. 8vo. 109, (1) pp., 1 leaf (blank). Small woodcut of speculum on page 64. Fine copy in quarter calf antique, boards, maroon morocco label, gilt.



Khunrath, Heinrich. Amphitheatrum Sapientiae. Hanau, 1609.

FIRST PUBLISHED by Lazarus Zetzner (Strassburg, 1608; Duveen, 320; Wellcome, I, 3559), the appearance of this work in 1783 shows that there were believers in alchemy in Germany almost into the nineteenth century. The preface is signed "I. Y. R." by the anonymous editor. The second part (pp. 91–109), by the celebrated German Protestant divine Johann Arndt (1555–1621), with separate divisional title page, deals with a theological, cabalistical, and alchemical interpretation of the first four plates in Khunrath's *Amphiteatrum* (Hanau, 1609). The German alchemist Khunrath, a disciple of Paracelsus, studied medicine (M.D., Basel, 1588) and published several theosophical, alchemical, and mystical books. Very scarce. Not in Blake, D.S.B., Duveen, Edelstein, Hall, Neu, Partington, etc. (Bolton, 996; Caillet, 5757; Ferchl, 271 [wrong date: 1784]; Ferguson, I, 464 [not in Young Coll.]; Ferguson Coll., 367; Wellcome, III, 390)

KIDD, John

Outlines of Mineralogy. By J. Kidd, M.D. . . .
Oxford: Printed by N. Bliss, for J. Parker, and R. Bliss; Longman, Hurst, Rees, & Orme, and Messrs. Rivingtons, London. 1809.

First edition. 2 vols., 8vo. (in 4s). I: xvii, (3), xxxix, (1), 255, (1) pp. II: viii, 227, (1), 39, (1) pp., 8 leaves (7 index, 1 errata). Pristine copy in original gilt-ruled half-calf, marbled boards, crimson and dark-blue labels. Engraved armorial bookplate in each volume: Joseph Radcliffe Esq., Milnsbridge, Yorkshire.

EDUCATED AS a physician at Christ Church College, Oxford (M.D., 1804), Kidd (1775–1851) was a chemical reader (1801) and first Aldrichian professor of chemistry at Oxford (1803–1832). He discovered naphthalene in coal tar, which led to the use of coal as a source of organic chemicals. Kidd lectured on chemistry, mineralogy, and geology, and most of his works dealt with these subjects. The present work on the classification of minerals is almost entirely chemical in content, with analyses of various minerals and references to earlier and contemporary literature. "An excellent work, founded on the method of Haüy, with remarks on other systems" (Zeitlinger). Kidd was one of the professors who urged the teaching of science in early-nineteenth-century Oxford. He is famous for his Bridge-water treatise *On the adaptation of external nature to the physical condition of man* (1833). (D.S.B., VII, 365; Edelstein, 1291; Ferchl, 272; Partington, IV, 76; Poggendorff, I, 1253; Sotheran, Cat. 734 [1913], 10127 ["Rare"]; Ward & Carozzi, 1254)

KIESSLING, Johann Gottfried

Johann Gottfried Kiesslings, Jur. Pract. & dictae artis Cult. Relatio Practica de Arte Probatoria Mineralium & Metallorum. Das ist: Gründliche Erzählung, Wie alle und jede Mineralia auf gewisse Metalle, Diese hinwiederum in sich selbst, in gleichen Müntzen, im Feuer, durchs Aqua fort, Aqua Regis, und Cementiren, probieret, und geschieden werden, Benebst der Nachricht, Was allenthalben darzu nöthig, und ein Probierer oder Guardain, so wohl hier-von, als denen zum Müntz- und Saiger-Hütten-Wesen, samt deren Verrichtungen wissen soll. Worbey noch einiger anderer zu dieser Kunst dienlichen Anweisungen gedacht wird.
Leipzig: verlegt Michael Blochberger. 1741.

First edition. 8vo. 3 leaves, 279, (1) pp. Beautiful engraved frontispiece. Very fine, crisp copy in contemporary unlettered vellum.

A RARE AND important book on the analysis of minerals and metals, the second edition of which appeared eleven years later (Leipzig, 1752). Ferguson describes this as "a genuine book on assaying [that] gives a good idea of the processes and reagents of the time. In the first edition symbols and characters are used, but in the second the names are given in full. The frontispiece, which represents an assayer's laboratory, has been modified in the second edition. The most important change is that the female figure who in the first edition is merely looking in through a window, in the second is represented as holding a rope or chain which is hanging down into the room, and to which are attached the planetary symbols of the metals." Quantitative analytical data on ores and minerals are given, and chemical reagents and techniques are described. Not in Blake, Bolton, D.S.B., Duveen, Edelstein, Morgan, Neu, Poggendorff, Smith, Waller, Watt, etc. Only the second edition is mentioned by Partington (II, 731), and this is the only edition in the Ferguson Collection (p. 369) and Wellcome (III, 391). (Ferchl, 272; Ferguson, I, 465–466; Hoover, 478)

KIRANUS, King of Persia (pseudonym)

Moderante Auxilio Redemptioris Supremi, Kirani Kiranides, et ad eas Rhyakini Koronides. Quorum ille in Quaternario tam Librorum, quam Elementari, e totidem Linguis, primo de Gemmis XXIX, Herbis XXIV, Avibus XXIV, ac Piscibus XXIV. . . . (Edited by G. Barthius). . . .
(Leipzig: 'Aera C' (1638).

First edition. 8vo. 9 leaves (last a divisional title page), 159, (1) pp., 11 leaves. Woodcut on title page. Characteristic browning of paper throughout; otherwise fine copy, entirely uncut with wide margins, in contemporary pasteboards. Rubber stamp of Prof. Pedro N. Arata (famous Argentinian chemist) on title,

and signature of his son, Maria Pedro Arata (celebrated engineer), on front pastedown endpaper.

AN IMPORTANT volume comprising a Latin translation of the famous book of *Kirani Kiranides*, an ancient Persian treatise often quoted by the early alchemists. Ferguson states: "Of all the books of secrets . . . I know of, there is no one more extraordinary than that entitled *Kirani Kiranides*. It was privately printed in Germany in 1638, and from the very first it has excited curiosity, and from its rarity has been hunted down by the lovers of out of the way books. . . . It is not a little remarkable that this book was translated into English, . . . The translator has concealed his name, but in the preface, . . . he . . . says that the Latin was privately printed and distributed, and that after diligent search . . . he procured a copy, and translated it. Even at that time, therefore, in 1685, . . . it had become a scarce and much coveted book. If it were so scarce then, it has become much scarcer in the course of two hundred years more." Ferguson was writing in 1888, and the passing of another century has resulted in this book becoming virtually unfindable, especially in uncut condition. (Brunet, III, 664–665; Duveen, 321–322; Edelstein, 1292; Ferguson Coll., 369; Ferguson, *Books of Secrets*, I, pt. 6, pp. 16–19; Neu, 2153; Wellcome, I, 3565)

KIRCHER, Athanasius

Ars Magna Sciendi, in XII Libros Digesta, qua nova & universali methodo per artificiosum combinationum contextum de omni re proposita plurimis & prope infinitis rationibus disputari, omniumque summaria quaedam cognitio comparari potest. Ad Augustissimum Rom. Imperatorem Leopoldum Primum, Justum, Pium, Felicem. Amsterdam: Apud Joannem Janssonium à Waesberge, & Viduam Elizei Weyerstraet. 1669.

First edition. 2 vols., folio, in 1 (continuous pagination). I: Engraved title, 8 leaves (including engraved portrait of Emperor Leopold I), 245, (1) pp. II: Engraved title (Tom. II, between pp. 246–247), pp. (247)–482, 5 leaves (index). Separate engraved plate (facing p. 12), volvelle (p. 13), full-page plate (p. 249), and 5 double-page tables on separate leaves (between pp. 406–407, 434–435, 462–463). Many large copperplates and woodcut figures in text. Some leaves lightly brown as is usually the case with this book; otherwise a very good, wide-margined copy in contemporary speckled calf, rebaked, with original gilt spine laid on.

A RARE AND curious encyclopedic work based on the "art" of Ramon Lull, scrutinizing the arts and sciences in the light of Lull's methods and theories. The fine copperplate on page 249 shows the tree of philosophy. Minerals, earths, ores, metals, nonmetals, salts, etc., are discussed. "Designed to teach all disciplines systematically Kircher's *Ars magna sciendi* (1669) was in the mainstream of the didactic and

encyclopedic movement of the century" (D.S.B.). "Un des bons ouvrages de ce savant" (Caillet). "A valuable work" (Watt). Kircher (1602–1680), German Jesuit, scholar and mathematician, and professor in Würzburg and later in Rome, published about forty large and small works on various subjects. A man of vast erudition, his works have great historical interest. The present book is of special interest owing to the influence of Lull's writings on European thought. Not in Duveen, Edelstein, Ferchl, Guaita, Neu, Osler, Smith, Waller, etc. (Caillet, 5771; D.S.B., VII, 376–377; Ferguson, I, 467; Ferguson Coll., 369; Watt, II, 573k; Wellcome, III, 395)

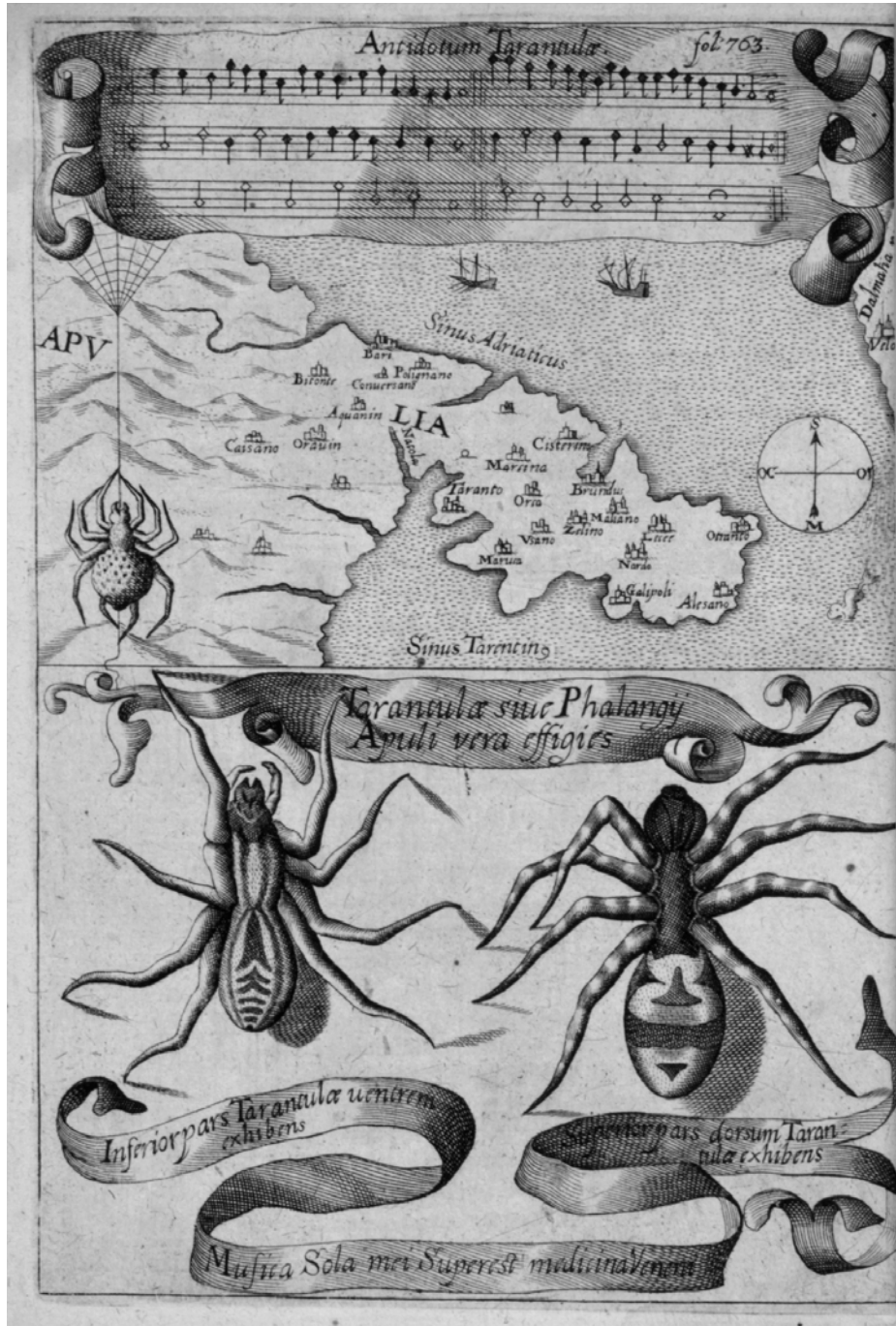
KIRCHER, Athanasius

Magnes sive de Arte Magnetica opus tripartitum, quo praeterquam quod universas magnetis natura, ejusque in omnibus artibus & scientiis usus nova methodo explicetur, e viribus quoque & prodigiis effectibus magneticarum, aliarumque abditarum naturae motionum in elementis, lapidibus, plantis & animalibus elucescentium, multa hucusque incognita naturae arcana per physica, medica, chymica & mathematica omnis generis experimenta recluduntur. . . .

Cologne: Apud Jodocum Kalcoven. 1643.

Second (first Cologne) edition. 4to. 15 leaves, 797, (1) pp., 19 leaves. Fine engraved title page, 29 full-page engraved plates (including 1 of volvelles), and numerous woodcut figures. Engraved title laid down; otherwise very good copy, in old calf, rebaked with contemporary gilt spine laid on.

KIRCHER (1602–1680), a Jesuit father and professor at Würzburg and later at Rome, published many large works on scientific and other subjects. He was a man of "vast . . . erudition, of equal credulity, superstition, and confidence in his own opinion" (Ferguson). Kircher stands as a link between the medieval world and the then new experimental science. The present important work (first, Rome, 1641), his second and largest book on magnetism, was preceded by the brief *Ars magnesia* (1631) and followed by the *Magneticum naturae regnum* (1667). William Gilbert's *De magneti* (1600), the first modern treatment of magnetism, greatly influenced Kircher, and he adopted Gilbert's theories of magnetism. This work contains all that was then known on electricity and magnetism. Corrected and enlarged by Kircher shortly after the first edition appeared, the book is important for the first use of the term *electromagnetism* (p. 563). Discussions of metals, transmutation, luminescence, and phosphorescence, etc., are of chemical interest. (Caillet, 5779; D.S.B., VII, 377; Ferchl, 273; Ferguson, I, 467 [not in Young Coll.]; Gartrell, 286; Harvey, 312; Krivatsy, 6399 [imperf.]; Merrill, 5; Partington, II, 329; Poggendorff, I, 1258; Thorndike, VII, 269; Waller, 11386; Wellcome, III, 394)



Kircher. Magnes sive de Arte Magnetica. Cologne, 1643.

KIRCHER, Athanasius

Magneticum Naturae Regnum sive Disceptatio Physiologica de triplici in Natura rerum Magnete, juxta triplicem ejusdem Naturae gradum digesto Inanimato Animato Sensitivo qua occultae prodigiosarum quarundam motionum vires & proprietates, quae in triplici Naturae Oeconomia nonnullis in corporibus noviter detectis observantur, in apertam lucem eruuntur, & luculentis argumentis, experientia duce, demonstrantur. Ad Inclytum, & Eximium Virum Alexandrum Fabianum Novi orbis Indigenam.

Amsterdam: Ex Officina Johannis Janssonii a Waesberge & Viduae Elizei Weyerstræat. 1667.

Second (first 12mo.) edition. 10 leaves (including engraved title), 201, (7) pp. Fine copy in contemporary blind-ruled calf, rebaked. From the library of Henry Cavendish (1731–1810), with his woodcut book stamp on the verso of the letterpress title page; also from the library of the famous chemist Charles Blachford Mansfield (1819–1855), friend and colleague of Michael Faraday, with his signature in ink on the recto of the first free endpaper: "C. B. Mansfield, 1843, Septr. 14, London."

THE FIRST edition appeared in 4to. format earlier in the same year (Rome, 1667). In this work Kircher holds that every substance possesses magnetic properties to some degree. He attempts to prove that, in addition to minerals, both animals and plants exhibit weak magnetic properties. From this belief arose the concepts of animal magnetism and mineral magnetism. There are descriptions of chemical experiments, furnaces, metals, salts, etc., as well as experiments on substances prepared by chemical processes from animal sources. This copy has a very distinguished provenance, having belonged to the great scientist Henry Cavendish, whose pioneer researches on magnetism and electricity and other areas of physics and chemistry are well known. Mansfield, an industrial chemist in London who worked with Faraday, discovered a method for the extraction of benzene from coal tar and gave lectures at the Royal Institution. Very rare. (D.S.B., VII, 377; Ekelöf, I, 8; Waller, 10867; Wellcome, III, 395; Wheeler Gift, 158)

KIRCHER, Athanasius

Mundus Subterraneus, in XII Libros digestus; quo Divinum Subterrestris Mundi Opificium, mira Ergasteriorum Naturae in eo distributio, . . . Universae denique Naturae Majestas & divitiae summa rerum varietate exponuntur. Abditorum effectuum causae acri indagine inquisitae demonstrantur; cognitae per Artis & Naturae conjugium ad humanae vitae necessarium usum vario experimentorum apparatu, necnon novo modo, & ratione applicantur.

Amsterdam: Apud Joannem Janssonium & Elizeum Weyerstraten. 1665.

First edition. 2 vols., folio, in 1. Engraved title leaf (dated 1664; Theod. Matham sculpsit), 15 leaves, 346 pp., 3 leaves. With 2 engraved portraits (Pope Alexander VII, and Kircher, age 62) in volume I; engraved title leaf (dated 1664; A. Siourtsma sculpsit), 5 leaves, 487, (1) pp., 4 leaves. With 19 finely engraved plates and maps (13 folding double page) and 2 smaller engraved plates (facing pp. 30 and 384 of vol. II). 7 folding tables and engraved volvelles (pp. 132, 154, 156). Several hundred large and small copperplate and woodcut engravings in text. Fine tall copy in contemporary calf, beige morocco label gilt, corners repaired.

A COMPLETE COPY of this beautiful and rare book, with the two portraits (often missing). Unquestionably the most interesting and scientifically important of Kircher's many works, showing him to have been thoroughly knowledgeable of the whole gamut of seventeenth-century sciences. The book attempts to describe the structure of the earth from a physical and chemical standpoint. Book XI includes a spirited attack on alchemy, which produced counterblasts from such alchemists as Salomon de Blawenstein and Gabriel Clauder (see Partington, II, 331). Another edition appeared in 1678 (Duveen, 322). In addition to chemistry, the author covers many other subjects: e.g., oceanic currents (with first map of these); physics of sun, moon, and earth; hydrography; volcanoes and their activity; thermal springs; and mineralogy, mining, and metallurgy. This work is important for the large, clearly engraved plates, including three full-page copperplates of chemical apparatus (pp. 390, 392, and 394 of vol. II). (Caillet, 5783; Ferchl, 273; Ferguson, I, 467; Guaita, 1496; Partington, II, 329–331; Poggendorff, I, 1259; Smith, 266; Waller, 10868; Wellcome, III, 395)

KIRCHHOFF, Gustav Robert

Researches on the Solar Spectrum, and the Spectra of the Chemical Elements. By G. Kirchoff. . . . Translated with the author's sanction from the Transactions of the Berlin Academy for 1861. By Henry E. Roscoe. . . .

Cambridge & London: Macmillan and Co. 1862.

First English edition. 4to. iv, 36 pp. + 8 pp. (advertisements). With 3 lithographic plates. Fine copy with wide margins, in contemporary cloth-backed blue printed boards.

BORN AT Königsberg, Prussia, Kirchhoff (1824–1887) is celebrated for his contributions to spectrum analysis and theoretical physics. In his fundamental paper (1859) he explained the production of Fraunhofer lines in spectra by the absorption of the corresponding spectral wavelengths in the atmosphere of the sun. First appearing in 1861 (Grolier, 59; P.M.M., 278; Sparrow, 117), in this classic research of the solar spectrum Kirchhoff applies the principles of spectrum analysis discovered by himself and

R. W. Bunsen: i.e., the correspondence between line spectra and the metallic elements. In 1861 Kirchhoff modified his spectroscope by employing four prisms and obtained a much-broadened solar spectrum in which he was able to identify a large number of terrestrial elements. He thus confirmed that the metallic elements that occur on Earth also occur in the Sun. The first two plates show spectral lines of many metallic elements. The third plate depicts Kirchhoff's spectroscope, with the four prisms. "While spectrum analysis . . . was due equally to Kirchhoff and Bunsen, its celestial applications belong to Kirchhoff alone" (Cajori). The translator, Roscoe (1833–1915), also carried out research on spectrum analysis and photochemistry. A sequel volume appeared (Cambridge, 1863, 16 pp.) (Bolton, 576; Cajori, 169; Magie, 354; Norman, 1220; Sotheran, Cat. 789 [1924], 5320 ["Scarce"]; Wheeler Gift, 1548)

KIRCHHOFF, Gustav Robert, and BUNSEN, Robert Wilhelm

Chemische Analyse durch Spectralbeobachtungen von G. Kirchhoff und R. Bunsen (1860). Herausgegeben von W. Ostwald.

Leipzig: Verlag von Wilhelm Engelmann. 1895.

First edition thus. 8vo. 74 pp. With 2 colored plates (1 folding) of spectra and 7 woodcuts in text. No. 72 of Ostwald's *Klassiker der Exakten Wissenschaften*. Fine copy in original printed boards.

IN THIS important reprint edited with notes by the physical chemist Friedrich Wilhelm Ostwald (1853–1932), Kirchhoff and Bunsen describe their pioneering spectroscopic research, which led to the discovery and isolation of two new alkali metals, rubidium and cesium. Details are given of the spectra of the alkali metals (lithium, sodium, potassium, rubidium, cesium), as well as of the alkaline earth metals (calcium, strontium, barium). The physical and chemical properties of rubidium and cesium and some of their compounds are described. (Bolton, *First Supplement*, 240; D.S.B., II, 589, VII, 383; Partington, IV, xxix, 292; Roller & Goodman, II, 42)

KIRCHMAIER, Georg Caspar

Georgi Casp. Kirchmaieri, In Electorali Witteberga P.P. Acad. C. De Phosphoris et Natura Lucis, Nec non de Igne, Commentatio Epistolica.

Wittenberg: Apud Johannem Henricum Ellingerum, Bibl. Anno 1680.

First edition. 4to. 1 leaf, 72 pp., 3 leaves. Title page in red and black. Large copperplate vignette on title. Minor repair to top edge of title page (affecting 5 letters); otherwise a fine copy in maroon half morocco antique, marbled boards, spine gilt-lettered and dated.

A MILESTONE WORK in the history of phosphorescence, in which Kirchmaier distinguished elementary phosphorus (so-called Kunckel's phosphorus) from the Bologna stone (impure calcined barium sulfide), emeraldine phosphorus (green fluorspar), and Balduin's hermetic phosphorus (calcium nitrate). He gives Potier's preparation, saying that he had omitted one essential, which Mentzel had given him, but he does not disclose it. Kirchmaier published a shorter tract on phosphorus (*Noctiluca constans et Der vices fulgurans, diutissimè quaesita, nunc reperta*, Wittenberg, 1676), which is incorporated into this more extensive work. E. Newton Harvey discusses this book, and its title page is illustrated in plate 36. Partington also discusses this work, stating that Kirchmaier followed Elsholtz in distinguishing the several varieties of phosphors known at that period. Pages 43–69 recount the author's own ideas on the nature of fire and light, with references to the works of contemporary chemists (e.g., Becher, Bartholin, Boyle, Sennert, Kircher, and Helmont). Scarce. Not in Bolton, Caillet, Duveen, Ferguson Coll., Neu, Sondheimer, Waller, Watt, etc. (Ferchl, 273; Ferguson, I, 469; Newton Harvey, 426; Partington, II, 339; Poggendorff, I, 1261; Smith, 266; Wellcome, III, 396)

KIRCHMAIER, Georg Caspar

Institutiones Metallicae, das ist, Wahr- und klarer Unterricht vom Edlen Bergwerck, durch einen, deszelben Liebhaber, bey der Acad. Nat. Curios. Colleg. Nebenst andern nützlichen Zugaben, censirt und publicist in Wittenberg, Anno 1687. Wittenberg & Leipzig. 1687.

First edition. 4to. 8 leaves, 88 + 112 pp. Title page in red and black, with large copperplate cignette (smelting furnace and miners at work). With 4 copperplates (3 folding) of mining compass and cross-sections of mines. Imprint cropped (mostly removing names of publisher); otherwise very good copy in contemporary vellum. Bound with: 4 seventeenth-century works on law, by J. F. Rheti, G. C. Wagner, T. Schöpffer, and C. Ziegler.

A MINING BOOK of considerable metallurgical and chemical interest, containing an extensive glossary of technical terms and their definitions (pp. 1–44 of 112 pp. section). The ores from which the common and rarer metals are produced and the various processes for extracting and refining the metals are described. Kirchmaier (1635–1700), professor of rhetoric at the University of Wittenberg, was received into the Academia Naturae Curiosorum in 1677 under the name Phosphorus II. A man of great attainments and versatility, his studies covered chemistry, metallurgy, mineralogy, physics, medicine, and zoology. His publications in these fields won him great respect among scholars. Kirchmaier was a friend of "Kunckel and had him provided with a laboratory in which he taught practical chemistry" (Partington, II, 363). A very rare book, unknown even to

the eighteenth-century bibliographers Baumer and Lenglet-Dufresnoy and unrecorded in more recent bibliographies. (Ferchl, 273; Poggendorff, I, 1261)

KIRCHMEYER, Carl Valentin

Uralter Kuckus-Brunn, anjetzo erneuerte Gradlitzer Brunn-Quelle, dessen Ursprung, Gelegenheit, Alterthum, heylsame Mineralien, Würckung, Nutzbarkeit, und rechter Gebrauch in möglichster Kürtze beschrieben . . . Vermehret und zum andernmal auffgelegt. . . .

Prague: gedruckt bey Wolfgang Wickhart, Ertz-Bischofflichen, und Landschafft-Buchdrucker im Königreich Böhheim. 1718.

Third edition. 8vo. 6 leaves, 91, (1) pp. Engraved frontispiece (A. B. sc.), and 2 folding copperplates. Very fine copy, in original sprinkled boards.

A TREATISE ON the waters of Gradlitz in Bohemia, with analytical chemical details, dedicated to the owner of the springs, Friedrich Anton von Sporck. The beautiful plates depict the buildings and surrounding countryside in which the mineral baths are located. The first and second editions appeared at Prague, 1689 (Duveen, 648) and 1696 (Neu, 2158), respectively. The present is the final and best edition. (Blake, 243; Ferchl, 273)

KIRCHWEGER, Anton Joseph

Aurea Catena Homeri. Das ist: eine Beschreibung von dem Ursprung der Natur und natürlichen Dinge, wie und woraus sie geböhren und gezeuget, auch wie sie erhalten und wiederum in ihr uranfängliches Wesen zerstöret werden, auch was das Ding sey, welches alles geböhret und wieder zerstöret, gantz simpliciter nach der Natur selbst eigner Anleitung und Ordnung mit seinen schönsten natürlichen rationibus und Ursachen überall illustriret. Neue Auflage, welche nach einem accuraten und vollständigen Manuscript fast auf allen Blättern verbessert, und an sehr vielen Orten um ein grosses Theil vermehret.

Leipzig: Verlegts Samuel Benjamin Walther. 1738.

Third edition. 8vo. 8 leaves, 406 pp., 8 leaves. With folding copperplate, folding woodcut plate, and 4 tables in text. Title and frontispiece in red and black. Fine copy in contemporary vellum, with old stamp on back of frontispiece (Museum Francisco-Carolinum Linz a. d. Donau).

THE SCARCE third edition of an important alchemical work, the text of which was carefully studied by Goethe. The first and second editions appeared at Leipzig in 1723 and 1728, respectively. Later editions also appeared: e.g., Jena, 1754; Jena, 1757; Vienna, 1757. The first book (pp. 1–222) is on the generation of matter (animal, vegetable, and mineral), and the second book (pp. 223–406) covers the decomposi-

tion of matter. Although the authorship of this work has not been established beyond doubt, the preponderance of evidence points to Kirchweger (d. 1746) having written it, possibly basing the text on an earlier manuscript by an unidentified author. For interesting notes on this work, see Ferguson and Wellcome (III, 396). Duveen, Rosenthal, and Wellcome list other editions. Not in Bolton, Guaita, Mellon, Partington, Smith, Sondheimer, Waite, Waller, Watt, etc. (Caillet, 543; Edelstein, 1297; Ferchl, 16 & 273; Ferguson, I, 470; Ferguson Coll., 372; Neu, 2162)

KIRCHWEGER, Anton Joseph

Liber III. Catenae Aureae Homeri de Transmutatione Metallorum. Erste und ächte Auflage.

Hall: Bey Johann Christoph Messerer. 1770.

8vo. 94 pp., 1 leaf (blank). Fine copy in contemporary half calf, speckled boards, orange gilt-lettered label.

THE THIRD and final part in German, complete in itself, of the *Aureae Catenae Homeri*. The first edition, in Latin, containing just two parts, was published by Johann Georg Böhme (Frankfurt & Leipzig, 1723). The third part first appeared in German (Frankfurt & Leipzig, 1726, and again in 1727). The present edition of 1770 is possibly the fourth edition in German. This alchemical book purports to describe processes for the transmutation of metals in eight chapters. The appearance of this type of alchemical book so late in the eighteenth century shows that there were believers in alchemy in Germany at that time. For further information on Kirchweger and this strange work, see Ferguson and Wellcome. Very scarce. Not in Blake, Bolton, Caillet, Duveen, Edelstein, Ferchl, Neu, Partington, Poggendorff, Smith, Sondheimer, Waite, Waller, Watt, etc. (Ferguson, I, 470 [not in Young Coll.]; Ferguson Coll., 372; Wellcome, II, 397)

KIRCHWEGER, Anton Joseph

Microscopium Basilii Valentini, sive commentariolum et cribellum über den grossen Kreuzapfel der Welt . . . Ein Euphoriston der ganzen Medicin . . . Ein Compendium der ganzen chymischen Scienz und Physica Hermetica Concentrata; ein Werk, so noch nie gesehen worden, höchst nützlich zur Praxi und der jetzigen Welt höchst nöthig. Berlin. 1790.

First edition. 8vo. 172 pp., 2 blank leaves. Very fine copy, entirely uncut and with wide margins, in original patterned boards.

A CURIOUS WORK, which attempts to apply the philosophical principles of Basil Valentine to pharmaceutical chemistry. In four chapters Kirchweger (d. 1746) discusses the

ores of antimony, the element itself, and its compounds. Alchemical symbolism is extensively used throughout. According to Ferguson the author was a doctor of medicine at Gmunden, in Upper Austria. Rare. Not in Caillet, Ferchl, Guiata, Partington, Poggendorff, Waite, Waller, Watt, etc. (Bolton, 996; Duveen, 323; Edelstein, 1298; Ferguson, I, 470 [not in Young Coll.]; Ferguson Coll., 372; Neu, 2159; Rosenthal, 489; Smith, 266; Wellcome, III, 397)

KIRKALDIE, George

Dissertation Chemica Inauguralis, de Duabus Aeris speciebus Aquam gignentibus. Quam annuente summon numine . . . Gulielmi Robertson, . . . Academiae Edinburgensae Praefecti . . . Pro Gradu Doctoris . . . Georgius Kirkaldie, Scotus . . . Ad diem 12 Septembris, hora locoque solitis.
Edinburgh: Apud Balfour et Smellie, Academiae Typographos. 1786.

First edition. 8vo. (in 4s). 3 leaves, 41, (1) pp. Pristine copy, in maroon half calf antique, marbled boards, spine gilt-lettered and dated.

A NATIVE OF Angus (Forfarshire), Kirkaldie was awarded the M.D. degree by Edinburgh University for this excellent chemical dissertation on oxygen (*aeris dephlogisticati*) and methane (*aeris inflammabilis*). He points out that on combustion oxygen and hydrogen, as well as oxygen and methane, produce water, and he ponders these seemingly strange reactions. The use of hydrogen in air guns and for filling balloons is also discussed. There are references to contemporary chemists and their work on gases (e.g., Bergman, Black, Cavallo, Cavendish, Cullen, Fontana, Ingenhousz, Kirwan, Landriani, Scheele, and Senebier). Kirkaldie comments on Lavoisier's reduction of the calx (oxide) of a metal by hydrogen, and the works of Priestley are often cited. A believer in phlogiston, Kirkaldie's explanations of reactions are based upon its supposed presence. Not in Black or the usual bibliographies. (Munk, II, 392)

KIRWAN, Richard

De la force des Acides, & de la proportion des substances qui composent les sels neutres; Ouvrage traduit de l'Anglois de M. Kirwan, par Madame L.
N.p., n.d. (Paris, 1792).

First French edition. 8vo. 1 leaf (blank), 108 pp., 1 leaf (blank). Very fine copy, unpressed and uncut with wide margins, in gilt-ruled half calf, marbled boards, maroon morocco label, by San-gorski & Sutcliffe, London.

THE IMPORTANT researches by Kirwan on the relative strengths of acids and the combining proportions of acids and alkalies (published in the *Proceedings of the Royal Irish*

Academy, 1790, IV, 3–84) were translated by Madame Lavoisier and published in the *Annales de Chimie*, vol. 14, 152–211, 238–286 (1792). This is one of the offprints from that journal, of which only thirty copies were printed. “Offprints without half-title or title-page exist but seem to be very rare” (Duveen, *Chymia* [1953], IV, 14–15). As Duveen indicates, Madame Lavoisier's footnotes prove conclusively that, in addition to possessing the ability to make an accurate translation, she had sufficient knowledge of chemical theory and practice to enable her to constructively comment on Kirwan's observations. (Cole, 724; Duveen & Klickstein, 277; Grimaux, *Lavoisier* [1888], 43; Partington, III, 666)

KIRWAN, Richard

Elements of Mineralogy. By Richard Kirwan, Esq.; F.R.S.
London: Printed for P. Elmsly, in the Strand. 1784.

First edition. 8vo. 1 leaf, xviii, 412 pp., 6 leaves (index). Fine copy with wide margins, fore- and lower edges uncut, in contemporary gilt-ruled calf, rebaked with original spine laid on, maroon morocco label. From the library of Dr. Joseph Black, with characteristic marginal annotations in ink.

KIRWAN (1733–1812), born in Ireland though of English ancestry, was educated in France, England, and Germany. Trained as a lawyer, he soon renounced that profession to pursue a career in science, in which he excelled. Elected F.R.S. (1780) and awarded the Copley Medal for his work on chemical affinity, he eventually settled in Dublin and became president of the Royal Irish Academy (1799). He initially espoused the doctrine of phlogiston but later converted to the new theories of Lavoisier. Kirwan considered mineralogy to be a branch of chemistry, and the present work is the “first systematic treatise on mineralogy in English” (Ferguson). It is based on the 7,331 specimens collected by N. G. Leske (1757–1786), professor at Leipzig and Marburg, and later owned by A. G. Werner. At the urging of Kirwan, the collection was purchased by the Irish Parliament. Some of the Leskean collection still exists. A greatly enlarged second edition (1794–1796) appeared, as well as translations into French (1785), German (1785), Spanish (1789), and Russian. Although not signed, the numerous annotations in this copy are in the characteristic handwriting of the great Scottish chemist Joseph Black. The annotations include important additions, corrections, criticisms, and chemical symbols. Most are in a firm hand, but a few are in later and shaky writing. An unsigned copy of Scheele's *Chemical Essays* (1786) with similar marginal annotations by Black is described by Duveen (p. 533). (Cole, 716; D.S.B., VII, 389; Ferchl, 274; Ferguson, I, 472 [not in Young Coll.]; Hoover, 486; Partington, III, 662; Poggendorff, I, 1263; Sinkankas, 3430; Ward & Corozzi, 1261)

KIRWAN, Richard

Elements of Mineralogy. By Richard Kirwan, Esq. F.R.S. & M.R.I.A. . . . Second edition, with considerable improvements and additions. . . .

London: Printed by J. Nichols, for P. Elmsly, in the Strand. 1794, 1796.

Second edition. 2 vols., 8vo. I (1794): xxxi, (1), 510 pp., 1 leaf (blank). II (1796): xvi, (2, errata), 529, (1) pp. With 3 printed tables (on 6 folding leaves). Half titles omitted. Joints tender; otherwise very good copy in original gilt-ruled half calf, marbled boards. Contemporary signature of J. Ingle, Peterhouse College, Cambridge, on flyleaf of volume I, and with copious marginal and other annotations, plus numerous loose slips of paper on mineralogy inserted.

THE GREATLY enlarged, updated, and extensively rewritten second edition, in which volume I covers "Earths and Stones" and volume II deals with "Salts, Inflammables, and Metallic Substances." The preface of volume I is dated 1 January 1795, though the title page is dated 1794. "Following Cronstedt, Kirwan based his classification on qualitative chemical tests. Commenting on the vast increase of mineralogical information in Europe during the decade following his first edition, Kirwan said he would have despaired of assimilating it had it not been for the acquisition of the Leskean collection of minerals" (D.S.B.). Although classified according to the Wernerian system, Kirwan states (p. xvi) that he is not "slavishly addicted to any system" and takes the liberty when necessary "of framing new systems." This edition was the best textbook on mineralogical chemistry of the period. A virtual reprint of this edition appeared (Dublin, 1810). This is an interesting copy, as the notes and separate inserted slips suggest that Ingle may have contemplated publishing a mineralogical work of his own. No reference to Ingle has been located. (Cole, 717; D.S.B., VII, 389; Ferchl, 274; Partington, III, 662; Poggendorff, I, 1263; Sinkankas, 3431; Smith, 266; Ward & Carozzi, 1262; Watt, II, 574g; Wellcome, III, 398)

KIRWAN, Richard

Elements of Mineralogy. By Richard Kirwan, Esq. F.R.S. & M.R.I.A. . . . Second edition, with considerable improvements and additions. . . .

London: Printed by J. Nichols, for P. Elmsly, in the Strand. 1794, 1796.

Second edition. 2 vols., 8vo. I (1794): xxxi, (1), 510 pp., 1 leaf (blank). II (1796): xvi (2, errata), 529, (1) pp. With 3 folding printed tables. Half title in each volume. Fine copy in original gilt-ruled polished tree calf, maroon labels.

ANOTHER COPY of this important edition.

KIRWAN, Richard

Éléments de Minéralogie, traduits de l'Anglois de M. Kirwan, Membre de la Société Royale de Londres, par M. Gibelin.

Paris: Chez Cuchet, Libraire, rue & hôtel Serpente. 1785.

First French edition. 8vo. (4), xlvi, 432 pp. Woodcut vignette on title page (cherub carrying out a distillation). Fine copy, in original mottled calf, spine richly gilt with armorial crest at bottom, maroon morocco label.

THE FIRST edition in French of Kirwan's *Elements of Mineralogy* (London, 1784), translated by Jacques Gibelin (1744–1828), a celebrated physician and naturalist who was curator of the library at Aix-en-Provence. The approbation is dated 1 December 1794 and signed by B. G. Sage. IN THE *avertissement* Gibelin notes that Kirwan had not mentioned many French chemists and mineralogists, but he explains this omission by stating that the author was writing to facilitate the study of mineralogy in England. The woodcut on the title page is a reversed version of that used on the title page of Lavoisier's *Traité Élémentaire de Chimie* (Paris: Chez Cuchet, 1789, 2 vols., 8vo.); however, it is different from the latter in that this woodcut contains more detail, including, for example, an easel with a painting on it. (Partington, III, 662; Ward & Carozzi, 1264)

KIRWAN, Richard

Essay, in Answer to the Following Question proposed by the Royal Irish Academy: "What are the Manures most advantageously applicable to the various sorts of soils, and what are the causes of their beneficial effect in each particular instance?" By R. Kirwan, Esq. L.L.D. F.R.S. M.R.I.A. . . .

Dublin: Printed by Graisberry & Campbell, Back-Lane. 1802.

8vo. v, (i), 83, (1) pp. With folding frontispiece depicting a drill for 2 horses and a barrow sowing machine. Fine, crisp copy, in quarter calf antique, marbled boards, maroon morocco gilt-lettered label.

AN AGRICULTURAL chemical work that was first read to the Royal Irish Academy in 1794 and appeared in their *Transactions* in 1796 (vol. 5, pp. 129–198). In 1796 it was published in book form in Dublin and also in London. Several revised editions of this popular work followed, the best being the sixth (London, 1806). Various types of mineral additives and animal manures to enrich soils are described, with numerous references to the writings of earlier and contemporary chemists (e.g., Van Helmont, Boyle, Hales, Priestley, Lavoisier, Fourcroy, Bergman, Senebier, and Ingenhousz). Chemical analyses of the several types of fertilizers are given. Partington (III, 669) states that "Kirwan's

agricultural work is important." No bibliographical reference to this rare Dublin edition has been found.

KIRWAN, Richard

An Essay on the Analysis of Mineral Waters. By Richard Kirwan, Esq. F.R.S.S. . . .

London: Printed by J.W. Myers, No. 2, Paternoster-Row, for D. Bremner, (Successor to Mr. Elmsly) Strand. 1799.

First edition. 8vo. vii, (1), 279, (1) pp. With 8 tables on 7 folding sheets (tables II and III on same sheet). Title page slightly foxed; otherwise fine copy in quarter calf antique, marbled boards, green morocco label. Neat notation in ink on title: "Ex Libris Societatis Edinensis Medicae."

A CLASSIC BOOK in the history of chemistry, covering the latest analytical procedures. "This work contains a very complete account of the qualitative and quantitative analysis of various kinds of mineral waters, and although based on the previous researches of Bergman and Westrumb, it shows Kirwan's chemical skill in a very favourable light" (Partington, who discusses this work in detail). Advances made in water analysis since the investigations of Bergman are summarized. The tables include data on the quantities of alkalis and earths that will neutralize carbonic, hydrochloric, nitric, and sulfuric acids under different conditions and the solubility of various salts in ethyl alcohol. The results of some of Kirwan's experiments on the limits for the production of visible precipitates in very dilute solutions are included. (Blake, 243; Bolton, 577; Cole, 718; D.S.B., VII, 390; Duveen, 324; Neu, 2165; Partington, III, 667-669; Smith, 267; Waring, 777; Wellcome, III, 398)

KIRWAN, Richard

An Essay on Phlogiston, and the Constitution of Acids. By Richard Kirwan, Esq. F.R.S. . . .

London: Printed by J. Davis, for P. Elmsly, in the Strand. 1787.

First edition. 8vo. 2 leaves, 1 leaf (errata), 146 pp. Fine copy, complete with the half title, in nineteenth-century cloth-backed boards, spine gilt-lettered.

A FAMOUS BOOK in the history of chemistry and the starting point of a controversy between the supporters of the phlogiston theory and those who opposed it. Kirwan supposed that "inflammable air" (hydrogen) was identical to phlogiston, a suggestion originally made by Henry Cavendish in 1766. He discusses the new theory of Lavoisier and his school (whom he first describes as "antiphlogistians"), and gives a list of chemists who still supported the phlogiston theory (e.g., Bergman, Chaptal, Crell, De La Metherie,

Priestley, and Wiegleb). The book was favorably received in Great Britain and by most European chemists. Lavoisier and his associates had the volume translated into French (by Madame Lavoisier) and published it in 1788 with critical notes that successfully refuted Kirwan's views. Partington (wrong date: 1784) discusses this work in detail and considers it "one of Kirwan's most interesting books." (Blake, 243; Bolton, 576; Cole, 719; D.S.B., VII, 388-390; Duveen, 324; Partington, III, 662; Smith, 267; Wellcome, III, 398)

KIRWAN, Richard

An Essay on Phlogiston, and the Constitution of Acids. A New Edition. By R. Kirwan, Esq. . . . To which are added, Notes, exhibiting and defending the Antiphlogistic Theory; and annexed to the French Edition of this Work; by Messrs. de Morveau, Lavoisier, de la Place, Monge, Berthollet, and de Fourcroy: translated into English. With additional remarks and replies, by the Author.

London: Printed for J. Johnson, No. 72, St. Paul's Church-Yard. 1789.

Second English edition. 8vo. xxiii, (1), 317, (1) pp. Fine copy, unpressed and uncut with wide margins, in original boards. Contemporary signature of G. Innes on title page and inscription on flyleaf: "To the Medical Society of Aberdeen, with Mr. Innes best wishes for their Success."

THE ENGLISH translation by William Nicholson of the *Essai sur le Phlogistique* (Paris, 1788), to which Kirwan has added (pp. 301-317) "Remarks upon the Annotations of the French Academicians." Nicholson has "added a Preface containing some comments on the obstacles preventing ready acceptance of the new theories and on errors in weighing and the accuracy of balances" (Cole). This work, pivotal in the history of chemistry, successfully convinced the English-speaking world of the falsity of the phlogistic hypothesis and greatly assisted the establishment of Lavoisier's correct antiphlogistic doctrine. Although Kirwan had been one of the staunchest adherents to the theory of phlogiston, the appearance of this book had a profound effect upon him, and by 1791 he was completely converted to the "new chemistry." (Bolton, 576; Cole, 720; Duveen & Klickstein, No. 244; Ferchl, 273; Partington, III, 662; Partington & McKie, "Historical Studies on the Phlogiston Theory," *Annals of Science*, III [1938], 4; Poggendorff, I, 1263; Smeaton, *Fourcroy*, No. 107; Smith, 267; Watt, II, 574g)

KIRWAN, Richard

Essai sur le Phlogistique, et sur la Constitution des Acides, traduit de l'Anglois de M. Kirwan; avec des Notes de MM. de Morveau, Lavoisier, de la Place, Monge, Berthollet, & de Fourcroy.

Paris: Rue et Hôtel Serpente. 1788.

First French edition. 8vo. xii, 344 pp., 2 leaves (table and errata). Woodcut vignette on title page and woodcut head- and tailpieces. Very good copy in green half calf antique, marbled boards, spine richly gilt, maroon morocco label.

THE FRENCH translation of Kirwan's *An Essay on Phlogiston* (London, 1787) and a very important book in the history of chemistry, marking the end of the phlogiston period and the vindication of Lavoisier's views. Although Kirwan's defense of the phlogiston theory was favorably received by most European chemists, it occurred to Lavoisier and his associates that a refutation of Kirwan's book, based on experimental observations, would be a telling blow against the theory of phlogiston and would give added stature to the "new chemistry." Accordingly, it was translated into French by Madame Lavoisier, with Lavoisier and his co-workers adding major refutations at the end of each section. The result was the immediate recognition of the falsity of the phlogistic hypothesis. Between 1789 and 1791 Kirwan gradually abandoned his belief in phlogiston and supported Lavoisier. (Blake, 243; Bolton, 576; Cole, 721; D.S.B., VII, 388; Duveen, 324; Duveen & Klickstein, 277-279; Partington, III, 662-663; Smeaton, *Fourcroy*, No. 106; Smith, 267; Waller, 11170; Wellcome, III, 398)

KIRWAN, Richard

An Estimate of the Temperature of Different Latitudes.

By Richard Kirwan, Esq. F.R.S. . . .

London: Printed by J. Davis, for P. Elmsly, in the Strand. 1787.

First edition. 8vo. viii, 114 pp. Very fine copy, unpressed and uncut with wide margins, in original boards, new printed paper label on spine. From the library of Horace Benedict de Saussure (1740-1799), meteorologist, botanist, and geologist, with his small book stamp on blank margin of title page.

A DETAILED STUDY in comparative climatology, which "was designed to pave the way for a theory of winds" (D.N.B.). Kirwan's "pioneering work in meteorology has only recently claimed much attention" (D.S.B.). "The author adopted Tobias Mayer's formula to express the decrement of temperature from Equator to Pole" (Zeitlinger). A table (pp. 113-114) lists the mean annual temperature of forty-two cities and towns in the Northern and Southern hemispheres, ranging from Lapland to the Falkland Islands. This copy

has an important provenance, having belonged to De Saussure, who in July 1788 "camped for fifteen days at a base 11,000 feet high on the Col du Géant [and] completed a full series of observations of the daily variations of winds and other meteorological phenomena" (D.S.B., XII, 121). (Cole, 723; D.S.B., VII, 389, 390; Poggendorff, I, 1263, Roller, 312; Sotheran, Cat. 734 [1913], 10203 ["Rare"]; Watt, II, 574g)

KIRWAN, Richard

Geological Essays. By Richard Kirwan, Esq. . . .

London: Printed by T. Bensley, Bolt Court, Fleet Street, for D. Bremner (Successor to Mr. Elmsly), Strand. 1799.

First edition. 8vo. xvi, 502 pp., 1 leaf (advertisements). Fine copy in original gilt-ruled tree calf, maroon morocco label. Bold signature of Andrew Ross (1773-1812) on first pastedown endpaper.

ACCORDING TO Kirwan's statement in the preface (which contains a brief history of geology), this work was ready for the press in June 1798 but was delayed by the Irish Rebellion of that year. "Kirwan criticized the geological theory of James Hutton, who thereupon expanded his paper into a book of three volumes. Kirwan replied (in his *Geological Essays*) in a temperate and objective way, pointing out that many of Hutton's ideas were inconsistent with chemical facts" (Partington). This book is full of chemical and mineralogical information. The final chapter comprises a long and virulent attack on the Huttonian system. An interesting copy, having belonged to Andrew Ross, a colonel who served in Ireland and Gibraltar and was an aide-de-camp to George III in 1809. (D.S.B., VII, 389; Hoover, 487; Partington, III, 662; Poggendorff, I, 1263; Sotheran, Cat. 734 [1913], 10204 ["Rare"]; Ward & Carozzi, 1268; Watt, II, 574h)

KIRWAN, Richard

The Manures most advantageously applicable to the various kinds of Soils, and the causes of their beneficial Effect in each particular instance. . . . By Richard Kirwan, Esq. F.R.S. & M.R.I.A. Author of the Elements of Mineralogy, &c. From the sixth London edition.

Philadelphia: Printed by Kimber, Conrad, and Co. 1807.

First American edition. 12mo. 94 pp. Fine copy, completely uncut, in the original boards.

THE RARE first American edition of this important agricultural chemical work, reprinted verbatim from the definitive sixth edition (London, 1806). No bibliographical reference to this Philadelphia edition has been found.

KJELLEN, Nicolaus Adam

Dissertatio de Necessitate Terminorum Technicorum in Scientiis. . . Praeside Mag. Jac. Fred Neikter, . . . Pro gradu philosophico exhibet Nicolaus Adamus Kjellen, Stip. Steincour. Ostrogothus. In Audit. Gust. Maj. D. XX Dec. MDCCXCVI. . .

Uppsala: Litteris Johann. Fredr. Edman, Reg. Acad. Typogr. (1796).

First edition. 4to. 10 pp. Very good copy, uncut, with wide margins, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated. From the library of Johan Gadolín (1760–1852), professor of chemistry at Åbo, with his small stamp on title page.

A LEARNED DISSERTATION on the necessity of employing technical terminology in the various scientific disciplines, presented by Kjellen, a pupil of Professor Neikter at the University of Uppsala. Reference is made to the system used by Linnaeus to define different species of minerals, plants, etc. The terms used in chemistry and mathematics are also discussed. Rare. Not traced in the usual bibliographies.

KLAPROTH, Martin Heinrich

Analisi Chimica dell'Uranite Sostanza Metallica Nuovamente scoperta dal Sig. Professore Klaproth.
(Milan, 1789).

First Italian edition. 4to. 10 pp. Minor damp stain in lower blank corners; otherwise fine copy in modern white pasteboards.

THE FIRST announcement in Italian of Klaproth's discovery of uranium in pitchblende from Joachimsthal in Bohemia. Uranium occurs in pitchblende as the oxide (U_3O_8). Klaproth "found that the solution in acid gives a yellow precipitate with alkali carbonate, soluble in excess. He obtained crystalline yellow uranyl nitrate and acetate, the precipitated phosphate, and the oxide. What he thought was the metal was a lower oxide. He named the element uranium" (Partington, III, 655). Klaproth published his discovery in *Crell's Annalen* (XII, 387–403). The present rare Italian translation is an extract from *Opuscoli Scelti* (Milan, 1789, XII, 313–322). An English translation of this important discovery appears in *Crell's Chemical Journal* (London, 1791, vol. I, 124–136, 229–241).

KLAPROTH, Martin Heinrich

Analytical Essays towards promoting the Chemical Knowledge of Mineral Substances. By Martin Henry Klaproth, . . . Translated from the German.

London: Printed for T. Cadell, Jun. and W. Davies, in the Strand: by G. Woodfall, No. 22, Paternoster-Row. 1801, 1804.

First English edition. 2 vols., 8vo. I (1801): xvi, 591, (1) pp. II (1804): 2 leaves, iv, 267, (1) pp. With half title in volume II, not required in volume I. Very fine set, unpressed and uncut with wide margins, in original blue boards. Preserved in a sturdy gilt-ruled maroon morocco-backed cloth box. From the library of the celebrated nineteenth-century astronomer Sir John Frederick William Herschel (1792–1871), with numerous marginal annotations in pencil and ink. Stamp on each title: Herschel Library Collingwood.

MOST of Klaproth's publications describing his analytical methods and discoveries of various elements were collected in his *Beiträge zur chemischen Kenntniss der Mineralkörper* (Posen & Berlin, 1795, 1797, 1802, 1807, 1810, 1815). Volume I of this English edition contains a translation of the first (1795) and second (1797) volumes of the German original; volume II is of the third (1802) volume. "Klaproth's researches in analytical chemistry were rightly looked upon at that time as patterns for the younger generations of chemists. . . They aimed at establishing the composition of minerals by means of improved analytical methods, and thereby laying the foundation for a chemical classification of them. His observations were so exact as to result in the discovery of various elements and earths" (Meyer, *History of Chemistry* [1906, p. 186]). The incisive annotations made by Herschel in each volume attest to his considerable interest in chemistry. The second volume is very rare: only the first is in Cole, Duveen, Sinkankas, Smith, etc. (Bolton, 578; Cole, 726; Duveen, 325; Edelstein, 1304; Hoover, 488; Partington, III, 654; Smith, 267; Sinkankas, 3437; Ward & Carozzi, 1270; Watt, II, 574r)

KLAPROTH, Martin Heinrich

Mémoires de Chimie, contenant des Analyses de Minéraux, par Martin Henri Klaproth, . . . Traduit de l'Allemand par B. M. Tassaert, . . .

Paris: Chas F. Buisson, Libraire, rue Git-le-Coeur, no. 10, ci-devant rue Haute-Feuille, nos. 20 et 23. 1807.

First French edition. 2 vols., 8vo. I: 2 leaves, iv, 490 pp., 1 leaf (errata). II: 2 leaves, 476 pp., 2 leaves (errata and advertisements). In volume I pp. 47, 137, and 145 are cancels. In volume II page 185 is a cancel. Fine set in original tree calf, spines richly gilt.

THE FRENCH translation, by Tassaert, of volumes I, II, and III of Klaproth's *Beiträge zur chemischen Kenntniss der Mineralkörper* (Posen & Berlin, 1795, 1797, 1802). Tassaert, a chemist, was one of the editors of the *Annales de Chimie*. In his preface he compares (unfavorably) the analytical methods for tin ores used by T. O. Bergman with the greatly improved procedures developed by Klaproth. He states that he wished that someone more versed in the German language had translated Klaproth's works, but as no one had done so, he was determined to give the public this French translation. (Bolton, 578; Cole, 727; Partington, III, 654; Smith, 267)

KLAPROTH, Martin Heinrich

Observations relative to the Mineralogical and Chemical History of the Fossils of Cornwall. By Martin Henry Klaproth, . . . Translated from the German by John Gottlieb Groschke, M.D. . . .

London: Printed for J. Johnson, No. 72, St. Paul's Church-Yard. 1787.

First English edition. 8vo. 1 leaf, viii, 84 pp., 1 leaf (blank). With engraved frontispiece of 3 minerals, delicately hand-colored. Very fine copy in nineteenth-century unlettered cloth-backed orange boards.

A PUPIL OF A. S. Marggraf, Klaproth (1743–1817) “was the leading analytical chemist in Europe from the late 1780's, when he established himself as Bergman's intellectual successor, until the early 1800's, when Berzelius gradually took his place. Working with minerals from all parts of the globe, Klaproth discovered or co-discovered zirconium (1789), uranium (1789), titanium (1792), strontium (1793), chromium (1797), mellitic acid (1799), and cerium (1803) and confirmed prior discoveries of tellurium (1798) and beryllium (1798)” (D.S.B., VII, 394). The original of this work was published in the *Schriften Natur-Forschender Freunde* (VII, 1786). This English translation is the only one to have appeared separately. It is based on work done in cooperation with the English geologist John Hawkins, who supplied the specimens. Groschke states (p. vii) that Klaproth had never visited Cornwall but relied entirely on his collection of minerals gathered in that county. Many different minerals are described, as well as novel analytical methods and assays for ores of cobalt, copper, tin, tungsten, etc. Rare. (Edelstein, 1307; Ferchl, 276; Partington, III, 654)

KLAPROTH, Martin Heinrich, and WOLFF, Friedrich Benjamin

Dictionnaire de Chimie, par Mrs M. H. Klaproth, . . . et F. Wolff, . . . Traduit de l'Allemand, avec des notes, par E. J. B. Bouillon-Lagrange, . . . et par H. A. Vogel, . . . Paris: Chez Klostermann Fils, Libraire-Éditeur des Annales de Chimie, rue du Jardinnet, no. 13, quartier Saint-André-des-Arcs. 1810, 1811.

First French edition. 4 vols., 8vo. I (1810): viii, 494 pp. Frontispiece portrait of Klaproth (Le Cerf sculpt., in facsimile) and 6 engraved plates of apparatus. II (1810): 2 leaves, 542 pp.; 1 engraved plate (blowpipe and equipment, facing p. 79). III (1811): 2 leaves, 512 pp.; 1 engraved plate (“Areometritype Decagrammal,” facing p. 411). IV (1811): 2 leaves, 569, (1) pp. Fine set in original gilt-ruled half calf, speckled boards, red morocco labels. Unobtrusive old stamps in blank margins of title pages: Bibliothèque Cantonale.

KLAPROTH WAS the foremost supporter of Lavoisier's antiphlogistic theory in Germany, and, in addition to his classic researches in analytical chemistry, he wrote an excellent chemical dictionary in collaboration with Friedrich Benjamin Wolff (1766–1845), professor at the Joachimsthal Gymnasium. The dictionary appeared as *Chemisches Wörterbuch* (Berlin, 1807–10, 5 vols., with a later supplement in 4 vols., Berlin, 1816–19). This is the French version of the first five volumes of the German edition, translated by the chemists Edme Jean Baptiste Bouillon-Lagrange (1764–1844) and Heinrich August Vogel (1778–1867). The later German volumes were never translated. The translators added valuable notes and state in their preface that all the important advances in chemistry since the beginnings of the science have been included. Detailed quantitative analytical data on chemical compounds and minerals, as well as the latest theories, are presented. (Bolton, 65; Cole, 729; Duveen, 325; Edelstein, 1306; Partington, III, 654; Wellcome, III, 400)

KLAPROTH, Martin Heinrich, and WOLFF, Friedrich Benjamin

Dizionario di Chimica dei Signori M.H. Klaproth . . . e F. Wolff . . . Traduzione con Annotazioni di Giuseppe Moretti . . .

Milan: Per Francesco Sonzogno di Gio. Battista, Corsia de' Servi, N. 596. 1811–1814.

First Italian edition. 4 vols., 8vo. I (1811): xii, 470 pp. (pp. 385–470 misnumbered 381–466). Frontispiece portrait of Klaproth (G. Dell'Acqua incise) and 4 engraved plates of apparatus. II (1812): 2 leaves, 505, (1) pp. III (1813): 2 leaves, 454, (4) pp.; 4 engraved plates of apparatus. IV (1814): 595, (1) pp. In volume I a blank corner of the dedication leaf and following leaf

are cut off (removing 2 lines of Moretti's preface), and the last 3 leaves have corners missing (slightly affecting text); otherwise very good set, in contemporary gilt-ruled, dark-blue quarter calf, marbled boards.

THE *Dictionnaire de Chimie* (Paris, 1810–11) was translated into Italian by the professor of chemistry at Udine, Giuseppe Moretti (1782–1853), and published in four volumes, as here. Moretti added numerous notes and a supplement to volume IV (pp. 561–595) containing the latest chemical research and dedicated the book to the director of public service Giovanni Scopoli. Rare. Mentioned by Cole (No. 729, p. 291) but not in the usual bibliographies.

KLETWICH, Johann Christopher

Dissertatio de Phosphoro Liquido & Solido, quam gratiosae Facultatis Medicae consensu praeside Dn. Bernhardo Albino, . . . publico eruditorum examini die IX. Novembris Anno MDCLXXXIX. exponet Joh. Christoph. Kletwich, Laub. Lus. Author.

Francofurti ad Oderam: Typis Zeitlerianis. (1689).

First edition. 4to. 28 leaves (unpaginated). Very good copy in late-nineteenth-century half cloth, patterned boards.

THE M.D. dissertation of Kletwich, with Bernhard Albinus (1653–1721) presiding, on the history, preparation, and properties of the element phosphorus. Kletwich (dates unknown) gives only a cursory account of the other phosphors known at the time, as he was particularly interested in the chemistry and luminescent properties of phosphorus. He makes numerous references to the works of Robert Boyle and discusses that author's *Aerial Noctiluca* (1680) and *Icy Noctiluca* (1681–82). Other authors mentioned include Brandt, Elsholtz, Kirchmaier, Krafft, Kunckel, and Slare. This work is important because the author describes forty chemical and physical experiments on phosphorus, some of them carried out in a vacuum. Harvey reproduces the title page as figure 11 of his *History of Luminescence* (1957). Rare. Not in D.S.B., Duveen, Edelstein, Ferchl, Ferguson, Ferguson Coll., Neu, Poggendorff, Smith, Waller, Watt, Wellcome, etc. (Bolton, 1177; Harvey, 124; Partington, II, 545; Waring, 611)

KLOCKMANN, Heinrich Clamor

Animadversiones Physico-Chemico-Medicae de Sale Sulphurato Stablii; Ammoniaci Sulphurato et Sulphureo cum Alkali Minerali. Dissertatio inauguralis quam consentiente gratioso medicorum ordine in Academia Christian-Albertina Kiloniensi pro summis in medicina honoribus rite obtinendis eruditorum scrutinio submittit auctor Henricus Clamor Klockmann Gustrovia-Megapolitanus.

Kiel: Typis Mich. Friedr. Bartschii Acad. Typogr. N.d. (ca. 1789).

First edition. 4to. 23, (1) pp. Elaborate woodcut headpiece on page 5. Very fine copy in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated, with original blue marbled wrappers bound in.

A DISSERTATION on the preparation, chemical properties, and medicinal uses of potassium sulfate, ammonium sulfate, and sodium sulfate, presented at the University of Kiel. No information on Klockmann has been located, and the praeses is not named. The author refers to the works of Fordyce, Stahl, Weigel, et al. Very rare. Not found in available bibliographies.

KNAPE, Christoph

Theoria Metamorphosis Chemico-Philosophicis Rationibus Superstructa. . . . Pro Gradu Doctoris . . . Die VI. Decembris MDCCLXXIII . . . Auctor Christophorus Knape Wollino Ucaro-Marchicus.

Halle ad Salam: Typis I.C. Hendel. (1773).

First edition. 4to. 2 leaves, 58 pp. With folding printed table. Woodcut capitals, head- and tailpieces. Fine copy in quarter cloth antique, vellum spine ink-lettered and dated.

A CURIOUS DOCTORAL dissertation on the theory of chemical change based upon rational philosophy, presented by Knape (1747–1821). The praeses is not named. The first part covers metamorphosis in general, with discussions of both chemical and natural changes, with references to the works of Boerhaave, Cramer, Naxagoras, Rattray, Swammerdam, Tackius, et al. The second part (pp. 21–46) is entirely chemical, with comments on the transmutation of metals, preparations of chemical compounds, etc. The works of Becher, Geoffroy, Henckel, Juncker, Macquer, Meyer, Spielmann, Vogel, and others are cited. The folding table lists various types of “metamorphosis” (i.e., chemical change). The copy described by Blake is imperfect (only 46 pages, no table, and lacking pp. 47–58). Not in Wellcome or the usual bibliographies. (Blake, 244; Bolton, 579)

KNAPP, Friedrich Ludwig

Chemical Technology; or, Chemistry, Applied to the Arts and to Manufactures. By Dr. F. Knapp . . . Translated and edited, with numerous notes and additions: by Dr. Edmund Ronalds . . . and Dr. Thomas Richardson . . . First American Edition, with notes and additions, by Professor Walter R. Johnson . . . Philadelphia: Lea and Blanchard. 1848, 1849.

First American edition. 2 vols., 8vo. I (1848): 2 leaves (illustrated advertisements, dated 15 March 1848), 504 pp. II (1849): 2 leaves (illustrated advertisements), 432 pp. + 32 pp. (catalogue of Lea & Blanchard's books). With 460 woodcut illustrations (some full page) of chemical apparatus and processes. Fine copy, in original publisher's blind-stamped cloth, spines gilt-lettered.

A COMPREHENSIVE TREATISE entirely on applied chemistry, giving excellent accounts of every aspect of the subject. Knapp (1814–1904), a pupil of Liebig, was professor of chemistry at the University of Giessen. This important work first appeared as *Lehrbuch der chemischen Technologie* (Braunschweig, 1844, 2 vols., 8vo.), with second and third editions in 1848–53 and 1865–75. Immediately popular, it was translated into Dutch (Gouda, 1846), English (London, 1848), French (Paris, n.d.), and Swedish (Stockholm, 1849–50). Based on the English version by E. Ronalds and T. Richardson, this American edition contains useful notes and additions by Walter Rogers Johnson (1794–1852), professor of chemistry and physics at Pennsylvania Medical College and later a freelance chemical consultant. The work is valuable for the numerous descriptions of chemical processes employed in the United States before the period of the Civil War. (Bolton, 579; Miles, *American Chemists & Chemical Engineers* [1976], p. 253; Smith, 269)

KOBELL, Franz von

Instructions for the Discrimination of Minerals by Simple Chemical Experiments. By Franz von Kobell, Professor of Mineralogy in the University of Munich. Translated from the German, by Robert Corbet Campbell.

Glasgow: Published by Richard Griffin & Company, and Thomas Tegg, London. 1841.

First English edition. 8vo. xii, 51, (1) pp. Woodcut diagrams in text. Fine, crisp copy, uncut, in modern green cloth, spine gilt-lettered.

A TRANSLATION OF the author's *Tafeln zur Bestimmung der Mineralien mittelst einfacher chemischer Versuche auf trockenem und nassem Wege* (Munich, 1838, third edition), an important work on the chemical analysis of minerals. In the advertisement the editor states that the translator, Campbell, "a zealous and talented young chemist" of Glasgow, had

died just before this English edition was published. Kobell (1803–1882) was a distinguished professor of mineralogy at the University of Munich. For a list of his publications, see Poggendorff. Partington (IV, 204) briefly mentions Kobell but not this work. Very scarce. Not in Duveen, Edelstein, Ferchl, Hoover, Morgan, Poggendorff, Smith, Sondheimer, Waller, Wellcome, etc. (Bolton, 581)

KOBELL, Franz von

Tafeln zur Bestimmung der Mineralien mittelst einfacher chemischer Versuche auf trockenem und nassem Wege. Von Franz von Kobell.

Munich: Joseph Lindauer'sche Buchhandlung. 1858.

Sixth edition. 8vo. xx, 95, (1) pp. Good copy in original patterned green boards, ink-lettered paper label on spine.

THE FIRST edition of this important work on mineralogical chemistry was published in Munich, 1833. It was frequently reprinted and updated with the latest information, a posthumous edition (edited by K. Oebbeke) appearing in Munich, 1884. No edition of this work in Duveen, Edelstein, Hoover, Morgan, Partington, Smith, Sondheimer, Waller, etc. (Bolton, 580; Ferchl, 278; Poggendorff, I, 1286)

KOESTLIN, Karl Heinrich

Fasciculus Animadversionum Physiologici atque Mineralogico-Chemici Argumenti. Dissertatio inauguralis . . . praeside . . . Gottl. Conr. Christ. Storr, . . . pro gradu doctoris medicinae publice defendet (blank) Augusti MDCCCLXXX. Auctor . . . Carolus Henricus Koestlin, Brackenhemo-Wirtembergensis, . . .
Tübingen: Litteris Sigmundianis. (1780).

First edition. 4to. 44 pp. Very good copy, in maroon quarter cloth antique, marbled boards, spine gilt-lettered and dated.

THE DOCTORAL dissertation of Koestlin (1755–1783), physician and professor of natural history at the Karlschule in Stuttgart, presented under the direction of Gottlieb Conrad Christoph Storr. It is dedicated to the famous mining expert Baron Ignaz Edler von Born (1742–1791). In the first section Koestlin discusses the shape of blood corpuscles as revealed under the microscope, with special reference to the work of Della Torre. The second section describes investigations on the chemical composition of the volcanic material that buried Herculaneum and Pompeii in A.D. 79. The third section discusses the origin of pumice, with comments on the theories of Bergman, Cartheuser, Kenckel, Pott, Wallerius, et al. After publishing several important papers, Koestlin died at the early age of twenty-eight. Rare. (Ferchl, 280; Poggendorff, I, 1298)

KÖNIG, Emanuel

Dei Fortissime Spirituum Universae Carnis nutu et juvamine, Quin & Consensu et Decreto Gratosissimae Facultatis Medicae in celeberrimâ & perantiquâ Universitate Patriâ Dissertationem Inauguralem Physico-Medicam eviscerantem, enumerantem et emedullantem Regnum Animale, pro Coronâ & reliquis Insignibus ac Privilegiis Doctoralibus Ritu majorum solenniter impetrandis publicè ventilandam proponit M. Emanuel König Basileensis. Ad diem XXIX. Maji An. Chr. MDCLXXXII. Loco horisque consuētis.
Basel: Typis Emanuelis König & Filiorum. (1682).

First edition. 4to. 6 leaves, 174 pp., 1 leaf. Very fine copy, in antique style half morocco, marbled boards, spine gilt-lettered and dated, with contemporary marbled wrappers bound in.

KÖNIG (1658–1731) presented the present work as his dissertation for the Basel doctorate. It is an extensive study on the animal kingdom that shows wide reading of books and the publications of learned societies. The *Regnum Animale* contains chapters on the sensitive soul, secretion of spirits, respiration, and other topics of biological interest, with numerous references to the work of John Mayow and his *Tractatus Quinque* (1674). In addition, there are many references to the works of contemporary scientists: e.g., Bohn, Bartholin, Borrichius, Boyle, Gassendi, Grew, Harvey, Hooke, and Lower. Boyle's *Sceptical Chymist* is mentioned on page 16, and there are many other references to Boyle. Of biochemical interest are the discussions of blood and its chemical properties, respiration, biological fluids, etc. Other editions of this work appeared at Basel in 1698 and 1703. A rare book, which is not in Bolton, Duveen, Ferguson, Neu, Poggendorff, Smith, Waller, or Watt. (Ferchl, 279; Partington, II, 318, 713; Wellcome, III, 408)

KÖNIG, Emanuel

Dissertationem Inauguralem Physico-Medicam eviscerantem, enumerantem et emedullantem Regnum Animale . . . proponit M. Emanuel König Basileensis. Ad diem XXIX. Maji An. Chr. MDCLXXXII.
Basel: Typis Emanuelis König & Filiorum. (1682).

First edition. 4to. 6 leaves, 174 pp., 1 leaf. Very fine copy, in half morocco antique, marbled boards, spine gilt-lettered and dated, contemporary marbled wrappers bound in.

THE DOCTORAL dissertation of König (1658–1731), professor of physics and medicine at Basel, containing chapters on the sensitive soul, secretion of spirits, respiration, and other subjects of chemical and biological interest, with numerous references to the work of John Mayow and his *Tractatus Quinque* (Oxford, 1674). There are references to the works of Bohn, Bartholin, Borrichius, Gassendi, Grew,

Harvey, Hooke, Lower, et al. Boyle's *Sceptical Chymist* (London, 1661) is mentioned (p. 16), and there are many other references to Boyle. Of biochemical interest are discussions of blood and its chemical properties, respiration, biological fluids, etc. Other editions appeared at Basel in 1698 and 1703. Rare. Not in Bolton, Duveen, Ferguson, Waller, etc. (D.S.B., VII, 459; Ferchl, 279; Krivatsy, 6472; Partington, II, 318, 713; Wellcome, III, 408)

KÖNIG, Emanuel

Regnum Minerale, Generale et Speciale, quorum illud Naturalem et Artificialem Mineralium productionem cum Parallelismo Alchymico verorum Philosophorum, Tractatibus hucusque ineditis, Commentario super Introitum Philalethae, &c. candide sistit; olim sub Nomine Regni Quarti Sulphurum Fixorum Metallicorum promissum. Hoc vero Metalla, Lapides, Salia, Sulphura, Terras, quin & Acidulas, Thermas, Physice, Chymice, Practice recludit.
Basel: Sumptibus & Typis Emanuelis König, Senioris. 1703.

Third edition. 4to. 11 leaves, 181, (3); 428, (4) pp. Title page in red and black. Engraved frontispiece portrait of König at age 44. Woodcut capitals, head- and tailpieces. Some leaves with minor browning; otherwise fine copy in original overlapping vellum.

ORIGINALLY PUBLISHED under a slightly different title in 1686 and again in 1687, the present is the final and most complete edition. König published books at his own press on the three kingdoms of nature, which display his extensive knowledge of contemporary scientific and technical periodical literature. His works contain much information in a small compass. "The *Regnum Minerale* deals with the names, differences, generation, nutrition and augmentation of metals . . . Part II deals with the separate metals . . . Section III on stones includes gems, the magnet . . . Section IV on the middle salts includes also the preparation of acids, etc." (Partington). On leaf c4 there is a list of "Characteres Chymici," including alchemical symbols. (D.S.B., VII, 459; Duveen, 326; Ferchl, 279; Neu, 2172; Partington, II, 713; Poggendorff, I, 1293; Ward & Carozzi, 1294; Wellcome, III, 408)

KOPP, Hermann Franz Moritz

Die Alchemie in Älterer und Neuerer Zeit. Ein Beitrag zur Culturgeschichte von Hermann Kopp. . .
Heidelberg: Carl Winter's Universitätsbuchhandlung. 1886.

First edition. 2 vols., 8vo. I: 1 leaf (advertisements), xvii, (1), 260 pp., 4 leaves (advertisements). II: vi, 425, (1) pp. Fine copy in original publisher's blind-stamped pebbled cloth, gilt-lettered spines.

THE FIRST volume of Kopp's classic treatise on alchemy traces the history of attempts to transmute base metals into gold, from its origins in Egypt through the Arabs to the great figures of the Middle Ages. The second volume covers the practice of alchemy up to modern times, including the attempts made by the Rosicrucians. "The best and most complete history of alchemy" (Zeitlinger). There is a detailed bibliography (pp. 308–396) of alchemical works. (Bolton, 127; Caillet, 5822; D.S.B., VII, 464; Duveen, 326; Smith, 271; Sotheran, Cat. 832 [1932], 5380 ["Scarce"]; Waller, 15577)

KOPP, Hermann Franz Moritz

Aus der Molecular-Welt. . . .

Heidelberg: Carl Winter's Universitätsbuchhandlung, 1882.

First edition, second issue. 8vo. ix, (1), 105, (1) pp. Fine copy in contemporary crimson quarter morocco, mottled boards. Bookplate: Thomas Mann.

A LATE WORK by Kopp, written to celebrate Robert Bunsen's seventieth birthday. "In the *Molecularwelt*, Kopp's delicate fancy and quaint humor are seen at their best; the book attracted considerable attention even beyond chemical circles, and rapidly ran through a number of editions" (Farber). This copy has an interesting provenance, having belonged to Thomas Mann (1856–1941), engineer, trade unionist, and founding member of the British Communist Party (see D.N.B.). Bolton (p. 127) describes a later edition (Heidelberg, 1885). (Farber, *Great Chemists* [1961], p. 590)

KOPP, Hermann Franz Moritz

Beiträge zur Geschichte der Chemie. Von Hermann Kopp.

Braunschweig: Druck und Verlag von Friedrich Vieweg und Sohn. 1869, 1875.

First edition. 3 parts in 2 vols., 8vo. I (1869): xi, (3), 530 pp.; 1 folding engraved plate (10 figures of alembics). II (1875): ix, (1), 310 pp. Fine copy in original publisher's gilt-ruled quarter calf, mottled boards. Stamp on endpapers: Univ. Biblioth. Helsingfors.

A WELL-DOCUMENTED collection of essays on the history of chemistry. Volume I deals with the chemical knowledge of the ancient world. Volume II comprises essays on alchemists and chemists from the Dark Ages to the eighteenth century. At the end (pp. 235–310) is a long discussion on the discovery of the composition of water, in which the relative claims of Cavendish, Lavoisier, Priestley, Watt, and others are set forth. Bolton describes this treatise as "erudite, comprehensive, important and valuable." Waller

(15576) lists volume I only. (Bolton, 127; D.S.B., VII, 464; Duveen, 326; Smith, 271)

KOPP, Hermann Franz Moritz

Die Entwicklung der Chemie in der neueren Zeit.

Von Hermann Kopp.

Munich: R. Oldenbourg. 1873.

First edition. 8vo. xxii, 854 pp. Fine copy in contemporary half calf, patterned cloth boards, dark-blue leather label, spine dated.

THE DEVELOPMENT of chemistry to the end of the seventeenth century, its progress from Boyle to Lavoisier, the phlogiston theory and its overthrow, and the reform of chemistry by Lavoisier are first briefly summarized. The bulk of the work concerns the development and progress of theoretical and practical chemistry from the time of Dalton to the year 1860, including the epochal researches of Cannizzaro. The book is valuable for presenting the opinions of contemporary chemists, who were personally known to Kopp and with whom he corresponded. (Bolton, 127; D.S.B., VII, 4644; Duveen, 326; Edelstein, 1316; Ferchl, 283; Smith, 271)

KOPP, Hermann Franz Moritz

Geschichte der Chemie. Von Dr. Hermann Kopp, . . .

Braunschweig: Druck und Verlag von Friedrich Vieweg und Sohn. 1843–1847.

First edition. 4 vols., 8vo. I (1843): xix, (1), 455, (1) pp. II (1844): x, 426 pp. III (1845): xii, 372 pp. IV (1847): xvi, 448 pp. With 4 steel-engraved frontispiece portraits (Lavoisier, Berzelius, Davy, Liebig), 1 in each volume. Occasional minor foxing; otherwise fine set in original publisher's gilt-ruled half calf, embossed cloth boards, green morocco labels.

KOPP (1817–1892) entered the University of Heidelberg in 1836 to study philology (mainly Latin and Greek) but was inspired by the chemical lectures of Leopold Gmelin and decided to devote his life to chemistry. He received his doctorate at Marburg (1838) and then worked at Giessen with Liebig, with whom he coedited the *Jahresbericht über die Fortschritte der Chemie* after the death of Berzelius, its founder. Although his research was principally in physical chemistry, Kopp had always maintained a profound interest in the history of chemistry, and he published several excellent books on this subject. The present treatise is the "first complete, accurate, and readable history of chemistry, . . . notable for its success in relating the development of chemistry to contemporary cultural events" (D.S.B.). The first volume is a general history of chemistry, the second

contains histories of special branches, and the last two cover histories of individual elements and organic compounds. Kopp's most important work, it contains much information not available elsewhere. Writing in 1893, Bolton describes it as "a classical work, above praise." Waller (15579) lists the Leipzig (1931) reprint, and Wellcome lists only volume II. (Bolton, 127; Cole, 731; D.S.B., VII, 464; Duveen, 326; Poggendorff, I, 1304; Smith, 271; Sotheran, Cat. 676 [1907], 2327 ["Very Scarce"]; Wellcome, III, 410)

KOTAY, Johann

Disputatio Physica de Elementis, . . . sub praesidio . . . Dn. Johannis Sperlings, . . . Publicè ventilandam exhibet Johannes Kotay Casschovia-Hungarus. In Auditorio Majori ad diem 29. Martij. horis antemeridianis.

Wittenberg: Ex Officinâ Johannis Röhneri Acad. Typogr. 1649.

First edition. 4to. 8 leaves. Fine crisp copy, in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated. Bound with: Neander, J. C., *Disputatio physica de elementis* (Wittenberg, 1750).

A DOCTORAL DISSERTATION on the physical and chemical properties of the four Aristotelian elements (air, earth, fire, water), presided over by Sperling (1603–1658), professor of physics at the University of Wittenberg. The works of Aristotle, Pliny, Scaliger, Sennert, et al., are cited. According to the title, Kotay was from Hungary, but no other information on him or this very rare work has been found.

KRAFFT, Georg Wolfgang, and WEITBRICHT, Josias

Sermones in Solenni Academiae Scientiarum Imperialis Conventu Die XXIX. Aprilis Anni MDCCXLII. Publicè recitati.

Petropoli (St. Petersburg): Typis Academiae Scientiarum. (1742).

First edition. 4to. 4 leaves, 51, (1) pp. Large copperplate on page 1 (refraction of light through a prism) and large copperplate tailpiece on page 51. Signed by the authors in ink: G. W. Kraft (p. 1) and Josias Weitbricht (p. 40). Fine copy with wide margins, uncut, in maroon quarter calf antique, marbled boards, spine gilt-lettered and dated. Bound with: Braun, J. A., *De admirando frigore artificiali quo mercurius est congelatus* (St. Petersburg, 1760). From the library of Professor Franz Sondheimer, with his bookplate on front endpaper.

KRAFFT (1701–1754), professor of mathematics and physics at St. Petersburg, and Weitbricht (1702–1747), professor of physiology, jointly presented this paper to the famous

St. Petersburg Academy of Sciences. Its subject is the so-called ocular harpsichord, in which the wave theories of light and sound are compared and contrasted. There are references to Newton's *Opticks* (Latin edition, 1706), the passage of light through prisms and crystals of various substances, the visible spectrum, music, etc. The works of Cardan, Euler, Galileo, Kepler, Kircher, et al., are also cited. The dedication is to Elisabeth (Elizaveta Petrovna, 1709–1762), empress of Russia (1741–62), daughter of Peter the Great. A very rare work, which is not mentioned by Poggendorff (I, 1308; II, 1291) in his lists of publications by Krafft and Weitbricht. (Sondheimer, 7)

KRAFFT, Michael August

The American Distiller, or, the Theory and Practice of Distilling, according to the latest Discoveries and Improvements, including the most improved Methods of constructing Stills, and of Rectification. By Michael Krafft, of Bristol, Pennsylvania, Distiller.

Philadelphia: Printed for Thomas Dobson, at the Stone House, No. 41, South Second Street. 1804. Archibald Bartram, Printer.

First edition. 4to. 6 leaves, (9)–151 + (22) + 152–219 pp. With 2 folding engraved plates of distilling apparatus. Fine, crisp copy, in original tree calf, maroon gilt-lettered label, spine gilt-ruled.

KRAFFT (dates unknown) dedicated this first original American treatise on distilling to Thomas Jefferson, president of the United States. As the first American book on distilling this work is a milestone in the history of chemical technology. In the preface the author condemns those who have infringed and evaded his patent of 1801 and have caused him financial hardship by freely using his still, described herein, without permission. Krafft noted that, to his certain knowledge, 217 stills designed according to his plan were in operation at the time of writing, "and numbers of others [are] now preparing." Pages 9–182 describe the process of distillation, construction of stills and furnaces, fermentation, etc. Pages 182–219 comprise 72 recipes for preparing distilled waters from unfermented and fermented fruits, vegetables, flowers, leaves, etc. Forbes had evidently not seen a copy, as he does not discuss it in his text, but refers only to "Krafft" and this title in his bibliography. A very rare book. Not in Bolton, Cushing, D.S.B., Duveen, Ferchl, Miles, Morgan, Partington, Poggendorff, Waller, Watt, Wellcome, etc. (R. J. Forbes, *A Short History of the Art of Distillation* [Leiden, 1970], p. 381; Smith, 272)

KRAFT, Nicolaus

Dissertatio Gradualis, de Speculo Ustorio Archimedis, . . . moderante Mag. Samuele Duræo, . . . publico examini offert, Nicolaus Kraft, Laur. Fil. Ostro-Gothus. . . IV. Februarii Anni MDCCLXI.

Uppsala. (1761).

First edition. 4to. 14 pp. Large woodcut capital, head- and tailpieces. Fine copy. Bound with: Wimermark, Sven, *De Diversa Radiorum* (Uppsala, 1776), and 30 other dissertations (q.v.).

A DISCOURSE ON the history and physics of the large concave parabolic burning mirror supposedly invented by Archimedes, with references to Cardan's *De Subtilitate* and works by Buffon, Descartes, Kepler, Kircher, Porta, et al. Of chemical interest are Kraft's comments on the use in naval battles of the inflammable mixture known as Greek fire. "One other defensive device [of Archimedes] often mentioned but of exceedingly doubtful existence was a burning mirror or combination of mirrors" (Marshall Clagett [D.S.B., I, 214]). No reference to Kraft or this work has been found.

KRIANDER, Thomas Thimotheus

Dissertatio Chemica de Natura Carbonis Vegetabilis, . . . pro gradu philosophico publicae censurae subjicit Thomas Thimotheus Kriander, Satacunda-Fenno. In Auditorio Majori die II Junii MDCCXCVIII. . .

Åbo: Typis Frenckellianis. (1798).

First edition. 4to. 11, (1) pp. Very fine copy, uncut with wide margins, in maroon quarter cloth antique, marbled boards, spine labeled: Gadolin. 5 Dissertations. 1797–1805.

AN INTERESTING dissertation on the nature of carbon compounds in plants, presented by Kriander under the direction of Gadolin, professor of chemistry at Åbo. The absorption of carbon dioxide by plants and photosynthesis are discussed, with conjectures concerning the mechanism by which the gas is converted to organic compounds. Experiments are described in which plants are subjected to various degrees of heat, and the inorganic and organic products are identified. Unknown to the usual bibliographers.

KUNCKEL, Johann

Ars Vitrarum Experimentalis, oder Vollkommene Glasmacher-Kunst, . . . commentario über die von dergleichen Arbeit beschriebenen Sieben Bücher P. Anthonii Neri, von Florentz, und denen darüber gethanen gelehrten Anmerkungen Christophori Merretti, . . . aus den Ital und Latein, beyde mit Fleiss ins Hochdeutsche übersetzt . . . Samt einem II. Haupt-Theil, so in drey unterschiedenen Büchern, und mehr als 200. Experimenten bestehet, darinnen vom Glasmahlen, Vergulden und Brennen, . . . mit einem Anhang von denen Perlen und fast allen natürlichen Edelsteinen . . .

Amsterdam und Dantzig: Auff Kosten des Autoris, bey Heinrich Betkio und Consorten. Gedruckt bey Christoph Günthern. 1679.

First edition. 4to. 8 leaves, 350 pp. (recte 348; pp. 153–154 omitted, text complete), 2 leaves (index to Neri); 4 leaves, 141 pp., 17 leaves. With fine mezzotint portrait of Kunckel and engraved title page. Letterpress title to first part in red and black. Woodcuts in text. With 20 fine full-page copperplates. Fine copy in half calf antique, marbled boards, spine gilt-lettered and dated.

A CLASSIC BOOK that not only reprints Neri's *L'Arte Vetraria* (Florence, 1612), with Christopher Merrett's notes on it (London, 1662), in German translation, but also gives Kunckel's own great experiments on the chemistry of glass in the second part (with separate title page). He describes the discovery of ruby glass, the making of highly refracting crystal, glazes for porcelain, glassblowing and the fabrication of glass, the invention of the table with double bellows for glassblowing, etc. "Till nearly the end of the eighteenth century [Kunckel's book] constituted by far the best account of glass-making in existence" (Thomas Thomson [quoted by Partington, II, 368]). Most copies have a Frankfurt and Leipzig imprint, the Amsterdam and Danzig imprint being much rarer and probably a cancel. The title page of the second part has the Frankfurt-Leipzig imprint. Very rare. Not in Bolton, Edelstein, Morgan, Smith, etc. (D.S.B., VIII, 525; Duncan, 7454; Duveen, 328 [imperf.]; Ferchl, 288; Ferguson, I, 485 [not in Young Coll.]; Ferguson, *Books of Secrets*, I, 18; Ferguson Coll., 378; Neu, 2928; Partington, II, 364; Poggendorff, I, 1331; Wellcome, III, 419)

KUNCKEL, Johann

Chymische Anmerckungen: darinn gehandelt wird von denen Principiis Chymicis, Salibus Acidis und Alkalibus, Fixis und Volatilibus, in denen dreyen Regnis, Minerali, Vegetabili und Animalii; wie auch vom Geruch und Farben, &c. Mit Anhang einer Chymischen Brille contra Non-Entia Chym. Nach eigener Experientz beschrieben, mit unterschiedenen Experimentis bewähret, und denen Warheit und Kunst-Liebenden zu Nutz und Dienstlichen Gefallen in den Druck besördert.

Wittenberg: In Verlegung Job Wilhelm Fincelii seel. Erben. Druckts Christian Schrödter. 1677.

First edition. 8vo. 8 leaves, 192 pp. Fine copy in original vellum. Bound with: Kunckel, J., *Nützliche Observationes* (Hamburg, 1676).

THE SEQUEL to *Nützliche Observationes*, in which Kunckel expounds further on fixed and volatile salts and the principles of chemistry in the mineral, vegetable, and animal kingdoms. At the end (pp. 160–192) he discusses chemical nonentities. Many experiments are described, including his attempts to discover whether metals contain spagyric sulphur and whether sulphur is the principle of fire and acidity. He also discusses the nature and properties of arsenic, the universal solvent for metals, acids and alkalies, salts, and many other chemical matters. Kunckel “believed that mercury is a constituent of metals, but doubted its presence in vegetables and animals” (Partington). He “claimed always to be a follower of the experimental method, and his work that was best known outside Germany was his *Chymische Anmerckungen*, of 1677” (D.S.B.). Latin translations appeared in 1678 and 1694, and an English version was included in *Pyrotechnical Discourses* (London, 1705). The text was reprinted in Kunckel’s *V Curiose Chymische Tractälein* (1721). (D.S.B., VII, 525; Duveen, 329; Edelstein, 1325; Ferchl, 288; Ferguson Coll., 379; Krivatsy, 6505; Neu, 2185; Partington, II, 364; Poggendorff, I, 1331; Sotheran, Cat. 832 [1932], 5385 [“Very Rare”]; Wellcome, III, 419)

KUNCKEL, Johann

Collegium Physico-Chymicum Experimentale, oder Laboratorium Chymicum, in welchem Deutlich und gründlich von den wahren Principiis in der Natur und denen gewürckten Dingen so wohl über als in der Erden, als Vegetabilien, Animalien, Mineralien, Metallen, wie auch deren wahrhaften Generation Eigenschafften und Scheidung, nebst der Transmutation und Verbesserung der Metallen gehandelt wird, denen Liebhabern natürlicher Wissenschaften zum ungemeynen Nutzen nun mehro endlich mit einem vollständigen Register und Vorreded herausgegeben von Johann Caspar Engelleder, . . .

Hamburg und Leipzig: in Verlegung Samuel Heyls. 1716.

First edition. 8vo. 16 leaves, 737 pp., 18 leaves. With fine engraved frontispiece portrait of Kunckel (H.W. fec.), and folding copperplate (p. 669). Fine copy in contemporary vellum. Bound with: Rothe, Gottfried, *Kurtze gründliche Anleitung zur Chymie* (Leipzig, 1717).

THE VERY rare posthumous first edition of Kunckel’s most important chemical work, edited by Dr. Johann Caspar Engelleder, a physician of Hamburg. On page 151 Kunckel states that he had worked at chemistry for sixty years, so the book was probably written in Stockholm about 1700. His account of the discovery of phosphorus appears on pages 656–665. Partington (II, 366–368) discusses the contents in detail. Further editions were published in 1722, 1738, and 1767. “Kunckel’s works, especially his *Laboratorium chymicum*, are of some use for the history of transmutation, as he records several cases of such action, more particularly those of Sebald Schwertzer and David Beuther, and they also contain autobiographical details” (Ferguson). There is no edition in the Duveen, Edelstein, Morgan, or Sondheimer collections. Not in Blake, Neu, Waller, Watt, Wellcome, etc. (Bolton, 595, Caillet, 5855; D.S.B., VII, 525; Ferchl, 288; Ferguson, I, 484 [not in Young Coll.]; Ferguson Coll., 379; Partington, II, 365; Poggendorff, I, 1331; Smith, 274 [lacks frontispiece]; Sotheran, Cat. 832 [1932], 5387 [“Very Rare”]; Thornton & Tully, 118)

KUNCKEL, Johann

Collegium Physico-Chymicum Experimentale, oder Laboratorium Chymicum, in welchem deutlich und gründlich von den wahren Principiis in der Natur und denen gewürckten Dingen so wohl über als in der Erden, als Vegetabilien, Animalien, Mineralien, Metallen, . . . Dritte Auflage.
Hamburg: bey Gottfried Richter. 1738.

Third edition. 8vo. 16 leaves, 737 pp., 18 leaves. Fine engraved frontispiece portrait of Kunckel (H. W. fec.), and folding copperplate (facing p. 668). Splendid copy in the original mottled calf, spine richly gilt, orange morocco label gilt.

A VERBATIM REPRINT of the first edition of 1716. Both the second (1722) and this third edition have pagination identical to that of the first edition. Rare. Not in Duveen, Edelstein, Ferchl, Morgan, Neu, Poggendorff, Rosenthal, Sondheimer, Watt, etc. (Blake, 249; Bolton, *First Supplement*, 252, Caillet, 5855; D.S.B., VII, 525; Ferguson, I, 484 [not in Young Coll.]; Ferguson Coll., 379; Partington, II, 365; Smith, 274; Sotheran, Cat. 800 [1926], 11243; Thornton & Tully, 118; Waller, 11173; Wellcome, III, 420)

KUNCKEL, Johann

V. Curiose Chymische Tractätlein; als: I. Chymische Anmerkungen, . . . II. Nützliche Observationes von den Fixen und flüchtigen Saltzen, . . . III. Epistola, contra Spiritum Vini sine Acido. IV. De Phosphoro Mirabili; . . . V. Probier-Stein, de Acido & Urinoso, Sale Calido & Frigido; . . . Wobey zugleich angehängt wird: Christoph Brummetts Tractätlein vom Blut der Natur. Nebst einer Vorrede: De doctis & nobilibus Empiricis: D. Johannis Philippi Burggravii, . . . Frankfurt and Leipzig. 1721.

First edition. 8vo. 7 leaves, 512 pp., 24 leaves. Title printed across 2 facing pages. Each tract has separate title, included in pagination. Small engraving on page 309. Fine copy in original unlettered vellum. From the library of the celebrated French chemist Jacob Reinbold Spielmann (1722–1783), with his finely engraved armorial bookplate on front pastedown endpaper.

FIRST COLLECTED edition of five important treatises by Kunckel, all in German. The first work originally appeared in 1677, the second in 1676, the third in 1681, and the fifth in 1684. The fourth work, on phosphorus, appears here for the first time. Appended is “Blood of Nature” by Kunckel’s assistant, Christoph Grommet (pp. 489–512), here called “Brummet,” on whom see Ferguson and Partington. “Kunckel had great enthusiasm . . . ample opportunities for experiment, a capacity for keen observation, great patience and stubborn application—in fact all the qualities which are found in a great chemist” (Partington, II, 368). A most desirable copy of a rare book, having once belonged to J. R. Spielmann. Not in Bolton, Caillet, Morgan, Poggendorff, Rosenthal, Sondheimer, Thornton & Tully, Waller, Watt, Wellcome, etc. (Blake, 249; D.S.B., VII, 525–526; Duveen, 329; Edelstein, 1329; Ferchl, 287; Ferguson, I, 483; Ferguson Coll., 379; Neu, 2187; Partington, II, 365–366; Smith, 273; Sotheran, Cat. 800 [1926], 11244 [“Rare”])

KUNCKEL, Johann

Johann Kunckels . . . vollständige Glaszmacherkunst worinnen sowol dessen Erläuterungen über Anton Neri sieben Bücher von dem Glasmachen und Dr. Merrets hierüber gemachte Anmerkungen als auch eine grosse Anzahl nützlich und angenehmer Versuche nebst einem Anhang von den Perlen und Edelsteinen enthalten sind. . . . mit Kupfern, neu vermehrte und verbesserte Auflage. Nürnberg: zu finden bei Christoph Riegels seel. Wittib. 1756.

Fourth edition. 4to. 10 leaves, 472 pp., 8 leaves (index). With engraved portrait frontispiece of Kunckel, 17 folding copperplates (reengraved), and woodcuts in text. Very fine copy, crisp and spotless, in contemporary speckled boards.

THE FINAL German edition of this classic work on the chemistry and technology of glassmaking, with corrections and an expanded index. Previous German editions appeared in 1679, 1689, and 1743. A very rare edition that is not in the usual early chemical libraries. (D.S.B., VII, 525; Duncan, 7454; Ferchl, 288; Partington, II, 364; Sotheran, Cat. 800 [1926], 13115)

KUNCKEL, Johann

Nützliche Observationes oder Anmerkungen, von den Fixen und flüchtigen Saltzen, Auro und Argento potabili, Spiritu Mundi und dergleichen, wie auch von den Farben und Geruch der Metallen, Mineralien und andern Erdgewächsen; durch viel-Jährige eigene Erfahrung, Mühe und Arbeit mit Fleiss untersucht, angemercket, und nun auff vieler der Edlen Chimie Beflissenen und unverdrossener Naturforscher inständiges Begehren zu dero Nutz und Gefallen an den Tag gegeben.

Hamburg: Auff Gottfried Schultzens Kosten, im Jahr 1676.

First edition. 8vo. 52 unnumbered leaves (i.e., 2 leaves, signatures A–E⁸, F⁴, G⁶). Fine copy in modern patterned boards, spine gilt-lettered and dated. Bound with: Kunckel, J., *Chymische Anmerkungen* (Wittenberg, 1677). Contemporary bookseller’s catalogue slip (in German) pasted on front flyleaf and Rosicrucian bookplate on front endpaper.

THE AUTHOR’S first publication, on nonvolatile (fixed) and volatile salts, the supposed composition of sulphur and mercury, gold and silver, and related subjects. Kunckel (1630–1703) affirms herein his belief in alchemy and the transmutation of metals but is not convinced of the existence of the elixir of life. The son of an alchemist, with no scholastic training, he was considered by von Meyer to be one of the most eminent practical chemists of the time. Like his contemporary Boyle, Kunckel carried out many quantitative experiments and is remembered for his role in the discovery and isolation of the element phosphorus, made about the same time as the present work (see Partington, II, 371–374). Duveen, Neu, and Wellcome list the Latin translation by C. A. Ramsay (London and Rotterdam, 1678). Not in Caillet, Mellon, Smith, Sondheimer, Waller, Watt, etc. (Bolton, 997; D.S.B., VII, 525; Edelstein, 1330; Ferchl, 287; Ferguson, I, 484; Ferguson Coll., 380; Krivatsy, 6507; Partington, II, 364; Poggendorff, I, 1330–1331; Rosenthal, 500; Sotheran, Cat. 825 [1931], 5389 [“Rare”]; Thorndike, VIII, 379; Thornton & Tully, 118)

KUNCKEL, Johann

Philosophia Chemica Experimentis Confirmata In qua agitur De principiis Chymicis, Salibus acidi & alcalibus, fixis & volatilibus, in tribus illis Regnis, Minerali, Vegetabili, & Animalis, itemque de odore & colore, &c. Accedit Perspicillum Chymicum contra Nonentia Chymica.

Amsterdam: Apud Joannem Wolters. 1694.

First Wolters (second Latin) edition. 12mo. 8 leaves, 333, (1) pp., 1 leaf (blank). Title page in red and black, with engraved vignette; fine engraved frontispiece of a chemical laboratory. Very good copy in contemporary paneled calf, rebounded, spine gilt-lettered and dated.

THE LATIN translation of Kunckel's *Chymische Anmerkungen* (Wittenberg, 1677). The first edition in Latin (London and Rotterdam, 1678; Wing, L2818A) is extremely rare. The present edition has a detailed frontispiece of a laboratory, depicting a distillation in progress, a chemist seated at a table taking notes, and an assistant attending to a furnace. Scarce. Not in Edelstein, Krivatsy, Poggendorff, Wellcome, etc. (Bolton, 595; D.S.B., VII, 525; Duveen, 329; Ferchl, 288; Ferguson, I, 484; Ferguson Coll., 381; Neu, 2188; Partington, II, 364; Smith, 274)

KUNCKEL, Johann, STAHL, Georg Ernst, and FRITSCHIUS, Johann Christian

Pyrotechnical Discourses. Being I. An Experimental Confirmation of Chymical Philosophy, treating of the several Principles in the Animal, Vegetable, and Mineral Kingdoms. With, a Perspective against Chymical Non-entities. Written by John Kunckel, Chymist to the Elector of Saxony. II. A short Discourse on the Original of Metallick Veins; by George Ernest Stahl M.D. which may serve as an Answer to Dr. Woodward's Theory of the Earth, and was a Forerunner to. III. The Grounds of Pyrotechnical Metallurgy, and Metallick Essaying; by John Christian Fritschius of Schwartzburg. All faithfully Translated from the Latin, and useful for all such as are any ways concern'd in Medicine or Metals.

London: Printed, and Sold by B. Bragg in Avemary-Lane. 1705.

First edition. 8vo. x, (2), 268 (i.e., 276) pp. Pages 181–188 are numbered in duplicate. Fine copy in original calf, maroon morocco label gilt. From the celebrated Hopetoun library, with armorial bookplate on front pastedown endpaper.

“THIS RARE work remained unknown to Ferguson. It contains the only English translations of the works mentioned” (Duveen). Translated by Francis Moulton, a chemist who manufactured at the Sign of Glaubers-Head in Watling Street; he is cryptically mentioned (p. iv) as “that ingenious Artist Mr. F-M-.” These initials are identified in the Ad-

denda of Cramer's *Art of Assaying Metals* (London, 1741). Moulton also translated Nehemiah Grew's Latin tract on Epsom salt (1695) into English (1697); see Partington (II, 697). Kunckel's *Chymische Anmerkungen* (Wittenberg, 1677) was translated into Latin (Amsterdam, 1694), from which this English version was made. Stahl's work originally appeared as *De Ortu Venarum Metalliferarum* (Halle, 1700). With slightly altered title page, the sheets of this 1705 edition were reissued in 1730 (see Blake and Duveen). (Bolton, 1028; D.S.B., VII, 525; Duveen, 490; Edelstein, 1327; Ferchl, 288; Ferguson Coll., 381; Hoover, 668 [imperf.]; Morgan, 433; Neu, 3388; Partington, II, 364, 660; Smith, 402; Sondheimer, 821; Sotheman, Cat. 832 [1932], 5649 [“Very Rare”]; Wellcome, III, 419)

KÜNSTEL, Johann Wolfgang

Dissertation Medico-Chymica de Salibus Metallorum praesertim Auri et Mercurii. Editio secunda.

Leipzig: Apud Jo. Fried. Gleditsch et Filium. 1711.

First separate edition. 4to. 1 leaf, 22 pp. Woodcut headpiece and initial. Fine copy in maroon quarter morocco antique, marbled boards, spine gilt-lettered and dated. A printed label in Latin, attached to the verso of the title leaf, states that this copy was bequeathed by Dr. Phillip Jacob Weygand, of Würzburg, on 23 January 1741, to Johann Jacob Freundt of Weyenburg.

AN IMPORTANT work on salts, especially those of gold and mercury, by Künstel (dates unknown), whom Ferchl describes as an alchemist. In three chapters the author discusses “sal polychrest” (potassium sulfate), metallic salts in general, and salts of gold and mercury. The works of Basil Valentine, Borrichius, Kunckel, Paracelsus, Stahl, et al., are cited. Mercury is considered to be “immature gold.” Although the title states that this is the second edition, it is in fact the first separate edition. The work originally appeared as a paper in the *Actis Lipsiensibus* (1711, p. 214). Manget gives an extensive review of it, and another edition appeared much later (Leipzig, 1760), a copy of which is listed by Ferguson. Rare. Not in the usual early chemical bibliographies. (Blake, 248; Ferchl, 286; Ferguson, I, 483 [not in Young Coll.]; Gmelin, *Geschichte der Chemie*, 1798, vol. 2, p. 325; Manget, *Bibliotheca Scriptorum Medicorum*, 1731, II, part 1, pp. 86–87; Wellcome, III, 418)

KURR, Johann Gottlob von

The Mineral Kingdom. By Dr. J. G. Kurr . . . With coloured illustrations of the most important minerals, rocks, and petrifications.

Edinburgh: Edmonston and Douglas, 88 Princes Street. 1859.

First English edition. Folio. 2 leaves, iii, (1), 70 pp. With 24 lithographed plates (including 1 chromolithograph and 22 beautifully hand-colored illustrations of 288 minerals) and 13 printed guard sheets. Slight foxing of some leaves; otherwise very good copy, in original gilt-lettered green pebbled cloth, rebaced in gilt-ruled brown morocco, black morocco label. With nineteenth-century bookplate: Marlborough College Natural History Society.

KURR (1798–1870), who was professor of mineralogy at the Imperial Polytechnic Institution in Stuttgart, published *Das Mineralreich in Bildern* (Stuttgart, 1858). An anonymous translator quickly rendered the book into English and added information on the locations of British minerals. The preface is dated Edinburgh, 1 January 1859. Vividly colored, the plates are the same as those of the original German edition. An extremely attractive work, which illustrates nearly three hundred types of minerals, including gemstones and precious metals. The plates are notable for their use of metallic finishes, including gold, silver, and copper. “A work remarkable for its exquisitely coloured plates” (Zeitlinger, who described it as “Scarce” in 1913). Of considerable chemical interest, there is a five-page table (pp. 7–11) of the chemical elements, in two parts: I. Metalloids, non metallic elements; and II. Metals. Not in Hoover, Sinkankas, Ward & Carozzi, or Wilson. (Ferguson Coll., 382; Sotheran, Cat. 734 [1913], 10344)

KURRER, Jacob Wilhelm Heinrich von

Die Kunst vegetabilische, vegetabilisch–animalische und rein animalische Stoffe zu bleichen. Von Dr. Wilhelm Heinrich v. Kurrer. . . .

Nuremberg: Bei Johann Leonhard Schrag. 1831.

First edition. 8vo. xxiv, 416 pp. With 5 folding printed tables (on 4 leaves) and 8 folding copperplates of bleaching equipment. Fine copy, unpressed and uncut with wide margins, in half calf antique, marbled boards, crimson morocco label, original wrappers bound in.

A COMPREHENSIVE TREATISE on the physical and chemical processes employed in bleaching animal and vegetable materials, including the use of chlorine, hypochlorite, hydrogen peroxide, sulphur dioxide, alkalies, and fermentation. A detailed bibliography (pp. 396–410) lists hundreds of books and journal articles on bleaching from the end of the seventeenth century to the date of this work. Kurrer (1781–1862) was director of textile-printing plants in Ger-

many (Augsburg, Zwickau), Hungary (Sassin), and Bohemia (Prague). This, his first published work, was followed by several other books on dyeing and bleaching. (Bolton, 596; Edelstein, 3210; Ferchl, 289; Poggendorff, I, 1334; Ron, 616)

KYAN, John Howard

Copy of a Letter to Beilby Thompson, Esq. M.P. on the Navy Estimates; showing the Expense of Building and Repairing His Majesty's Navy, from the year 1800 to 1820. With remarks on the adoption in His Majesty's Dock-Yards of Kyan's patent process for prevention of dry rot in timber. By Mercator.

London: Printed by J. and C. Adlard, Bartholomew's Close. 1834.

First edition. 8vo. (in 4s). 11, (1), 76 pp., 6 folding leaves. Fine copy in contemporary dark-blue half calf, marbled boards, maroon morocco label, spine gilt. Bound with: Faraday, Michael, *On the practical prevention of dry rot in timber* (London, 1833).

BORN IN Dublin, Kyan (1774–1850), inventor of the “Kyanising” process for preserving wood, began his experiments to prevent the decay of wood in 1812. He moved to London and became a distiller. Following exhaustive trials by the admiralty, using the fungus pit at Woolwich, he patented his invention for wood preservation in 1832. The invention consisted of impregnating wood with corrosive sublimate (mercuric chloride). It aroused considerable enthusiasm and prompted Michael Faraday (1833) and George Birkbeck (1834) to deliver lectures endorsing the process. In the present work Kyan (under the pseudonym “Mercator”) demonstrates the vast sums of money the navy could save by “Kyanising” the wood used in ship construction to prevent the depredations of fungus, marine animals, etc. In a detailed series of tables he lists estimated costs to the government for the building, rebuilding, and repairs (above normal wear and tear) for the years 1800 to 1820. Kyan shows that over 36 million pounds sterling could be saved by the use of his process during the next twenty years. The process was employed for several years but was eventually supplanted by the method of Sir William Burnett (1779–1861), using zinc chloride, and later the application of creosote from coal or wood tar. Kyan died in New York. Very rare, not in N.U.C.