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FINE BOOKS

SCIENCE, MEDICINE, NATURAL HISTORY, *and* EARLY PRINTING

CATALOGUE 14

105. *Shelley*

FINE BOOKS

SCIENCE, MEDICINE, NATURAL HISTORY, AND EARLY PRINTING

CATALOGUE FOURTEEN

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RARE BOOKS & MANUSCRIPTS

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MEMBER

FINE BOOKS
SCIENCE, MEDICINE, NATURAL HISTORY, *and* EARLY PRINTING

THE TERM "CYBERNETICS" COINED

1. AMPÈRE, André-Marie

Essai sur la philosophie des sciences, ou exposition analytique d'une classification naturelle de toutes les connaissances humaines. Paris: Chez Bachelier, 1834; 1843.

Two volumes. 8vo. lxx, 272 (i.e., 274; includes inserted leaf, 150 bis and 150 ter); x, xcvi, 180 pp. Volume I with 4 large folding tables, 2 of which are repeated in Volume II. Contemporary calf-backed marbled boards; minor foxing, a bit heavier on preliminary leaves, especially in Volume II. From the library of Alfred Mauger, with his bookplate in Volume I. $1500.00

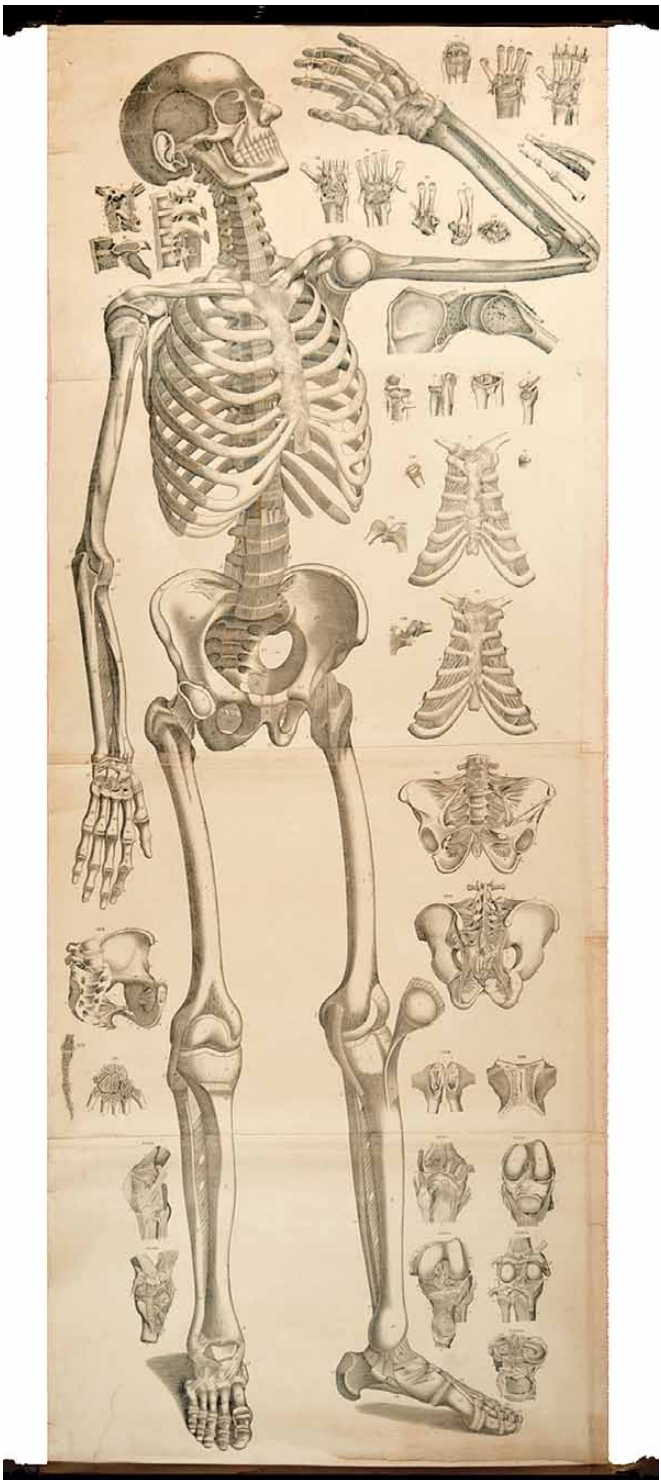
First edition. In this work, Ampère introduces his classification of all sciences, and by a process of division and subdivision provides 128 categories of disciplines, including one he terms "cybernetics." His system was based on the content of the sciences and possessed a very dynamic internal structure, taking into account the historical relations among different divisions. This work remained the most complete inventory of scientific knowledge for the mid-nineteenth century. Ampère (1775–1836), a French physicist and mathematician famous for his contributions to the science of electromagnetism, considered this work his most important and the culmination of his career.

Dibner, *Ten Founding Fathers of the Electrical Science*, 26; *En Français dans le Texte*, 240; Overmier & Senior, *The Bakken*, p. 127

2. [ANATOMICAL ÉCORCHÉ]

BECKERS, Johann (engraver)

Four life-size anatomical écorché, each in the form of a scroll, by the engraver Johann Beckers. Each scroll consists of engravings backed with linen on wooden poles (32 inches) at the head and foot. $24,000.00



2. *[Anatomical Écorché]*

The scrolls depict as follows:

1. Frontal skeleton, signed, 71 x 26 inches
2. Frontal skeleton, unsigned, 73 x 28 inches
3. Rear-view skeleton, signed, 69 x 26 inches
4. Rear-view skeleton, unsigned, 71 x 28 inches

It is assumed that these scrolls were used to teach anatomy. It was not uncommon to use écorché (from the French, meaning "flayed") drawings or three-dimensional sculptures as teaching tools; they were originally created by Leonardo and earlier artists. We have been unable to locate any other copper-engraved scrolls similar to these from this early date (the Countway Library of the History of Medicine at Harvard has two life-sized copper engravings made by Antonius Cattani, circa 1780, after sculptures by Ercole Lelli). Our four scrolls are possibly dated from the same period.

Beckers (or Becker) was a little-known copper-plate engraver who flourished during the first decade of the eighteenth century.

COMPLETE WITH ALL THREE VOLUMES

3. ANDERSON, James

Essays relating to agriculture and rural affairs. Edinburgh: William Cheech, 1775, 1777; Bell & Bradfute, 1796.

Three volumes (Volume I in two parts). 8vo. xxxiv, 472; viii, 272; [iv], 133, [1]; lx, 631, [1] pp. Volume I with half-title, 1 page publisher's advertisement, separate title for Essay VI, and 3 folding engraved plates; Volume II with 2 title pages, advertisement from publisher (explaining why there are 2 title pages), separate half-title to Essay VI, and 18 engraved plates; Volume III is complete with the half-title and errata. Contemporary calf, worn; interiors excellent. $3500.00

First editions, including the very scarce second volume which contains the "Additions" to the six essays in Volume I, plus the additional essays making up Volume III, written "at the request of the President of the Board of Agriculture." (Notwithstanding, the essays in Volume III were initially withdrawn from the patronage of the Board, and only published later, by the author, when "the prices of corn had risen to the alarming height they have now attained.") The essays which make up the first volume include treatment of enclosures and fencing, draining bogs and swampy ground, leveling ridges, the proper

method of sowing grass seeds, hay-making, and a lengthy tract entitled "Miscellaneous disquisitions, doubts and queries relating to agriculture." This essay was supplemented in the 1777 printing by a treatise on quick-lime. The third volume contains three essays, including "On the obstacles to the advancement of agriculture in England, and the means of removing them"; "On waste lands, and the means of their improvement"; and "Hints on the economical consumption of the produce of a farm." The lovely engraved illustrations in Volume II identify a number of different grasses.

As one might tell from the titles and from reading just a bit of the essays, the author was a practical man whose writings are clearly the result of his experience. Anderson (1739–1808) published a number of works on agriculture, though he was best known for his book on corn laws. He was quite familiar with newer technology, and indeed invented a number of agricultural improvements, most famously the "Scotch plough" for use on heavy soils. Most of his publications appeared in contemporary journals, where he detailed what he termed works "calculated to disseminate useful knowledge among all ranks of people at a small expense."

Dictionary of National Biography, I, p. 381; Fussell, *More Old English Farming Books*, pp. 104–106; Goldsmith, I, 11233; McDonald, *Agricultural Writers, 1200–1800*, pp. 214–215

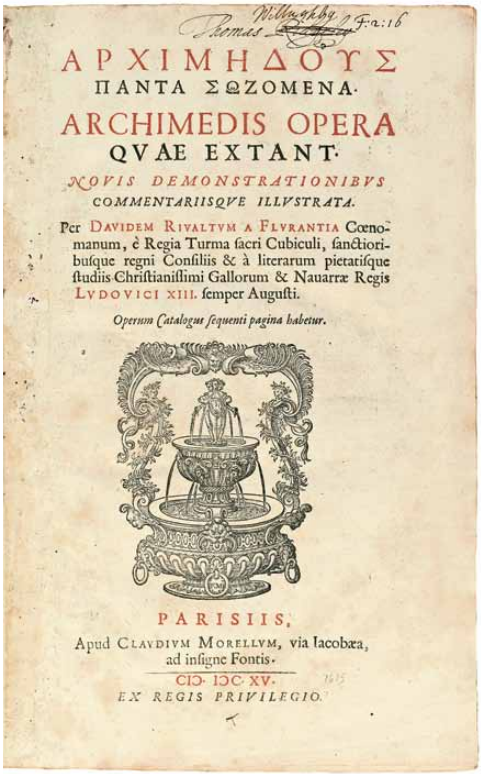
RARE EDITION WITH SUPERB WOODCUTS

4. ARCHIMEDES

Αρχιμηδους παντα σωζομενα. *Archimedis opera*. Paris: Claude Morel, 1615.

Folio. [xliv], 549 pp. Title in red and black with printer's device, ornamental initials, head- and tailpieces, woodcut mathematical diagrams throughout. Greek, Roman, and Italic type. Contemporary calf, rebacked; inner margins of last dozen leaves waterstained, otherwise a very nice copy with contemporary annotations and the contemporary ownership signature of Thomas Willughby on the title page. $7500.00

The complete works of Archimedes, the first edition edited by David Rivault. It contains all Archimedes' monumental contributions to science: his discovery of the principle of specific gravity and methods for calculating the centers, circle measurements, the quadrature of the parabola and spirals, techniques of analysis, his theoretical work on mechanics and hydrostatics, an approximation of the value of π, and his treatment of the numeration of large numbers.


Thomas Willoughby 1742:16

ΑΡΧΙΜΗΔΟΥΣ
ΠΑΝΤΑ ΣΩΖΟΜΕΝΑ.

ARCHIMEDIS OPERA
QVAE EXTANT.

NOVIS DEMONSTRATIONIBVS
COMMENTARIISQVE ILLVSTRATA.

Per DAVIDEM RIVALTVM A FLVRANTIA Cœnomanum, è Regia Turma sacri Cubiculi, sanctioribusque regni Consiliis & à literarum pietatisque studiis Christianissimi Gallorum & Nauarræ Regis LVDOVICI XIII. semper Augusti.

Operum Catalogus sequenti pagina habetur.

PARISIIS,
Apud CLAVDIVM MORELLVM, via Iacobæa, ad insigne Fontis.
CIↃ. IↃC. XV.
EX REGIS PRIVILEGIO.

4. *Archimedes*

Archimedes of Syracuse (c. 287–212 BC) was the finest scientist and mathematician of the ancient world. He created mechanics and was a pioneer in the fields of statics and hydrostatics. According to Gauss, Archimedes had only Newton as a mathematical equal.

Dibner, 137; Horblit, 5; *Printing & the Mind of Man*, 72 (all cite the 1544 ed.)

5. [ARISTOTLE]

CAMUS, Armand-Gaston. *Histoire des animaux d'Aristote.* Paris: Chez la Veuve Desaint, 1783.

Two volumes. Folio. [viii], lvi, 758, [4]; [iv], xlviii, 850, [2] pp., including half-titles, approbation, and privilege du Roi. Volume I with the Greek and French translations on facing pages. Contemporary tree calf, some wear to joints and corners; marbled edges, some light waterstains in first volume. From the library of George Milton Smith, with his bookplate. $1750.00

First edition of Camus' translation of Aristotle's descriptive zoology from Greek into French, a masterpiece of scholarship. This highly esteemed first French translation is much sought after for its extensive erudite commentaries and profound enlightenment of comparative anatomy. Divided into two books, the first volume contains Aristotle's original Greek with Camus' French translation facing. He here documents all the various manuscripts, editions, and translators cited in the work. The second volume, a detailed study of natural history up to the modern time, contains Camus' careful observations on the commentaries of other translators. This work is of particular importance for Camus' nomenclature of those living creatures originally described in Aristotle's account. He lists all of the animals found in Aristotle's works, including those "fanciful and primitive," and then details the differences in terms of the modern knowledge of natural history.

So great was the influence of Aristotle that his teachings were accepted and enlarged upon for nearly two millennia. He was acquainted with more than five hundred species of animals and had dissected and investigated in detail at least fifty kinds, ranging over the entire animal kingdom. Many of his conclusions have stood the test of time. "Among them may be mentioned his descriptions of the mechanisms of locomotion, of the process of digestion in ruminants, of the habits of bees, of the mechanism of animal reproduction; his exposition of analogous structures in living bodies; and his methods of biological classification" (Eimas, *Heirs of Hippocrates*, 14).

Camus (1740–1804) was a successful advocate before the Revolution. In 1789 he was elected by the third estate of Paris to the states general, and attracted attention by his speeches against social inequalities. He was named archivist to the Constituent Assembly, and in that capacity he organized the national archives and classified the papers of the different assemblies of the Revolution. He was restored to the office in 1796 and became absorbed in literary work. He remained an austere republican, refusing to take part in the Napoleonic regime.

This scarce work was included in Thomas Jefferson's library.

Fothergill, *Historical Aspects of Organic Evolution*, pp. 21–33; Ley, *Dawn of Zoology*, pp. 24–37; Wood, p. 203

FROM THE LIBRARY OF
AMERICAN ASTRONOMER ASAPH HALL

6. [ASTRONOMY COLLECTION]

Sixty-one (61) original offprints and monographs. 1823–1944, though most are 1870–1895. $4500.00

Asaph Hall (1829–1907) was an American astronomer who discovered the two moons of Mars, Deimos and Phobos. Born in Connecticut, Hall studied mathematics and ultimately took a job at the Harvard College Observatory. Six years later he became an assistant astronomer at the U.S. Naval Observatory, where he was made a professor of mathematics a year later. At the time, the Observatory had the largest refractor telescope in the world. Using it, Hall discovered, in 1877, the two moons of Mars. Much of Hall's later work involved the moons of the outer planets and studies of binary stars. In 1895, he returned to Harvard as professor of astronomy.

Included in the list of authors are:

Wilhelm Heinrich Walter BAADE (1893–1960), a German astronomer who worked in America from 1931 to 1959. His work led him to recalculate the size of the known universe, doubling the previous calculation made by Hubble in 1929.

Edward Emerson BARNARD (1857–1923), American astronomer. The faint Barnard's Star is named for him after he discovered in 1916 that it had a very large proper motion relative to other stars. This is the second nearest star system to the sun, only the Alpha Centauri system being closer. He was also a pioneering astrophotographer.

George Phillips BOND (1825–1865), American astronomer. He succeeded his father as director of Harvard College Observatory from 1859 until his death. His cousin was Edward Singleton Holden, first director of Lick Observatory. Bond took the first photograph of a star in 1850 (Vega) and of a double star in 1857 (Mizar); suggested photography could be used to measure a star's magnitude; and discovered numerous comets and calculated their orbits. He and his father jointly discovered Saturn's moon, Hyperion (which was also independently discovered by William Lassell).

Johann Gottfried GALLE (1812–1910), a German astronomer at the Berlin Observatory. On September 23, 1846, with the assistance of student Heinrich Louis d'Arrest, Galle became the first person to knowingly view the planet Neptune.

Ernest Barthélémy MOUCHEZ (1821–1892), a French astronomer, originally prepared for a naval career and served with distinction in the French Navy before he became director of the Paris Observatory. He was a member of the Bureau des Longitudes and of the astronomical section of the Académie des Sciences. Mouchez attempted to improve surveying techniques by promoting the use of observational instruments.

Hubert Anson NEWTON (1830–1896) was an American astronomer and mathematician, and a worldwide authority on meteors and comets. He won the Smith gold medal from the National Academy of Sciences, was elected an associate of the Royal Astronomical Society of London, served as president of the American Association for the Advancement of Science (1885), and was a foreign member of the Royal Society of Edinburgh.

H.C. SCHUMACHER (1780–1850), a German-Danish astronomer, studied astronomy under the direction of his good friend Gauss, and worked to establish an observatory at Altona. He directed the Mannheim Observatory from 1813 to 1815, and then became professor of astronomy in Copenhagen. He also founded and published the journal *Astronomische Nachrichten*, of which he edited thirty-one volumes.

A complete list of items in the collection will be provided upon request.

AVOGADRO'S LAW

7. AVOGADRO, Amedeo

Fisica de'corpi ponderabili ossia trattato della constituzione generale de'corpi. Torino: Stamperia Reale, 1837–1841.

Four volumes. 8vo. [iv], xxxi, 910; [iv], xv, 980; [iv], xiii, 932; [iv], xiii, 926, liii pp., including index. Complete with half-titles, 18 folding plates, errata, and all blank leaves. Uniformly bound in contemporary calf-backed marbled boards. An exceptionally fine and clean set. $26,000.00

First and only edition of Avogadro's major work, and the first systematic compendium of theoretical physics to be published in Italy. This monumental work was expanded from the author's memoir, which appeared in the *Journal de physique* (1811). The famous hypothesis which bears his name provided the key to distinguishing between atoms and molecules. Avogadro's law still governs chemical research, and is an indispensable aid in the determination of the molecular weights of many chemical compounds (see Zeitlinger).

Avogadro (1776–1856) held the first chair of mathematical physics in Italy. He was largely responsible for the introduction of the metric system in Piedmont, but he and his work were for the most part unknown to the rest of Europe. Complete sets of this work are now of great rarity.

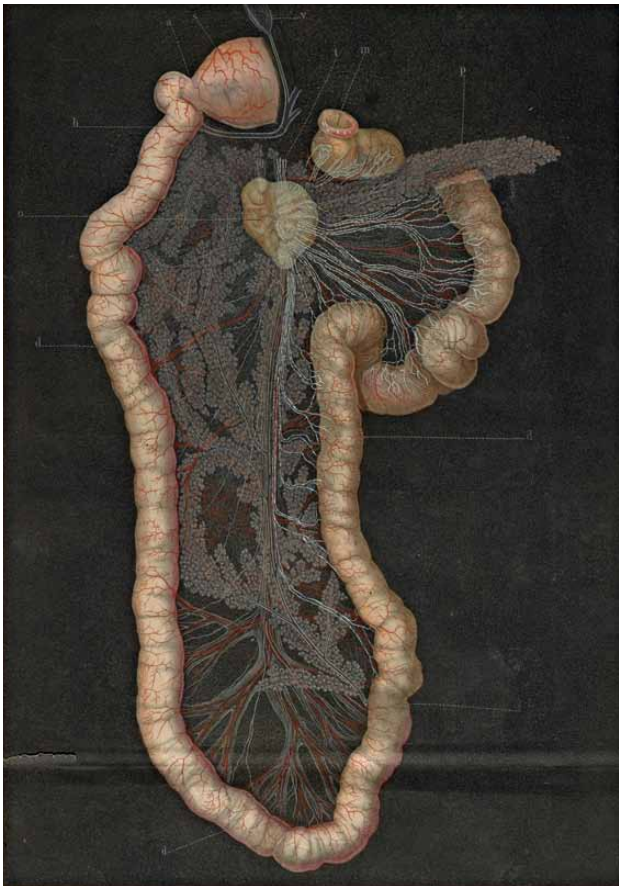
Gregory, *Short History of Atomism*, pp. 108–110; Partington, IV, pp. 213–217; Zeitlinger, S1, 3018

A CLASSIC IN PHYSIOLOGY

8. BERNARD, Claude

"Mémoire sur le pancréas et sur le role du sac pancréatique dans les phénomènes digestifs. . . ." In *Supplément aux Comptes Rendus*, I, pp. 379–563. [Paris]: Bachelier, [1856].

4to. [vi], 563 pp., including half-title. With 9 engraved plates (the first 4 drawn by Bernard, plates 5 through 9 beautifully hand-colored). The complete volume in exquisite condition, with 23 additional hand-colored plates. Uncut in contemporary hand-patterned yellow wrappers with printed spine label. $1500.00



8. *Bernard*

First edition of Bernard's most important contribution to scientific medicine. This monograph was the culmination of a series of papers on the role of the pancreas in digestion. "A model of scientific writing and a classic in the history of physiology . . . it was, in fact, the problem of digestion which led [Bernard] to the pancreas, to the liver, and later, to the nervous system" (Lilly Library, *Notable Medical Books*, 159).

Garrison & Morton, 1000.1; Grolier, *One Hundred Books Famous in Medicine*, 67b; Olmstead, pp. 87–88

THE FIRST FRENCH BOOK ON NAVIGATION
WITH AN EARLY DESCRIPTION OF SOUTH AMERICA

9. BESSARD, Toussaint de

Dialogue, de la longitude: est-oueste, de T. Bessard d'Auge en Normandie. Qui est, la premiere partie du miroer du monde: contenant, tous les moyens, que l'on pourroit avoir tenues, en la naviguation, iusqu'à maintenat: que, les deux filles de cosmographie, asçavoir, geo-graphie, & hydro-graphie, en mettent un nouveau, & plus-seur, en avant: touchant le fait de cette longitude, tant par mer, que par terre. Rouan: Messgissier, 1574.

4to. [xvi], 111, [1] pp. Woodcut printer's device on title, full-page woodcut portrait of author facing impressive full-page woodcut coat-of-arms. With 20 text woodcuts, including illustrations of instruments, and 3 tables. Nineteenth-century vellum; small repairs to title-page and to lower corner of coat-of-arms.

$85,000.00

First edition of this extremely rare treatise, the first work printed in France on navigation and one of the earliest attempts to determine longitude at sea. As a mathematician and instrument-maker, Bessard believed this could be accomplished by fixing one's position vis-à-vis the stars; his instruments, which are illustrated here, support this conclusion. Notwithstanding, he was well aware of the needs of those traveling by sea, and his methods for determining longitude were successfully followed by navigators and explorers. An early description of South America is also included, undoubtedly drawn from Bessard's firsthand experience.

Bessard (also *Bossard*), born in Putot-en-Auge, became an accomplished mathematician and designer of navigational instruments, publishing in 1572 *L'aigle-compas de T. de Bessard, d'auge en Normandie.* However, most of his life was passionately spent in travel, both at sea and by land, and Bessard is remembered as one of the most renowned voyagers of sixteenth-century France.

LE MESME,

Cano-metre.

Ceſte figure monſtre, comment l'inſtrument doit eſtre dreſſé, ſur trois baſtons: pour plus facillement, mirer, & regarder l'eſtoil-

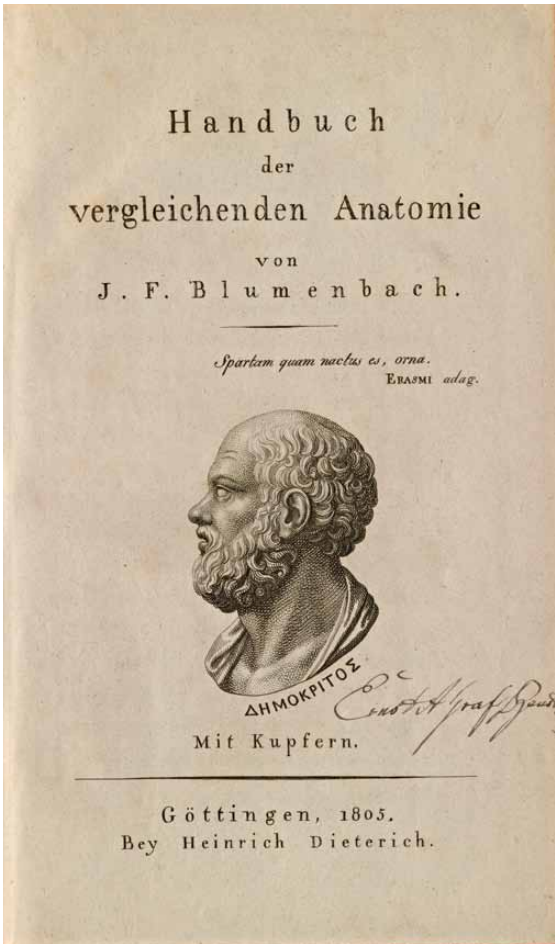
We could locate only three other copies of this work: British Library (STC-French, 51); the Bibliothèque Nationale (12, #647); and the Crone Collection of the Scheepvaart, the Dutch Maritime Museum (Crone Library, 77), which appears incomplete.

En Français dans le texte, 67

10. BLUMENBACH, J[ohann] F[riedrich]

Handbuch der vergleichenden Anatomie. Göttingen: H. Dieterich, 1805.

8vo. xvi, 549 pp. Complete with half-title, engraved title depicting a bust of Democritus, and 8 engraved plates. Original boards; an excellent copy with the large bookplate of H.A. and a contemporary signature on title. $1200.00


Handbuch
der
vergleichenden Anatomie
von
J. F. Blumenbach.
Spartam quam nactus es, orna.
Erasmi adag.
ΔΗΜΟΚΡΙΤΟΣ
Mit Kupfern.
Göttingen, 1805.
Bey Heinrich Dieterich.

10. *Blumenbach*

First edition of this monumental work in the history of comparative anatomy and human development. Blumenbach believed that an organism's morphology was capable of being modified by the environment and that the resultant changes were inherited. He argued that zoological classification should be based on structures associated with an animal's specific functions; it was in this way that he came to make such groundbreaking contributions to comparative primate anatomy. Of special note are the numerous bibliographical references given as footnotes to the text.

Blumenbach (1752–1840), physiologist and anthropologist, is widely accepted as one of the founders of scientific anthropology. Probably the most far reaching of all his contributions were his classifications of the human race. He was one of the few during his time to stress the equality of the people who made up each of these variations, regardless of differences.

Eimas, *Heirs of Hippocrates*, 1116 (2nd ed.); Norman, I, 252; Spencer, *History of Physical Anthropology*, II, p. 186; Wellcome, II, p. 183

AN ACCOUNT OF A FAILED EXPEDITION TO POLAND

11. BOËNCOURT, Chevalier [Galliard]

HENDERSON, Alexander (editor). *A narrative of the French expedition to Dantzig in 1734; Voyage des troupes Françoises en Pologne.* Edinburgh: Alexander Henderson, 1831.

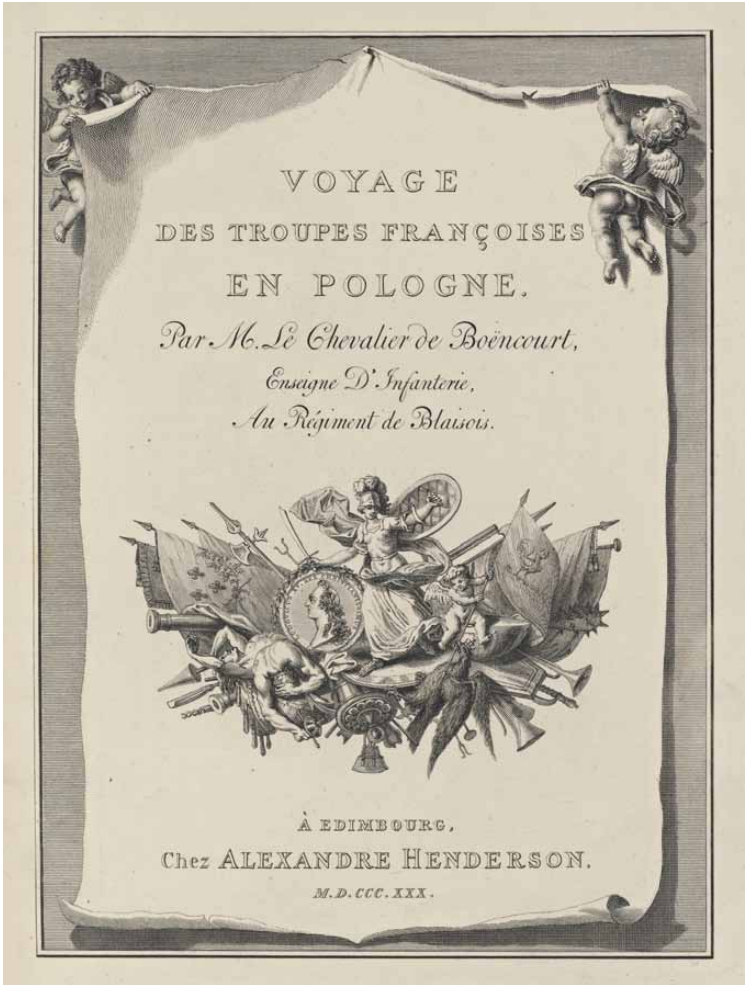
Two parts in one. 4to. [ii], xl; [x], 7–87 pp. First part (in English) with a limitation leaf, half-title (*An account of the French expedition to Poland*), engraved title, and dedication leaf (to C.L.F. Panckoucke), plus illustrated headpiece and initial. Second part (in French, *Voyage des troupes*) with half-title, beautiful copper-engraved title, and 2 additional leaves containing the same title engravings, 1 leaf with armorial engraving on recto, and on verso a dedication to Monseigneur D'ormesson de Noyseau with illustrated initial; last leaf with the armorial emblem. Bound in half-morocco over brightly colored marble boards, covers a bit worn; generally in excellent condition, uncut and largely unopened. $8500.00

First and only edition, extremely rare. Only 58 copies were printed, this being number 36, initialed by Alexander Henderson on the limitation leaf. Henderson was a Scottish physician, a book collector, author of the well-known *Ancient and modern wines* (1824), and a Francophile. During his travels to France he acquired this eighteenth-century French manuscript by

Boëncourt, Enseigne d'Infantrie, who was part of a French military expedition to the besieged port city of Dantzig (Gdansk) in Poland. This expedition took place during the War of Polish Succession. Russians had a claim to the throne, but Sweden, in alliance with the French, wanted Stanislaw, the son-in-law of Louis XV, on the throne. Of course a war broke out. The French sent reinforcements, but the Russians proved superior and Stanislaw fled in disguise.

This rare account by Alexander Henderson is printed from the author's original manuscript. "Chevalier de Boëncourt's narrative of an expedition was ill-conceived, and consequently unfortunate in its ending. It is of considerable interest and value" (Dobell's *Catalogue of Books Printed for Private Circulation,* 1906).

No copies are located in America by OCLC


VOYAGE
DES TROUPES FRANÇOISES
EN POLOGNE.
Par M. Le Chevalier de Boëncourt,
Enseigne D'Infanterie,
Au Régiment de Blaisois.
À EDIMBOURG,
Chez ALEXANDRE HENDERSON.
M.D.CCC.XXX.

11. *Boëncourt*

12. BOSCOVICH, P. Rogerio Joseph

De lentibus et telescopiis dioptricis dissertatio. Rome: Antonii de Rubeis, 1755.

58, [2] pp. With 1 large folding plate. Complete with errata and imprimatur leaves.

(bound with)

De continuitatis lege et ejus consectariis pertinentibus ad prima materiæ elementa eorumque vires dissertatio. Rome: Generosi Salomoni, 1754.

80 pp. With a large folding plate which also contains the errata and corrigenda.

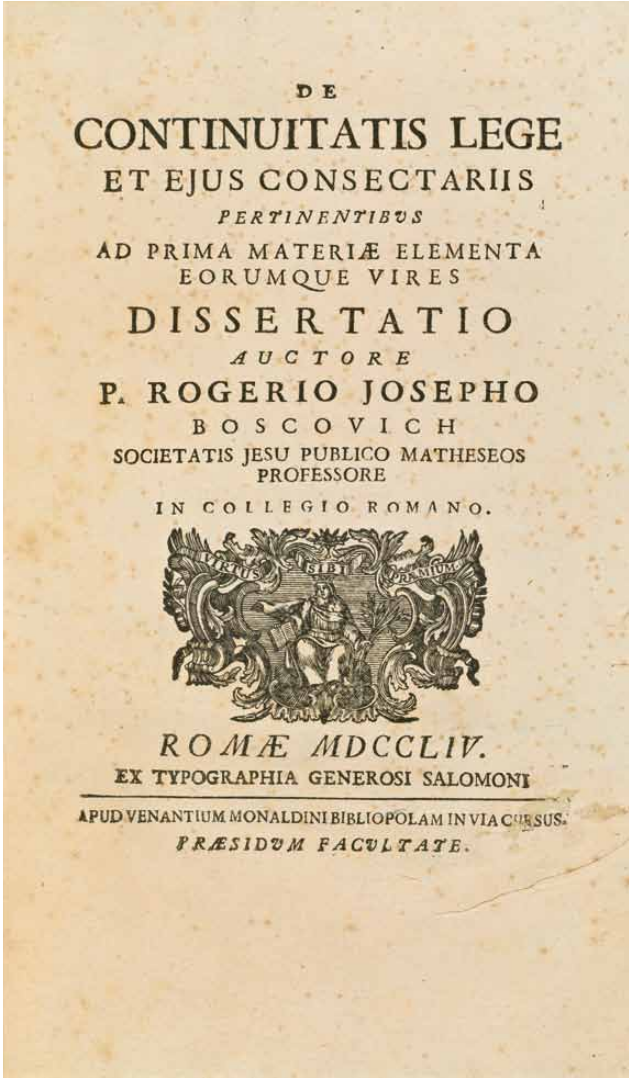
Two works bound together. 4to. Calf-backed marbled boards; title of first work has traces of erased stamp and an embossed stamp, lightly browned, heavier sporadic browning in second work with tiny repair on blank verso of title. $7000.00

I. First edition of Boscovich's extremely rare dissertation on telescopic lenses and Newtonian optics. He here describes the construction of lenses for telescopes as well as gives instructions on the manufacturing of dioptric instruments with the use of two different lenses. In addition, he presents guidelines for establishing the optimal refraction of lenses when viewing celestial bodies. The problem of measuring the refractive and distractive qualities of lenses became the subject of special interest following Dollond's later experiments with crown and flint crystals and the construction of the first achromatic objectives. References to Newton are noted throughout this work.

II. First edition and very scarce, probably the earliest presentation of Boscovich's atomic theories prior to his 1763 major work, *Philosophiae naturalis theoria redacta.* With a discussion of Leibniz' law of continuity, Boscovich here describes the essence of continuity as the existence of a common boundary for any of the parts of a continuous object. "For Boscovich an atom is an indivisible point-mass and the center of forces—either attractive or repulsive depending upon the distance between the atoms." The parts before and after the common boundary he calls continuum praecedens and continuum sequens, and he discusses them in context of the correspondence of the real numbers and the line, thus essentially arriving at what has formally been used by Richard Dedekind and Cantor to define the real continuum. "The work is further inspired by Newton's 31st query in the fourth edition of the *Opticks*, and quotes *De motu* by Johann Bernoulli" (Roberts/Trent).

Boscovich (1711–1787), famed Jesuit natural philosopher, was the father of the atomic theory and one of the greatest scientists of the eighteenth century. The significance and relevance of his ideas to contemporary science has been acknowledged by most historians. His contributions to physics, mathematics, astronomy, optics, geodesy, civil engineering, chemistry, and the philosophy of science are well known. Boscovich's work contains numerous ideas that have inspired, among others, Maxwell, Faraday, Hamilton, Kelvin, and Einstein.

Dictionary of Scientific Biography, II, pp. 326–332; Riccardi, 6.1, 178; Roberts & Trent, *Bibliotheca Mechanica*, p. 45; Whyte, *Roger Joseph Boscovich*


DE
CONTINUITATIS LEGE
ET EJUS CONSECTARIIS
PERTINENTIBUS
AD PRIMA MATERIÆ ELEMENTA
EORUMQUE VIRES
DISSERTATIO
AUCTORE
P. ROGERIO JOSEPHO
BOSCOVICH
SOCIETATIS JESU PUBLICO MATHESEOS
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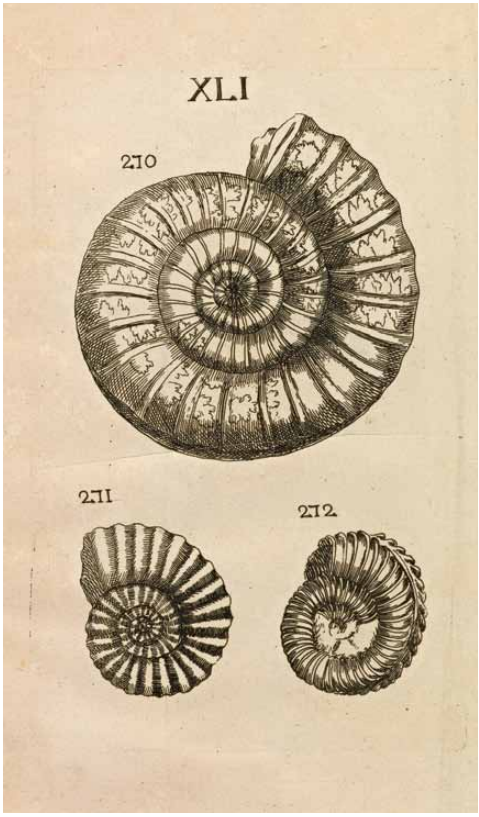
ROMÆ MDCCLIV.
EX TYPOGRAPHIA GENEROSI SALOMONI
APUD VENANTIUM MONALDINI BIBLIOPOLAM IN VIA CURSUS.
PRÆSIDUM FACULTATE.

12. *Boscovich*



13. *Bourguet*

13. [BOURGUET, Louis]

Traité des petrifications. Paris: Briasson, 1742.

Two parts in one. 4to. [iii], iv–xvi, 163; [iii], 4–91, [3] pp., including half-title to second part, approbation, and errata. With engraved chapter vignettes and 60 folding plates. Contemporary tree calf, elaborate gilt-decorated spine (slightly chipped at head and foot); endpapers printed in purple floral pattern, occasional browning in text and on edges of plates, heavier on preliminaries. Contemporary signature of Dav. Christoph. Schobingen M.D. on flyleaf, and bookplate on front paste-down, contemporary annotations to the errata leaf, possibly for a later edition. From the Furstenberg library at Donaueschingen. $5000.00

First edition. This indispensable manual of paleontology was the earliest of its kind to be published in French. It consists of two parts; the first is a compilation of letters relating to Bourguet's previous work, *Lettres philosophiques*, wherein he compares the processes of the mineral world, such as crystallization, to processes of the living world. The second part contains an atlas of sixty exquisite plates of fossils, including those unearthed by the author mostly from Switzerland or taken from the works of Lang and Scheuchzer. The illustrations are accompanied by concise explanatory text, a comprehensive bibliography of paleontology, and a list of international areas where fossils have been found.

Bourguet (1678–1742), affectionately referred to among his friends as the Pliny of Neuchâtel, traveled extensively, constantly adding to his store of knowledge and collection of specimens and fossils. He sought to arrange all mineral and organic species in a single line, from the simplest to the most complex, illustrating the concept of the Great Chain of Being. He had many correspondents, including Leibniz, and played an important role in the diffusion of ideas at the time.

Dictionary of Scientific Biography, XV, pp. 52–59; Hoover, 160; Zittel, p. 21

EARLY USE OF PHOTOGRAPHY IN MEDICINE

14. CAMPANA, Dr. [Joseph César]

Recherches d'anatomie, de physiologie et d'organogénie pour la determination des lois de la genèse et de l'évolution des espèces animales. Paris: G. Masson, 1875.

4to. [iv], xv, 385 pp., including errata. With 45 original albumen photographs mounted on 16 plates and 49 wood text engravings. Original patterned paper over boards; light stains on the half-title and title page, otherwise a fine copy. $2500.00

First edition of this little-known and fascinating work on the evolution of animals, especially birds, through the study of bronchial and air sac anatomy. Though not necessarily disagreeing with Darwin, the author is attempting to reveal the means of evolution through an examination of anatomy, particularly the development of the avian respiratory system. He makes a number of references to Darwin and Lamarck. Although little is known about him, Dr. Campana, who was awarded a degree from the Faculté de Médecine de Paris in 1861, was one of the first to make great historical advances in his research of avian respiratory systems, and he illustrates his findings with 45 original photographs of organs and anatomical details. Like many scientists of the period experimenting with the latest technological innovations in

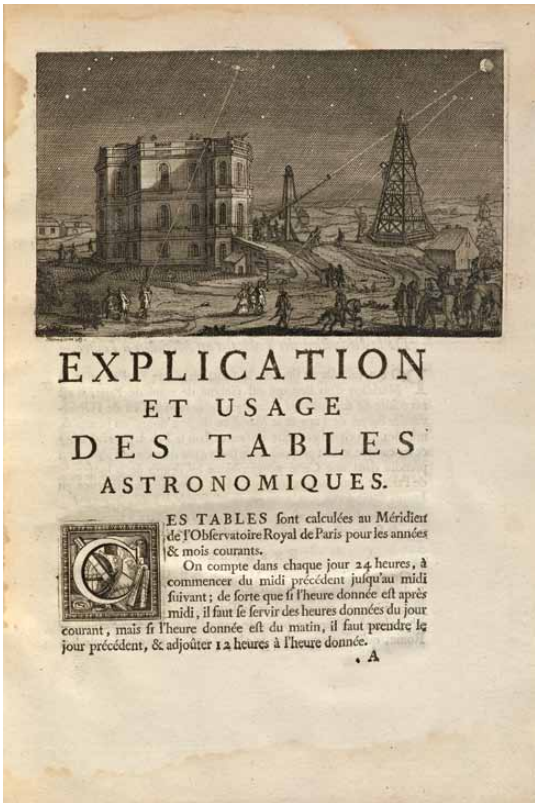
photography, he was quite convinced that the use of pictures to communicate information provided a stronger foundation for the admission of scientific evidence. Of particular interest is the author's extensive bibliography.

Lorentz, V, 236

15. CASSINI, [Jacques]

Tables astronomiques du soleil, de la lune, des planetes, des étoiles fixes, et des satellites de Jupiter et de Saturne. . . . Paris: de l'Imprimerie Royale, 1740.

4to. xiv, [vi], 120, 222, [2] pp., including errata. Woodcut arms of the Bourbons on title, engraved vignette of the Paris Observatory by Henri Simon Thomassin (1688–1741), and 5 folding plates. Contemporary calf, rebacked with the original spine laid down, spine with raised bands and gilt, hinges weak; title repaired, soiling and staining to gutter of first few leaves and toward the second half of the text and tables. $1850.00



EXPLICATION
ET USAGE
DES TABLES
ASTRONOMIQUES.

CES TABLES ſont calculées au Méridien de l'Obſervatoire Royal de Paris pour les années & mois courants.

On compte dans chaque jour 24 heures, à commencer du midi précédent juſqu'au midi ſuivant; de ſorte que ſi l'heure donnée eſt après midi, il faut ſe ſervir des heures données du jour courant, mais ſi l'heure donnée eſt du matin, il faut prendre le jour précédent, & adjoûter 12 heures à l'heure donnée.

A

15. *Cassini*

First edition of Cassini's tables showing movement of the sun, moon, and planets, among other celestial observations. The tables were so accurate that they were used by astronomers long after they went out of print.

Cassini (1677–1756) is best remembered for his valuable observations, though his theoretical works were seriously undermined by his adherence to Cartesianism. The son of Giovanni Domenico Cassini, he participated in his father's project of extending the meridian of Paris as far as the southern border of France. In 1713 he took a position clearly supporting the hypothesis of the elongation of the terrestrial ellipsoid, a point of view he defended for many years in the controversy between the last of the Cartesians against the expansion of Newtonianism.

Houzeau & Lancaster, I, 12793; Poggendorff, I, p. 390

AN IMPORTANT SOURCE FOR RENAISSANCE TECHNOLOGY INCLUDING DESCRIPTIONS OF MICHELANGELO'S TECHNICAL DESIGNS

16. CEREDI, Giuseppe

Tre discorsi sopra il modo d'alzar acque da' luoghi bassi. Per adacquar terreni. Per levar l'acque sorgenti, & piovute dalle ca[m]pagne, che non possono naturalmente dare loro il decorso. Per mandare l'acqua da bere alle Città, che n'hannobisogno, & per altri simili usi. Parma: Seth Viotti, 1567.

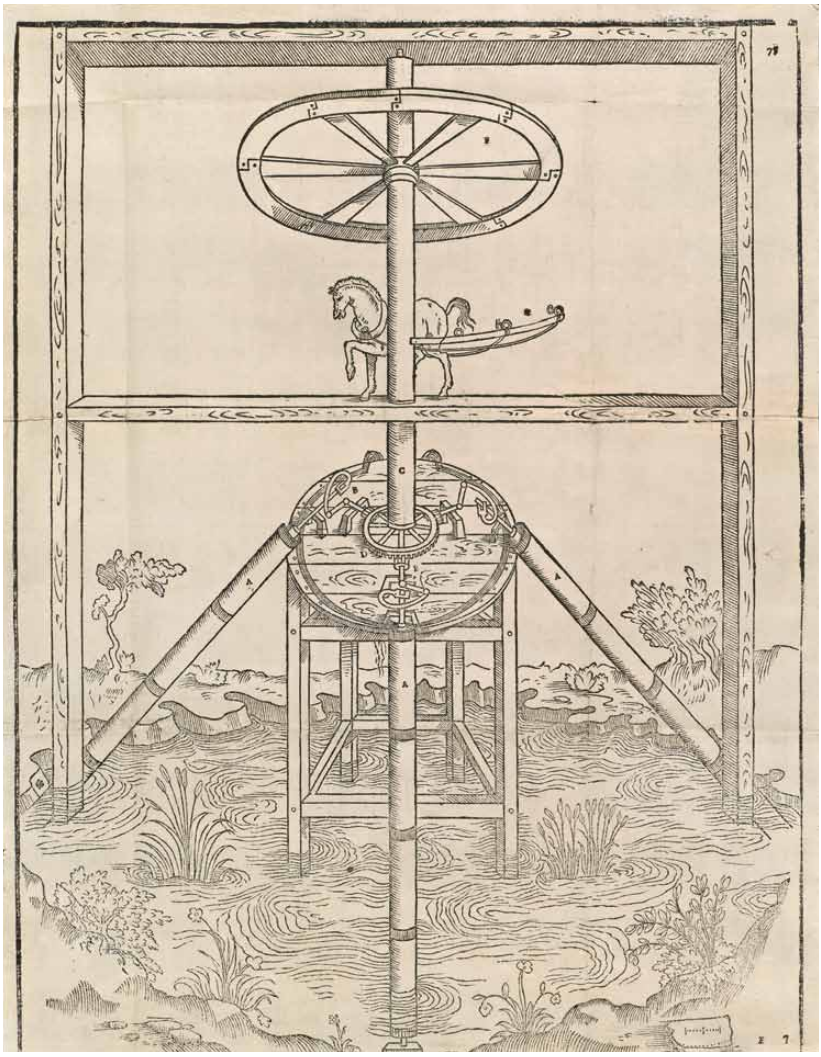
4to. [xx], 100 (i.e., 99) pp. Woodcut title vignette of a unicorn, 4 very large folding and 13 text woodcuts, allegorical initials and headpieces. Contemporary limp vellum, recased, ties present, covers, paste-down and title with contemporary writing, small red number stamped on the title and first leaf, text in excellent condition. $10,500.00

First and only edition. A splendid copy of this important study of Renaissance hydraulic engineering and mechanics, as well as the earliest histories of the subject. The author's interest in the supply of water to cities led him to investigate the construction and use of the Archimedean screw for the irrigation of fields and the drainage of swamps. The devices in use at the time were inefficient, and here the author suggests an improved design for cranks and other devices for turning screws. According to Stillman Drake, Ceredi's investigations belong to theoretical mechanics, and are reminiscent of the experimental rules given by Philo of Byzantium for the construction

of ballistae. He was also familiar with the works of Archimedes, Pappus, Valla, Cardano, and Agricola.

This treatise is also valuable for the fact that it describes a number of technical constructions made by Michelangelo for the Duke of Parma (pp. 63–65).

Adams, C-1280; Drake & Drabkin, *Mechanics in Sixteenth-Century Italy*, pp. 51–52; Riccardi, I, 339



16. *Ceredi*

Cette œuvre fort intéressante ne porte aucun nom, ni marque. Le costume ample du XVIIIe siècle se prêtait parfaitement à la construction de tels mécanismes et ce n'est pas par hasard qu'il fut choisi par l'artiste ; celui-ci a logé le volant dans les plis arrière de la robe. Le capulet simplement posé sur le corps, s'enlève très aisément, ce qui permet l'examen facile des organes. Cet automate, qui semble dater de la première moitié du XIXe siècle, paraît être, par sa technique, de construction anglaise[1].

FIG. 468
ANDROÏDE MARCHANT
(Collection sir David Salomons, Londres)

Nous donnons dans la figure 470 la reproduction d'un dessin représentant une poupée

[1] Un androïde de ce genre fut construit à Londres vers 1830, par Ch. Bauguier de Genève.

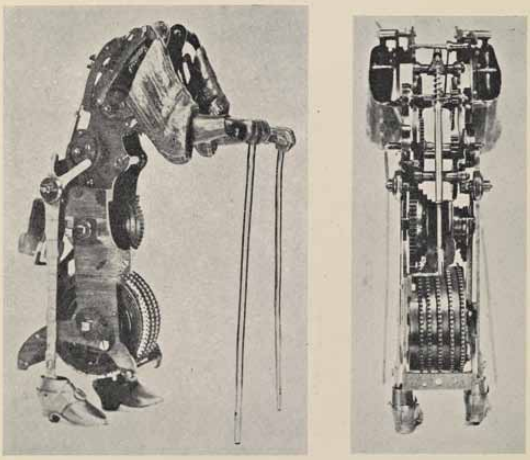


FIG. 469
ANDROÏDE MARCHANT
(Mécanisme)

AUTOMATON BIRDS, SCRIVENERS & MUSICIANS

17. CHAPUIS, Alfred & GÉLIS, Edouard

Le monde des automates étude historique et technique. Paris: [Haraucourt], 1928.

Two volumes. 4to. xvi, 348, [4]; [vi], 352, [8] pp. With 7 full-page plates (5 in color) and 540 text illustrations. Half-morocco and marbled boards, original stiff paper wrappers bound in, top edges gilt; aside from some minor staining to lower margin of first volume, a superb uncut copy. $1500.00

First edition of this rare book on the history of automatons and their creators, printed in a limited edition of 1000 copies, this being number 405. Stretching from antiquity to the beginning of the twentieth century, this treatise not only discusses the history of automatons, but also explains how they function, employing hundreds of detailed text illustrations to show their mechanical parts and how their movements are generated. Included are chapters on clocks and watches; mechanical paintings; snuff boxes; singing birds; talking machines; androids which write, draw, and sing; as well as chapters on orthopaedics and artificial limbs.

Chapuis (b. 1888) and Gélis were Swiss watchmakers and historians renowned for both their quality workmanship and their historical knowledge. They both authored numerous historical works on watches, machines, and robots, including *Grands artisans de la chronométrie*, *Les automates dans les œuvres d'imagination* (Chapuis), and *L'horlogerie ancienne; histoire, décor et technique* (Gélis).

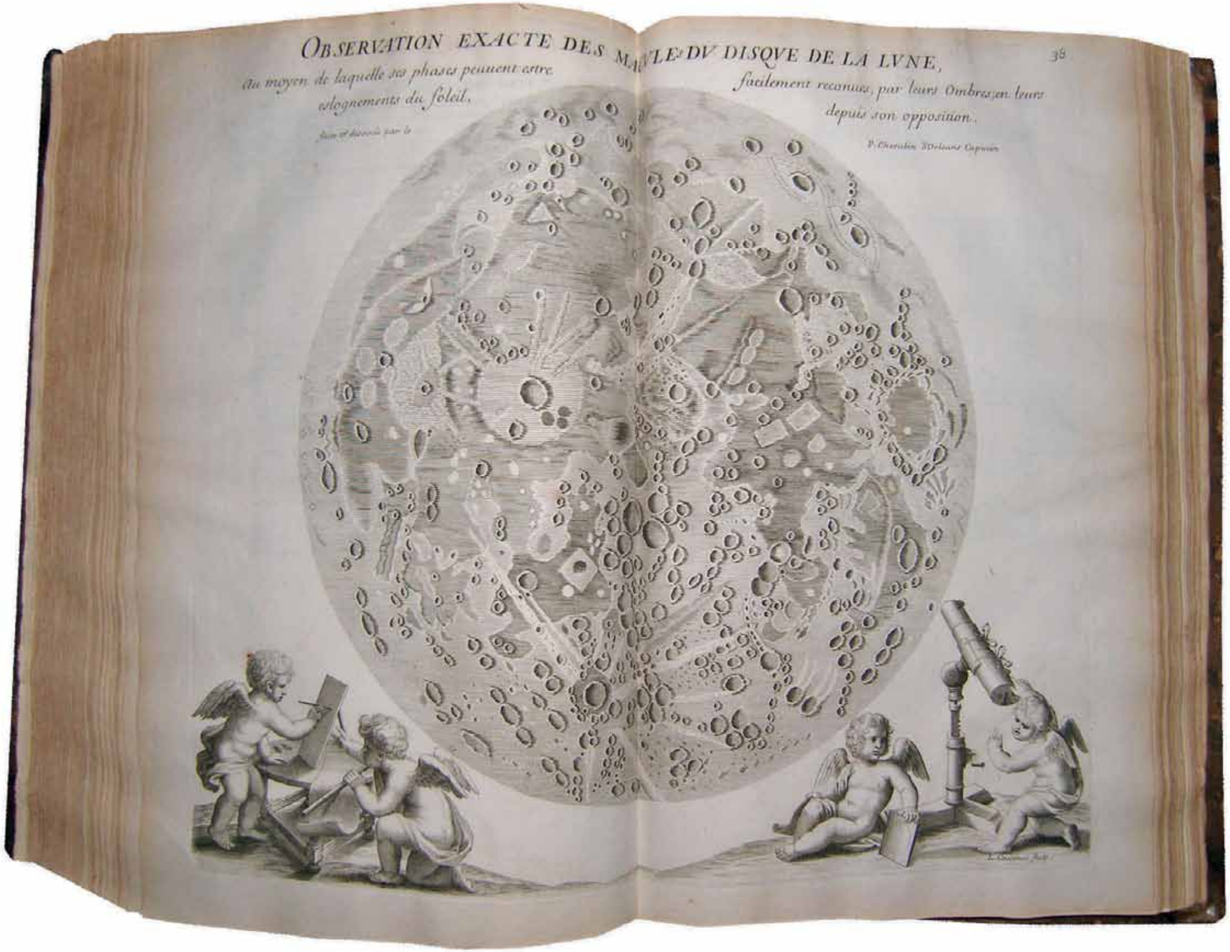
18. CHÉRUBIN D'ORLEANS, [François Lasseré]

La dioptrique oculaire, ou la theorique, la positive, et la mechanique, de l'oculaire dioptrique en toutes ses especes. Paris: Thomas Jolly & Simon Benard, 1671 [1670].

Folio. [xlvi], 419, [1], 30 pp. Added engraved title with fabulous printer's device, 57 engraved plates (5 double-page, 1 folding), 2 text engravings, vignette initials, decorative head- and tail-pieces. With the privilege and the directions to the binder (errata on verso). Contemporary calf, rebacked, spine with raised bands, extremities renewed, otherwise an excellent copy.

$24,000.00

First edition of this stunningly illustrated book. Chérubin provides descriptions detailing construction of microscopes, telescopes, and binocular


OBSERVATION EXACTE DES MA[...]LE DV DISQVE DE LA LVNE,
au moyen de laquelle ses phases peuuent estre
facilement reconnues, par leurs Ombres, en leurs
eslognements du soleil,
depuis son opposition.
38
P. Cherubin D'Orleans Capucin

18. *Chérubin*

glasses in addition to finely engraved plates depicting the optic nerves and the refraction of light through concave and convex lenses. The tenth section deals entirely with astronomical phenomena, with two large engravings of an astral map and the topography of the moon.

Of particular interest are the descriptions of his original techniques for cutting and polishing lenses, including illustrations of various lathes designed by him, some of the earliest machines used for these purposes. "The best glasses were worked by hand, with the glassworker utilizing a cutting wheel of suitable shape. Several of the devices on Chérubin's lathe, however, are very far in advance of their time" (Daumas, p. 269). Through a system of pulleys wound around an adjustable-speed mandrel operated by a hand stirrup or foot pedal, the lens cutter could maintain a consistently moving grinding surface. Another invention detailed in this work is an adjustable focus for his microscopes. "Chérubin arranged to focus the object by screwing the base up and down by means of a screw in the centre of the base. This appears to be the first instance of a focusing screw being applied to the stage of a microscope" (Clay & Court, p. 82).

Chérubin (1613–1697), Capuchin scholar, was a prolific manufacturer specializing in optical apparatus. A certain device described in a letter to his superior, which allowed one to "very distinctly discern, from eighty paces away, the particular movements of the mouths of a group in discussion," was so incredible that the order nearly expelled him.

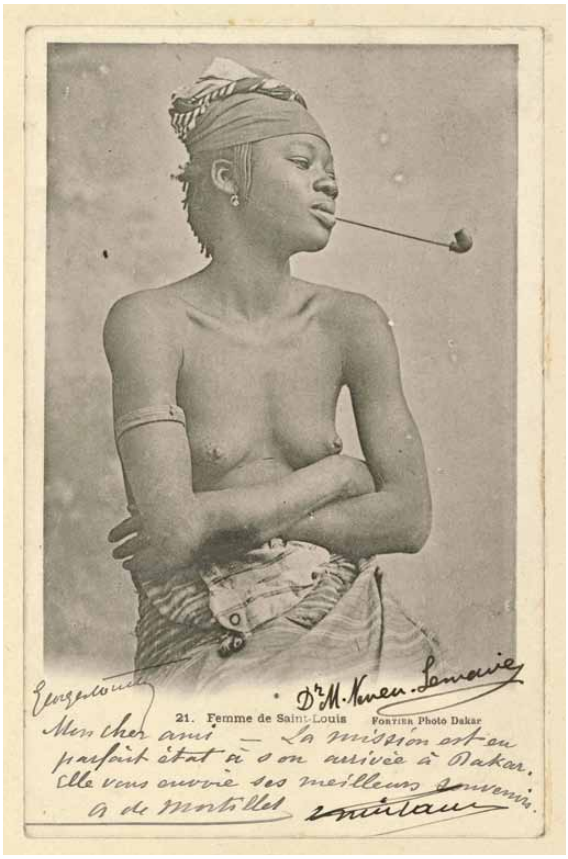
BMC, 5, p. 614; Clay & Court, *History of the Microscope*, pp. 81–82, 189; Daumas, *A History of Technology & Invention*, II, p. 269; *Nouvelle Biographie Générale*, X, pp. 229–230; Wellcome, II, p. 335

THE AUTHOR'S UNIQUE COPY WITH SIGNIFICANT ADDITIONAL MATERIAL

19. CHERVIN, Arthur

Anthropologie Bolivienne. Paris: Imprimerie Nationale, 1907.

Three volumes. 4to. [v]-iv-xlvii, 411; [viii], 5-435; [ix]-4-151 pp. An interleaved copy with original photographs, letters, instructions, postcards, etchings, handwritten documents, signed watercolor by Géraut dated 1905, menu, tickets, clippings, patterns of craniology, separate monograph by B. Diaz Romero entitled *Farmacopea Callaguaya, Enumeracion de las Plantas Medicinales* (La Paz, 1904), and additional material. Contemporary half-morocco and cloth, each spine with 2 labels and blind-stamped decoration. An amazing set. $5500.00



19. *Chervin*

First edition, the author's own working copy.

The Créqui-Montfort Expedition consisted of a team of scientists sent to South America to make a scientific and anthropological study of the different tribes of Indians, as well as the geography, flora, and fauna of the area. South America had witnessed a wave of research in the second half of the nineteenth century, including work by Humboldt, Darwin, and D'Orbigny. The task of this group was to collect objects and data to be transported back to Europe. Although he was responsible for organizing this expedition, Dr. Chervin was unable to participate himself.

In his preface to the *Anthropologie Bolivienne*, politician Léon Burgeois summarized the five key results of this anthropological focus. "In his view the research offered, first, an overview of the life and mentality of the studied peoples; second, it contributed to the theories of the origins or ethnogeny of America's inhabitants; third, it introduced a method of 'craniometrical

photography'; fourth, it analyzed the question of racial mixing or *métissage*; and fifth, the Expedition studied human life at high altitudes" (Zamorano).

The work is divided into three volumes. The first contains ethnology, demography, and metric photography; the second is devoted to anthropometric studies; and the third craniology. Dr. Chervin brought together the most important experts in anthropology, headed by Julien Guillaume; Adrien Mortillet, professor of anthropology; Georges Courty, specialist in natural sciences, geology, and meteorology; and Dr. Neveu Lemaire, French physician and parasitologist at the Pasteur Institute.

It was Dr. Chervin's object to obtain from the anthropological evidence knowledge of the native races which, prior to discovery, inhabited the highlands of South America, including Bolivia. He was highly interested in ethnical migrations in prehistoric times. Characteristics of different tribes are noted—one has a flatter face, another takes shorter steps although they have longer legs, others dress their hair differently and wear different costumes.

Of major importance were the photographs. The expedition transported cameras, photographic instruments, and a photographic system borrowed from the Bertillon criminal identification method in order to produce and collect the picturesque portraits of indigenous people. Expedition members photographed daily life scenes, geographic conditions, and archaeological sites in Bolivia. Photography was in the process of becoming a more reliable scientific instrument and source of data, especially to gather proofs that could add to the ongoing racial debates then raging in Europe and Latin America. Anthropologists of the nineteenth century valued this technology as visual evidence of race, and the expedition collected this data to support analysis of the relationship between racial thinking, photography, and scientific practices.

For a complete discussion of this work, please see Gabriela Zamorano, "Traitorous Physiognomy: Photography and the Racialization of Bolivian Indians by the Créqui-Montfort Expedition" in the *Journal of Latin American and Caribbean Anthropology*, Vol. 16, No. 2, November 2011, pp. 425–455.

FIRST BOOK ON LIPOCHEMISTRY COMPLETELY UNSOPHISTICATED

20. CHEVREUL, M[ichel] E[ugène]

Recherches chimiques sur les corps gras d'origine animale. Paris: Chez F. G. Levrault, 1823.

8vo. [vi], xvi, 484, [1] pp. With 1 plate and 3 folding tables, numerous text tables. An extraordinary copy, unpressed and bound

in the original printed boards; some foxing. From the library of Eleanor R. Webster, professor of chemistry at Wellesley College. Preserved in a folding clamshell box. $3500.00

First edition of the author's classic study of animal fats. He determined that fats are composed of fatty acids and glycerol, easily separated by saponification. He also discovered several chemical species such as oleic, butyric, caproic, and capric acids; stearic acid ("stearine"); cholesterol ("cholesterine"); and glycerol ("glycérine"). The first part contains definitions and descriptions of Chevreul's method of analysis, as well as a description of all species of fats and their saponification products. He here describes the discovery of stearic acid by the resolution of the soap of sheep fat into two distinct components. The next section contains a comparison of the different animal fats and a discussion of saponification. The final chapter is a summary and a series of conjectures on the immediate components of fats.

Few areas of chemistry had been so thoroughly explored at the time Chevreul conducted his experiments. His discoveries led to the establishment of the great industry of stearin candles. According to the DSB, "Chevreul's *Recherches* is a full account of the chemistry of fats. He had revealed the nature of a large and important class of organic substances and had shown that they were composed of a few chemical species which were amenable to analysis and obeyed the same laws of chemical combination followed by simpler substances in the inorganic realm. The book is a model of complete, exhaustive research in organic chemistry."

Chevreul (1786–1889), who lived to nearly 103 years old, was an active chemist for eighty years. The student of the eminent French chemist Vauquélin (1763–1829), he succeeded him as chair at the Muséum d'Histoire Naturelle, a position which he held for over thirty years. As director of the famous dye factory Gobelins, he accomplished his important research on dyes and developed his remarkable analysis of color.

Dictionary of Scientific Biography, III, pp. 240–244; Ferchl, 94; Garrison & Morton, 669; *Neville Historical Chemical Library*, p. 273; Partington, IV, 247

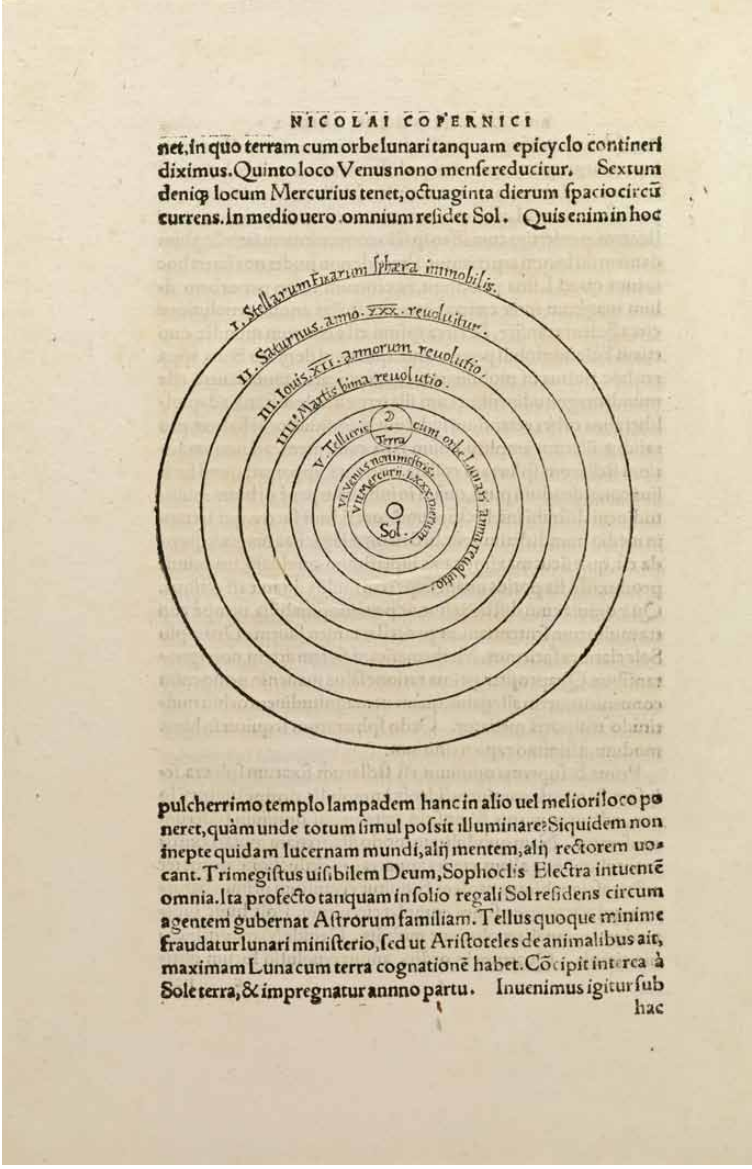
SECOND EDITION OF COPERNICUS' *DE REVOLUTIONIBUS* AND FIRST WITH RHETICUS' *NARRATIO PRIMA*

21. COPERNICUS, Nicolaus

De revolutionibus orbium coelestium, libri VI . . . Narratio prima, per M. Georgium Ioachimum Rheticum ad D. Ioan. Schonerum scripta. Basel: Heinrich Petri, [September, 1566].

Folio. [vi], 213, [1] leaves. With printer's device on title and verso of last leaf and numerous text woodcuts and tables. Contemporary vellum, author and title in ink on spine; title page repaired on upper corner and on fore-edge. A fine, clean copy.

$150,000.00


NICOLAI COPERNICI

net, in quo terram cum orbe lunari tanquam epicyclo contineri diximus. Quinto loco Venus nono mense reducitur. Sextum denique locum Mercurius tenet, octuaginta dierum spacio circũ currens. In medio uero omnium residet Sol. Quis enim in hoc

pulcherrimo templo lampadem hanc in alio uel meliori loco poneret, quàm unde totum simul possit illuminare? Siquidem non inepte quidam lucernam mundi, alij mentem, alij rectorem uocant. Trimegistus uisibilem Deum, Sophoclis Electra intuentẽ omnia. Ita profecto tanquam in solio regali Sol residens circum agentem gubernat Astrorum familiam. Tellus quoque minime fraudatur lunari ministerio, sed ut Aristoteles de animalibus ait, maximam Luna cum terra cognationẽ habet. Cõcipit interea à Sole terra, & impregnatur annuo partu. Inuenimus igitur sub hac

21. *Copernicus*

Second edition of Copernicus' epochal work. Copernicus (1473–1543), the founder of modern astronomy, was the first to propound the theory of planetary orbits. This work revealed one of the greatest advances in human thought, proving that the Earth was not, after all, the central point around which the entire universe revolved. Copernicus initially was hesitant to have his system printed, believing that any suggestion that the Earth moved would be considered heretical and cause him trouble. It was likely that this edition "was printed soon after the 1543 printing had sold out; the two editions must have been almost identical in size because the same number of each printing survive" (Gingerich).

Added here for the first time is Rheticus' famous tract, *Narratio prima*, printed in the form of a letter to his teacher Joh. Schoener, the Nuremberg astronomer. This great rarity, first published in 1540, contains the actual first announcement of Copernicus' system and has exercised a profound influence on all succeeding scientific endeavors. Rheticus, a disciple and friend, surveys the principal features of Copernicus' heliocentric universe and describes the new discoveries made by Copernicus—probably the most important scientific text of the sixteenth century.

Dibner, 2 (Rheticus); Evans, *Epochal Achievements in the History of Science*, 15 (first ed.); Gingerich, II.298; Gingerich, *Science in the Age of Copernicus*, 35; Horblit, 18a; *Printing & the Mind of Man,* 70; Sparrow, *Milestones of Science*, 40; Zinner, *Astronomischen Literatur*, 2390

PRESENTATION COPY

22. CRICK, Francis Harry Compton & WATSON, James Dewey

"Molecular structure of nucleic acids. A structure for deoxyribose nucleic acid"; "Molecular structure of deoxypentose nucleic acids"; "Molecular configuration in sodium thymonucleate." Offprint from *Nature*, Vol. 171, April 25, 1953.

8vo. 13, [1] pp. With two-tone illustrations and text figures. Unbound. Presentation copy, signed by Crick and Maurice Wilkins on top of first title, and by Wilson and Stokes at the end of their paper on page 9. An excellent copy from the library of Dr. Maurice S. Fox, professor of biology at MIT, with his signature.

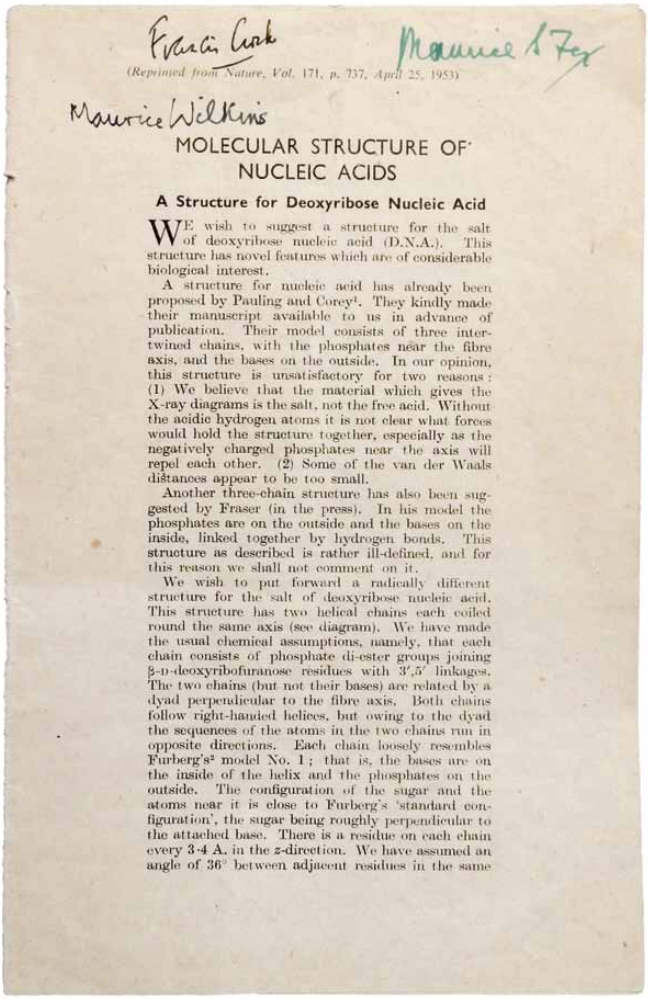
$45,000.00

First edition. The original three-article offprint of what a consensus of scientists considers the greatest intellectual achievement of modern science: the genetic code. The first paper identifies the double helix structure; the

second, by Maurice Wilkins, A.R. Stokes, and H.R. Wilkins, explains how the structure divides prior to mitosis so that each strand can act as a cell; the third paper by Rosalind E. Franklin and R.G. Gosling adds additional material on the molecular structure of nucleic acids.

The discovery of the structure of DNA was a race between research groups working independently. The 1962 Nobel Prize was awarded to Watson, Crick, and Wilkins for their discoveries concerning the molecular structure of nucleic acids and its significance for information transferred in living material.

Dibner, 200; Garrison & Morton, 256.3; Judson, *The Eighth Day of Creation*, pp. 161–170, 580–581; *Nobel, the Man and His Prizes*, pp. 201–202



Francis Crick Maurice Wilkins

(Reprinted from *Nature*, Vol. 171, p. 737, April 25, 1953)

MOLECULAR STRUCTURE OF NUCLEIC ACIDS

A Structure for Deoxyribose Nucleic Acid

WE wish to suggest a structure for the salt of deoxyribose nucleic acid (D.N.A.). This structure has novel features which are of considerable biological interest.

A structure for nucleic acid has already been proposed by Pauling and Corey[1]. They kindly made their manuscript available to us in advance of publication. Their model consists of three intertwined chains, with the phosphates near the fibre axis, and the bases on the outside. In our opinion, this structure is unsatisfactory for two reasons: (1) We believe that the material which gives the X-ray diagrams is the salt, not the free acid. Without the acidic hydrogen atoms it is not clear what forces would hold the structure together, especially as the negatively charged phosphates near the axis will repel each other. (2) Some of the van der Waals distances appear to be too small.

Another three-chain structure has also been suggested by Fraser (in the press). In his model the phosphates are on the outside and the bases on the inside, linked together by hydrogen bonds. This structure as described is rather ill-defined, and for this reason we shall not comment on it.

We wish to put forward a radically different structure for the salt of deoxyribose nucleic acid. This structure has two helical chains each coiled round the same axis (see diagram). We have made the usual chemical assumptions, namely, that each chain consists of phosphate di-ester groups joining β-D-deoxyribofuranose residues with 3′,5′ linkages. The two chains (but not their bases) are related by a dyad perpendicular to the fibre axis. Both chains follow right-handed helices, but owing to the dyad the sequences of the atoms in the two chains run in opposite directions. Each chain loosely resembles Furberg's[2] model No. 1; that is, the bases are on the inside of the helix and the phosphates on the outside. The configuration of the sugar and the atoms near it is close to Furberg's 'standard configuration', the sugar being roughly perpendicular to the attached base. There is a residue on each chain every 3·4 A. in the *z*-direction. We have assumed an angle of 36° between adjacent residues in the same

22. *Crick & Watson*

23. CROOKSHANK, Edgar M.

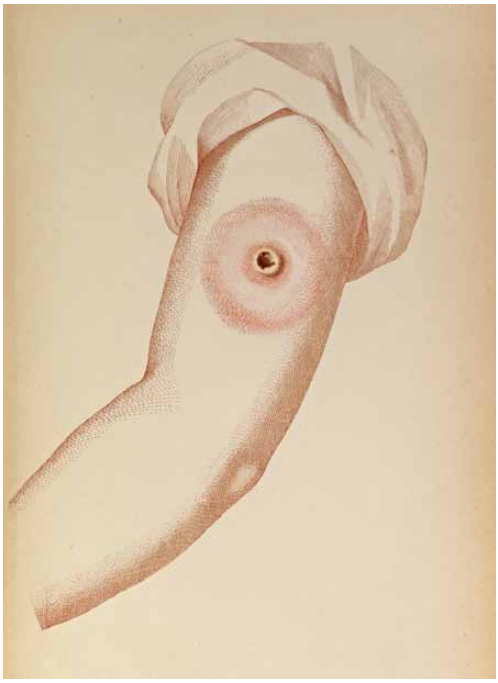
History and pathology of vaccination. London: H.K. Lewis, 1889.

Two volumes. 4to. xxiv, 466; vi, 610 pp., plus 32 pages publisher's advertisements. With 23 plates in Volume I and numerous tables. Publisher's cloth, rebacked with the original backstrip laid down; new endpapers. An excellent, partially unopened copy.

$650.00

First edition of this massive work on inoculation. The first volume contains a history of smallpox vaccination and a critical inquiry into its effectiveness. Crookshank (1858–1928), who studied under Lister, Pasteur, and Koch, was a solid opponent of vaccination. Volume II is composed entirely of papers excerpted from other sources, ranging from Jenner's original *Inquiry* to Crookshank's own observations on an 1887 outbreak of cowpox. "The appearance of this volume caused no small amount of controversy within the medical ranks, owing to the fact that Crookshank saw fit to color the account with his own, quite negative, view on the efficacy of inoculation" (Eimas, *Heirs of Hippocrates*, 2216).

Cushing, C494; Garrison & Morton, 5435; Waller, 13030



23. *Crookshank*

24. CULPEPER, Nicholas

The English physitian, or, an astrologo-physical discourse of the vulgar herbs of this nation: being a compleat method of physick, whereby a man may preserve his body in health; or cure himself, being sick, for three pence charge, with such things only as grow in England, they being most fit for English bodies. . . . London: Printed by Peter Cole, at the sign of the Printing Press in Cornhil, near the Royal Exchange, 1652.

Folio. [xiv], 92, 189–255, [5] pp. With frontispiece portrait of the author signed by Cross, and small diagram on page 253; publisher's

24. *Culpeper*

advertisement on recto of page 7 repeated on last leaf. Contemporary boards, rebacked; portrait mounted on heavy paper, margin repair to title, fore-edges a bit ragged with a tear on G^2 (with loss of only a couple of letters), soiled and stained throughout as in most copies due to paper stock, still a good complete copy of the very rare first edition. $4500.00

First edition, extremely rare with few copies located, espousing Culpeper's theory of the relationship between astrology and herbs and physical health. Though not illustrated, the book had an enduring impact through the centuries. Ever since his first instruction by William Lilly in the art of astrology, Culpeper saw how this knowledge lay at the root of the European herbal tradition. The planet associated with each herb is here used symbolically to derive its medicinal use. In order to gain knowledge of the herb, one is expected to contemplate the symbolic associations of each planet—parts of the body, humoral correspondences, temperature, etc.—in relation to the listed indications, to see how the herb can be used. This herbal can be seen as a masterpiece of very clever scholarship, which is the main reason it has had such an enduring popularity. The contemporary astrologer John Gadbury described this book as "a work of such rarity that never any herbalist durst adventure to do."

Culpeper (1616–1654), a physician, herbalist, and astrologer, was a very popular writer but a thorn in the side of the College of Physicians. According to Osler, his unauthorized translation of their *Pharmacopoeia* was deeply resented. He had a successful practice and gave much free advice to the poor, but he was unaccepted by the orthodox medical practitioners. Hard work and his extensive literary activities, worries about a family of seven children, and a case of consumption brought on his early death at the age of 38.

Davis, *Nicholas Culpeper, Herbalist of the People;* Krivatsy, 2963; Norman, I, 1541; Wellcome, II, p. 415; Wing, C-7502

25. CURTIS, William

The botanical magazine; or, flower-garden displayed in which the most ornamental foreign plants, cultivated in the open ground, the green-house, and the stove, are accurately represented in their natural colours. To which are added, their names, class, order, generic and specific characters, according to the celebrated Linneaus, their places of growth and times of flowering. Together with the most approved methods of culture.... London: Stephen Couchman, 1795.

25. *Curtis*

8vo. pp. 289-360. With 75 hand-colored plates. Original full tree calf, front hinge weak. $2400.00

First edition of Volumes 9 and 10. Each issue of *The Botanical Magazine* was sold separately. Beginning in 1787, it became the longest-running botanical magazine published. Each issue contains a full description in formal yet accessible language, and is renowned for featuring work from two centuries of botanical illustrators.

Many plants received their first publication on the pages and the description given was enhanced by the finely detailed illustrations. The plates were copper engraved and the hand coloring was performed by up to thirty people.

Cleveland Herbal Collection, 577; Hunt, 689; Nissen, BBI, 2350

26. DAL NEGRO, Salvatore

Nuovo metodo di costruire macchine elettriche di grandezza illimitate e nuovi sperimenti diretti a rettificare l'apparato elettrico. Venice: Pietro Zerletti, 1799.

8vo. xxxii, 112 pp. With a large engraved folding plate. Contemporary wrappers; an excellent copy with very wide margins on thick paper, uncut. $1800.00

First edition of this scarce treatise. Dal Negro (1768–1839) first studied law at Padua, but his interest shifted toward experimental physics. This, his first book, describes how he constructed his electrostatic machine and some of the experiments he conducted with it. The folding plate illustrating the machine accompanies the instructions on how to build it. In the next few years he made various improvements to the pile of Volta, a recent invention, which he called electric motors (batteries). His interests were in the field of physics, where he devoted himself to the improvement of systems already known, but he also invented new ones. In 1809, for example, he invented a device for measuring very short spans of time, which he called an "oligocronometro" based on a compound pendulum. The apparatus was improved several times and ultimately was used to measure both the time of falling bodies and the initial velocity of projectiles. In 1810 he perfected the hydraulic ram, invented by Montgolfier. He also worked on topics related to electromagnetism.

A member of many scientific societies, Dal Negro was appointed professor of experimental physics at the University of Padua. He constructed the first electric motor in 1830 and the first generator in 1832. His contributions to physics have not as yet been fully explored and evaluated.

Bakken, 91; Mottelay, 589; Ronalds, p. 123

THE FOUNDATION OF MODERN METEOROLOGY

27. DALTON, John

Meteorological observations and essays. London: Printed for W. Richardson, J. Phillips, & W. Pennington, 1793.

8vo. in 4's. xvi, 208 pp., including the 4-page subscriber's list, text woodcut, and tables. Contemporary calf, rebacked; small tear in title page repaired and title and last printed leaf repaired in the margin, some minor browning to first and last leaves, and occasional spotting, otherwise a solid copy with some contemporary annotations. $3000.00

First edition, first issue of the author's first published book. This work contains the first tentative germs of the laws of partial pressures and of gaseous expansion under constant pressure. It was Dalton's initial approach to his chemical atomic theory and the basis of his greatest work, *A new system of chemical philosophy* (1808–1827). Dalton independently detected the magnetic relations of the aurora borealis, concluding auroral light to be of purely electrical origin.

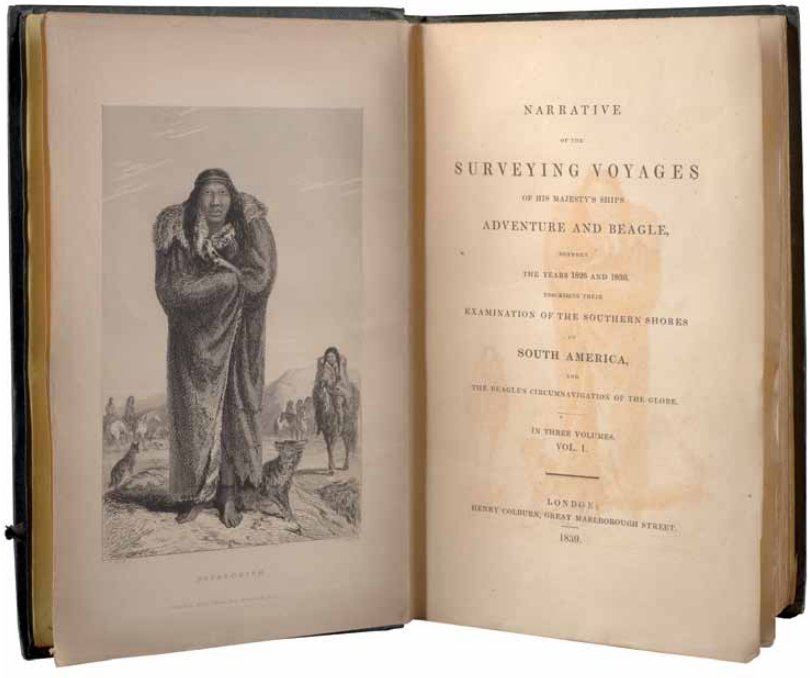
Dalton (1766–1844) devoted many hours to compiling meteorological records and to the construction of thermometers, barometers, rain gauges, and hygrometers. He was a member of the Royal Society and a corresponding member of the French Academy.

Norman, I, 574; Smyth, *John Dalton: A Bibliography*, 1; Zeitlinger, I, 930

THE GENESIS OF THE THEORY OF EVOLUTION

28. DARWIN, Charles, FITZROY, Robert & KING, P. Parker

Narrative of the surveying voyages of His Majesty's ships Adventure and Beagle, between the years 1826 and 1836, describing their examination of the southern shores of South America, and the Beagle's circumnavigation of the globe. . . . London: Henry Colburn, 1839.


NARRATIVE

OF THE

SURVEYING VOYAGES

OF HIS MAJESTY'S SHIPS

ADVENTURE AND BEAGLE,

BETWEEN

THE YEARS 1826 AND 1836,

DESCRIBING THEIR

EXAMINATION OF THE SOUTHERN SHORES

OF

SOUTH AMERICA,

AND

THE BEAGLE'S CIRCUMNAVIGATION OF THE GLOBE.

IN THREE VOLUMES.

VOL. I.

LONDON:

HENRY COLBURN, GREAT MARLBOROUGH STREET.

1839.

28. *Darwin*

Four volumes (3 and an appendix). 8vo. Collation complete (Freeman, 10, pp. 38–39). With 44 lithographed plates, 4 charts and maps inserted, 8 charts and maps loose in cover pockets, text woodcuts. Original cloth; a superb set with an occasional waterstain (as in most sets, some of the plates bear evidence of having been waterstained before being placed in the volumes). Preserved in a cloth box. From the library of Henry William Poor (1844–1915), railroad magnate and financial adviser. This copy was purchased from Poor by Henry Huntington. $85,000.00

First edition, first issue, recording the historic voyage of the *Beagle*, including Darwin's *Journal*, which forms the third volume of the *Narrative.* This set is of great rarity; it contains Darwin's first published book, the beginning of a whole new conception of the origin and evolution of the various species of life on earth.

Captain Robert Fitzroy (1805–1865) commanded the five-year expedition, during which time the *Beagle* visited Brazil, Argentina, Tierra del Fuego, Chile, Peru, the Galápagos Islands, New Zealand, Australia, and other countries and islands along the way. Darwin's account of the voyage is one of the most important records of natural history exploration ever written, and provided a foundation for the entire structure of modern biology.

see Dibner, 199; Freeman, 10; see *Printing & the Mind of Man*, 344; see Sparrow, *Milestones of Science*, p. 38

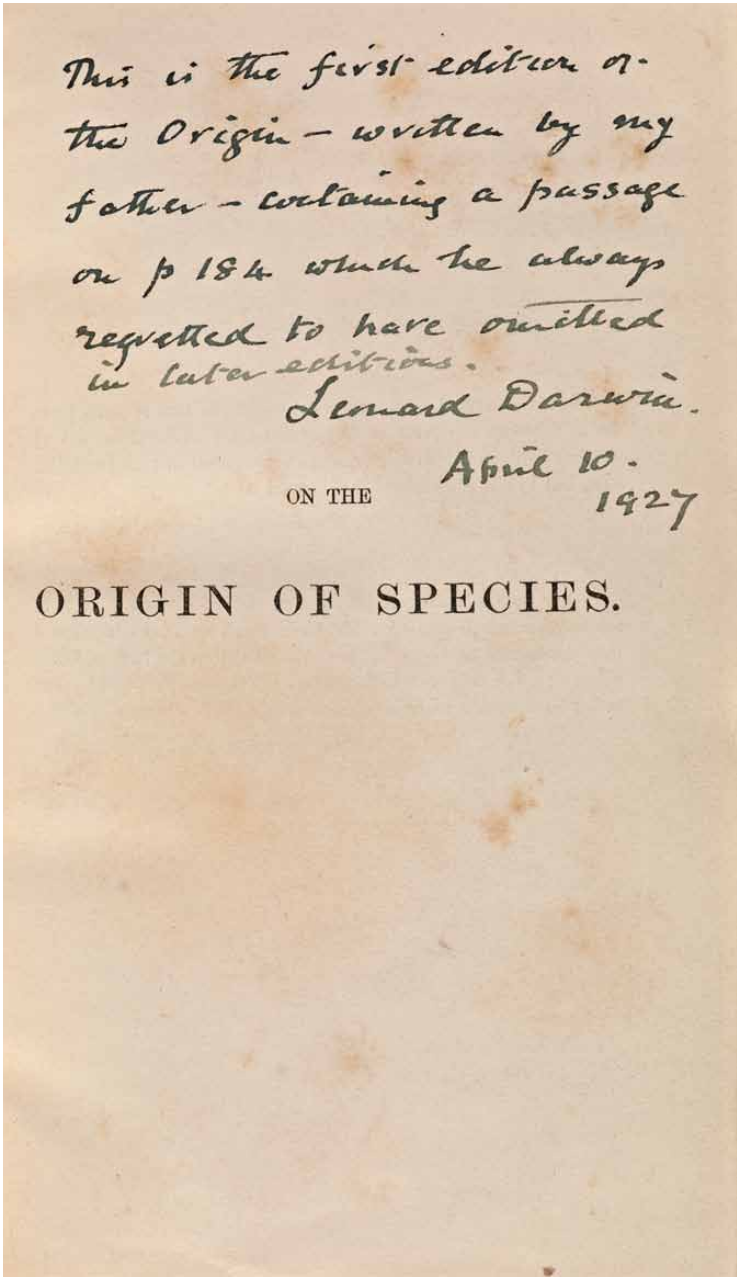
ASSOCIATION COPY
WITH LETTERS AND UNRECORDED OFFPRINT

29. DARWIN, Charles

On the origin of species by means of natural selection. . . . London: John Murray, 1859.

8vo. in 12's. ix, [i], 502 pp. With 1 folding plate. Half-morocco over marbled boards of the period. An excellent copy inscribed by Leonard Darwin, Charles Darwin's son, with related material bound in at the end, including a 2-page letter signed by Darwin, and an unrecorded offprint of a paper on Darwin's work. Preserved in a half-morocco solander box (see provenance).

$135,000.00


This is the first edition of the Origin – written by my father – containing a passage on p 184 which he always regretted to have omitted in later editions.
Leonard Darwin.
April 10. 1927
ON THE
ORIGIN OF SPECIES.

29. *Darwin*

First edition, first issue, of Darwin's historic and pioneering work on the theory of evolution; certainly the most important biological book ever written.

Bound in:

1. Half-title inscribed by Leonard Darwin: "This is the first edition of the Origin—written by my father—containing a passage on p 184 which he always regretted to have omitted in later editions. April 10. 1927." Refers to the black bear and the possibility of their development by natural selection into aquatic animals, reprinted in the first four American editions (Osborn, *Book Collector*, Vol. 9, No. 1, pp. 77–78 [1960]; Freeman, p. 76).
2. ALS. Charles Darwin to Lady Drysdale. [ca. 1859]. 2 pp. (possibly lacking 1 page). The letter is addressed to the mother-in-law of Dr. Lane, whose Moor Park spas Darwin and his wife frequented after 1857. The letter was probably written while Darwin was at a hydropathic spa in Ilkley, Yorkshire, from October to December, 1859. At that time Lane was moving to Sudbrooke Park, Surrey, which Darwin and his wife visited the following year.
3. ALS. George Augustus Rowell to Sir James Emerson Tennent (of Tempo Manor). 3 Alfred Street, Oxford, December 12, 1860. 3 pp.
4. ROWELL, George Augustus. "Mr. Darwin's Theory." Reprinted from the *Oxford Chronicle* of December 8, 1860. 8 pp. First edition of this unrecorded offprint on Darwin's theory of how instincts are neither endowed nor learned, but a result of "accidental natural selection." Rowell states that Darwin fails to sufficiently support his case, and "actually his examples of the cuckoo and the bee sting demonstrate the wisdom of the Creator." Interestingly enough, the author unwittingly offers further evidence in support of Darwin's theory.

Provenance: This copy of the *Origin* was presented to Sir James Emerson Tennent (1804–1869), best known for his works on the natural history of Ceylon, by George Augustus Rowell (1804–1892), underkeeper of the Ashmolean and of the Oxford University Museum. The Rowell letter notes that he became despondent about his scientific work and burned all his manuscripts, papers, and apparatus. He eventually changed his mind, and in 1862 published a second edition of his pamphlet on pain. A slip bound in at the end by Sir Charles Langham, Baronet of Tempo Manor, notes that Leonard Darwin had signed the book while visiting him, and that in 1946, the book was appraised at £20.

Dibner, 199; Freeman, 373; *Printing & the Mind of Man*, 344b

30. DESCARTES, René

Discours de la methode pour bien conduire sa raison & chercher la verité dans les sciences. Plus la dioptrique, les meteores, et la geometrie. Leiden: Ian Maire, 1637.

4to. 78, [ii], 413; [34] pp., including title, 3 half-titles, and tables. With title vignette and numerous woodcut illustrations and diagrams throughout. Finely bound to the style of the original Dutch binding in rust-colored morocco, elaborate gilt spine and gilt covers. $185,000.00

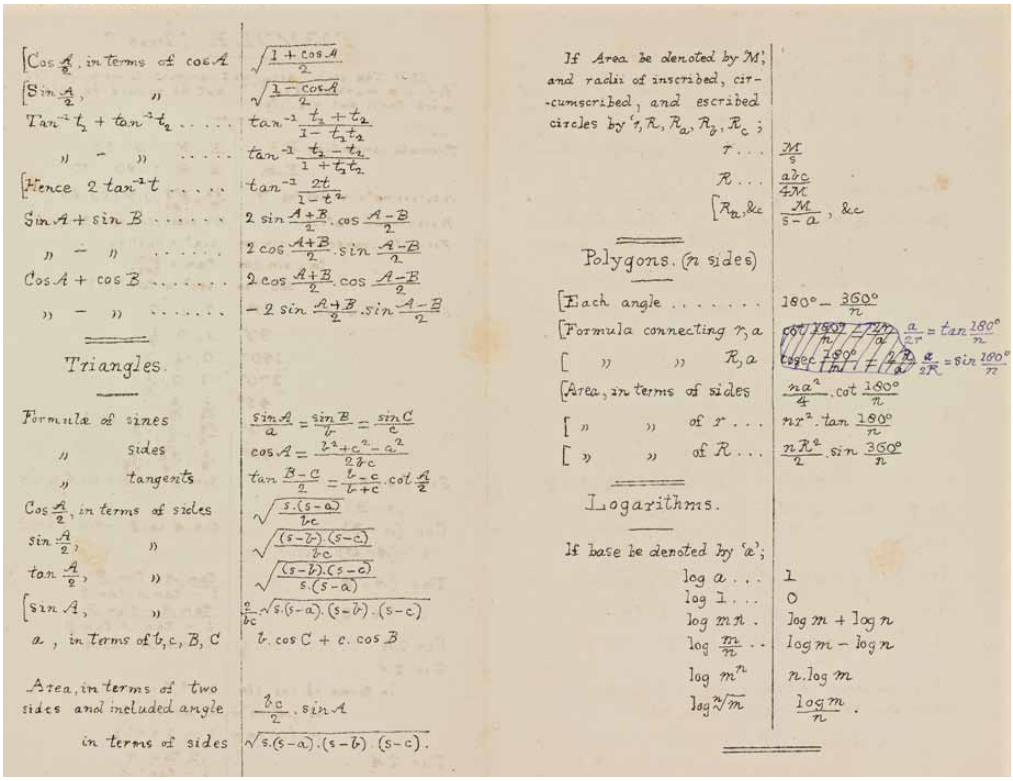
First editions of two of Descartes' first and most important works, published anonymously. A classic in the history of philosophy and optics, it has been called by John Stuart Mill "the greatest single step ever made in the progress of the exact sciences" because it marks the birth of coordinate geometry.

The *Discours* proper is the account of the author's general method for obtaining truth; it contains the famous argument, "cogito, ergo sum." *La Dioptrique, Les meteores*, and *La geometrie* are intended to illustrate his method. The *Dioptrique* includes an explanation of his law of refraction (discovered by Snell in 1621) for the first time in terms of the sines of the angles of incidence and refraction; *Meteores* contains the correct explanation of form and position of the rainbow by means of the law of refraction (the colors were explained by Newton in 1704); *Geometrie* contains the description of the analytic method in geometry, invented by the author, with applications, important contributions to the theory of algebraic equations, and great advances in algebraic notation.

"Descartes employs a summary of his cardiovascular physiology to illustrate how the newly discovered laws by which God orders his universe are sufficient to explicate certain of the most important human functions, and the *Dioptrique* includes a summary of his general theory of sensations as a preliminary to a detailed study of image formation and visual perception" (DSB).

"It is no exaggeration to say that Descartes was the first of modern philosophers and one of the first modern scientists; in both branches of learning his influence has been vast" (PMM).

Dibner, 81; *Dictionary of Scientific Biography*, IV, pp. 55–60; Horblit, 24; *Printing & the Mind of Man*, 129



Triangles.

[Cos $\frac{A}{2}$, in terms of cos A	$\sqrt{\frac{1+\cos A}{2}}$
[Sin $\frac{A}{2}$, "	$\sqrt{\frac{1-\cos A}{2}}$
$\tan^{-1} t_1 + \tan^{-1} t_2$	$\tan^{-1}\frac{t_1+t_2}{1-t_1t_2}$
" − "	$\tan^{-1}\frac{t_1-t_2}{1+t_1t_2}$
[Hence $2\tan^{-1} t$	$\tan^{-1}\frac{2t}{1-t^2}$
$\sin A + \sin B$	$2\sin\frac{A+B}{2}.\cos\frac{A-B}{2}$
" − "	$2\cos\frac{A+B}{2}.\sin\frac{A-B}{2}$
$\cos A + \cos B$	$2\cos\frac{A+B}{2}.\cos\frac{A-B}{2}$
" − "	$-2\sin\frac{A+B}{2}.\sin\frac{A-B}{2}$

Triangles.

Formula of sines	$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$
" sides	$\cos A = \frac{b^2+c^2-a^2}{2bc}$
" tangents	$\tan\frac{B-C}{2} = \frac{b-c}{b+c}.\cot\frac{A}{2}$
Cos $\frac{A}{2}$, in terms of sides	$\sqrt{\frac{s.(s-a)}{bc}}$
sin $\frac{A}{2}$, "	$\sqrt{\frac{(s-b).(s-c)}{bc}}$
tan $\frac{A}{2}$, "	$\sqrt{\frac{(s-b).(s-c)}{s.(s-a)}}$
[sin A, "	$\frac{2}{bc}\sqrt{s.(s-a).(s-b).(s-c)}$
a, in terms of b, c, B, C	$b.\cos C + c.\cos B$
Area, in terms of two sides and included angle	$\frac{bc}{2}.\sin A$
in terms of sides	$\sqrt{s.(s-a).(s-b).(s-c)}$.

If Area be denoted by M, and radii of inscribed, circumscribed, and escribed circles by r, R, R_a, R_b, R_c;

r . . .	$\frac{M}{s}$
R . . .	$\frac{abc}{4M}$
[R_a, &c	$\frac{M}{s-a}$, &c

Polygons. (n sides)

[Each angle	$180° - \frac{360°}{n}$
[Formula connecting n, a	$\cot\frac{180°}{n}.\frac{a}{2r} = \tan\frac{180°}{n}$
[" " R, a	$\cot\frac{180°}{n}.\frac{a}{2R} = \sin\frac{360°}{n}$
[Area, in terms of sides	$\frac{na^2}{4}.\cot\frac{180°}{n}$
[" " of r . . .	$nr^2.\tan\frac{180°}{n}$
[" " of R . . .	$\frac{nR^2}{2}.\sin\frac{360°}{n}$

Logarithms.

If base be denoted by 'a';

$\log a$ . . .	1
$\log 1$ . . .	0
$\log mn$.	$\log m + \log n$
$\log \frac{m}{n}$ . .	$\log m - \log n$
$\log m^n$	$n.\log m$
$\log \sqrt[n]{m}$	$\frac{\log m}{n}$.

31. *Dodgson*

31. [DODGSON, Charles Lutwidge] (Lewis Carroll)

Four mathematical pamphlets offered together, preserved in a folding clamshell case. Each is quite rare; ABPC records only one other copy of each, the Falletta copies, selling at auction in the past thirty years (Christie's, November 30, 2005). $24,000.00

1. *Formulae. (Group C.).* [Oxford: c. 1878].
Bifolium (222 x 142 mm). Cyclostyled. Without wrappers, as issued. Rare cyclostyled pamphlet, with Dodgson's manuscript corrections in his characteristic purple ink. The formulas correspond to the topics in sections G and L of *A Guide to the Mathematical Student in Reading, Reviewing,*

and Working Examples (1864). All of Dodgson's cyclostyle pamphlets were produced in unknown but small numbers.

2. *Formulae*. [Oxford]: 19 March 1878.
   8vo. (218 x 140 mm). 1 p. Cyclostyled. Without wrappers, as issued. Another rare cyclostyled piece. Dodgson acquired his "electric pen" in 1877 and describes it in a letter dated 28 June 1877: it "seems to be quite the best thing yet invented for taking a number of copies of MSS, drawings or maps. The 'pen' consists of a needle, in a holder like a pencil: the needle is worked in and out with enormous rapidity by electricity and projects far enough to go through a thin sheet of paper . . . the paper thus prepared is placed in a frame with blank paper underneath, and an ink roller is passed [over it] . . . copies are easily worked off at a rate of 2 a minute." This work consists of 18 formulas corresponding to the topics in section L of the pamphlet *A Guide to the Mathematical Student in Reading, Reviewing, and Working Examples*.
3. *Algebraical formulae and rules for the use of candidates for responsions*. [Oxford: University Press, 1870.]
   Bifolium (230 x 144 mm). Printed on cream paper. Dodgson's diary mentions only *Algebraical formulae for responsions* (WMGC, 65), which he took to the University Press on 21 May 1868. It is possible that the present pamphlet is an expanded and improved version.
4. *Arithmetic. I.* [Oxford: University Press, c. 1870.]
   Bifolium (227 x 144 mm). Printed on cream paper. First edition, rare. The pamphlet consists of templates for 33 examination problems divided into 5 sections: integral numbers, vulgar fractions, decimal fractions, concrete numbers, and rule of three. The problems are stated in skeleton form, leaving blanks for the variables, so that new problems can be generated easily.

1. *Mathematical Pamphlets*, 6; not in Williams, Madan, Green, and Crutch
2. *Mathematical Pamphlets*, 15; not in Williams, Madan, Green, and Crutch
3. *Mathematical Pamphlets*, 13; Williams, Madan, Green, and Crutch, 76
4. *Mathematical Pamphlets*, 23; not in Williams, Madan, Green, and Crutch

PLANETARY ORBITS

32. DOPPELMAYR, Johann Gabriel

Phaenomena in planetis primariis quae facies diversas, ex illorum phasibus maculis et fasciis seu zonus. Noribergae: Sumptibus Haeredum Homannianorum, [1742].

505 x 583 mm. Museum-quality matting; small paper crease near center fold. $1500.00

This handsome hand-colored chart from Doppelmayr's *Atlas Coelestis* illustrates and describes planetary orbits.

33. DOPPELMAYR, Johann Gabriel

Phaenomena circa quanitatem dierum artificialum et solarium perpetuo mutabilem, ex Hypothesi Copernicana deducta. Noribergae: Sumtibus Haeredum Homannianorum, [1742].

505 x 590 mm. Museum-quality matting. $1500.00

This hand-colored chart from Doppelmayr's *Atlas Coelestis* contains a beautifully decorative vignette depicting angels and gods, descriptive text and diagrams of an eclipse (large center illustration), and seven astronomical systems, including those of Ptolemy, Plutarch, Gilbert, and Plato.

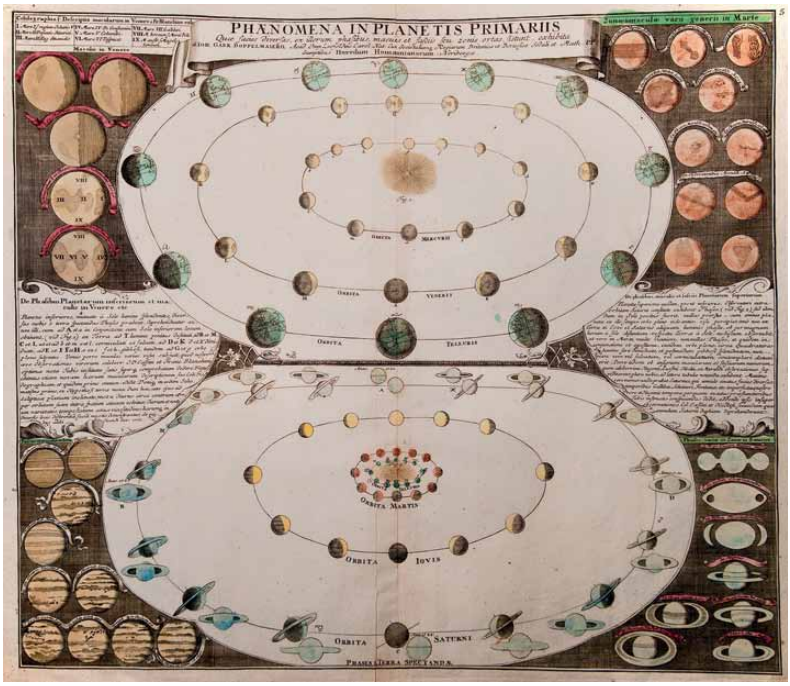
The author's celebrated *Atlas novum coelestis* was intended as an introduction to the fundamentals of astronomy. Besides star charts and a selenographic map, the *Atlas* included diagrams illustrating the planetary systems of Copernicus, Tycho, and Riccioli; the elliptic theories of Kepler, Boulliau, Seth Ward, and Mercator; the lunar theories of Tycho, Horrocks, and Newton; and Halley's cometary theory.

Doppelmayr (1677–1750) was a highly respected mathematician who devoted his life to lecturing, writing, astronomical and meteorological observation, and physical experimentation; in fact, this latter predilection contributed to his demise following a severe electrical shock incurred while experimenting with the newly invented condenser. The majority of his published work was in astronomy, including a translation of Wilkins' essay of 1640 on the probability of the earth being a planet.

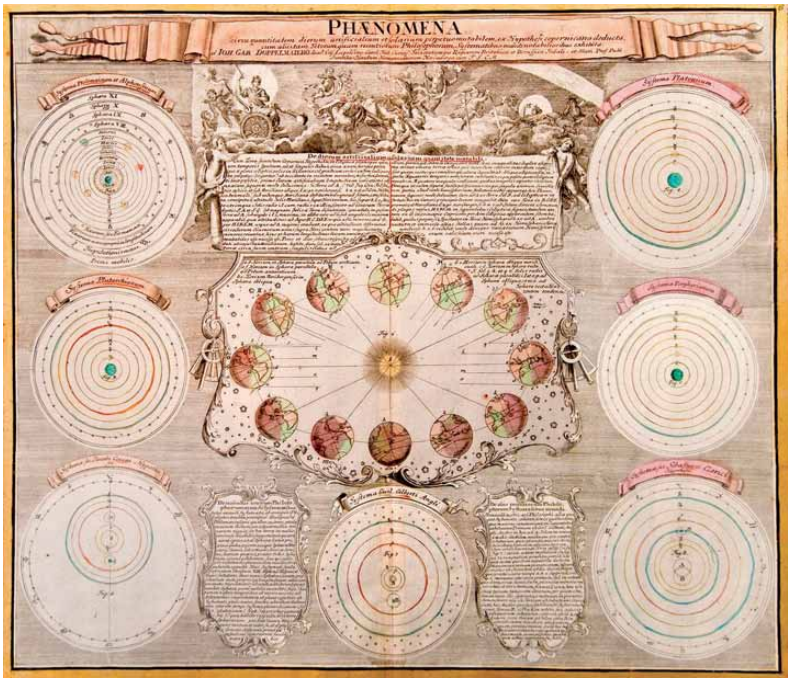
34. DÜRER, Albrecht

Institutiones geometricae. Paris: C. Wechel, [August] 1532.

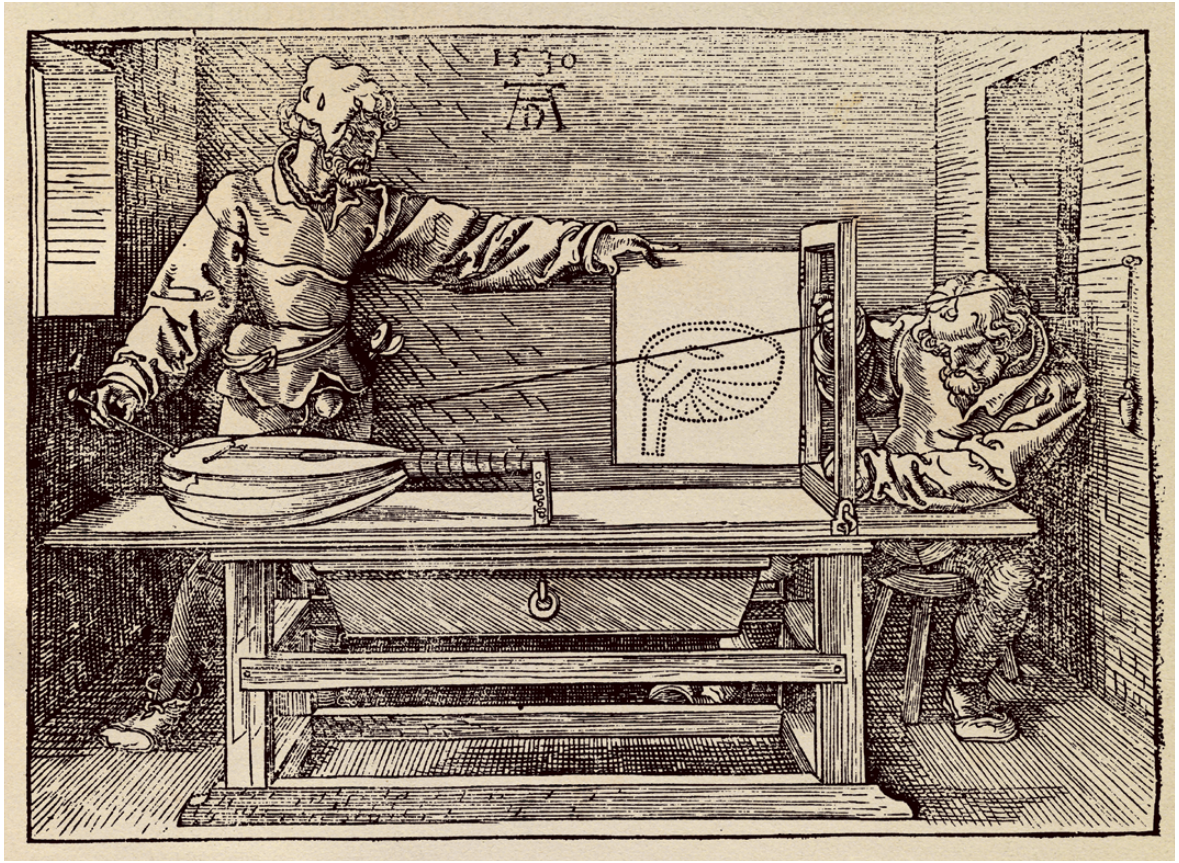
Folio. [viii], 185, [3] pp. Wechel's tree device (Renouard 1114) on title and repeated on verso of last printed leaf. With 9 full-page and 3 half-page woodcuts, approximately 175 text drawings of geometrical diagrams, architectural figures, and designs for letters. Complete with the 2 pasted slips on pages 179 and 181, lacking in many copies. A few unobtrusive spots on the lower blank margin of the preliminary leaves. A large handsome



32. *Doppelmayr*



33. *Doppelmayr*



34. *Dürer*

copy in modern vellum with the inscription "Signum Alberti Düreri" and his monogram written in ink in a contemporary hand above the first woodblock illustration. $18,000.00

First Latin edition of Dürer's *Unterweisung der Messung* (Nuremberg, 1525), his masterpiece of perspective and art theory. He here demonstrates the application between mathematics (geometry) and art by his depictions of architecture, lettering, and ornamental forms. With this translation by his good friend Camerarius, Dürer introduces to the rest of Europe the Renaissance approach to design and artistic creation. He treats construction of plane curves and helices by means of Euclidian geometry, construction of polygons and their uses in architectural ornamentation, parquet floors, and finally polyhedra, stereometry, and perspective. The woodcuts and diagrams are executed with great precision; they include the famous illustrations of the two figures demonstrating a drawing instrument, signed with Dürer's monogram (dated 1530 for this edition), as well as one of an artist drawing a seated man with the aid of Dürer's machine. The text of the third part contains his famous original treatise on the shaping of Roman capital and Gothic letters built up by means of small geometrical forms.

Adams, D1051; Mortimer, *French Sixteenth Century Books*, I, 183; *Printing & the Mind of Man*, 54 (Nuremberg ed.)

35. EINSTEIN, Albert

"Über einer die Erzeugung und Verwandlung des Lichtes betreffenden heuristischen Geischtspunkt." (with) "Über die von der molekularkinetischen Theorie der Wärme geforderte Bewegung von in ruhenden Flüssigkeiten suspendierten Teilchen." (with) "Zur Elektrodynamik bewegter Körper." Three articles in *Annalyn der Physik*, 4. Folge, Bank. 17, 1905, pp. 132–148, 549–560, 891–921. Leipzig: Johann Ambrosius Barth, 1905.

8vo. viii, 1020 pp. Line-block and halftone text illustrations, 1 folding table, 3 halftone plates, 1 collotype plate. Contemporary cloth-backed marbled boards, title and date in gilt on spine; an excellent copy with the small stamp of the University of Basel on the fly-leaf. Preserved in a clamshell box. $18,000.00

First edition, journal issues, of three important early papers by Einstein. In the first paper, "Einstein suggested that light be considered a collection of

independent particles of energy, which he called 'light quanta.' Such a hypothesis, he argued, would provide an answer to the problem of black-body radiation where classical theories had failed, and would also explain several puzzling properties of fluorescence, photoionization and the photoelectric effect" (Norman). It was for this paper, together with one on the photoelectric effect ("Zur theorie der Lichterzeugung und Lichtabsorption"), published in 1906, that Einstein was awarded the Nobel Prize in Physics in 1921.

The second paper proved, according to Einstein himself, that "according to the molecular theory of heat, bodies of dimensions of the order of 1/1000 mm. suspended in liquid experience apparent random movement due to the thermal Brownian molecular movement" (quoted by R. W. Clark, *Einstein*, New York, 1984, p. 87). Experimental verification of the predictions made in this paper contributed to proving the physical reality of molecules.

The third paper, on the electrodynamics of moving bodies, was Einstein's first statement of the special theory of relativity. In it he argued that all motion is relative to the inertial system in which it is measured, and that matter and energy are equivalent. As he himself remarked, "it modifies the theory of space and time."

I: Norman, I, 689; Weil, 6; II: Norman, I, 690; Weil, 8; III: Dibner, 167; Grolier/Horblit, 26b; Norman, I, 691A; Weil, 9

36. EINSTEIN, Albert

1. ——— *Entwurf einer verallgemeinerten Relativitätstheorie und einer Theorie der Gravitation. I. Physikalischer Teil.* Leipzig: B. G. Teubner, 1913. 38 pp.
2. ——— & GROSSMAN, Marcel. "Kovarianzeigenschaften der Feldgleichungen der auf die verallgemeinerte Relativitätstheorie gegründeten Gravitationstheorie." From *Zeitschrift für Mathematik und Physik*, Vol. 63, Nos. 1–2. Leipzig: B. G. Teubner, 29 May 1914, pp. 215–225.
3. ——— *Die Grundlage der allgemeinen Relativitätstheorie.* Leipzig: J. A. Barth, June, 1916. 64 pp.
4. ——— *Über die spezielle und die allgemeine Relativitätstheorie.* Braunschweig: Friedr. Vieweg & Sohn, 1917. iv, 70 pp. With text figures.

5. LORENTZ, H[endrik] A[ntoon]. *Das Relativitätstheorie Drei Vorlesungen gehalten in Teylers Stiftung zu Haarlem*. Leipzig und Berlin: B. G. Teubner, 1914. [2], 52 pp.

6. MINKOWSKI, Hermann. *Raum und Zeit. Vortrag, gehalten auf der 80. Naturforscher-Versammlung zu Köln am 21 September 1908.* Leipzig und Berlin: B. G. Teubner, 1909. [4], 14 pp. With portrait of the author.

Six works in one. 8vo. Five with their original printed front wrappers. Bound together into contemporary half-cloth over marbled boards; numerous annotations in pen and pencil. Ownership inscription of L[ouis] Kollros (b. 1878), well-known Swiss mathematician, geometer, and biographer of Jakob Steiner; from the library of the Eidg. Technische Hochscule, Zürich, with their stamp on each title. Preserved in a folding clamshell box.

$15,000.00

FIRST EDITIONS of Nos. 1, 2, 3, 5, and 6, second edition of No. 4. This collection of original offprints contains Einstein's most significant contributions to the theoretical basis for the release of atomic energy, and on general relativity. Lorentz's *Relativitätstheorie* is one of the earliest expositions on Einstein's theory of relativity, and led to a major breakthrough in nuclear fission. Minkowski's epoch-making paper, *Raum und Zeit*, is the mathematical foundation of the theory of relativity, and the first promulgation of the concept of space-time and the four dimensional space-time continuum.

Norman, I, 693 (1), 696 (3); *Printing & the Mind of Man*, 408 (3), 401 (6); Weil, 58a (1), 66 (2), 80a (3), 90 (4)

EDITIO PRINCEPS
THE EARLIEST CONTRIBUTION
TO THE PHILOSOPHY OF MATHEMATICS

37. EUCLID

[Greek:] *Elementa geometriae.* Basel: Johann Herwagen, 1533.

Folio (310 x 200 mm). [vi], 268, 115 pp. With woodcut device on title and colophon, decorated woodcut border to first page of

text, and numerous woodcut diagrams. Contemporary English calf, neatly rebacked, remains of ties, later endpapers. A very good copy. $45,000.00

Editio princeps of Euclid's *Elements*, an epic-making text with the important commentary by Proclus on the first book. The first printing of Euclid in 1482 was a Latin translation from an Arabic manuscript, but the original Greek text did not appear for a further half-century. The Greek text was edited by Simon Grynaeus, a German Protestant theologian and philologist. This edition is also important for the innovation of geometrical diagrams within the text rather than in the margins, as had been the case with the earlier printed editions.

The commentary by the Neoplatonist mathematician and philosopher Proclus on the first book of the *Elements* is the earliest extant criticism of Euclid's fifth postulate on the existence of parallel lines, the study of which led, after a further fifteen hundred years of effort, to the discovery of non-Euclidean geometry by Gauss, Bolyai, and Lobachevsky. It is also the first printing of the earliest work on the philosophy of mathematics. "Because of his interest in the principles underlying mathematical thought and their relation to ultimate philosophical principles, Proclus' commentary is a notable—and also the earliest—contribution to the philosophy of mathematics. Its numerous references to the views of Euclid's predecessors and successors, many of them otherwise unknown to us, render it an invaluable source for the history of science" (DSB).

Boyer, *A History of Mathematics*, pp. 111–115; *Dictionary of Scientific Biography*, XI, p. 160; Sanford, *A Short History of Mathematics*, pp. 268–275

"ANALYSIS INCARNATE"

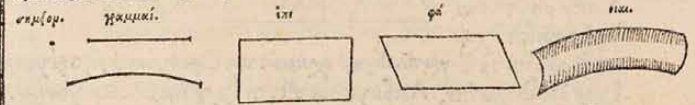
38. EULER, Leonhard

Introductio in analysin infinitorum. Lausanne: Marc-Michel Bousquet, 1748.

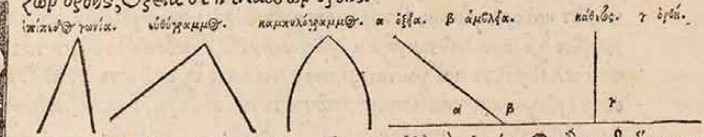
Two volumes. 4to. [ii], xvi, 320; [ii], 398, [2] pp. Titles in red and black with engraved vignettes, frontispiece by Soubeyran after De la Monce, and portrait of the dedicatee, Jean Jacques Dourtous de Mairan, by Frequet after Tocquet (mounted); initials, head- and tailpieces, chapter vignettes, directions to the binder, and 41 folding engraved plates (plates 37 and 38 misbound). Contemporary mottled calf, gilt-ornamented spine;

ΕΥΚΛΕΙΔΟΥ ΣΤΟΙΧΕΙΟΝ ΠΡΩ-
ΤΟΝ, ΕΚ ΤΩΝ ΘΕΩΝΟΣ ΣΥΝΟΥΣΙΩΝ.

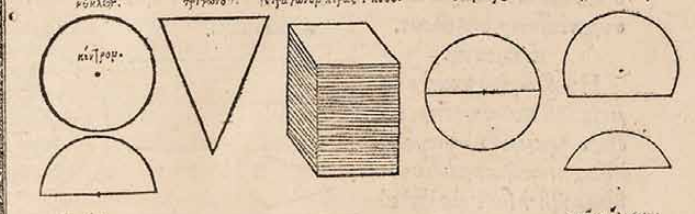
ΣΗΜΕΙΟΝ ἐστὶν, οὗ μέρος οὐθέν. γραμμὴ δὲ, μῆκος ἀπλατὲς, γραμμῆς δὲ πέρατα σημεῖα. εὐθεῖα γραμμή ἐστιν, ἥτις ἐξίσου τοῖς ἐφ' ἑαυτῆς σημείοις κεῖται. ἐπιφάνεια δέ ἐστιν, ὃ μῆκος καὶ πλάτος μόνον ἔχει. ἐπιφανείας δὲ πέρατα, γραμμαί. ἐπίπεδος ἐπιφάνεια ἐστὶν, ἥτις ἐξίσου ταῖς ἐφ' ἑαυτῆς εὐθείαις κεῖται.



Ἐπίπεδος δὲ γωνία ἐστὶν, ἡ ἐν δύο γραμμαῖς ἁπτομένων ἀλλήλων, καὶ μὴ ἐπ' εὐθείας κειμένων, πρὸς ἀλλήλας τῶν γραμμῶν κλίσις. Ὅταν δὲ αἱ περιέχουσαι τὴν γωνίαν γραμμαὶ, εὐθεῖαι ὦσιν, εὐθύγραμμος καλεῖται ἡ γωνία. Ὅταν ἡ εὐθεῖα ἐπ' εὐθεῖαν σταθεῖσα, τὰς ἐφεξῆς γωνίας ἴσας ἀλλήλαις ποιῇ, ὀρθὴ ἑκατέρα τῶν ἴσων γωνιῶν. Καὶ ἡ ἐφεστηκυῖα εὐθεῖα κάθετος καλεῖται ἐφ' ἣν ἐφέστηκεν. Ἀμβλεῖα γωνία ἐστὶν, ἡ μείζων ὀρθῆς, Ὀξεῖα δὲ ἡ ἐλάσσων ὀρθῆς.



Ὅρος ἐστίν, ὅ τινός ἐστι πέρας. Σχῆμα ἐστὶ, τὸ ὑπό τινος, ἢ τινων ὅρων περιεχόμενον. Κύκλος ἐστὶ, σχῆμα ἐπίπεδον, ὑπὸ μιᾶς γραμμῆς περιεχόμενον, ἡ καλεῖται περιφέρεια πρὸς ἣν ἀφ' ἑνὸς σημείου τῶν ἐντὸς τοῦ σχήματος κειμένων, πᾶσαι αἱ προσπίπτουσαι εὐθεῖαι, ἴσαι ἀλλήλαις εἰσί. Κέντρον δὲ τοῦ κύκλου, τὸ σημεῖον καλεῖται. Διάμετρος δὲ τοῦ κύκλου ἐστὶν, εὐθεῖά τις



διὰ τοῦ κέντρου ἠγμένη, καὶ πεπερασμένη ἐφ' ἑκάτερα τὰ μέρη ὑπὸ τῆς τοῦ κύκλου περιφερείας, ἥτις καὶ δίχα τέμνει τὸν κύκλον. Ἡμικύκλιον δέ ἐστι, τὸ περιεχόμενον σχῆμα ὑπό τε τῆς διαμέτρου, καὶ τῆς ἀπολαμβανομένης ὑπὸ

marbled paste-downs, spotting and soiling, especially to preliminary and endleaves. $9000.00

First edition. This definitive work on analysis caused a revolution in this branch of mathematics, a subject which had hitherto never been presented in such a general and systematic manner. Treating trigonometry as a branch of analysis, Euler introduced the now current abbreviations for trigonometric functions, and pointed out the relation between trigonometric and exponential functions. He was also the first to discuss the equation of the second degree in three variables and to classify the surfaces represented by it. Euler's work on infinite series culminated in the creation of the theory of definite integrals, known as Eulerian integrals. He further developed the calculus of finite differences, and established the theorem of homogeneous functions.

Euler (1707–1783), one of the most important Swiss mathematicians, was a student of Johann Bernoulli, and later went to St. Petersburg to teach mathematics and physics. He published important works in other fields of science, including dynamics, chemistry, medicine, and astronomy.

Bell, *Men of Mathematics*, pp. 139–152 (Chap. 9, "Analysis Incarnate"); *Printing & the Mind of Man*, 196; Struik, *Source Books in Mathematics*, pp. 345–351

39. FARADAY, Michael

Faraday's diary being the various philosophical notes of experimental investigation made by Michael Faraday during the years 1820–1862 . . . Foreword by Sir William Bragg. London: G. Bell & Sons, 1932–1936.

Eight volumes (7 plus index). Lg. 8vo. With frontispieces and text illustrations; a mint set in the original dust jackets. $2500.00

First edition of the scientific diaries of one of the greatest experimental philosophers of all time. These volumes, printed from the manuscripts now held by the Royal Institution of Great Britain, contain Faraday's full and accurate descriptions of his every experiment, each written on the day it was made and continued through to his final fundamental conclusions along with outlines of future research.

Faraday (1791–1867) was probably more instrumental to the development of the study of electrical sciences than any other investigator. For many years he tried to generate electricity from magnetism. Toward the end of 1831, a new approach occurred to him and he was able to prove that the electricity thus generated had all the same characteristics of electricity produced by other means.

Jeffreys, p. 489; Thornton, *Scientific Books*, pp. 207–208

40. FERRARIUS, Omniboni [Ognibene]

De arte medica infantium, libri quatuor. Quorum duo priores de tuenda eorum sanitate, posteriores de curandis morbis agunt; De arte medica infantium aphorismorum, particulae tres. Brescia: Francesco and Pietro Maria Marchettti [Colophon: Vicenzo da Sabbio], 1577.

4to. [xii], 195, [1] pp.; 11 leaves (some mispagination). With errata, 4 engraved text illustrations, large illustrated woodcut initials, ornamental head- and tailpieces. Marchetti's anchor and dolphin device on both title pages. Contemporary vellum, manuscript title on spine, covers a bit bowed; 4 leaves with paper repair to top margin. $12,000.00

First edition. The work is divided into three parts: the management of wet nurses; the care and feeding of the newborn; and the diseases of children. Appended is a list of aphorisms on the care and diseases of children, based on the writings of Hippocrates and Galen, but with a number of additions from contemporary sources. Notable are the illustrations, which include a self-operated breast pump for extracting milk, a device for training children to walk, a child's stool with a toilet, and a helmet designed to protect the child's head from injury.

SECVNDVS. 39

Posteà ut ad incedendam facilius assuescat eum substinẽdo sub axillis, & brachijs adiuuare debemus, ad parumpèr deambulandum, & hoc stomacho non repleto, & non statim post cibum. Laudo etiam, ut aliquandò ponatur in quodam (ut in Italia fieri solet) paruo curriculo, gratia huiusce exercitationis tantummodo facto, in quo per se ipsos infantes deambulando cadere non possunt; cuius forma ad clariorem intelligentiam quorumcunq; inferius descripta apparet.

Deindè cum erit fessus, uel gestandus est, uel prout multis in locis obseruatur, eum ponere ad sedendum debemus in quadam parua sede, in qua concluditur adeò, ut pariter cadere non possit, & meiere, & aluum exonerare quàm aptissime possit, sine aliquo impedimento, cuius forma similiter ad claram omnium cognitionem, hic posita est.

H 2

60 LIBER

Et cum ratio in eis sopita sit prætereà ab ipso infante sempèr remouendi sunt lapides, ligna, fustes, cultelli, vitrum, & omnia alia instrumenta ferrea generis cuiuscunq; quæ lædere, pungere, aut incidere, aut frangere, aut grauare possunt, & paritèr summa cum diligentia semper remoueatur ab igne, ab aquis, à puteis, a locis altis, & a locis, quò sæpè conueniunt, & transire solent animalia, quæ vel morsu, vel cornibus, vel pedibus lædere solent, & possunt, prout sunt canes, boues, equi, & similes; Posteà, sed semper cum custodia, more agni, sic vèl sedendo, vel deambulando lasciuire concedatur. His ergò omnibus de die in diem summo studio, diligentiaq; seruatis, sanitas facillimè custodietur infantis, donec peruenerit ad biennium, vel ad ætatem, in qua ex se ipso ad ambulandum, loquendum, & comedendum quamaptissimus erit; Et cùm aliquid intelligibili modo loqui

Ferrarius (1584–1655), a physician at Verona, apparently spent a considerable amount of time training nurses in child care. He was an advocate of introducing solid food as early as seven months, suggesting that bread and vegetables first be chewed by the nurse before being put in the infant's mouth.

Adams, F288; Durling, 1494, 1496; Grulee, 452, 454; Norman, I, 787; Still, *History of Pediatrics*, pp. 147–156; Wellcome, I, 2227

41. FEUCHTWANGER, Lewis

A treatise on gems, in reference to their practical and scientific value; a useful guide for the jeweller, lapidary artist, amateur mineralogist, and chemist; accompanied by a description of the most interesting American gems, and ornamental and architectural materials. New York: Printed by A. Hanford, 1838.

8vo. in 4's. 178, [2] pp. Complete with appendix, detailed table of contents, the 2 pages of advertisements, and several text diagrams. Original cloth, front cover stamped in gilt, binding somewhat faded and worn at the head and foot of the spine as well as the corners; interior lightly browned on fore-edges, but generally a very good copy from the library of [G. P.] Girdwood with his armorial bookplate, signatures, and annotations on last blank leaf. $2500.00

First edition, extremely rare first issue, of the first treatise on gemstones published in the United States. A new edition was printed later the same year with the author's name misspelled on the copyright page and less text. This pioneer work treats chemistry, geological and geographical distribution, nomenclature, lore, and processing of gemstones for the gem trade, as well as use of gemstones in optics. Feuchtwanger deals with individual gemstones, their cutting and cleaning, as well as the manufacture of synthetic stones. Also included is an appendix on pearls and coral. Of special significance here is the first adequate record of native American precious stones and their localities.

Feuchtwanger (1805–1876) was apparently a recent immigrant to the United States when writing the present treatise. He specialized in the manufacture of German silver and chemicals for laboratory use. This work was widely used as a reference until superseded by Kunz's treatise in 1890. James Renwick, professor of chemistry and physics at Columbia College, commends the work as eminently useful.

British Museum Natural History, II, 569 (list only 1859 edition); Sinkanis, 2081 (very rare)

42. FLOYER, John

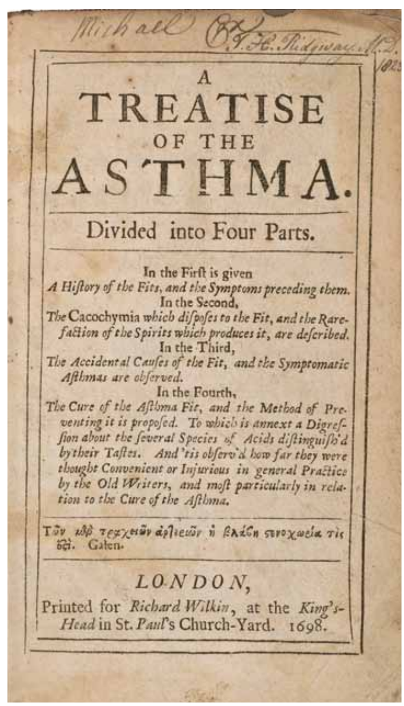
A treatise of the asthma. Divided into four parts. In the first is given a history of the fits, and the symptoms preceding them. In the second, the cacochymia which disposes to the fit, and the rarefaction of the spirits which produces it, are described. In the third, the accidental causes of the fit, and the symptomatic asthmas are observed. In the fourth, the cure of the asthma fit, and the method of preventing it is proposed. . . . London: Richard Wilkin, 1698.

8vo. [xl], 247 pp., including errata. A long dedication to Dr. Phineas Fowke is followed by two sections "to the reader," the second of which details the "several species of the asthmas." Contemporary calf, boards worn, rebacked with the original backstrip laid down; minor spotting, otherwise a very nice copy. Signatures of Michael Cox and T.H. Ridgway, M.D., dated 1823 on the title page. $5500.00

First edition of the first clear description of bronchial asthma. It is the first major monograph on the subject in English. Floyer clearly defines asthma, separating it from other pulmonary disorders. In this work, he discusses the influence of heredity in asthma and includes an early description of emphysema. According to Sakula's article on Floyer's book published in *Thorax* (Vol. 39, No. 4, 1984), "he [Floyer] considered that the cause of the dyspnoea was bronchial constriction due to spasm, and he regarded the spasm to be tonic, more akin to catalepsy than to the clonic convulsion of epilepsy."

Floyer (1649–1734), an eminent physician at Lichfield, is noted for his many contributions to medicine. He was one of the most eccentric physicians of his time, and his works show great independence of thought as well as a true spirit of research. Floyer suffered from asthma for many years and often made himself a subject for investigation during his research into the condition.

Eimas, *Heirs of Hippocrates*, 668; Garrison-Morton, 3166; Osler, 2614; Wellcome, III, p. 34



A
TREATISE
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Divided into Four Parts.

In the First is given
A History of the Fits, and the Symptoms preceding them.
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The Cacochymia *which disposes to the Fit, and the Rarefaction of the Spirits which produces it, are described.*
In the Third,
The Accidental Causes of the Fit, and the Symptomatic Asthmas are observed.
In the Fourth,
The Cure of the Asthma Fit, and the Method of Preventing it is proposed. To which is annext a Digression about the several Species of Acids distinguish'd by their Tastes. And 'tis observ'd how far they were thought Convenient or Injurious in general Practice by the Old Writers, and most particularly in relation to the Cure of the Asthma.

[illegible] Galen.

LONDON,
Printed for *Richard Wilkin*, at the *King's-Head* in St. *Paul's* Church-Yard. 1698.

42. Floyer

43. FONTANA, Felice

Recherches phisiques sur la nature de l'air nitreux et de l'air déphlogistiqué. Paris: Chez Nyon l'aîné, Libraire, rue Jean-de-Beauvais, 1776.

8vo. [iv],184, [4] pp. Complete with half-title, privilege du Roi, and errata. Woodcut printer's device on title and chapter headpieces. Full mottled calf, spine gilt with red morocco label and circular private library label affixed to front board, small chip to foot of spine; marbled endpapers, light occasional foxing, otherwise an excellent copy. Bookplate of previous owner, "Bilharz," possibly anatomist Theodore Bilharz (1825–1862), known for his description of the parasitic disease called bilharziasis, now known as schistosomiasis. $5000.00

First edition of this rare and valuable work describing the author's experiments on nitrous and dephlogisticated air (oxygen). Fontana, the foremost researcher on the properties of gases and one of the greatest Italian scientists of the century, here explains why calx (oxide) can be reduced without the addition of a phlogiston, an unmeasurable fire-like element released during combustion. It is here that Fontana also 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" (Neville). Despite this interpretation of the phenomenon of combustion, Fontana remained a phlogistonist.

Fontana announces his indebtedness to the work of Joseph Priestley, who had discovered oxygen two years prior and whose experiments determining the relative purity of air inspired this study. The famous experiment here on mercuric nitrate was in fact described by Priestley in Volume III of his *Experiments and observations* (1777). Even Lavoisier, in a 1776 memoir, details an experiment about which Priestley commented on its similarity with that of Fontana.

Fontana (1730–1805), an Italian neurologist and biologist, was one of the major microscopists of the eighteenth century. He held the chair of logic and later of physics at the University of Pisa, and he helped oversee the opening of the Museum of Physics and Natural History at Florence. In addition to the present work, he was noted for his research on red blood cells and the movement of the iris, and his discovery of the lymphatic vessels in the crystalline lens of the eye. He also introduced, in 1774, the most accurate eudometer, an instrument used to measure the healthiness of air.

Blake, p. 150; Bolton, *A Select Bibliography of Chemistry*, p. 445; Cole, *Chemical Literature 1700–1860*, 453; Neville, *Roy G. Neville Historical Chemical Library*, p. 462; Partington, *A History of Chemistry*, p. 322

INFANTILE SEXUALITY

44. FREUD, Sigmund

Drei Abhandlungen zur Sexualtheorie. Leipzig & Vienna: Deuticke, 1905.

8vo. [ii], 83, [1] pp. Original printed wrappers preserved in a clamshell box. An excellent copy with the back strip redone.

$4500.00

First edition of the work which Freud himself considered second in importance only to his *Die Traumdeutung.* Freud introduces here his epochal theory of infantile sexuality, which linked the forces motivating the development of body and mind from earliest infancy, a contribution of utmost value. Infantile sexuality was a fact known, Freud said, to every nursemaid, yet the *Three essays* provoked (and still provokes) considerable controversy in both scientific and popular sectors. The importance of the *Three essays* to Freud is underscored by the fact that it was the only book besides *The interpretation of dreams* that he submitted to constant revision, with six editions published in his lifetime.

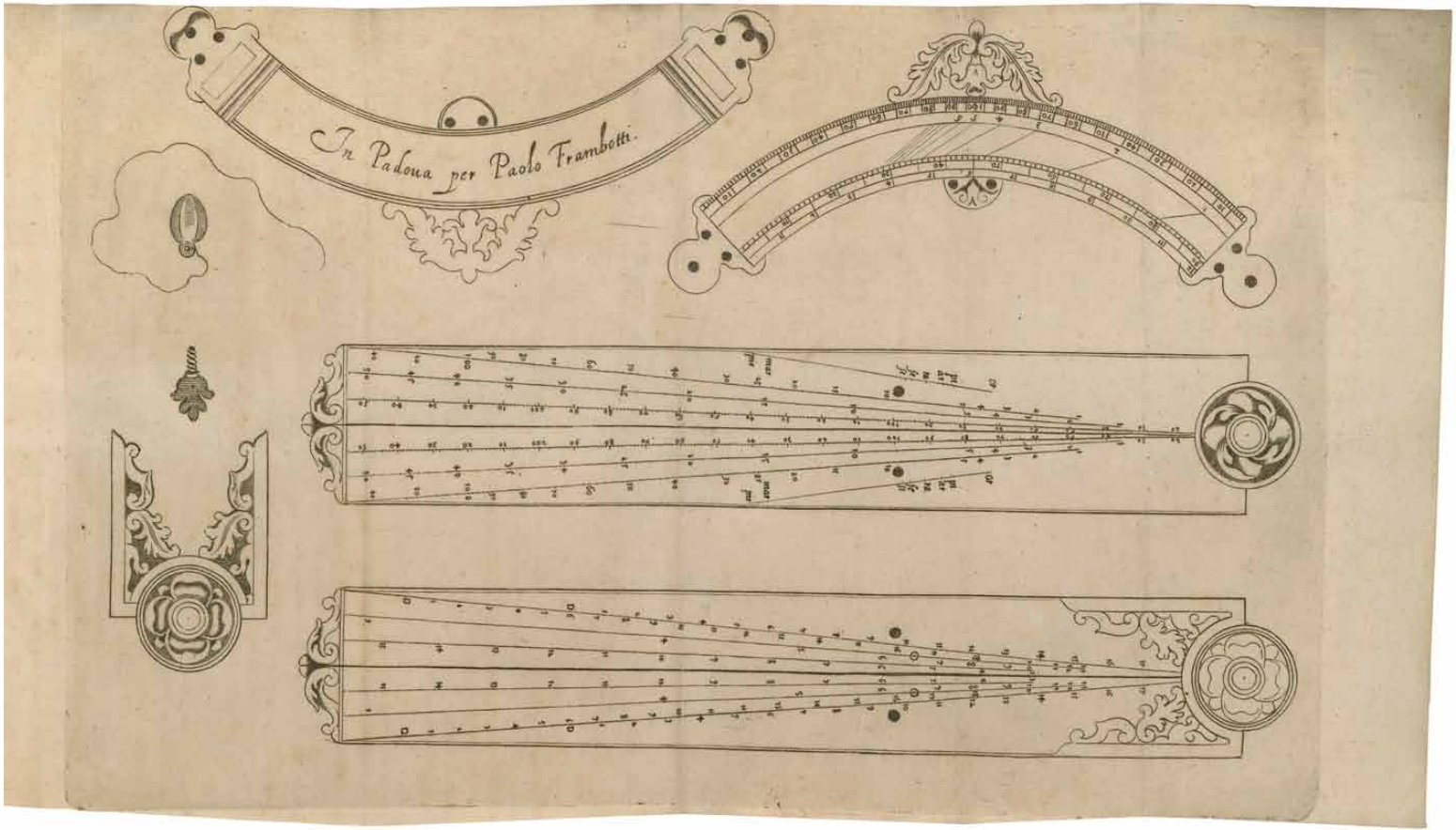
Garrison & Morton, 4983; Grinstein, 79

45. GALILEI, Galileo

Dialogo sopra i due Massimi Sistemi del Mondo Tolemaico, e Copernicano. Florence: Giovanni Battista Landini, 1632.

4to. [viii], 458, [32] pp. The engraved frontispiece facing the title by Stefano della Bella depicting Aristotle, Ptolemy, and Copernicus in discussion surmounted by the Medici arms appears to be a facsimile on contemporary paper; woodcut printer's device on title, woodcut initials, headpieces, and diagrams. Contemporary vellum, title in ink on spine; minor browning and spotting as usual. $70,000.00

First edition of Galileo's statement and defense of the Copernican system of heliocentrism, which directly led to his trial for heresy in Rome in 1633. The *Dialogo* was designed both as an appeal to the great public and as an



46. *Galilei*

escape from silence. In the form of an open discussion between three friends—intellectually speaking, a radical, a conservative, and an agnostic—it is a masterly polemic for the new science.

Cinti, 89; Dibner, 8; Riccardi, I, 511

46. GALILEI, Galileo

Le operazioni del compasso geometrico et militare. Padua: Paolo Frambotto, 1649.

8vo. [viii], 80 pp. With a large folding engraved plate of the sector and numerous woodcut text diagrams. Early soft boards; a superb copy from the library of Felix and Frieda Pollak, with their bookplate. Preserved in a folding cloth box. $5500.00

Third edition of Galileo's valuable first published book. He here describes and explains the use of his invention, the geometric and military compass, or circle of proportion. The instrument, the first important device to perform arithmetical calculations by mechanical means, made it possible to calculate the ratios between linear dimensions of planar and solid bodies, and was specifically created to calculate trajectories and distances for military purposes. According to DSB, Galileo "transformed [the device] from a simple device of limited use to an elaborate calculating instrument of varied uses and of great practical utility by adding to it a number of supplementary scales. He . . . wrote a treatise on its use for engineers and military men."

Pollak (1909–1987), an Austrian émigré, became an accomplished American poet and special collections curator at the University of Wisconsin.

Carli-Favaro, 228; Cinti, 122; Cockle, *A Bibliography of Military Books*, 680; *Crawford Library Catalogue of the Edinburgh Royal Observatory*, p. 195; D'Ayala, *Dizionario Militare Francese Italiano*, p. 19; *Dictionary of Scientific Biography*, V, p. 240; Manzoni, *Bibliotheca Manzoniana Catalogue*, II, 5700; Riccardi, I, 506; *Wheeler Gift Catalogue*, I, 127

47. GAUSS, Carl Friedrich

Theoria motus corporum coelestium in sectionibus conicis solem ambientium. Hamburg: Perthes & Besser, 1809.

4to. xi, [i], 227, [1] pp., including errata, plus 20 pages of tables and 1 engraved plate. Nineteenth-century half-morocco over pebbled cloth; paper uniformly browned, library stamp on title. $5500.00

First edition of a famous classic of astronomy and mathematics. Gauss (1777–1855), one of the greatest German mathematicians, became director of the

observatory at Göttingen by age thirty. In this, his chief work on celestial mechanics, he introduced the principle of curvilinear triangulation and the four formulae in spherical trigonometry known as "Gauss's Analogies," by which he was able to accurately calculate and predict orbit location.

Professor G. Walde Dunnington, in his definitive study of Gauss, writes: "The processes detailed in the *Theoria motus* are no less remarkable for originality and completeness than for the concise and elegant form in which the author has exhibited them."

Smith, *History of Mathematics*, I, p. 504; Sparrow, *Milestones of Science*, 34

EARLIEST INVENTION OF THE TELEPHONE?

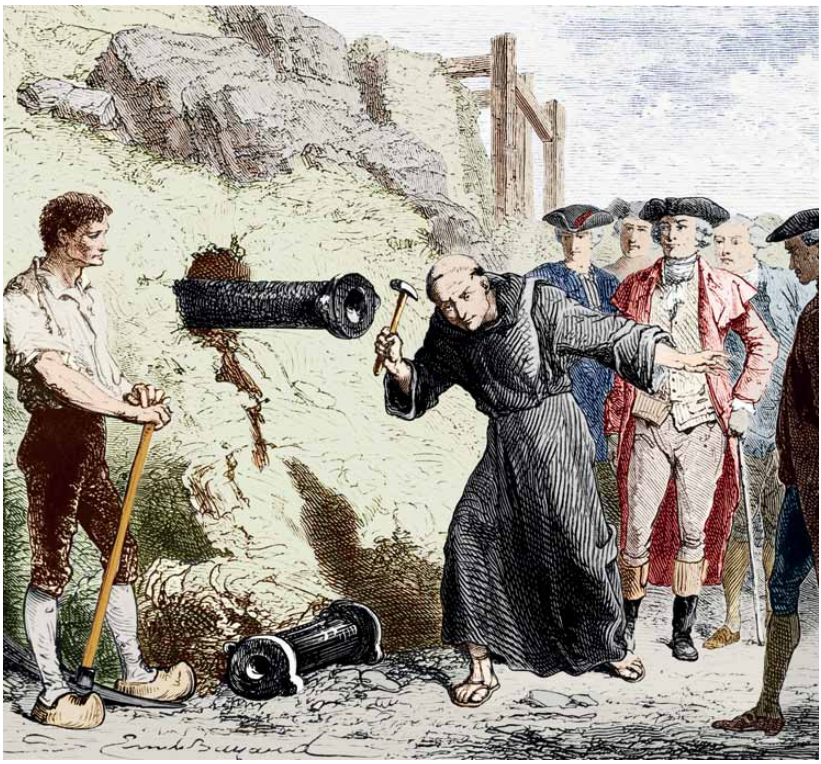
48. [GAUTHEY, Emiland-Marie]

Expérience sur la propagation du son et de la voix dans des tuyaux prolongés a une grande distance, nouveau moyen d'établir & d'obtenir une correspondance très rapide entre les lieux fort éloignés. Philadelphia & Paris: Chez Prault, 1783.

8vo. 32 pp., including list of subscribers. Woodcut printer's device on title, woodcut tailpiece. Bound into boards with morocco spine label. A fine copy of a great rarity. $6500.00

First and only edition of this extraordinary monograph on the construction and use of what is possibly the earliest invention of the telephone. The apparatus consisted of a series of specially built acoustic tubes, linked together over a distance of 100 feet or so. The interlocutor would speak into the custom-built wooden mouthpiece while the auditor placed their ear to the other end, and vice-versa, to continue the conversation. Thus the long-distance transmission of sound was first described. The invention was presented to the Académie des Sciences in Paris, where it was well received, especially by the Marquis de Condorcet (1743–1794), who was so impressed that he wrote a report on Gauthey's description and took up a subscription to fund the experiment on a larger scale.

The list of subscribers, which appears at the end of the book, includes such forward thinkers and luminaries as Benjamin Franklin, the astronomer Lalande (1732–1807), the scientist and physician Marat (1743–1793), and the mathematician Deparcieux (1703–1768), to name a few. Condorcet eventually conducted the experiment himself, which turned out to be a great success, as they were able to converse over a distance of 800 meters. It is a mystery why Gauthey's experiment never took off; he planned to continue experimenting over further and further distances, but for reasons unknown these experiments never took place. Most likely he was unable to find ad-



48. *Gauthey*

ditional investors to develop his system in France, and thus left for America in order to seek financial support there. His efforts were unsuccessful, but he did publish this 32-page prospectus in Philadelphia in 1783.

There is some confusion as to the true authorship of this work, written anonymously; some attribute it to a Trappist monk named Dom Gauthey (fl. 1780), as the report of the Académie Royale des Sciences lists him as the author of the *Mémoire*. The more likely candidate is the French engineer and architect Emiland-Marie Gauthey (1732–1806), to whom both Poggendorff and Querard attribute this work. Gauthey was professor of mathematics and Inspecteur-Général at the École des Ponts-et-Chaussées in Paris, as well as a member of the Academy of Sciences of Dijon. He is best known for having constructed the Charolais Canal, thus linking the Loire and Saône rivers.

OCLC locates 2 copies (Harvard and Göttingen), plus another copy located at UC San Diego; Barbier, A.A. *Ouvrages Anonymes*, 375a; *Nouvelle Biographie Générale*, XIX, pp. 694–695; Poggendorff, I, 857; Querard, 3, p. 286

THE ORIGIN OF THE SPANISH INQUISITION

49. GONZÁLEZ DE MONTEZ, Reinaldo

SKINNER, Vincent, trans. *A discovery and playne declaration of sundry subtill practises of the Holy Inquisition of Spayne.* London: John Day, 1568.

4to. [xii], 99 leaves. With large printer's device on last leaf. Eighteenth-century calf; minor shaving to a few headlines, edges of last leaf and back paste-down stained. Bookplate of Alfonso Cassuto with his miniature stamp on title. Cassuto (1910–1999) was a Portuguese antiquarian bookdealer and collector whose collection was started by his great-grandfather Jehuda de Mordehai Cassuto, who in 1835 acquired a sizeable library assembled in the seventeenth century by the Namias Family of Hamburg. Also an ownership signature dated 1851 on the fly-leaf.

$24,000.00

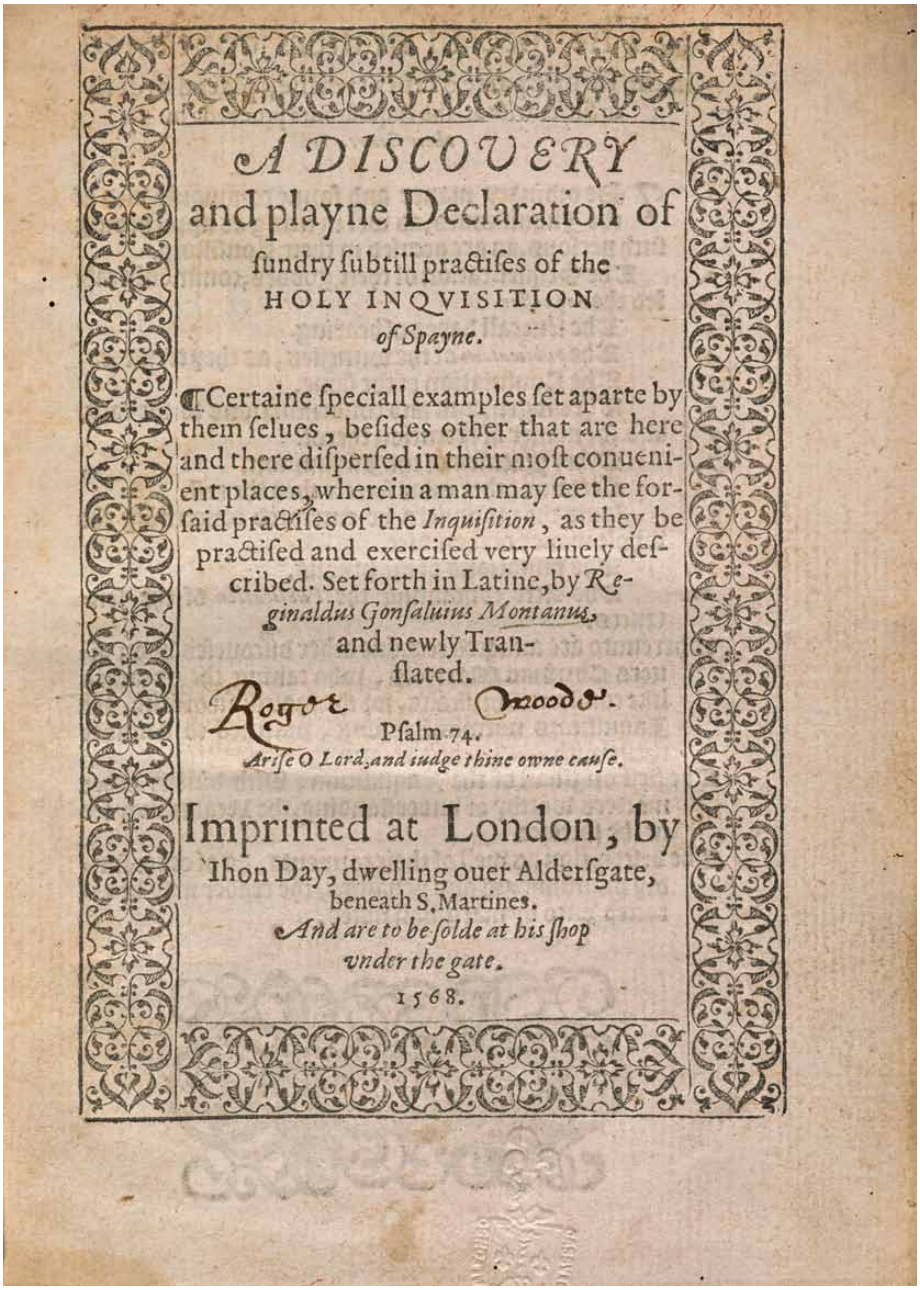
First edition in English, translated by Vincent Skinner (d. 1616), of probably one of the rarest and most important works describing the horrors of the Spanish Inquisition. The mysterious author, Reginaldus Gonsalvius Montanus, probably a Spanish or Flemish Protestant, was a former Dominican friar who had left the Roman Catholic Church. He describes the legal proceedings and trials conducted by the Inquisition, and also includes biographies of a number of persons condemned, including a native of Mexico. Though the Spanish Inquisition was focused chiefly on converted Christians suspected of lapsing into former beliefs and practices, Protestant writers and artists in England, Germany, and the Netherlands were the most effective publicists of righteous indignation against the dubious methods of interrogation which commonly resulted in false confessions, if not injury or death.

This is a prime example of the European half of the Black Legend, under which the worst excesses of Spanish policy were presented as the norm. The American portion of the Black Legend was focused on the portrayal of Spanish colonial mistreatment of the New World indigenous peoples.

Of interest is the reference from Skinner's translation in which the phrase "scot free" refers to not paying one's taxes. The etymology of this phrase shows the danger of trying to prove a case on circumstantial evidence alone.

Originally printed in Latin in Heidelberg the prior year, editions in German, Dutch, and French were printed later in 1569. Information about the Spanish Inquisition had its origin principally in this work.

Huntington Library Checklist, p. 392; Palau, VI, p. 293; STC, 11996



A DISCOVERY
and playne Declaration of
ſundry ſubtill practiſes of the
HOLY INQVISITION
of Spayne.

¶ Certaine ſpeciall examples ſet aparte by them ſelues, beſides other that are here and there diſperſed in their moſt conuenient places, wherein a man may ſee the forſaid practiſes of the *Inquiſition*, as they be practiſed and exerciſed very liuely deſcribed. Set forth in Latine, by *Reginaldus Gonſaluius Montanus*, and newly Tranſlated.

Roger Woode.

Pſalm 74.
Ariſe O Lord, and iudge thine owne cauſe.

Imprinted at London, by
Ihon Day, dwelling ouer Alderſgate,
beneath S. Martines.
And are to be ſolde at his ſhop
vnder the gate.
1568.

49. *González de Montez*

GOULD'S STUNNING PARTRIDGES

50. GOULD, John

A monograph of the odontophorinæ, or partridges of America. London: Richard and John E. Taylor for the Author, [1844]–1850.

Large folio (545 x 306 mm). Complete with half-title, list of subscribers, and 32 magnificent hand-colored plates by Gould and Henry Constantine Richter. Contemporary morocco with elaborately gilt-decorated spine, insignificant repair on spine; all edges gilt, marbled paste-downs, some light spotting on first and last blank leaves, otherwise an excellent copy. $24,000.00

First edition of Gould's splendid folio on the partridges of America, in which he celebrates the unassuming game bird in a grand and sumptuous style. He here expertly illustrates 35 partridge species in their natural surroundings, greatly enlarging their recorded number. Each spectacular plate is accompanied by detailed information on each figure, including measurements, behavior, and habitats.

50. *Gould*

Gould (1804–1881), one of the most innovative, productive, and versatile ornithological illustrators of the nineteenth century, began his study of birds and taxidermy while assisting his father at Windsor. He became taxidermist to the Zoological Society of London in 1827 and began publishing his own books on birds beginning in 1832 with his landmark work *A century of birds from the Himalaya Mountains*. "In the field of natural history the accomplishments of John Gould are truly monumental. No other ornithologist has ever exceeded (or will ever exceed) the number of Gould's bird discoveries and the magnitude and splendor of his folio publications" (Sauer, *John Gould*, xv).

Anker, 176; *Dictionary of National Biography*, VIII, pp. 287–288; Sauer, 13; Sitwell, *Fine Bird Books*, p. 102; Wood, p. 365

ONE OF THE GREATEST ARGUMENTS IN SCIENCE: THE CONTROVERSY OF THE COMETS

51. [GRASSI, Orazio]

Libra astronomica ac philosophica qua Galilaei Galilaei, opiniones de cometis a Mario Guiducio in Florentina Academia expositae, atque in lucem nuper editae, examinantur a Lothario Sarsio Sigensano. Perugia: Marci Naccarini, 1619.

4to. 72 pp. Engraved title vignette of one of the 1618 comets in the constellation of Libra, with large historiated initials and text diagrams. Antique calf in a contemporary style with gilt borders and gilt-ornamented spine; overall in superb condition.

$24,000.00

First edition of Grassi's extraordinarily important and bitter attack on Galileo's theory of the nature of comets, later inspiring *Il Saggiatore*. The scientists' famous dispute started the prior year with Grassi's *De tribus cometis*, which Galileo (using the alias of his assistant Guiducci) followed up with his provocative *Discorso della comete* (1619). Grassi responded (under the pseudonym Lothario Sarsi) with this publication of *Libra astronomica*, in which he strongly defends the ideas of Tycho Brahe and the Jesuits. Galileo went on to publish his polemic and rhetorical masterpiece, *Il Saggiatore* (1632), as a direct reply to this work.

Grassi (1583–1654) was a Jesuit mathematician who taught at the Collegio Romano. This controversy ruined his relationship with Galileo, and earned his adversary the ire of the entire Collegio Romano, a major factor in his later difficulties with the Inquisition.

LIBRA ASTRONOMICA AC PHILOSOPHICA

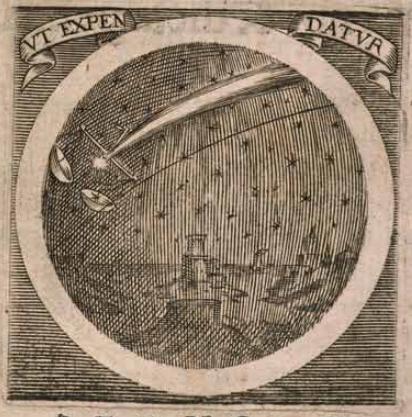
QVA GALILAEI GALILAEI

Opiniones de Cometis

A MARIO GVIDVCIO

In Florentina Academia expositæ, atque in lucem nuper editæ, examinantur

A LOTHARIO SARSIO SIGENSANO.



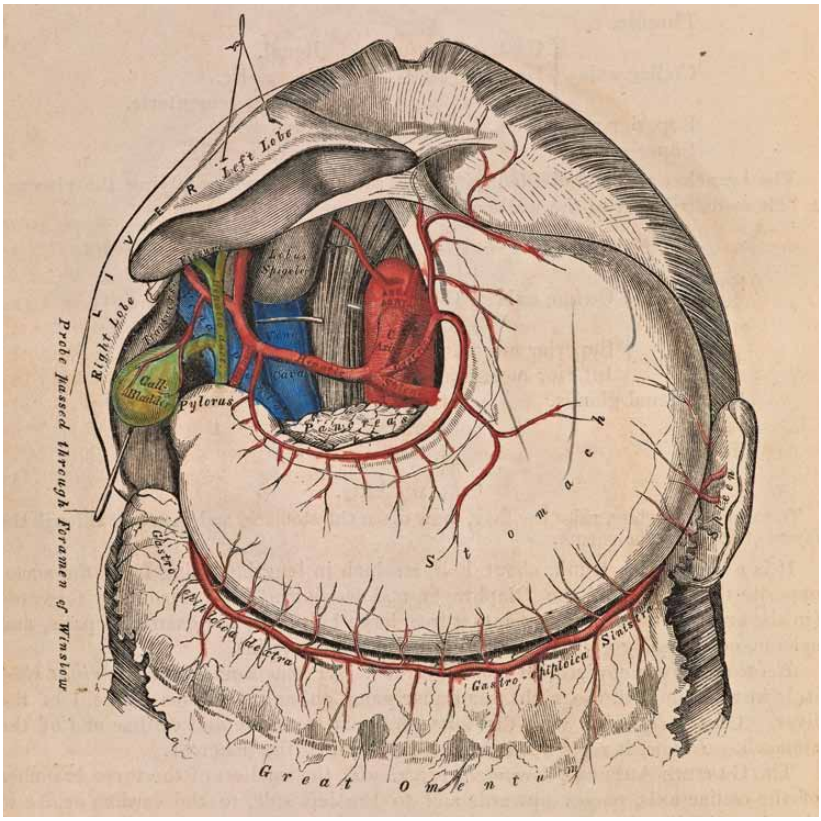
PERVSIÆ,
Ex Typographia Marci Naccarini. M. DC. XIX.
SVPERIORVM PERMISSV.

Biagioli, *Galileo Courtier*, pp. 257–311; BMC, *Italian*, I, p. 411; Carli-Favaro, 81; Cinti, 64; DeBacker & Sommervogel, III, pp. 1684–1686; Honeyman, IV, 1539; Lalande, p. 173; Langford, *Galileo, Science and the Church*, pp. 107–110; Lewis, *Galileo in France*, pp. 48–50; McMullin, *Galileo: Man of Science*, pp. 155–157, xc; Riccardi, I, 628; Sharrat, *Galileo: Decisive Innovator*, pp. 134–144

52. GRAY, Henry

Anatomy descriptive and surgical. London: John W. Parker, 1858.

8vo. xxxii, 750 pp. With half-title and 363 text illustrations by Henry Vandyke Carter. Without the leaf of publisher's advertisements sometimes found in this edition. Contemporary half-calf



52. *Gray*

and marbled boards, rebacked with the original spine laid down, boards show some wear; the text is lightly browned throughout, still generally an excellent copy from the library of Arthur W. Atwood, with his signature dated 1870; other signatures in memory of Arthur Lee Barlee and J. Tucker of Guy's (Hospital). $9500.00

First edition of probably the best-known medical book in the English language. "Gray's treatise was distinguished for the lucid and logical arrangement of a mass of detailed descriptions; clear new drawings based on dissections by the surgeon-author and the artist; and sections on the surgical anatomy of defined areas, such as the axilla, the elbow, the popliteal space, the perineum, and the laryngotracheal region" (Lilly Library, *Notable Medical Books*, 211).

Gray (1827–1861), a celebrated English physician, was chiefly engaged in anatomical research and teaching at St. George's Hospital in London. This work has become quite scarce in first edition.

Eimas, *Heirs of Hippocrates*, 1914; Garrison & Morton, 418; Reynolds, 1711

53. HAUKSBEE, F[rancis]

Physico-mechanical experiments on various subjects. Containing an account of several surprizing phenomena touching light and electricity, producible on the attrition of bodies . . . The explanations of all the machines. . . . London: J. Senex & W. Taylor, 1709.

4to. [xiv], 194 pp. With 7 numbered folding engraved plates, plus an additional small folding plate inserted between pp. 160 and 161, and numerous text woodcuts. Modern polished calf in a contemporary style, morocco spine label; interior very clean, small tear on C_4 (no letters affected) and repair to T_4; all plates quite fresh. An exceptionally nice copy. $7000.00

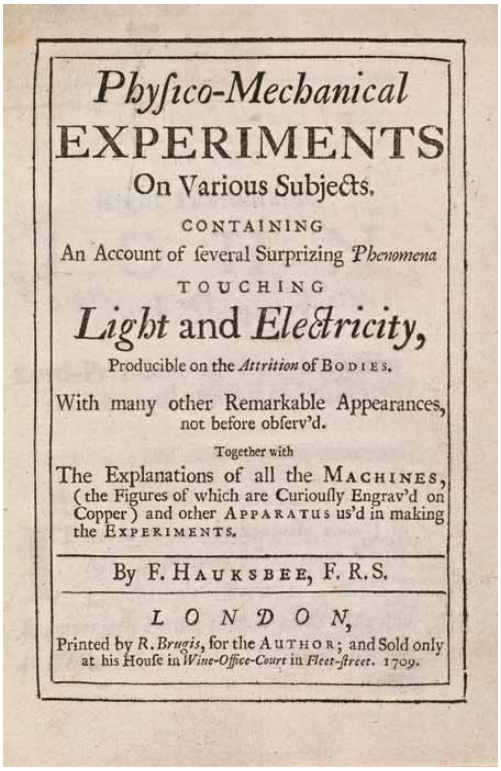
First edition of this famous book, now a great rarity. This work contains some of the most important experiments of the eighteenth century, and opened a new era in electricity. Franklin, Priestley, Newton, and later Laplace were all influenced by Hauksbee.

It is here that Hauksbee provides the solution to the remarkable mercurial phosphorescence caused by shaking a mercury barometer in the dark. Discovered by Picard in 1675, this phenomenon sparked considerable controversy in scientific circles, but it was Hauksbee who correctly attributed it to the friction of mercury against the sides of an exhausted glass-globe. Hauksbee's glass cylinder electrical machine and accompanying electrical air pump, invented by him to demonstrate this and other optical phenomena

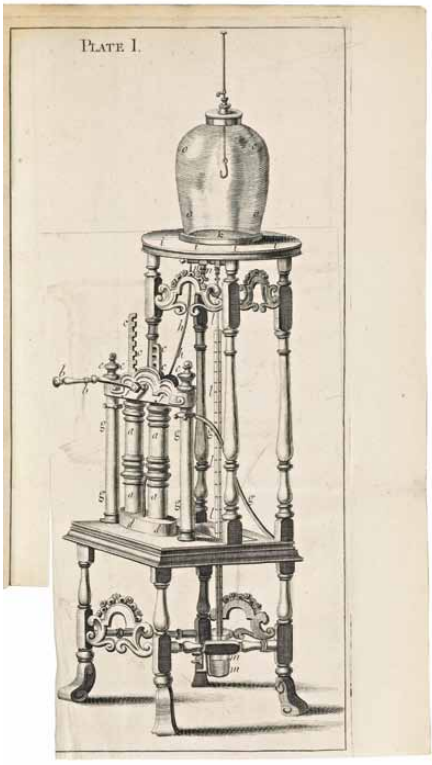
caused by the passage of electricity through rarefied air, "formed the starting point of modern researches, X-rays, and the constitution of the atom" (Duveen). Descriptions and illustrations of these inventions are included along with experiments conducted by Hauksbee providing early examples of violent electrical repulsion and electric induction. This work won a great deal of attention in its time and was translated into French and Italian.

Hauksbee (d. 1713?), FRS, was the first "demonstrator" appointed by the Royal Society, whose duty it was to confirm or refute by experiment the discoveries reported to the Society by others, as well as to perform original experiments. He contributed spell-binding observations of magnetism in addition to his studies on electricity. Notably, scientists conducting meteorological studies during his time were advised to obtain their portable "thermometers of standard design and great precision" (Wolf) from Hauksbee.

Duveen, pp. 281–282; Gartrell, 245; *Wheeler Gift Catalogue*, I, 232; Wolf, *A History of Science, Technology, & Philosophy in 18th Century*, I, pp. 213, 285



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, (the Figures of which are Curiouſly Engrav'd on Copper) and other APPARATUS us'd in making the EXPERIMENTS.
By F. HAUKSBEE, F. R. S.
LONDON,
Printed by R. *Brugis*, for the AUTHOR; and Sold only at his Houſe in *Wine-Office-Court* in *Fleet-ſtreet*. 1709.



53. *Hauksbee*

SHOCKING ILLUSTRATIONS OF ELEPHANTIASIS

54. HENDY, James

A treatise on the glandular disease of Barbadoes: proving it to be seated in the lymphatic system.

(bound with)

A vindication of the opinions and facts, contained in a treatise on the glandular disease of Barbadoes. London: C. Dilly; G. Kearsley, 1784; 1789.

Two works in one. 8vo. vii, 140; xi, 155 pp. With 3 full-page illustrations (2 folding). Contemporary calf-backed marbled boards; a very fine copy. $8500.00

54. *Hendy*

First editions of these extremely rare works on medicine in the Americas. The first is an important treatise on glandular diseases of Barbados, a leprosy variety also known as *Jambe des Barbades* or "Red evil." It is here that Hendy correctly identifies elephantiasis, the first separately printed English account of this disease. A complete account of the clinical symptoms are provided and the illustrations are shocking indeed. Hendy notes that those who drank liquor in excess were most subject to the disease, because they were most likely to sleep outdoors, where climate is a major cause of the spread of the sickness. As a remedy, he recommends a lace stocking to reduce swelling.

Five years later, Hendy returned to the subject to report new facts and reply to various criticisms received, specifically from John Rollo in his book *Remarks on the disease lately described by Dr. Hendy under the appellation of the Glandular disease of Barbados* (London, 1785).

Hendy (1750–1789), a graduate of the University of Edinburgh, was physician to his Majesty's Naval Hospital at Barbados, and Physician General to the militia of the island.

1. Sabin, 31334 (many without the folding plate); 2. Sabin, 31335 (without plate); see Mitchell, *West Indian Bibliography*

55. HIGGINS, William

Experiments and observations on the atomic theory, and electrical phenomena. Dublin: Graisberry and Campbell, 1814.

(bound after)

MEYLER, Anthony

Observations on ventilation . . . lectures delivered on the subject at the request of the Dublin Society. . . . London: Longman, Hurst, Rees, Orme and Brown, [1822].

Two works in one. 8vo. [vi], 208; [iv], 180 pp. Both works lack half-titles. Text diagrams. Contemporary calf over marbled boards, hinges a bit rubbed. From the libraries of John Lort Stokes (1812–1885), British admiral who served on the *Beagle* with Darwin, and the British chemist Franz Sondheimer (1926–1981), with his bookplate. $1850.00

First edition of Higgins' book, which is "an attack on Dalton, whom the author claimed to have anticipated" (Duveen, p. 294). Published six years after the first volume of John Dalton's *New system of chemical philosophy* (Manchester, 1808), this work contains Higgins' claim that he anticipated the chemical

EXPERIMENTS

AND

OBSERVATIONS

ON THE

Atomic Theory,

AND

ELECTRICAL PHENOMENA.

BY

WILLIAM HIGGINS, Esq.

F. R. S. & M. R. I. A.

PROFESSOR OF CHEMISTRY TO THE DUBLIN SOCIETY.

DUBLIN:

PRINTED BY GRAISBERRY AND CAMPBELL, 10, BACK-LANE, AND SOLD BY GILBERT AND HODGES, DAME-STREET.

1814.

55. *Higgins*

atomic theory in his *Comparative view of the phlogistic and antiphlogistic theories* (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." "Partington . . . 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" (Neville).

Second edition of Meyler's work on ventilation. His first lecture to the Royal Dublin Society was given as early as 1811.

Stokes served in various capacities on board the *Beagle*, including mate and assistant surveyor, 1831 to 1836, during which period Darwin served as naturalist. He ultimately became the commanding officer on the *Beagle* from 1841 to 1843, during which time the ship surveyed Timor and New Zealand.

Duveen, p. 294; Gartrell, 790; Neville, I, p. 640; Partington, III, 738; *Wheeler Gift Catalogue*, I, 722

HOOKE'S SUPPLEMENT TO THE *MICROGRAPHIA*

56. HOOKE, Robert

Lectures and collections. London: J. Martyn, 1678.

4to. [viii], 112 pp. With 5 folding engraved plates; an excellent copy, crisp and clean, in modern polished calf. $12,500.00

First edition of one of the very rare volumes of the author's lectures which Sir John Cutler initiated in 1664 for his benefit. Cutler founded a professorship of mechanics and, with the concurrence of the Council of the Royal Society, settled an annual stipend of fifty pounds to Hooke during his lifetime. Hooke, whose genius threw a gleam of light on every subject of physics which engaged his attention, gives here some remarkable supplements to his *Micrographia*.

The work contains a thorough discussion of his observations of the comets of 1664, 1665, and 1667, as well as Sir Christopher Wren's hypothesis and geometrical problems about those comets, and a discourse concerning the comet of 1677. Miscellaneous contributions from Boyle, Halley, Cassini, Gasendi, Hevelius, and others are included. In the second section is Hooke's discourse and description of a microscope, improved for discerning the nature and texture of bodies. Of interest are the two letters Leeuwenhoek communicated to the Royal Society concerning some late microscopical discoveries, including an account of the "little animals" he had found in pepperwater (protoza and bacteria). The Society asked Hooke to repeat these experiments and confirm Leeuwenhoek's observations on blood, milk, and phlegm, as well.

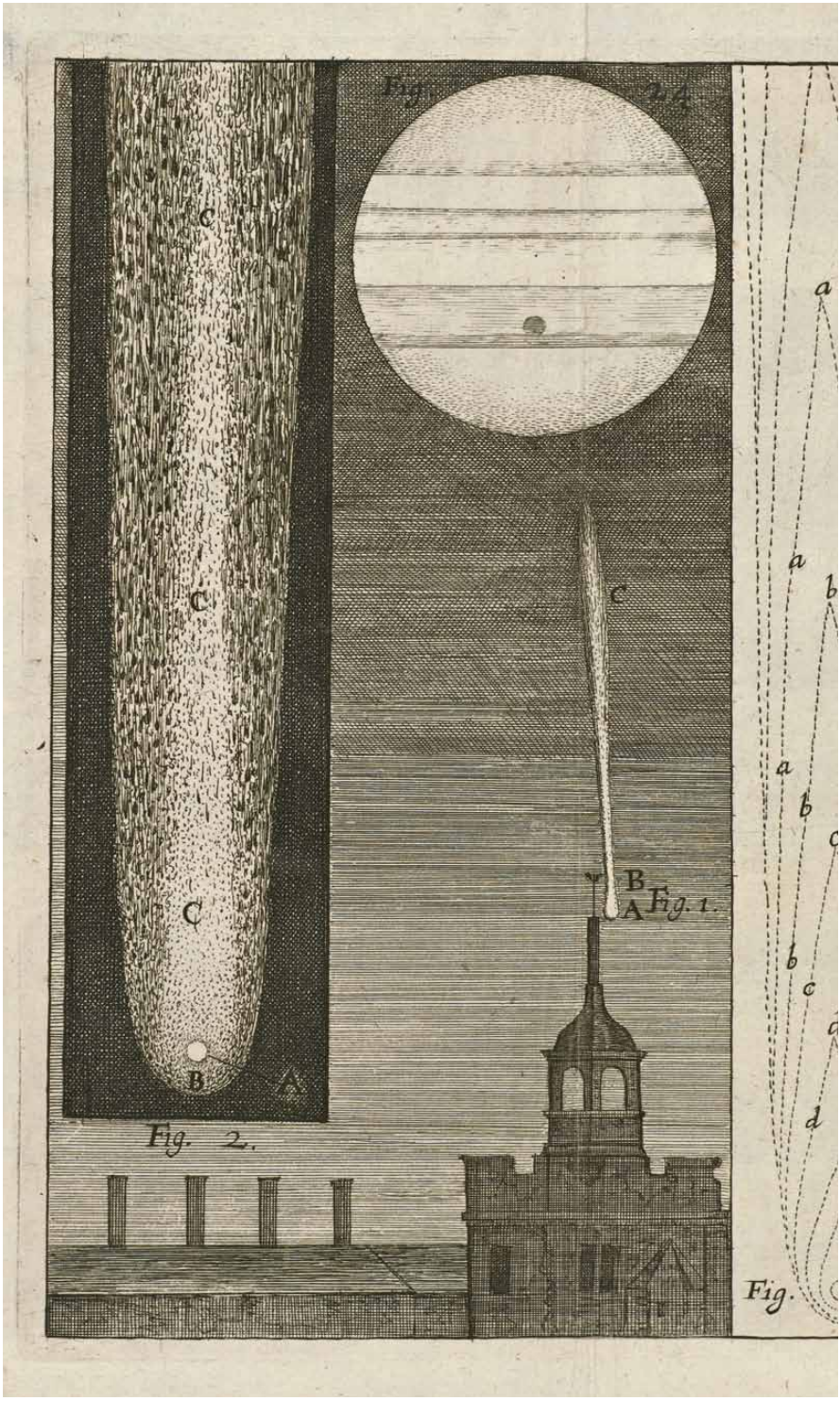


Fig. 2.
Fig. 1.
Fig.

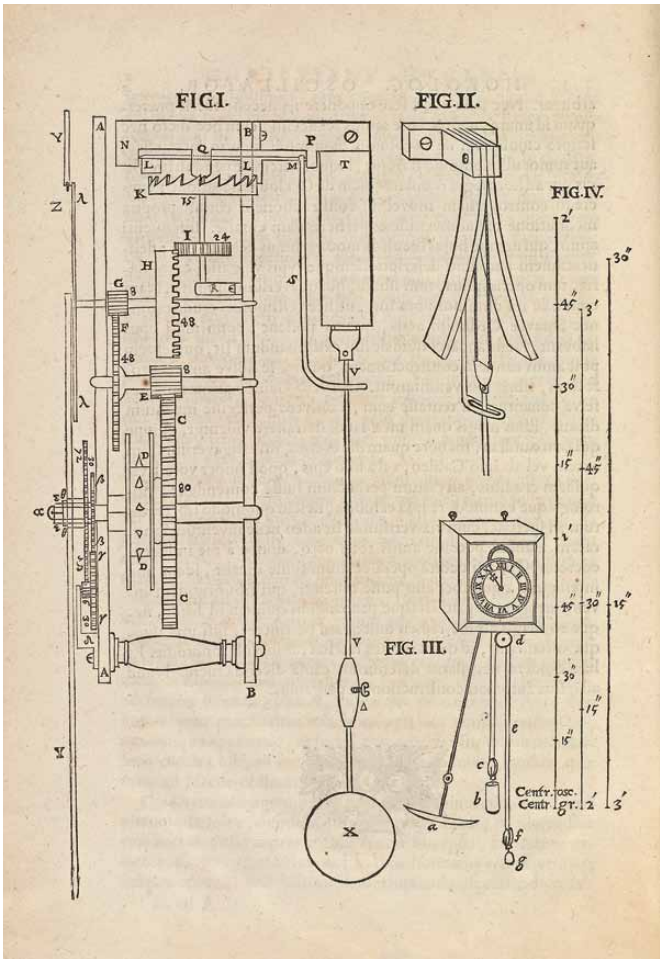
"Hooke's mind was so prolific that there was scarcely a discovery made in his time which he did not conceive himself entitled to claim . . . his power of forecasting discovery was extraordinary, and he was the greatest mechanic of his age. He professed to have made a 'century of inventions' " (DNB).

Keynes, 22; Norman, I, 1098; Wing, H2618

DEVELOPMENT OF THE PENDULUM CLOCK

57. HUYGENS, Christian

Horologium oscillatorium sive de motu pendulorum ad horologia aptato demonstrationes geometricae. Paris: F. Muguet, 1673.



57. *Huygens*

Folio. [xiv], 161, [1] pp. With the royal device on title, full-page woodcut of the pendulum clock, and numerous woodcut diagrams, fine ornamental initials, head- and tailpieces. Full calf in an antique style by K. Oliver, new endpapers; original fly-leaf with contemporary annotations, plus a few annotations throughout text. From the libraries of Julian Marshall and Robert Wheeler Willson, Harvard Professor of Astronomy from 1891 to 1919, with each of their bookplates, and the bookplate of the Harvard College Library with its small release stamp. An excellent copy. $35,000.00

First edition. "A work of the highest genius which has influenced every science through its mastery of the principles of dynamics. It is second in scientific importance perhaps only to Newton's *Principia*, which is in some respects based on it" (Singer). Indeed, Newton, in the *Principia*, acknowledged Huygens' treatment of the dynamics of circular motion.

This work contains a description of the pendulum clock that Huygens invented in 1656, probably the greatest advancement to physics. It was from Galileo that Huygens (1629–1695) learned of the isochronism of the pendulum. He went on to devise attachments at the pendulum's fulcrum that made it swing in the proper arc and then attached that to the works of a clock, using falling weights to transfer just enough energy to the pendulum to keep it from coming to a halt through friction and air resistance.

"It was the most original work of this kind since Galileo's *Discorsi*" (PMM).

Baillie, pp. 84–86; Dibner, 145; Horblit, 53; *Printing & the Mind of Man*, 154

58. HUYGENS, Christian

Opera reliqua. (with) *Opera posthuma*. Amsterdam: Janssonio-Waesbergios, 1728.

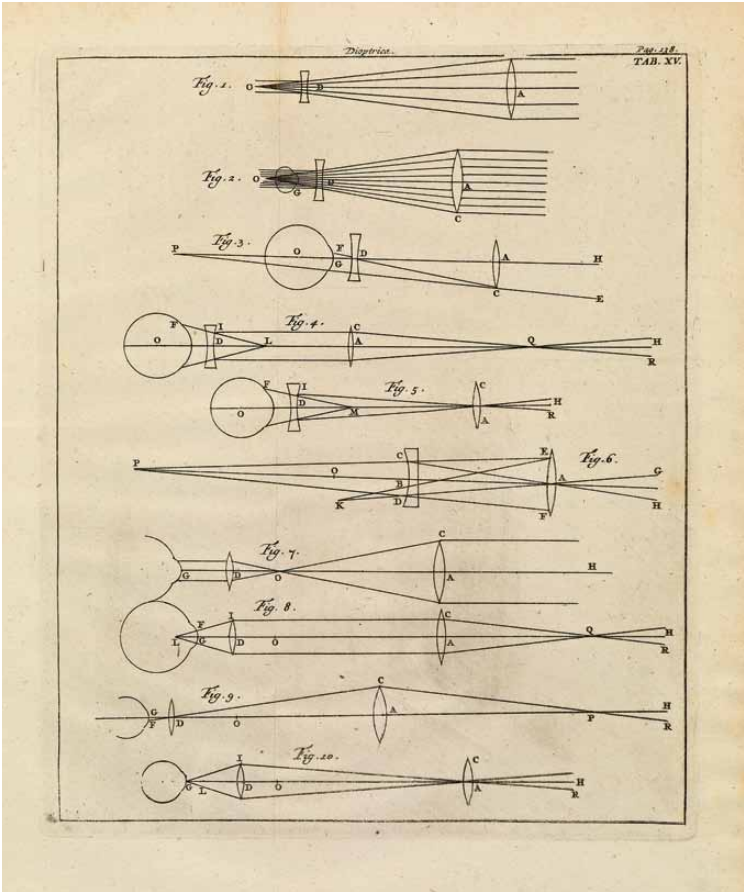
Two works in one (first work in 2 parts). 4to. 10, [24], 315, [1]; [xxii], 226; [ii], 184 pp. Titles in red and black. With 58 folding engraved plates. Contemporary calf; some occasional browning and offsetting of plates, otherwise a very nice wide-margined copy. $8500.00

First edition. Edited by Gravesande, this set represents one of the most comprehensive collections of works by the great Dutch scientist Huygens. The present volumes contain his works on gravity and accelerated motion, the laws of elastic bodies, and the undulatory theory of light, perhaps his most important achievement. Also included are his tracts on optics, instructions on

grinding lenses for telescopes, and a description of the Planetary Automate machine he constructed portraying the movements of the solar system. This machine, as well as a number of other innovations and discoveries, are all depicted in the finely engraved illustrations.

Huygens (1629–1695), Dutch astronomer and physicist, was one of the greatest scientists of his century. He successfully used the pendulum to regulate clocks, improved the telescope, and developed a wave theory of light, which was first recognized and credited by Young a full century later. Huygens' light theories were opposed to Newton's corpuscular theory of propagation, and remained unaccepted for a century until they were successfully used to explain optical interference. The combined ideas of Huygens and Newton have been applied to the quantum theory by physicists such as Planck, Einstein, and de Broglie.

Houzeau & Lancaster, I, pt. 1, 3428, 3429; Zeitlinger, I, 2058, 2061



58. *Huygens*

59. JAMES, Robert

A medicinal dictionary: including physic, surgery, anatomy, chemistry, and botany, in all their branches relative to medicine: together with a history of drugs. . . . London: Printed for T. Osborne, 1743–1745.

Three thick volumes. Royal Folio. With 63 fine copperplates (mostly folding with 2 plates to a leaf). Original boards, re-backed, covers rubbed and worn; interior with some of the edges frayed on a number of plates, many of the folds uneven, a couple of plates taped together, with some browning of text, otherwise, a good copy. $1500.00

First edition of "the largest, most exhaustive and most learned medical dictionary written in English prior to the scientific age of medicine which arose in the early nineteenth century" (G&M). Published in weekly installments from 1742 to 1745, James' dictionary also set the example for historical works such as the *Dictionary of the English Language* (London, 1755) by Samuel Johnson and the *Encyclopedie* of Diderot, which began its publication in 1751. This work was also translated into French by Diderot.

James (1703–1776), a successful physician, was known as the inventor of "fever powder," which became the most popular medicine of the day. He studied at Oxford, and received his M.D. from Cambridge by royal mandate in 1728. It can be assumed that Samuel Johnson, a close friend and pupil, aided James in his writing of the dictionary.

Blake, p. 233 (imperfect); Eimas, *Heirs of Hippocrates*, 879; Garrison & Morton, 6799; Wellcome, III, 343

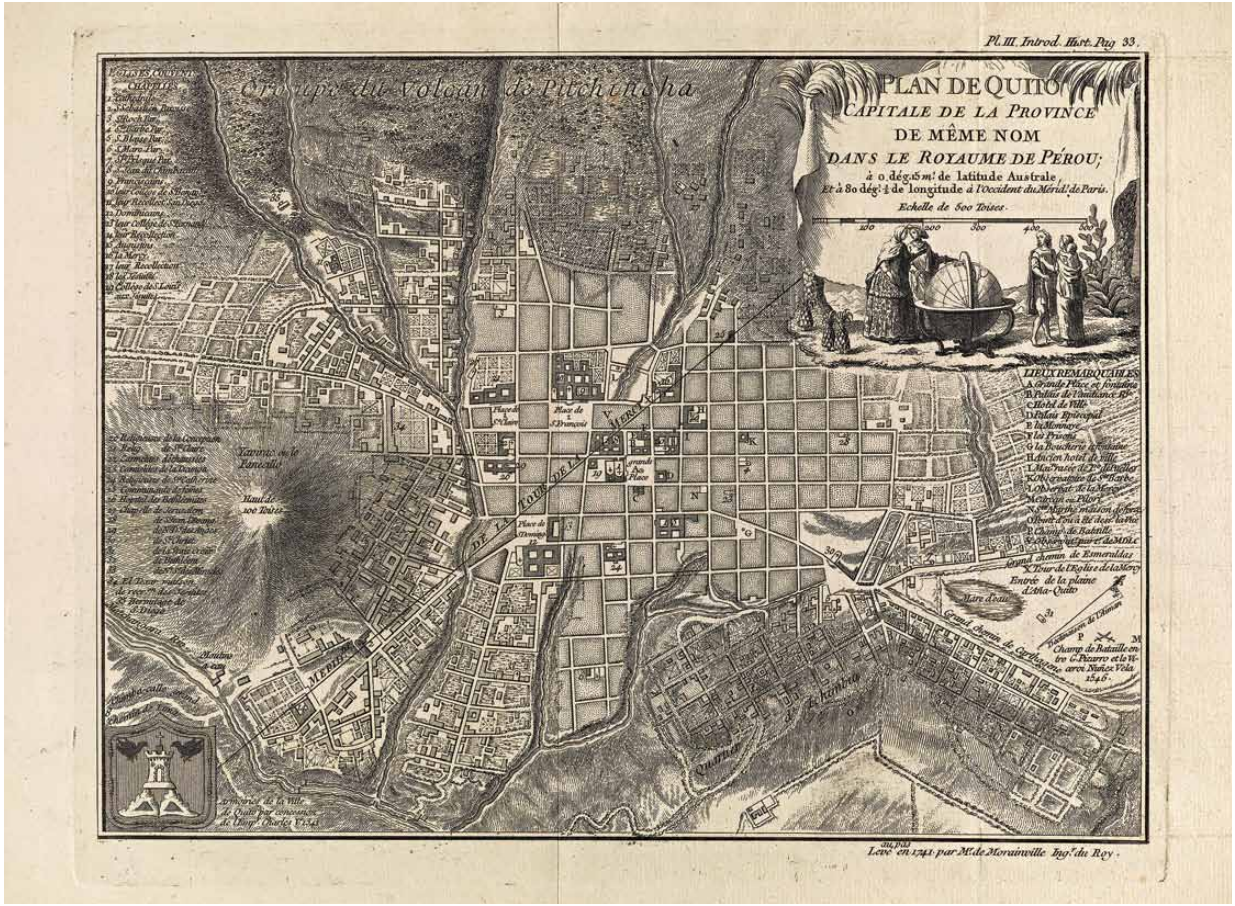
60. LA CONDAMINE, [Charles Marie de]

Journal du voyage fait par ordre du Roi, a l'équateur, servant d'introduction historique a la mesure des trois premiers degrés du méridien.

(offered with)

Mesure des trois premier degrés du méridien dans l'hémisphere Austral, tirée des observations de M.rs de l'Académie Royale des Sciences, envoyés par le Roi pour l'équateur. Paris: de l'Imprimerie Royale, 1751.

Two separate volumes. 4to. [ii], xxxvi, 280, xv, [1]; [xii], 266, x, viii pp. With 6 engraved plates (5 folding), including the map of Quito in the first work, and 3 folding plates in the second work. Engraved headpieces. Contemporary tree calf, spine gilt in compartments



60. *La Condamine*

with morocco labels, upper front cover of both books with mild stain; some minor marginal waterstain to a few leaves of the second volume, otherwise a clean and wide-margined set. $8500.00

First edition of the account of the scientific expedition to the equator sponsored by the Académie des Sciences. The French Academy sent out two expeditions in 1735, the purpose of which was to measure an arc of the meridian in order to settle a controversy over the shape of the earth. La Condamine, along with Bouger and Godin, traveled to Ecuador, while the second expedition consisting of Maupertuis, Clairaut, and Le Monnier went to Lapland to measure several degrees of meridian at the Arctic Circle.

La Condamine ultimately split from his group and traveled alone to Quito. Thereafter he journeyed down the Amazon, and thus became the first to undertake a scientific exploration of that part of South America. He returned to Paris, where he published this work, two years after Bouger published his own account of the results of the group's experiments.

The original controversy between the two sides regarding the shape of the earth (ablate ellipsoid according to Newton and Huygens, and prolate ellipsoid according to Descartes and the Cassinis) was quite polemical. Comparing the measurements taken during the expeditions of the French Academy ultimately verified Newton's theories.

Dictionary of Scientific Biography, XV, p. 270; Norman, I, 1250

THE FOUNDATION OF ANALYTIC MECHANICS
H. C. SCHUMACHER'S COPY

61. LAGRANGE, Joseph Louis

Méchanique analitique. Paris: la Veuve Desaint, 1788.

4to. xii, 512 pp. Contemporary polished calf, spine with morocco label and gilt floriated compartmental designs, covers with gilt borders, gilt dentelles, and marbled edges; a_3 with small stain in paper, and other than some occasional soiling and browning, interior clean. From the library of H. C. Schumacher with his small ownership inscription dated 1810 on the verso of half-title.

$18,000.00

First edition of the author's masterpiece which laid the foundation of modern mechanics. "Perhaps the most beautiful mathematical treatise in existence; called by Hamilton, 'a kind of scientific poem.' It contains the discovery of the general equations of motion, the first epochal contribution to theoretical dynamics after Newton's *Principia*, next to which it has been

ranked" (Evans). The book is divided into two parts, statics and dynamics, each of which addresses the subdivisions of solid bodies and fluids. Lagrange presents his discovery of the general equations of motions applicable to any system of bodies, having improved upon the calculus of variation set forth by the Bernoullis and Euler by substituting analytical treatment for their geometrical one.

Lagrange (1763–1813) was born in Turin and studied under Beccaria. He is noted for his contributions to mathematics, celestial mechanics, and astronomy. Ball considered him the foremost mathematician of his period.

Schumacher (1780–1850), who studied astronomy under the direction of his good friend Gauss, established an observatory in Altona in 1821. He also founded in 1823 the journal *Astronomische Nachrichten*, which is still published today.

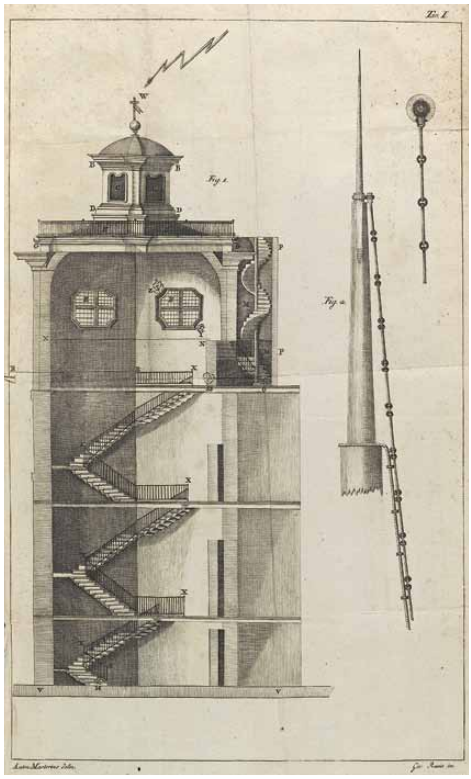
Ball, *A History of Mathematics*, pp. 411–422; Dibner, 112; *En Français dans le Texte*, 179; Evans, *Exhibition of First Editions of Epochal Achievements in the History of Science*, 10; Horblit, 61; Sparrow, *Milestones of Science*, 120 (plate 105)

62. LANDRIANI, Marsilio

Dell'utilità dei conduttori elettrici. Milan: Marelli, 1784.

8vo. xxxiv, 304 pp. Engraved title vignette, head-piece, initial, and 1 folding engraved plate. Original wrappers, top of front wrapper torn away; minor spotting on preliminary and endleaves, otherwise an excellent unsophisticated copy preserved in a folding clamshell box. $3000.00

First edition of the author's fascinating treatise on lightning rods. Landriani not only treats practical matters of construction and use, but also incorporates a section on scientific theory, differentiating between natural and artificial electricity. He provides a detailed description of Franklin's experiments, and includes a catalogue of all known lightning rods installed in Europe.



62. *Landriani*

Landriani (1746–1815), physicist and inventor, was one of a small group of eighteenth-century Italian scientists who received government funds to travel for the purpose of investigating scientific advances in other countries. A number of letters from scientists such as Saussure and Toaldo, among others, are published here for the first time. Along with Fontana, Landriani also developed the science of eudiometry, a method of verifying the healthiness of the air.

Gartrell, 301; Overmier & Senior, *The Bakken*, p. 78; Ronalds, p. 285; *Wheeler Gift Catalogue*, I, 523

63. LAPLACE, Pierre-Simon

Exposition du systeme du monde. Paris: Imprimerie du Cercle-Social, An IV [1796].

Two volumes. 8vo. 314, [4]; 312, [4] pp., including half-titles. Contemporary half-calf and marbled boards; generally browned due to paper stock, some signatures more than others. Book label of Fratelli Salimbeni and bookplate with initials CPC and motto, "nec adversa retorquent." $2500.00

First edition. A remarkable work which presents the author's explanation of the origin and formation of the solar planetary system. Laplace's celebrated nebular hypothesis as well as his discoveries on the rotation of the moon, its elliptic path, etc., are included.

The *Systeme* is divided into five books. The last book contains the author's brilliant history of astronomy, which was considered a masterpiece of French literature, and procured his admission to the French Academy.

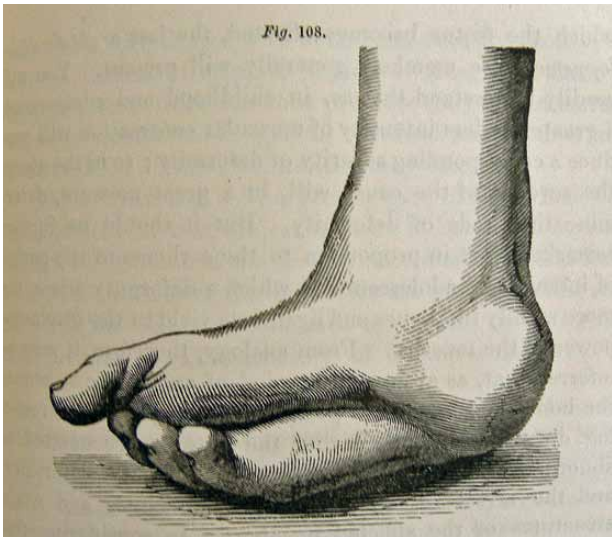
This work went into many editions; the first edition is now quite scarce.

Dictionary of Scientific Biography, XV, pp. 273–403; *Printing & the Mind of Man*, 252

64. LITTLE, W[illiam] J[ohn]

On the nature and treatment of the deformities of the human frame; being a course of lectures delivered at the Royal Orthopaedic Hospital in 1843. London: Longman, Brown, Green, and Longmans, 1853.

8vo. x, [ii], 412, [2] pp. Original blind-stamped cloth, rebacked with the original spine laid down; an excellent presentation copy inscribed to Bernard Edward Broadhurst from the author, with his armorial bookplate. $1800.00



64. *Little*

First edition of the author's outstanding treatise on deformities, their pathology and treatments. Among the numerous subjects discussed are deformities from wounds and diseases of joints, accidents, spasm, paralysis, rickets, curvatures of bones, congenital distortions, club foot and hand, malformations, monstrosities, and distortion of the spine. In addition, this work contains original descriptions of cerebral diplegia and pseudohypertrophic muscular dystrophy, named "Little's disease."

Little (1810–1894) studied medicine in London, was a member of the Royal College of Surgeons, and founded the first orthopaedic hospital in Britain, the Royal National Orthopaedic Hospital; he was also the first president of the British Orthopaedic Association. A deformity of his left leg due to polio necessitated the use of a brace and a determination to seek a correction of his disfigurement. A consultation with Dieffenbach and Stromeyer in Germany, and an operation, convinced him how successful their procedures and management of such deformities would be. Little is considered the founder of British orthopaedics, and, according to Keith (*Menders of the maimed*), "there can be no doubt that Little was the pioneer of orthopaedic surgery in England."

Bernard Edward Broadhurst was lecturer and surgeon to the orthopaedic department of St. George's Hospital in London. He published a number of books on orthopaedic subjects.

Ashwal, *Founders of Child Neurology*, pp. 298–307; Bick, *Source Book of Orthopaedics*, pp. 212, 477; Garrison, *History of Neurology*, p. 411; Garrison & Morton, 4329, 4735; Peltier, *Orthopaedics*, pp. 33–34


1. Monagnolo. 2. Terre del filosofo. 3. Highest Cone. 4. Lepra. 5. Finocchio. 6. Capra. 7. Cone of 1811. 8. Cima del asino. 9. Mussarra.
View of the Valle del Bove Etna.

66. *Lyell*

HEALTH OF SEAMEN

65. LOWNDES, Thomas

Brine-Salt improved. The method of making salt from brine, shall be as good or better than French Bay-Salt. In a letter to the Right Honourable the Lords Commissioners of the Admiralty. Dated 8 July, 1746. London: S. Austen, 1746.

4to. 38, [2] pages. With elaborate engraved chapter vignettes, decorated initials and endpieces. Original marbled boards, spine rebacked. A fine copy. $1800.00

First and only edition. English salt was, at this time, unquestionably inferior. In 1740 the Admiralty was buying French salt for provisioning the Navy, even when at war with France. Lowndes had spent many years and a great deal of money on improving the quality of English salt, which, though highly praised by the Royal College of Physicians, was not accepted by the Admiralty. He took the results of his considerable efforts to the House of Commons, who in turn petitioned His Majesty to instruct the Admiralty to accept the terms. This treatise contains Lowndes' method of making salt from brine, with several accounts and estimates showing the quantity of salt annually consumed in Great Britain and Ireland, as well as in American fisheries, and estimates for the Navy. "Salt so furnished by me (according to my printed process) will, tis not doubted, preserve beef and swine's flesh above four years, and fish as long as the nature of the different kinds of that commodity will permit."

Lowndes (1692–1748), founder of the Lowndes chair of astronomy and geometry at Cambridge, was for many years provost-marshal of South Carolina. He claimed to have taken a prominent part in inducing the British government to purchase Carolina as well as to regulate the paper currency of New England and other schemes.

OCLC locates 6 copies; ESTC, T100014; Goldsmith, Lib. Catalogue, 8214; Kress, 1.4817

66. LYELL, Charles

Principles of geology, being an attempt to explain the former changes of the earth's surface, by reference to causes now in operation. London: John Murray, 1830, 1832, 1833.

Three volumes. 8vo. xv, [i], 511, [1]; xii, 330, [2]; xxxi, [i], 398, 109, [1] pp., plus 3 pages publisher's advertisements. With all half-titles, appendix and glossary, 11 plates and maps (3 engraved

frontispieces, 2 hand-colored; 3 maps, 2 folding and 2 hand-colored), and 135 text illustrations. Full calf. A handsome set in fine condition. $10,000.00

First edition of Lyell's classic of modern geology, in which he makes a comprehensive presentation of the uniformitarian theory of change. The work contains Lyell's investigation into the effects of geologic conditions on species variation, from which he concludes that the emergence of new species is a steady process. This hypothesis, so important in the development of the Darwinian theory of evolution, replaced the cataclysmic theories of geologic change held by Cuvier and others, and led to one of the most revolutionary scientific ideas of the nineteenth century—that the age of the earth was enormously greater than had ever been supposed.

Lyell (1797–1875), the outstanding English geologist, was an ardent opponent of Cuvier and the catastrophists. His *Principles* established geology as a science.

Dibner, 96; Horblit, 70; Sparrow, *Milestones of Science*, 140

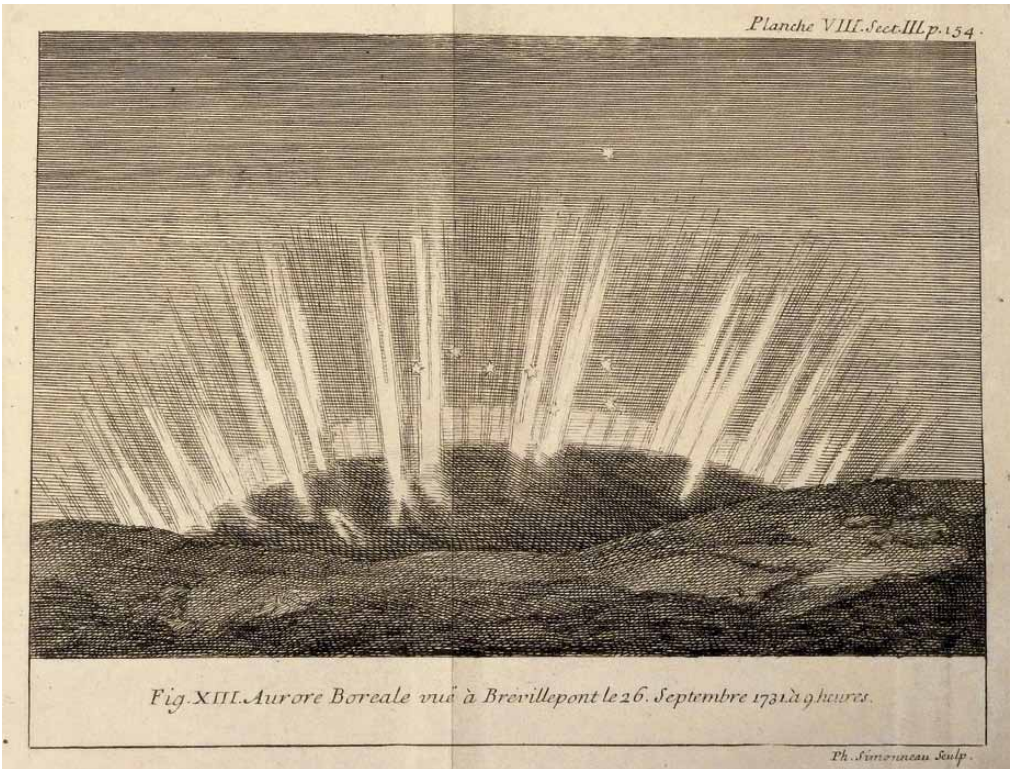
67. MAIRAN, [Jean-Jacques d'Ortous] de

Traité physique et historique de L'Aurore Boréale. Paris: de l'Imprimerie Royale, 1733.

4to. [viii], 281 pp. With 15 folding engraved plates, woodcut chapter vignette, head- and tailpieces. Contemporary calf, raised bands on gilt spine; marbled paste-downs, some minor browning, but overall a very nice copy. $1500.00

First edition of this classic work on the aurora borealis, the northern lights, the first comprehensive treatise devoted entirely to the subject. Mairan attributed the phenomenon to an extension of the sun's atmosphere, which at times enveloped the earth and blended with our own atmosphere. "Inquiry into the history and physics of the aurora borealis; the chapter on the relation between the aurora and the magnetic declination is of special interest" (*Wheeler Gift Catalogue*, I, 382, citing the second edition). There are references to other scientists who both observed the lights and made an attempt to explain them, including Newton, Cassini, Euler, and Descartes.

Mairan (1678–1771) attended college at Toulouse, afterwards moving to Paris to study physics and math under the direction of Malebranche, among others. In 1718, he was made a member of the Royal Academy of Sciences as Associate in the Department of Geometry. In 1740 he became Associate Secretary of the Academy, and was elected to the Académie Française in



67. *Mairan*

1743. Soon after, he was appointed as associate editor of the *Journal des Savans*. He was also a member of academies in London, Edinburgh, Uppsala, and St. Petersburg. "Mairan was concerned with a wide variety of subjects, including heat, light, sound, motion, the shape of the earth and the aurora. He wanted to find physical mechanisms to explain phenomena. His theories were generally ingenious descriptions, which were sometimes mathematical and sometimes based on experiment" (DSB).

Mairan incorporated many of Newton's ideas, which had just begun to circulate on the Continent, into his experimentation and publications, even though he is identified as a Cartesian. His work with the sun's heating effect at various elevations led to the invention by Pierre Bouger of the photometer.

J. Morton Briggs, "Aurora and Enlightenment," in *Isis* 58 (1967), pp. 491–503; *Dictionary of Scientific Biography*, IX, pp. 33–34; Zeitlinger, II, 11307

VALUABLE MATHEMATICS SAMMELBAND

68. [MATHEMATICS]

Six papers bound together in contemporary half-calf and marbled boards. The condition is excellent. The name G. Thieme (most likely the noted publisher of scientific journals) is handwritten on the first blank. $10,500.00

1. DEDEKIND, Richard
Was sind und was sollen die Zahlen. Braunschweig: Vieweg and Son, 1888.
8vo. xviii, 58 pp., including half-title.
First edition, rare, of Dedekind's important work on set theory. His epochal 1872 publication, *Stetigkeit und irrationale zahlen*, gave the first rigorous definition of the system of real numbers, laying the foundation for much of modern-day real analysis and point-set topology. This, his follow-up work, elaborates on his attempts "to derive a purely logical foundation for arithmetic, and devised a number of axioms that formally and exactly represented the logical concept of whole numbers" (DSB).

Dedekind (1831–1916), a German mathematician who was a friend and colleague of Georg Cantor, claimed all of mathematics to be a branch of logic. In this work (*The nature and meaning of numbers*), he "presents a theory of the integers using set-theoretic concepts and outlines a possible approach to placing the rationals on a logistically well-founded axiomatic basis" (Parkinson, p. 415).

2. FISCHER, Otto
Konforme abbildung sphärischer dreiecke auf einander mittelst algebraischer funktionen. Leipzig: von Metzger & Wittig, 1885.
8vo. 76 pp. Complete with half-title and 2 large folding plates on heavier stock.
First edition of the author's thesis on conforming images of spherical triangles by means of algebraic functions.

Fischer (1861–1916) was a German physiologist and mathematician, earning a doctorate degree from the Franke Foundation in Halle an der Saale in 1885 under Felix Klein. His main interest was the mechanics of the muscles and joints of the human musculoskeletal system. He was a professor at the University of Leipzig, where he taught both medicine and mathematics.

3. PHRAGMÉN, [Lars] E[dvard]
Über die Berechnung der einzelnen Glieder der Riemann'schen primzahlformel.
Stockholm: Kongliga vetenskaps-Akademiens Förhandlingar, 1891.
8vo. pp. 721–744.

First edition of this famous work on the calculation of the individual members of the Riemann prime number formula.

The son of mathematics teachers, Phragmén (1863–1937) also taught mathematics before obtaining his degree at the University of Uppsala. He was an editor at the *Acta Mathematica*, where he corresponded with Poincaré to correct a book in which he found a number of errors. He was also president of the Swedish Society of Actuaries. He is best known, however, for the Phragmén-Lindelöf principle, an extension of the maximum modulus principle of complex analysis to unbounded domains.

4. NEUMANN, Carl

"Ueber den Satz der virtuellen verrückungen"; "Ueber das princip der virtuellen oder facultativen verrückungen." [Leipzig: von Breitkopf und Härtel, 1869].

Two separate papers. 8vo. pp. [257]–280; [53]–64. In *Konigl. Sachs. Gesellschaft der Wissenchaften*. With annotations on the first couple of pages. At the end of the second paper, a thank you by C. F. Gauss.

Two works on virtual displacements. Neumann created the second-type boundary, which, when imposed on an ordinary or partial differential equation, specifies the value that the derivative of a solution is to take on the boundary of the domain.

Neumann (1832–1925) was professor of mathematics at both the Universities of Tübingen and Leipzig. His main interests were in applied mathematics, and he wrote on mathematical physics, potential, and electrodynamics. He was also editor of *Mathematische Annalen*.

5. LERCH, M[atyáš]

Contributions à la théorie des fonctions; Addition au mémorie présenté dans la séance du 15 Octobre [Prague, 1886].

Two separate papers. 8vo. pp. 571–582; pp. 423–432. With a 4-page letter containing mathematical symbols handwritten by Lerch to Karl Weierstrass (1815–1897) tipped in between the two papers. The letter is signed by Lerch and dated October, 1890. A small section of page 582 is crossed out in the same hand.

First printings of Lerch's contributions to general mathematical functions. These papers are the first in a series dealing with the general theory of functions, the most significant of which constitutes construction of continuous functions having no derivative. Lerch (1860–1922) showed exceptional abilities while still studying at the Czech Technical University at Prague. Before 1896 he published more than 110 scientific papers in domestic as well as prominent foreign journals. Much of his work concerned mathematical analysis, including theories of infinite series, the gamma function, elliptic functions, and the integral calculus.

Weierstrass is generally referred to as the father of modern analysis. He made significant contributions and advancements in the field of calculus of variations. Numerous theories and functions bear his name.

6. MÉRAY, Hugues Ch[arles Robert]
Théorie des radicaux fondée exclusivement sur les propriétés générales des séries entières. Dijon: Darantiere, [1885].
8vo. 75, [1] pp. Title page in manuscript signed by Méray and dated Dijon, 1891. With annotations throughout probably by the author for another edition.
First edition of Méray's famous work on radical theory based exclusively on the general properties of power series.

Méray (1835–1911) is remembered for having anticipated, clearly and with only minor differences of style, Cantor's theory of irrational numbers, one of the main steps in the arithmetization of analysis. Of interest, an earlier "arithmetical" theory of irrational numbers was propounded by Weierstrass in his lectures when he introduced the real numbers as sums of sequences of rational numbers. Dedekind also seems to have developed his theory of irrationals at an earlier date.

No copies of Phragmén, Lerch, or Méray are located by OCLC

FAMOUS FOR INCLUDING THE SIXTH BOOK

69. MATTIOLI, P[ietro] Andrea

Il dioscoride dell'eccellente dottor medico M.P. Andrea Matthioli de Siena; co i suoi discorsi, da esso la seconda volta illustrata, & diligentemente ampliati: Con l'aggiunta del sesto libro de i rimedi di tutti i ueleni da lui nuovamente tradotto, & con dottisimi discorsi per tutto commentato.

(bound with)

Il sesto libro di Pedacio Dioscoride Anazarbeo, in cui si tratta de i rimedi de i uleni mortiferi, tanto preservativi, quanto curativi, tradotto, & commentato in lingua volgare Italiana de M. Pietro Andrea Matthiolo Sanese Medico. Venice: Vincenzo Valgrisi, alla bottega d'Erasmo, 1548.

Two books in one. 4to. [lxiv], 756; 128, [8] pp. Each work with Valgrisi's allegorical serpent woodcut on the title, woodcut historiated initials. With the occasional marginalia. Contemporary stiff vellum, early rebacking with hand-printed title. An excellent copy with the exception of a small stain that runs through a

few leaves toward the end of the first book, and some scattered browning to the last book, with a couple of edges repaired and fore-edge of last leaf strengthened. $7500.00

First Valgrisi printing and second overall edition of this exceedingly rare commentary on Dioscorides' materia medica, famous for including the sixth book. It is also noted as the first unillustrated edition printed in quarto following Mattioli's first published translation in folio, 1544, by Niccolo Bascarini. Valgrisi includes a note to the reader defending this printing with additions and changes in the text, and sets the title to give Mattioli's name prominence over that of Dioscorides.

While conducting his medical career, Mattioli (1501–1577) began translating the works of Dioscorides, adding his commentaries and opinions, plus his observations on the references to plants from other writers, as well as the increasing number of newly discovered plants and their medicinal uses and virtues he treats in Book Six. Mattioli's editions of Dioscorides proliferated and the original text of the author became increasingly hard to find, especially because the illustrated works were more popular. The first illustrated edition appeared in Latin in 1554.

Of particular interest is Edward Green's notes in his *Landmarks of Botanical History*, in which he cites a fruitless search for a copy of the earliest editions: "I had expected it would be easy to procure as a loan from some of the older American libraries . . . he searched, wrote letters of inquiry, and the book was given up as not to be seen on this side of the Atlantic" (pp. 510–511).

BMC, *Natural History*, reprint edition, III, p. 1268 (lacking); Durling, 1162; Mortimer, 294 (noted not seen); not in Pritzel or Nissen

70. MAXWELL, James Clerk

A treatise on electricity and magnetism. Oxford: Clarendon Press, 1873.

Two volumes. 8vo. xxix, [iii], 2 (errata), 425, [3]; xxiii, [i], 2 (errata), 444, [2] pp. Complete with both half-titles and all blanks. With 20 plates and 32 pages publisher's advertisements. Original cloth, skillfully and beautifully refurbished as new.

$14,500.00

First edition of this classic work on the electromagnetic theory of light by Maxwell (1831–1879), probably the greatest theoretical physicist of the nineteenth century. He here demonstrates that electromagnetism travels through space in transverse waves similar to those of light and having the same velocity, advancing the hypothesis that light and electricity are the same

in their ultimate source. "A generation later Einstein's work on relativity was founded directly upon Maxwell's celebrated contribution to electromagnetic theory; it was this that led him to equate Faraday with Galileo and Maxwell with Newton" (PMM).

Norman characterizes this copy as a second issue of the first edition, in that it contains the errata.

Dibner, *Ten Founding Fathers of the Electrical Sciences*, pp. 45–46; Horblit, 72; Norman, II, 1466; *Printing & the Mind of Man*, 355

DISCOVERING THE ACTUAL LENGTH OF A METER— A UNIQUE COPY

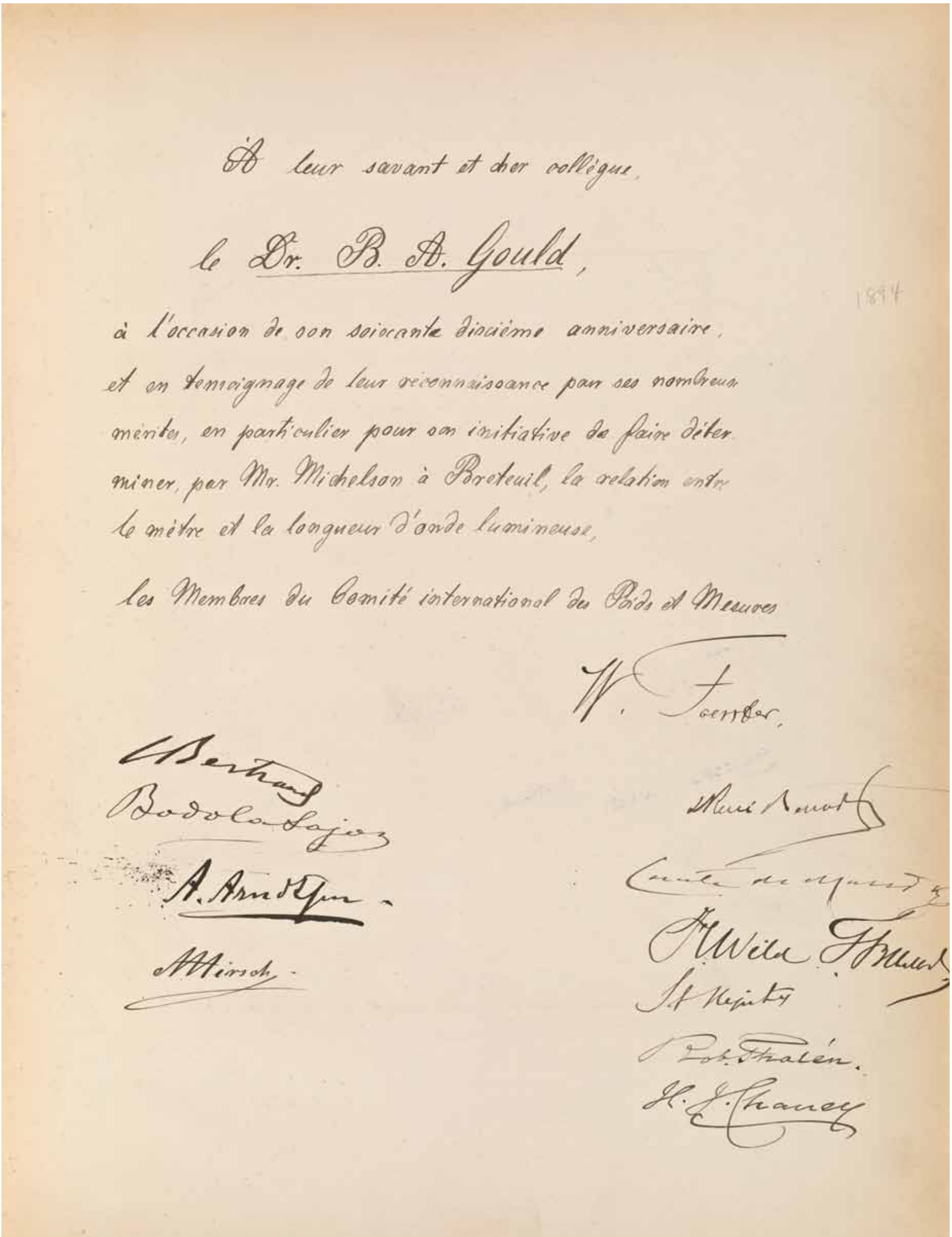
71. MICHELSON, Albert A.

"Détermination expérimentale de la valeur du mètre en longueurs d'ondes lumineuses." Offprint from *Travaux et mémoires du Bureau International des Poids et Mesures*, Vol. XI. Paris: Gauthier-Villars et Fils, 1894.

4to. 237, [2] pp. With 2 full-page engravings and numerous charts in the text. Half-morocco and marbled boards, rebacked with the original backstrip laid down, gilt spine decorations; interior clean, a.e.g. A unique copy inscribed to astronomer Benjamin Apthorp Gould from each member of the Comité Internationale du Poids et Measures, with a photograph of the entire committee tipped in. $1500.00

First separate edition of this scarce work by renowned scientist Albert Michelson, the first American Nobel Prize winner for physics. The work describes the length of the international meter bar, which Michelson originally measured in terms of wavelengths of cadmium light. Two years earlier, Michelson found that the red spectral line of natural cadmium was exceptionally coherent. He then developed an interferometer to determine the length of the International Prototype Meter. His measurements gave the meter a value of 1,553,164.13 times the wavelength of cadmium red in air, at 760 mm of atmospheric pressure at 15° C.

This copy is inscribed to the noted American astronomer Benjamin Apthorp Gould (1824–1896), who founded the Argentine National Observatory. It is signed by all members of the International Committee for Weights and Measures for Gould's seventieth birthday, with an original photograph of the committee tipped in. The committee was formed on May 20, 1875, when the Treaty of the Meter was signed by 17 countries. Gould received the



A leur savant et cher collègue,

le Dr. B. A. Gould,

à l'occasion de son soixante dixième anniversaire,

et en témoignage de leur reconnaissance pour ses nombreux mérites, en particulier pour son initiative de faire déterminer, par Mr. Michelson à Breteuil, la relation entre le mètre et la longueur d'onde lumineuse,

les Membres du Comité international des Poids et Mesures

W. Foerster.

J. Bertrand

Bodola Lajos

A. Arndtsen.

A. Hirsch.

H. Wild

St. Hepites

Rob. Thalén.

H. J. Chaney

1894

71. *Michelson*

Gold Medal of the Royal Astronomical Society in 1883 for his publication *Uranometria Argentina* (1879). The publication assigned Gould designations to all bright stars within 100 degrees of the south celestial pole in a manner similar to what Flamsteed had earlier done for the Northern Hemisphere.

Born in Prussia to a Jewish family, Michelson moved to America at the age of two. He joined the U.S. Naval Academy in 1869, with a focus in optics, heat, and climatology. In 1907, Michelson was recognized for his work on measuring the speed of light, and for the Michelson-Morley experiment, which attempted to determine the velocity of matter, the results of which were used by Einstein to develop his theory of special relativity. As well as winning the Nobel Prize, Michelson was also awarded the Copley Medal, the Henry Draper Medal, and the Gold Medal of the Royal Astronomical Society. It is interesting to note that a crater in the moon is named after him.

THE MOST IMPORTANT RENAISSANCE BOOK ON MECHANICS

72. MONTE, Guido Ubaldo, Marchese del

Mechanicorum liber. Pisauri [Pesaro]: Hier. Concordiam, 1577.

Folio. [viii], 131, [1] pp. Complete with all blanks present, title woodcut depicting a fulcrum positioned to move the earth, numerous woodcut illustrations and text diagrams, and with the register on the last colophon leaf. Contemporary calf, rebacked; an excellent copy. $18,500.00

First edition of the most important sixteenth-century work on mechanics, and, according to contemporaries, the most significant on statics since Archimedes. Monte wrote a number of mathematical books that he saw as pertinent to mechanics, but his *Mechanicorum* "provided the first truly systematic attempt to establish mechanics on a rigorously mathematical basis, affirming that mechanics and statics are entirely separate sciences, therefore, no unified science of mechanics was possible." Monte's *Mechanicorum* "paved the way for Galileo's synthesis of all the traditions that had influenced mechanics in the sixteenth century" (Drake & Drabkin). In this treatise, Monte systematizes mechanical knowledge by laying a foundation of general principles and showing how those principles give rise to more complicated mechanical demonstrations.

Monte (1545–1607) was a prominent figure in the renaissance of mathematical sciences. He studied mathematics under Frederico Commandino and later became Bernardino Baldi's teacher. "He was Galileo's patron and friend for twenty years and was possibly the greatest single influence on the mechanics of Galileo. In addition to giving Galileo advice on statics, Monte discussed projectile motion with him, and both scientists reportedly con-

ducted experiments together on the trajectories of cannonballs" (DSB). The work remained unparalleled until Galileo's treatise on mechanics became available and then enjoyed a certain fame beside Galileo's work. According to Drake and Drabkin, "Guido's book was greatly admired and served as a text for modern mechanics throughout the seventeenth and eighteenth centuries, influencing mechanical thinkers."

See *Isis*, Vol. 91, No. 2 (June 2000), Henninger-Voss, "Working Machines and Noble Mechanics: Guidobaldo del Monte and the Translation of Knowledge," pp. 233–259; *Dictionary of Scientific Biography*, IX, pp. 487–489; Drake & Drabkin, *Mechanics in Sixteenth-Century Italy,* pp. 44–48*;* Riccardi, II, 178

COLLECTION OF RARE OFFPRINTS FROM NOTABLE ZOOLOGIST

73. MONTGOMERY, T[homas] H[arrison], Jr.

Collected Papers, 1901–11. [n.p.], [n.d.].

Thirteen of Montgomery's original offprints bound together in black buckram. Ex-library (Scripps Institution for Biological Research). $ 5500.00

A compendium of Montgomery's papers on cytology and zoology. Montgomery (1873–1912) was a distinguished professor and chairman of the Department of Zoology at the University of Pennsylvania. Although he only lived to age thirty-nine, he was a prolific researcher and produced more than eighty papers between 1894 and his death in 1912. His work focused on cytology, morphology, and taxonomy, though he also made contributions to the fields of phylogeny, animal distribution, and ecology.

DSB describes his conclusions from the celebrated work *A study of the chromosomes of the germ cells of metazoa* (included in this collection) as "contain[ing] the essentials of the chromosomal basis of biparental inheritance . . . announced just prior to the rediscovery of Mendel's laws of segregation and recombination. Despite what seems in retrospect an unimaginative and narrow interpretation, it appears undeniable that the speed with which Sutton, Wilson, and others subsequently established the correlation with the rediscovered laws of inheritance was due in large measure to Montgomery's masterly analysis—not the least aspect of which was its clarifying terminology."

The papers herein contain other considerable contributions. In addition to Montgomery's work which was basic to the theory of sex determination, other papers "brought order to the rather chaotic views of the nucleolus by clearly distinguishing 'chromatin nucleoli' (among which were the heterochromosomes) from the plasmosomes, or true nucleoli. Noteworthy in his

1911 paper was Montgomery's confirmation of observations on fixed material by examining cells teased out in a physiological fluid. This degree of sophistication was not attained by other cytologists for nearly two decades" (DSB).

Papers include:

"A study of the chromosomes of the germ cells of metazoa." Offprint from the *American Philosophical Society*, January 1901. 4to. pp. 154–236. With 4 plates. Original printed front wrapper signed with "author's compliments."

"Peculiarities of the terrestrial larva of the urodelous batrachian, plethodon cinereus green." Offprint from the *Proceedings of the Academy of Natural Sciences of Philadelphia*, August 1901. 8vo. pp. 503–508. With 1 plate. Original printed front wrapper signed with "author's compliments."

"Studies on the habits of spiders, particularly those of the mating period." Offprint from the *Proceedings of the Academy of Natural Sciences of Philadelphia*, January 1903. 8vo. pp. 59–149. With 2 plates. Original printed front wrapper.

"On the morphology of the rotatorian family floscullariidæ." Offprint from the *Proceedings of the Academy of Natural Sciences of Philadelphia*, May 1903. 8vo. pp. 363–395. With 4 plates (3 folding). Original printed front wrapper.

"Supplementary notes on spiders of the genera lycosa, pardosa, pirata and dolomedes from the Northeastern United States." Offprint from the *Proceedings of the Academy of Natural Sciences of Philadelphia*, October 1903. 8vo. pp. 645–655. With 1 plate. Original printed front wrapper.

"On floscularia conklini, nov. spec., with a key for the identification of the known species of the genus." Offprint from the *Biological Bulletin*, September 1903. 8vo. pp. 233–238. Sewn as issued.

"The main facts in regard to the cellular basis of heredity." Offprint from *Proceedings of the American Philosophical Society*, read January 1904. 8vo. pp. 5–14. Sewn as issued.

"Descriptions of North American araneæ of the families lycosidæ and pisauridæ." Offprint from the *Proceedings of the Academy of Natural Sciences of Philadelphia*, March 1904. 8vo. pp. 261–323. With 3 plates. Original printed front wrapper.

"Chromosomes in the spermatogenesis of the hemiptera heteroptera." Offprint from the *Transactions of the American Philosophical Society*, 1906. 4to. pp. 97–173. With 5 plates. Original printed front wrapper.

"The development of theridium, an aranead, up to the stage of reversion." Offprint from the *Journal of Morphology*, July 1909. 8vo. pp. 297–352. With 8 plates. Original printed front wrapper (pp. 350–352 and 8 plates misbound).

"Differentiation of the human cells of sertoli." Offprint from the *Biological Bulletin*, November 1911. 8vo. pp. 367–388. With 5 plates.

"Are particular chromosomes sex determinants?" Offprint from the *Biological Bulletin*. June 1910. 8vo. 17 pp.

"On the dimegalous sperm and chromosomal variation of euschistus, with reference to chromosomal continuity." Offprint from *Archiv für Zellforschung*. Leipzig: Wilhelm Engelmann, 1910. 8vo. [i], pp. 120–145. With 1 text figure and 2 plates. Original printed front wrapper (2 plates misbound).

Dictionary of American Biography, XII, pp. 99–100; *Dictionary of Scientific Biography*, IX, pp. 495–497; Hughes, *A History of Cytology*, p. 84

THE NATURAL HISTORY OF WOMEN

74. MOREAU (DE LA SARTHE), Jacq[ues Louis]

Histoire naturelle de la femme, suivie d'un traité d'hygiène appliqué à son régime physique et morale aux différentes époques de la vie. Paris: L. Duprat, 1803.

Two volumes bound in three. 8vo. [vi], 358; [ii], 359-744; [ii], 460 pp. Volumes 1 and 2 continuous pagination, Volumes 2 and 3 with index and errata. With frontispiece and 11 engraved plates

74. *Moreau*

(7 folding) by Robert De Launay and J. Morin (though many after Moreau). Contemporary marbled calf, gilt ornamental spines, red and green leather labels with gilt lettering, marbled endpapers; lightly browned on a few leaves, some marginal paper flaws, but generally an excellent set from the library of Mr. A. Meurant à Frameries, with his bookplate, and contemporary signature of L. Jallot, D.M., in each volume. $2500.00

First edition of this fascinating study of the natural history of women, in which the author discusses and depicts their physical and moral mode at various times of their life. This extensive treatise deals with attitudes to gender, sexuality, femininity, and morality. Moreau explores the biological intersections of the male and female, their hygiene, dress, deportment, and bodily ornamentation as well as temperaments and beauty. In addition, there is a chapter on comparative anatomy of various races and nations. Of special interest is Moreau's description of the anatomy of expressions, which in great measure anticipated Bell's conclusions.

Moreau (1771–1826), a military surgeon, left the service, having lost the use of his right hand. He later became a librarian and a professor of the history of medicine. Moreau was a distinguished doctor-philosopher who wrote many works on medical subjects such as mental diseases and classifications of monsters, as well as collaborated with Vicq-d'Azyr and Lavater.

We could locate only one copy in America (NYPL); Wellcome, IV, p. 175

75. MOUTON, Claude

Essay d'odontotechnie ou dissertation sur les dents artificielles. Où l'on démontre que leur usage n'est ni moins commode, nimoins étendu, que celui des dents natyrelles. Paris: Antoine Boudet, 1746.

8vo. xi, [i], 162, [4] pp. Complete with approbation and privilege du Roi; table of chapters at the end.

(bound with)

BUNON, Robert

Essay sur les maladies des dents, ou l'on propose les moyens de leur procurer une bonne confirmation dès la plus tendre enface, & d'en assurer la conservation tout le cours de la vie. Avec une letter où l'on discute quelques opinions particulieres de l'auteur de l'orthopedie. Paris: Antoine Boudet, 1743.

8vo. xii, 237, [3] pp. Complete with errata, approbation, and privilege du Roi.

Two works bound together in contemporary calf-backed marbled boards. Engraved printer's device on title, woodcut headpieces. Extremely good copy with just the occasional light browning.

$12,500.00

First editions of both volumes, considered the most important dentistry works following Fauchard.

These books are extremely rare and valuable.

I: "The first specialized book on dental prosthetics" (G&M). Mouton (d. 1786) was the first to describe mechanical dentistry, only one of several innovations in this work. For badly decayed teeth he here prescribes gold crowns and a post to be retained in the root canal. And in a completely original and innovative manner, in order to have a more aesthetic appearance, he recommends white enameling over the gold crowns. He also invented a method of applying partial dentures or artificial teeth by fixing them to the natural teeth with springs or clasps. Of the numerous contributions made by Mouton, one of particular interest was his discovery of a remedy against toothaches by means of moving and partially raising the tooth (subluxation). Mouton was well known for his many successful transplantations of teeth.

II: Disappointed with Fauchard's work, Bunon was the first to perform specialized odontological research as well as to address such issues as the development and care of children's teeth, and dental hypoplasia (caused by childhood diseases). For the prevention of tooth decay, he writes that after caries, dental tartar is the most potent enemy to the vitality of the teeth. In addition, he includes the first dental pharmacopeia. Of special interest was Bunon's proposal to substitute the word *legs* for *dental roots*.

Bunon (1702–1748) was an ardent champion of conservative dentistry and prophylaxis and succeeded in converting many medical men to his views. "Anyone who takes the trouble of reading Bunon's works attentively cannot help admiring his depth of insight, his spirit of observation, his exquisite clinical sense, and his ingenuity" (Guerini, *A History of Dentistry*, p. 342).

Mouton: Crowley, *Dental Bibliography*, 774; Garrison & Morton, 3672.2; Guerini, 303, 309; Strömgren, *Index of Dental and Adjacent Topics Before 1800*, p. 136; Taylor, *History of Dentistry*, p. 58; Weinberger, *An Introduction to the History of Dentistry*, 314, 405

Bunon: Crowley, *Dental Bibliography*, 770; Garrison & Morton, 3672.1; Guerini, 301, 337; Strömgren, *Index of Dental and Adjacent Topics Before 1800*, p. 46; Taylor, *History of Dentistry*, pp. 61, 313, 345

THE FIRST CONTINENTAL EDITION OF NEWTON'S *PRINCIPIA*

76. NEWTON, Sir Isaac

Philosophiae naturalis principia mathematica . . . editio ultima auctior et emendator. Amsterdam: Sumptibus Societatis, 1714.

4to. [xxviii], 484, [8] pp. With the folding engraved plate of cometary orbit facing p. 465 and numerous woodcut diagrams in the text. Title printed in red and black with an engraved device. Contemporary vellum over boards; a few wormholes in the spine, preliminary and endleaves, otherwise a very nice copy.

$16,000.00

First Amsterdam edition of Newton's epoch-making work, taken from the second printed edition (1713). It is in this edition of the *Principia* that Newton's famous additions to the theory of the motion of the moon and the planets appear, as well as many other important additions and corrections.

This rare printing includes Newton's prefaces of May 8, 1686, and March 28, 1713, as well as the preface of the editor, Roger Cotes. This entire edition was reset in Amsterdam and the text corrected according to the corrigenda. The woodcuts and plates were also re-engraved (Gray, p. 10).

Babson, *Supplement*, p. 4; Wallis, 11

77. [NEWTON, Isaac]

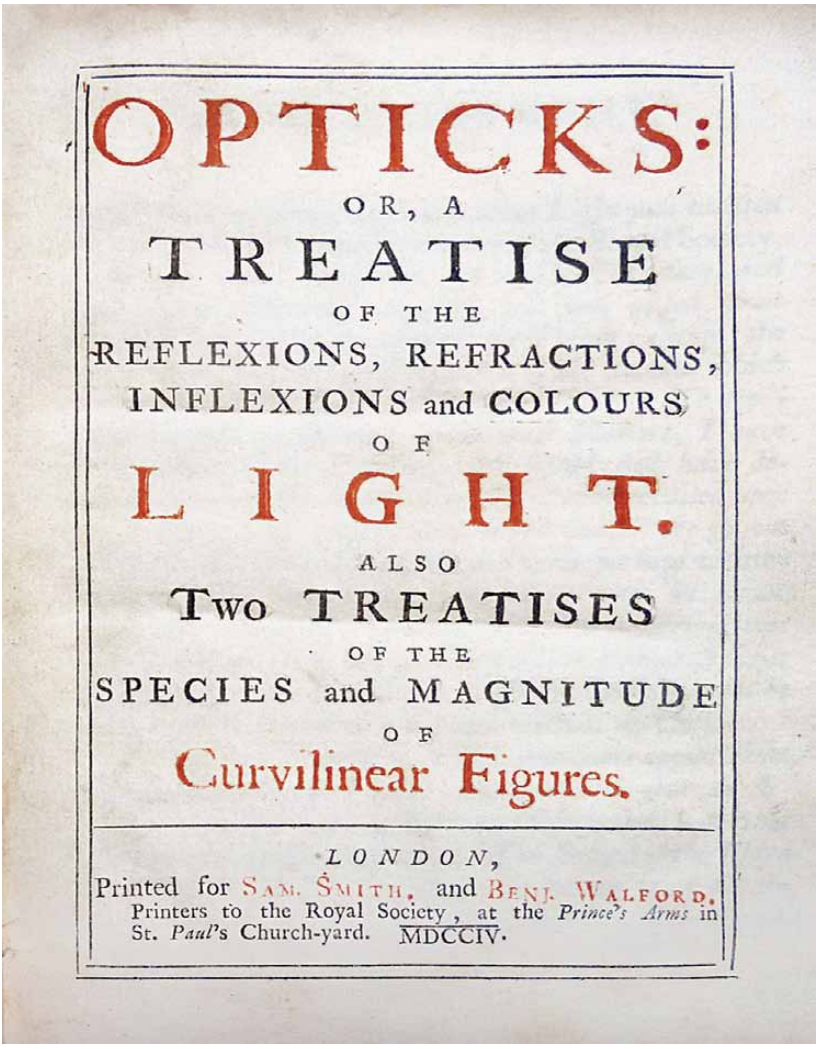
Opticks: or, a treatise of the reflexions, refractions, inflexions and colours of light. Also two treatises of the species and magnitude of curvilinear figures. London: Sam. Smith and Benj. Walford, 1704.

Two parts in one. 4to. [iv], 144; 211, [1] pp., including errata. Title printed in red and black. With 19 folding engraved plates. Contemporary English paneled calf, neatly rebacked; an excellent large paper copy. $60,000.00

First issue of the first edition, issued anonymously with only the initials "I.N." at the end of the advertisements. Regarded as one of the great classics of optics, this work expounds Newton's corpuscular or emission theory of light, and is the first work to contain his optical discoveries in a collected form. His set of sixteen "queries" on the nature of matter was considered to be the most important feature of the *Opticks* and had a profound influence on scientific thought.

This work is also distinguished for containing Newton's first printing of the two treatises on curvilinear figures, including his invention of "fluxional" calculus. His assertion of priority over Leibniz started a controversy which agitated mathematicians for nearly two hundred years. A later issue printed the same year contains the author's name on the title, but lacks the two treatises and has only twelve plates.

Babson, 132; Dibner, 148; Gray, 174; Horblit, 79b; *Printing & the Mind of Man*, 172; Wallis, 174


OPTICKS:

OR, A

TREATISE

OF THE

REFLEXIONS, REFRACTIONS,

INFLEXIONS and COLOURS

OF

LIGHT.

ALSO

Two TREATISES

OF THE

SPECIES and MAGNITUDE

OF

Curvilinear Figures.

LONDON,

Printed for SAM. SMITH, and BENJ. WALFORD,

Printers to the Royal Society, at the *Prince's Arms* in

St. *Paul's* Church-yard. MDCCIV.

77. *Newton*

INVENTION OF THE CALCULUS

78. [NEWTON, Sir Isaac]

Analysis per quantitatum series, fluxiones, ac differentias: cum enumeratione linearum tertii ordinis. London: Pearson, 1711.

4to. [xiv], 101 pp. Engraved title vignette, 2 double-page engraved tables, 78 engraved diagrams, and numerous text woodcuts. Modern calf-backed boards; original fly-leaf browned, otherwise an excellent, clean copy. $75,000.00

First edition of one of the great books of science, Newton's first independent treatise on higher mathematics containing the first printed account of the binomial theorem. It presents Newton's invention of the differential calculus, which, though published at a later date, appeared to be simultaneous with and independent of Leibniz. The volume includes *De analysi per aequationes numero terminorum infinitas*; *Excerpta ex epistolis ad Oldenburgium, Wallisium, et Collins*; *Tractatus de quadratura curvarum*; *Enumeratio linearum tertii ordinis*; and *Methodus differentialis* (comprising Newton's method of interpolation, which is the basis of the calculus of finite differences). In the preface, the editor, William Jones, gives notes of the earliest publications of Newton's method, no doubt with some reference to the contest with Leibniz.

Other than his association with Newton, Jones (1675–1749), a Fellow of the Royal Society and close friend of both Newton and Edmund Halley, is chiefly remembered for having introduced the symbol π. This book is considered the rarest of Newton's mathematical works.

Babson, 207; Gray, 293; Horblit, 66; Norman, II, 1590

SUBSCRIBER'S COPY

79. NEWTON, Isaac

Excerpta quaedam e Newtoni Principiis philosophiae naturalis, cum notis variorum. Cambridge: Typis Academicis Excudebat J. Bentham, 1765.

4to. ix, [i], 180 pp. The first 10 pages contain a list of subscribers (mainly from Oxford and Cambridge) and a corrigenda. With 12 folding plates. Bound in old boards, rebacked, a clean and crisp copy, uncut. $5000.00

First edition of this rather rare series of excerpts from Newton's *Principia*. "Although there is no mention of it in the book itself, the annotators were

John Jebb, M.D., Rector of Ovington, Robert Thorp, Archdeacon of Northumberland, and Francis Wollaston, Rector of Chislehurt" (Babson).

In addition to the myriad of books explaining the mathematics of Newton's masterpiece published in the hundred years following the first edition, the public clamored for copies and excerpts from the book itself. Jebb (1736–1786) was a medical doctor and a Fellow of the Royal Society. Thorp (1783–1862) succeeded his father as rector of Chillingham and in 1792 was created Archdeacon of Northumberland. In addition to this work, he published a translation of the *Principia* in English (*Mathematical principles of natural philosophy*, London, 1777). Wollaston (1738-1826), a mathematician and son of the astronomer Francis Wollaston, was a Fellow of the Royal Society.

Babson 15; Wallis 20

80. NOSTRADAMUS

The true prophecies or prognostications of Michael Nostradamus, physician to Henry II, Francis II, and Charles IX, Kings of France, and one of the best astronomers that ever were. A work full of curiosity and learning. London: Thomas Ratcliffe, and Nathaniel Thompson, 1672.

Folio. [xxxvi], 522 pp. Title in red and black. Without the frontispiece portrait, missing in about half the copies extant. Contemporary calf, spine gilt with red morocco label; some leaves browned and foxed, otherwise a sound copy with the book label of Stewart of Glassertoun. $4500.00

First edition in English of the book of prophecies of Nostradamus, first printed in French in 1555 under the title *Les propheties*. It was originally done in three installments, the first containing 353 quatrains, or four-line poems. The second installment, containing 289 further quatrains, was printed in 1557, while the third installment of 300 new quatrains was printed in 1558, but apparently only survives as part of the "works" which was published after his death. Each quatrain is a prediction of future events, which Nostradamus claimed was based upon astrological assessment of the quality of an occurrence such as a birth, death, wedding, etc. Much of the work, especially the more dramatic prophecies, apparently paraphrase the endeavors of earlier writers such as Livy, Plutarch, and other classical historians. Many of his astrological references are taken almost word for word from Richard Roussat's *Livre de l'estat et mutations des temps* (1549–1550).

One of his major prophetic sources was evidently the *Mirabilis liber* of 1522, which contained a range of prophecies by Pseudo-Methodius, the Tiburtine Sibyl, Joachim of Fiore, Savonarola, and others. Nostradamus was one of the

first to re-paraphrase these prophecies in French, which may explain why they are credited to him. Further material was gleaned from the *De honesta disciplina* of 1504 by Petrus Crinitus, which included extracts from Michael Psellos's *De daemonibus*, and the *De mysteriis Aegyptiorum*, a book on Chaldean and Assyrian magic by Iamblichus, a fourth-century Neo-Platonist.

Most of the quatrains deal with disasters, such as plagues, earthquakes, wars, floods, invasions, murders, droughts, and battles—all undated and based on foreshadowings by the *Mirabilis liber.* Some quatrains cover these disasters in overall terms; others concern a single person or small group of people. Some cover a single town, others several towns in several countries. A major, underlying theme is an impending invasion of Europe by Muslim forces from farther east and south headed by the expected Antichrist, directly reflecting the then-current Ottoman invasions and the earlier Saracen equivalents, as well as the prior expectations of the *Mirabilis liber.* All of this is presented in the context of the supposedly imminent end of the world.

Nostradamus has been credited, for the most part in hindsight, with predicting numerous events in world history, from the Great Fire of London, and the rise of Napoleon and Adolf Hitler, to the September 11 attacks on the World Trade Center. Skeptics suggest that his reputation as a prophet is largely manufactured by modern-day supporters who fit his words to events that either have already occurred or are so imminent as to be inevitable. Alternatively, there are numerous fairly recent popular books, and thousands of private websites, suggesting not only that the prophecies are genuine but that Nostradamus was a true prophet. Due to the subjective nature of these interpretations, however, no two of them agree on exactly what he predicted, whether for the past or for the future. In either case, stories abound, and Nostradamus is still idolized (indeed, see his own website, nostradamus.org).

Michel de Nostredame, or Nostradamus as he is known (1503–1566), was a French astrologer and physician. He practiced medicine in southern France from 1529 and gained a reputation for his innovative treatment of plague victims. Catherine de Medicis invited him to her court as an astrologer, and in 1560 he was appointed physician to Charles IX.

Provenance: Most likely from the library of Keith Stewart (1739–1795), brother of the Earl of Galloway and Receiver General of the Land Tax for Scotland, as well as the largest landowner in the parish of Muirkirk. He was a partner (as well as a landlord) of Archibald Cochrane (1749–1831), 9th Earl of Dundonald and founder of the British Tar Company. Stewart commissioned mineral surveys and, as a direct result of his efforts to interest ironmasters in the deposits in the parish, the Muirkirk Iron Company was established by a group of entrepreneurs from Glasgow in 1787. In addition, Stewart was a commodore in the Royal Navy.

THE TRUE

PROPHECIES

OR

PROGNOSTICATIONS

OF

Michael Noſtradamus,

PHYSICIAN

TO

Henry II. Francis II. and Charles IX. KINGS of FRANCE,

And one of the beſt

ASTRONOMERS that ever were.

A

WORK full of CURIOSITY and LEARNING.

Tranſlated and Commented by *THEOPHILUS de GARENCIERES*, Doctor in Phyſick *Colleg. Lond.*

LONDON,

Printed by *Thomas Ratcliffe*, and *Nathaniel Thompſon*, and are to be ſold by *John Martin*, at the *Bell* in St. *Pauls Church-yard*, *Henry Mortlack* at the *White Hart* in *weſtminſter-Hall*, *Thomas Collins*, at the *Middle-Temple Gate*, *Edward Thomas*, at the *Adam* and *Eve* in *Little Britain*, *Samuel Lowndes* over againſt *Exeter-houſe* in the *Strand*, *Rob. Bolter*, againſt the South-door of the *Exchange*, *Jon. Edwin*, at the *Three Roſes* in *Ludgate-ſtreet*, *Moſes Pits* at the *White Hart* in *Little Britain*, 1672.

WITH AN ALS BY THE AUTHOR

81. OSLER, Sir William

The principles and practice of medicine. Designed for the use of practitioners and students of medicine. New York: D. Appleton and Co., 1892.

8vo. xvi, [ii], 1079 pp., plus 14 pages publisher's advertisements. Finely bound in full morocco, gilt lettering and decorations on spine, a very fine copy belonging to Robert Saundby, president of the Edinburgh Royal Medical Society, with his bookplate. With an autographed letter tipped into the book, written by Osler, concerning a lecture by Ronald Ross (Nobel Prize winner for medicine, 1902) on malaria in Greece. Osler invites Saundby to the lecture and a dinner to be held prior to the lecture. $5000.00

First edition, second issue, with Plato's *Gorgias* corrected on the verso of the third leaf. Osler's textbook was considered the best English work on medicine of its time, and became a standard text for students and practitioners in every country and language in the world. It provided a systematized text on internal medicine as well as relevant information from great advances in the laboratory sciences, particularly bacteriology. The chapters describe specific diseases by systems, a pattern since followed by most textbooks.

Osler (1849–1919) was a clinician, pathologist, and historian of medicine. His warm and charming personality, his great skill as a physician, his innovative structuring of the medical school curriculum, and his many significant writings have made him the most important figure of his time in both English and North American medicine.

Osler's handwritten letters are very rare.

Garrison & Morton, 2231; Golden & Roland, *Sir William Osler, an Annotated Bibliography*, 1375; Lilly Library, *Notable Medical Books*, 233; Norman, *One Hundred Books Famous in Medicine*, 82

82. OWEN, Richard

Odontography; or, a treatise on the comparative anatomy of the teeth. . . . London: Hippolyte Baillière, Publisher, 1840–1845.

Two volumes (text and atlas). 8vo. xix, [3], lxxiv, 655, [1]; 37, [1] pp., including half-titles and errata, plus 168 lithographed plates (numbered 1–150). Original red half-morocco over marbled boards; foxing to preliminary and endleaves, and in the margins

of a few plates. From the library of Sir Victor Brooke with his bookplate. $3500.00

First edition of Owen's major work on the comparative anatomy of vertebrate teeth in which he traces the natural order of animal groups according to their tooth structure. Considered the greatest contribution toward a uniform nomenclature of the teeth, this work covers the whole range of the toothed vertebrates, fossil and extant, describing the dental systems of fish, reptiles, mammals, marsupials, and cetacea.

Owen (1804–1892), a comparative anatomist, was Hunterian professor and conservator of the British Museum. He is principally remembered as T. H. Huxley's antagonist in the debates over Darwin's *Origin of species*.

Sir Victor Brooke (1843–1891), baronet, was a naturalist and big game hunter. His grandson became prime minister of Northern Ireland. A work on his life was published by John Murray in 1894.

Crowley, *Dental Bibliography*, 1606; Freeman, *British Natural History Books*, 2880; Garrison & Morton, 329; Lilly Library, *Notable Medical Books*, 195; Weinberger, *Dental Bibliography*, I, p. 106

GAMES OF CHANCE

83. PARISOT, Séb[astien]-Ant[oine]

Traité du calcul conjectural, ou l'art de raisonner sur les choses futures et inconnues. Paris: Bernard, etc., 1810.

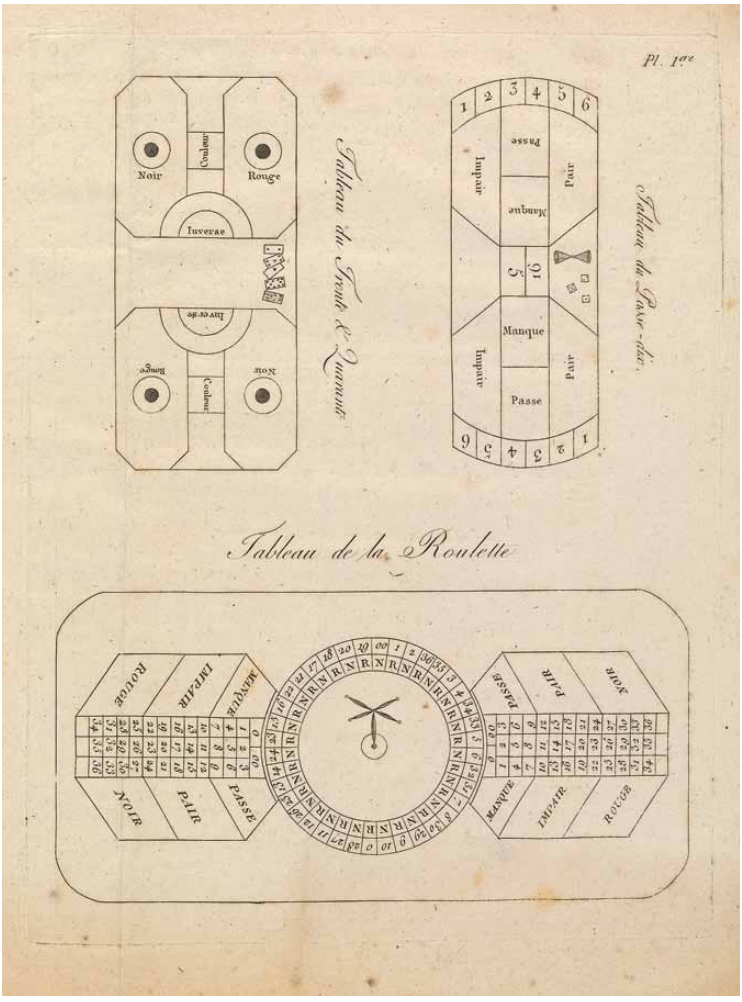
4to. xxiv, 654, [1] pp., including half-title and errata. With 2 folding engraved plates illustrating board and other games. Original wrappers. A wonderful, uncut copy, minor browning, with the contemporary annotation on title: (translated) "very clever man forgotten, probably because it was small," referring to the number of copies printed. $8500.00

First and only edition of this rare work on mathematics and probability. The author treats the probability theories of Bernoulli, de Moivre, Montmart, Fermat, Pascal, Ozanam, and others, detailing their strengths and errors. Based upon the previously written accounts of these authors, Parisot develops his own theories of probability with specific applications. The first part treats pure mathematics and game theory, with applications to cards, tokens, tickets, and random numbers. The second part deals with other games of chance, including roulette, pass-ten, the lottery, and the martingale, a betting strategy which is a model of a fair game where no knowledge of past events can help to predict future winnings.

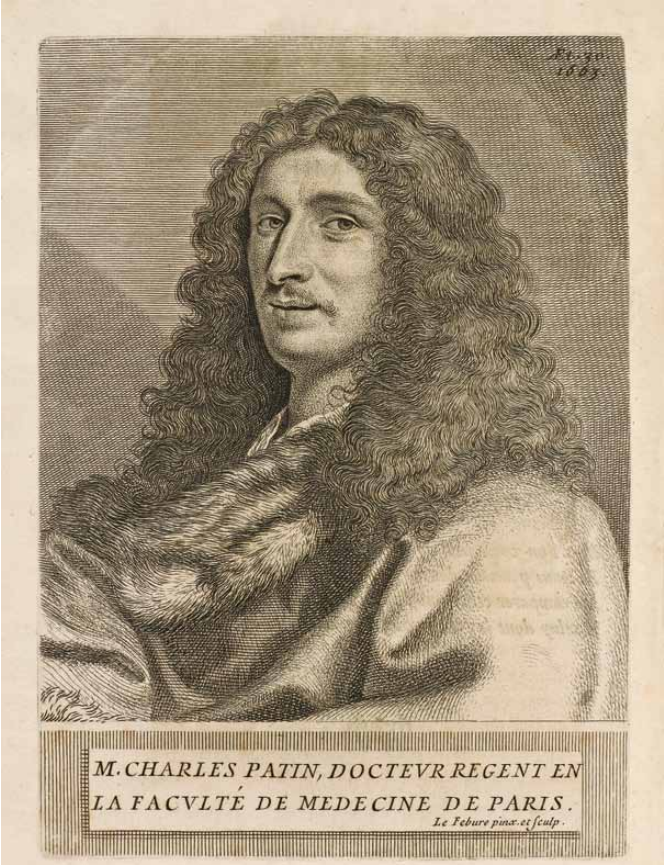
In the third part he applies the principles of his probability theories to various issues of political economy and commercial transactions such as loans, mortality rates, and annuities. He includes interesting statistics on population. The final part contains a broader discussion on the solution to curious and recreational issues, including an analysis of five problems introduced by Huygens. The book concludes with an essay on systematic physics and metaphysics, in which Parisot examines the positions of Descartes and Newton on the issues of light and matter in the universe.

Little is known of this author. He wrote one other book on the lottery (*L'art de conjecturer a la loterie*, 1801).

Zeitlinger, SSI, 2142



83. *Parisot*



84. *Patin*

ECOLOGICALLY CORRECT ALTERNATIVE FUEL SOURCE

84. PATIN, Charles

Traité des tourbes combustible. Paris: du Bray & Variquet, 1663.

4to. [xx], 122, [6] pp. With engraved vignette on title and the famous portrait of "Monsieur Charles Patin" by Claude Lefebvre, French painter and etcher. Contemporary full calf, slightly warped and somewhat worn; first and last leaves browned around the edges, small waterstain on last blank and paste-down, text in excellent condition. $3500.00

First edition of this very rare treatise describing the use of peat as a fuel. The author discusses the varieties and sources of combustible peat used to make charcoal as well as many useful by-products in agriculture, cooking, and botany. At the time, charcoal was believed to mainly consist of bitumen and sulphur, causing strong fumes, which Patin was much opposed to because of his concern with dangers of health caused by inhalation. Proficient in metallurgy, Patin was an early advocate of ecology, with his knowledge that strong organic matter accumulates in the ground and gives rise to significant drops in mineral contents, causing many problems for plant growth. At the end of the book is a proposal of the Sieur de Chambre for the artificial production of peat bogs surrounding Paris along with a royal letter patent for a thirty-year process.

Patin (1633–1693), the gifted son of Gui Patin, by the age of twenty-three completed his law studies and received his M.D. degree. He taught anatomy and pathology at the medical school of Paris, but was obliged to leave France for fear of imprisonment for circulation of certain libels which drew upon him the resentment of the court. He traveled extensively, finally settling in Padua, Italy, where he was appointed professor of chemistry, physics, and medicine. He was a man of extensive learning and a voluminous writer in Latin, French, and Italian. Patin is well known for his work on numismatics and metals.

85. PECKHAM, John

Perspectivae communis libri tres. Cologne: Heirs of Arnold Birckmann, 1580.

4to. [i], 47 (ie., 46) leaves. With numerous geometrical text diagrams. Quarter vellum and marbled paper over boards; some light foxing to scattered leaves, otherwise a very nice copy. $4500.00

Rare illustrated edition of this classic work on optics, the most influential and widely read treatise on perspective and its underlying optical basis. Written in the second half of the thirteenth century during Peckham's professorship at the papal curia, it was "the most widely used of all optical texts . . . and remains today the best index of what was known to the scientific community in general on the subject" (DSB). The work's most original contribution is the description of concave refracting surfaces, the first description in a printed text of such glasses, though its greater importance probably lies in being the starting point for later attempts to make the study of perspective more mathematically rigorous.

In the first part Peckham discusses the propagation of light and color, the anatomy and physiology of the eye, the act of visual perception, physical requirements for vision, the psychology of vision, and the errors of direct vi-

sion. He then goes on to discuss vision by reflected rays and presents a careful and sophisticated analysis of image formation by reflection. The subject was also of great interest to artists, who were just learning how to manifest the laws of linear perspective that apparently had been lost to the west (see Wightman, *Science and the Renaissance*, I, pp. 160–161). It was read by Ghiberti and studied carefully by Leonardo in the 1490s as well as by generations of artists and architects.

Peckham (ca. 1230–1292) was the Archbishop of Canterbury. The text was first published in 1482–83; the present edition by Georg Hartmann appeared in Nuremberg in 1542. It was augmented with geometrical figures by Pascal Duhamel, professor of mathematics at the College Royal in Paris in 1556; this first Birckmann edition is a reprint of that, and was in turn printed again in 1592.

Adams, P-536; *Dictionary of Scientific Biography*, X, pp. 475–476; Smith, *History of Mathematics*, II, p. 341 ("The work that had the greatest influence upon the subject of perspective in the Middle Ages was the *Prespectiva communis*")

THE PHYSICAL REVIEW

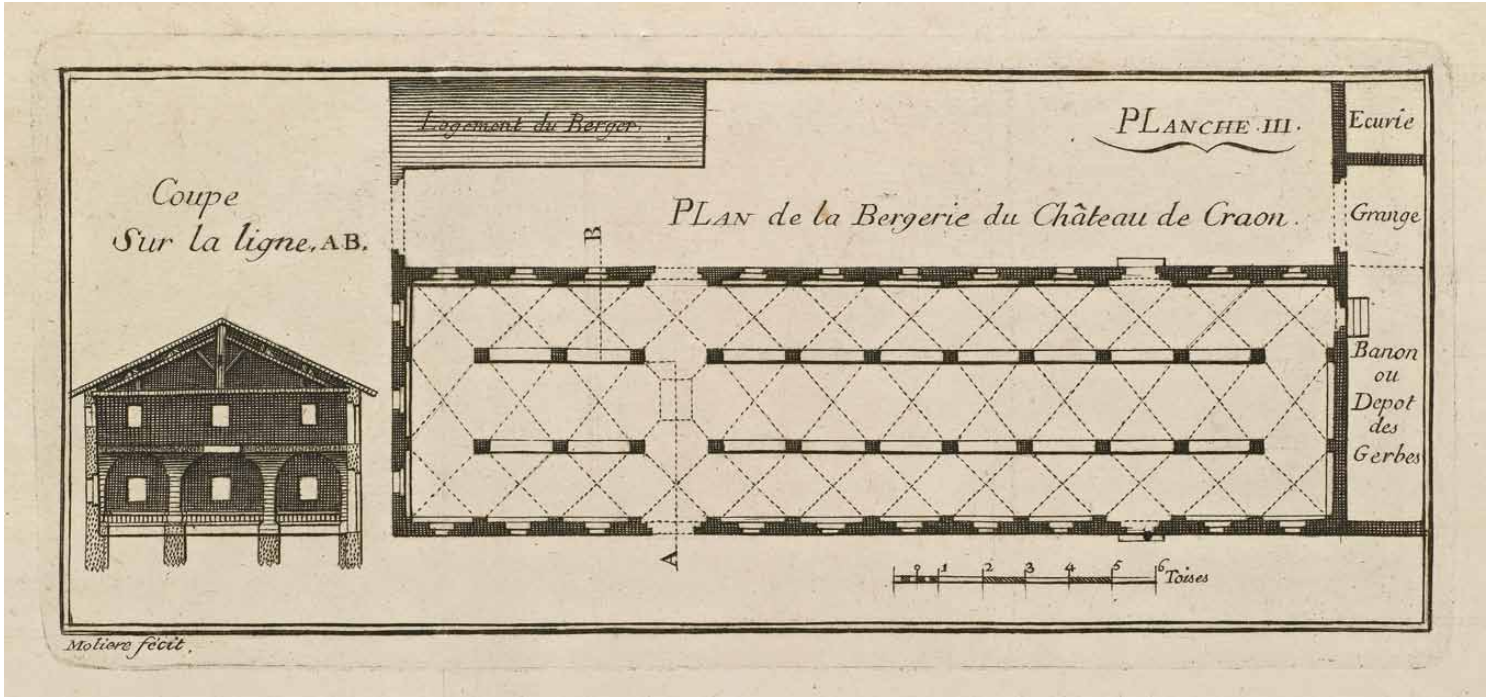
86. *The Physical Review.* 822 issues, all in original printed wrappers. 1899–1952. A complete run during this time period, with the exception of 16 missing issues. But with an additional 30 duplicate issues from 1920–1934. $25,000.00

All first editions. Many of the greatest announcements of both American and European science were made in the *Physical Review.* Articles by Percy William Bridgman, Fermi, and Bohr appear. It is in this journal that Carl David Anderson first announced his discovery of the positron. Bardeen & Brattain's work on the transistor appears in these pages, as do articles related to the laser, and nuclear and quantum physics. Even Schrödinger and Einstein published articles in the *Physical Review.*

The American Physical Society was founded on May 20, 1899, when 36 physicists gathered at Columbia University for that purpose. They proclaimed the mission of the new Society "to advance and diffuse the knowledge of physics," and in one way or another the APS has been at that task ever since. In the early years, the sole activity of the APS was to hold scientific meetings, initially four per year. In 1913, the APS took over the operation of the *Physical Review*, which had been founded in 1893 at Cornell, and journal publication became its second major activity.

The *Physical Review* was followed by *Reviews of Modern Physics* in 1929, and by *Physical Review Letters* in 1958.

A complete list of the volumes, issues, and years will be provided upon request.


Logement du Berger.
PLANCHE III.
Ecurie
Coupe
Sur la ligne, AB.
PLAN de la Bergerie du Château de Craon.
Grange
B
Banon
ou
Depot
des
Gerbes
A
0 1 2 3 4 5 6 Toises
Moliere fecit.

88. *Piroux*

87. PINGRÉ, [Alexandre Gui]

Cométographie ou traité historique et théorique des comètes. Paris: de l'Imprimerie Royale, 1783–1784.

Two volumes. 4to. xii, 630, [2]; viii, 518 pp., including errata. With 7 engraved plates, woodcut headpieces, and numerous tables. Contemporary mottled calf, gilt spines, corners and edges worn; sporadic browning, otherwise a very good set. $4500.00

First edition of this valuable work on comets. The text is divided into four parts: a history of astronomy dating from ancient Babylon and Egypt through the eighteenth century; a catalogue of all the comets observed since antiquity with orbital elements of 166 for which paths had been computed (50 by Pingré himself); cometary returns and their physical effects upon the earth; and the methods for computing cometary orbits. For the significance of this monumental work, see Colin A. Ronan's article in DSB, where he notes that as recently as 1950, it was officially recommended as a source book on cometary information.

Pingré (1711–1796) was an eminent professor of astronomy at the Rouen Academy of Sciences whose notable contributions include examining the measurement of an arc of the meridian made eighty years before by Jean Picard, and observations of the transit of Venus in 1761 and 1769.

Lalande, *Catalogue des livres* (1808), 1306; Thorndike, *Latin Treatises on Comets 1238 & 1368 A.D.* (numerous references)

88. PIROUX, M.

Moyens de préserver les édifices d'incendies, et d'empêcher le progrès des flames . . . Mémoire qui a remporté le prix de l'Académie Royale de Nancy, le 8 Mai 1781. Strasbourg: les Freres Gay, 1782.

8vo. [viii], 168, [2] pp. With engraved headpiece and 4 folding engraved plates. Contemporary half-calf over marbled boards, spine label and gilt design. Oval library stamp "Det Kongelige Garnisonsbibliothek Kiöbenhavn" on title, withdrawn stamp. $1400.00

First and only edition of this work on fire-resistant structures, dedicated to M. de la Porte, royal counsellor and intendant for Lorraine and Barrois. Chapter one describes what fire is and how wood burns, opening with a reference to the researches into the nature of fire by Marat (who was to send everything up in flames before very long). Piroux's discussion of the nature

of fire is framed in terms of the phlogiston theory. He then moves to the subject of stoves and chimneys, emphasizing the importance not only of regular chimney cleaning but also of doing away with chimneys plastered with clay over wood and their replacement with chimneys of mortared bricks. Potential hazards presented by the construction of floors, walls, and staircases are discussed, as are means of amelioration such as the invention of a fire-proof floor. The dangers of wooden cladding and of flammable roof materials are exposed. The four plates illustrate desirable means of construction for a hearth positioned on a floor, of floor supports, for a bergerie, and for a roof.

Piroux (fl. 1781–1791) had won the prize offered by the Académie Royale for the discovery of a means of preventing fires and of keeping fires from traveling to neighboring structures. The title page to this work describes Piroux as a lawyer and architect, but according to Lynn he was the "lieutenant of police in Nancy" (that in connection with the title *L'Art de voyager dans l'air et de s'y diriger*, ascribed to him by Querard).

Lynn, *Popular Science and Public Opinion in Eighteenth Century France*, Manchester University Press, 2006, p. 142; Querard, *La France Litteraire, ou Dictionnaire Bibliographique des Savants*, VII, p. 190

RARE TREATISE ON THE HEART

89. PISSINUS, Sebastiani Lucensis

De cordis palpitatione cognoscenda, & curanda libri duo. Frankfurt: Claudium Marnium & heredes Johannes Aubrii, 1609.

8vo. 193, [23] pp., including index. Woodcut printer's device to title, chapter initials, head- and tailpieces. Contemporary limp vellum with remnants of ties, title in manuscript on spine; interior excellent. Contemporary ownership inscription of the Collegii Paris Societ[atis] Jesu on title. $7500.00

First and only edition of this uncommon treatise, one of the first exclusively devoted to the study of cardiology. This little-known and curious work is filled with a number of fascinating observations. The author here sets forth his ideas on pain, inflammation, and dilation of the arteries. He describes the relation of the heart to epilepsy as well as the role of heat and the humors. Of specific interest is his physiological explanation of how the heart beats as well as how respiration and physical movement affect the speed of the pulse. In addition, he includes references to the early theories of Aristotle, Galen, Cardano, Mercuriale, and Fernel, among others.

Pissinus (1580–1654) was a physician in Lucca, Italy. A pioneer in the field of cardiology, he published the first treatise on cardiac polyp, greatly influ-

encing the work of Malpighi, Morgagni, and Haller, to name a few. "Although his *Epistola de cordis polypo* is only eleven pages long, it identified key issues with striking clarity." His later works include *De cyanei lapidis viribus* written in 1617, *Del modo di purgare li case e robe infette* (under the Italian form of his name, Pezzini) in 1631, and *Epistola de cordis polypo* in 1654.

OCLC locates 5 copies (2 in America); Forrester, *Malpighi's De polypo cordis: an annotated translation,* in "Medical History," Vol. 39, No. 4, October 1995, pp. 477–492; Krivatsky, 9037; Waller, 7473

THE STANDARD OF ALL PRE-RENAISSANCE ASTRONOMY

90. PTOLEMAEUS, Claudius

Almagestum seu magnae constructionis mathematicae opus. Venice: Lucantonio Giunta, 1528.

Folio. 150 leaves; final blank present. Roman, Gothic, and Greek types. Title in red and black, printer's woodcut device on title and ornamental woodcut initials. Woodcut mathematical diagrams in margins. Later full blue morocco. Bookplate removed from front paste-down; occasional browning on fore-edges, heavier on title, but generally an excellent copy with wide margins and contemporary writing on the fore-edge of the book. From the library of J.N. Lewis of Mt. Vernon, Ohio, dated Sept. 23, 1872. $25,000.00

First edition of the first translation of the *Almagest* from the original Greek. Until 1528, the only Latin translation was from the Arabic. George of Trebizon (d. 1485) made the present translation from a Greek manuscript in the Vatican. It was edited by the Renaissance mathematician Luca Gaurico (d. 1558), and dedicated to Pope Nicholas, who had commissioned the work. George of Trebizon withdrew the dedication when his commentary was criticized by Bessarion and others. The texts were re-dedicated by his son to Pope Sixtus IV (1471–1484); the dedication manuscripts survive in the Vatican Library.

"The *Almagest*, a masterpiece of clarity and method, was superior to any ancient scientific textbook and with few peers from any period" (DSB). In this astronomical encyclopaedia, Ptolemy gave a catalogue of the visible fixed stars based on Hipparchus' work and perfected a system explaining the movements of the planets. It was consulted by Copernicus, who derived from the *Almagest* much of his data, geometrical devices, and the material for his star catalogue, as well as descriptions of the latitudes of the inferior planets. The present edition of Ptolemy's *Almagest* was the most important of his astronomical and mathematical works; it covers every aspect of theoretical mathematical

astronomy, and was the entire basis of all astronomy up to the publication of works by Tycho Brahe and Kepler.

Adams, P-2214; *Dictionary of Scientific Biography*, XI, pp. 187, 196; Norman, II, 1760; Wellcome, 5281

91. PTOLEMAEUS, Claudius

Liber de analemmate, a Federico Commandino Urvinate instauratus, & commentariis ilustratus, qui nunc primum eius opera e tenebris in lucem prodit. Eiusdem Federici Commandini liber de horologiorum descriptione. Rome: Paulus Manutius, 1562.

4to. [iv], 93, [3] leaves, including index and errata. Dolphin and anchor device on title, Greek and Roman types, numerous woodcut diagrams. Modern full calf in an antique style, gilt fleurons on covers; an exceptionally clean copy from the library of a Jesuit college with its inscription on title dated 1645.

$6500.00

First and only edition of Ptolemy's celebrated application of mathematics to astronomical problems. It was edited by the noted mathematician Commandino, who appended his own work on the calibration of sundials in order to give further practical application of Ptolemy's method. Commandino (1509–1575) used a fragmentary Latin translation of an Arabic text to recover Ptolemy's complete work. According to the DSB, "The *Liber de analemmate* outlines a method for finding angles used in the construction of sundials and is an "important demonstration that Greek mathematics consisted of more than 'classical' geometry. Because of its excellent commentary, the *editio princeps* of the *Analemma* is still worth consulting" (DSB).

Adams, P-2216; *Dictionary of Scientific Biography*, XI, pp. 197–198, 205; Houzeau & Lancaster, 3071; Renouard, 187:13; Riccardi, I, 360; Sarton, I, 277

"THE GODFATHER OF MODERN NEUROSCIENCE"

92. RAMÓN Y CAJAL, Santiago

Revista trimestral micrográfica. Madrid: Nicolás Moya, 1896–1900.

Five volumes in three. 8vo. [iv], 203, [1]; [iv], 192; [iv], 204; [iv], 200; [iv], 198 pp. With 4 plates and 276 text illustrations, many in color. Modern half-cloth over marbled boards; an excellent set with the signature of T. Ziehen on the first blank leaf. $18,500.00

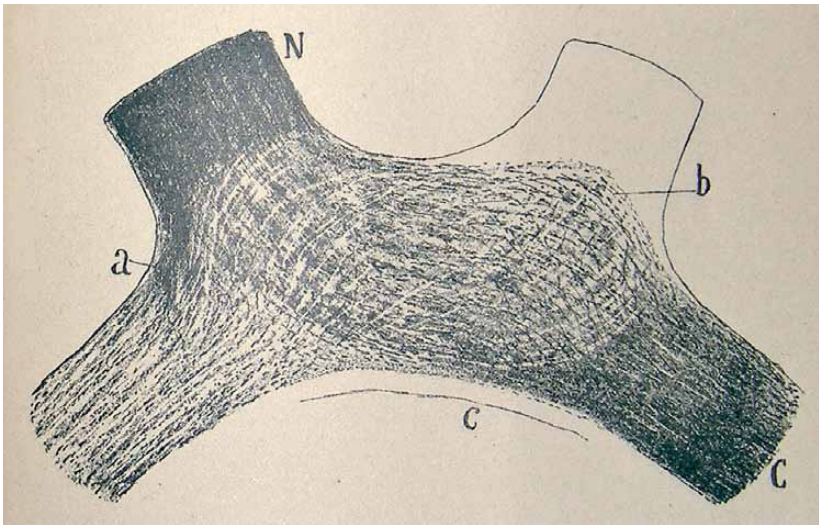
First edition. This most valuable journal was created by Cajal in order to publish his own scientific research and to encourage his pupils. It is extremely rare, with only sixty copies printed. As initially conceived by Cajal, the *Revista trimestral micrográfica* was published for five years as a quarterly review of normal and pathological histology before being taken over by the University of Madrid, who changed the name to *Trabajos del Laboratorio de Investigaciones*. Many of Cajal's important papers were published in his journal and formed the critical mass necessary for him to become a vocal proponent in favor of the independence of neural units, along with the principle of dynamic polarization, which would eventually become the Neuron Doctrine.

Ramón y Cajal (1852–1934) was the founder of modern neurology. His neuron theory is one of the principal scientific conquests of the twentieth century. It has withstood, with scarcely any modifications, the passage of more than a hundred years, being reaffirmed by new technologies, such as electron microscopy.

HISTOLOGY OF THE NERVOUS SYSTEM

93. RAMÓN Y CAJAL, Santiago

Textura del sistema nervioso del hombre y de los vertebrados: estudios sobre el plan estructural y composicion histologica de los centros nerviosos adicionados de consideraciones fisiologicas fundadas en los nuevos descumbrimentos. Madrid: Moya, 1899–1904.



93. *Ramón y Cajal*

Two volumes. 8vo. xi, [i], 566; [iv], 1209, [1] pp., plus 1 leaf of advertisements. With hundreds of text illustrations (a few in color) from the author's drawings. Contemporary morocco-backed marbled boards; very minor interior browning, overall a very nice copy. $18,500.00

First edition of one of the greatest works in the neurosciences, printed by subscription in an edition of only eight hundred copies. It is here that Cajal laid the cytological and histological foundations of modern neurology. His investigations confirmed the neuron doctrine first proposed by His and Forel—that dendrites receive impulses from other cells, the distinct functional pathways, the synapse—and included an authoritative description of the cerebral cortex leading to cytoarchitectonics.

Ramón y Cajal, neurologist, studied medicine at the University of Zaragoza. He developed and adopted Golgi's chrome-silver method for staining nerve tissues, which allowed him to make very accurate illustrations of nerve cell structure. The research included in the present work led to the Nobel Prize in physiology and medicine shared with Golgi in 1906.

Brazier, *A History of Neurophysiology in the 19th Century*, pp. 143–144; Garrison, *History of Medicine*, pp. 168–169, 514; W. C. Gibson, "Santiago Ramón y Cajal," in *Annals of Medical History*, N.S., Vol. VIII, No. 5, pp. 389–394 (1936)

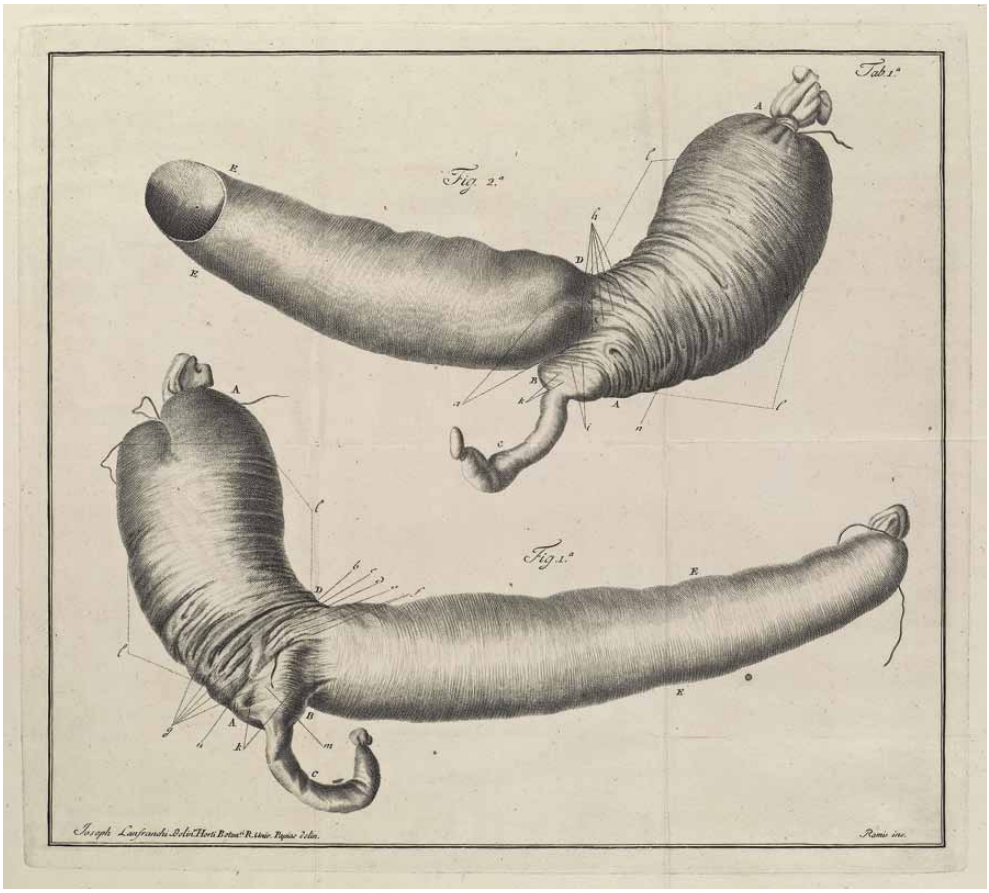
INSCRIBED

94. REZIA, Jacobi [Giacomo]

Specimen observationum anatomicarum, et pathologicarum. Accedit Antonii Josephi Testae . . . epistola pathologici argumenti. Ticino: Petri Galeatii, 1784.

8vo. [xii], 127, [1] pp., including half-title. With 3 folding plates. Italian wrappers over boards with morocco spine label. A wonderful, unsophisticated copy with the presentation signature of the author to Joannis Baptistae Bertololi of Milan, who wrote on the Bauhin valve. $1500.00

First edition by Rezia, a renowned Italian physician who played an important role in developing the fields of anatomy, surgery, and pathology. This book contains his observations on the bowels and an overview of the lymphatic system, with a section devoted entirely to the Bauhin valve. Located on the colon, this ileocecal valve was named for the sixteenth-century Swiss botanist Caspar Bauhin, who is credited with its discovery.

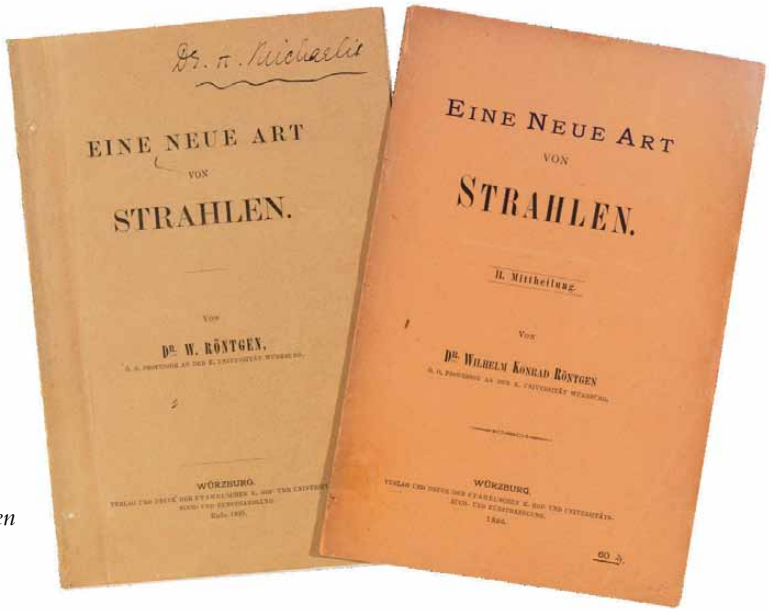


94. *Rezia*

The folding plates include figures depicting this valve, the colon, and the intestines. They were engraved by Joseph Lanfranchi (1745–1825), chair of anatomy and surgery at the University of Pavia, where the plates were printed. The book is dedicated to Samuel August David Tissot (1728–1797), one of the most famous physicians of the Enlightenment.

Rezia (1745–1825), a member of the Faculty of Medicine at the University of Pavia, founded the city's first anatomical museum and was a leader in the art of dissection.

Blake, p. 380; Hirsch, pp. 785–786; O'Malley, *The History of Medical Education*, p. 110; Wellcome, IV, p. 515



95. *Röntgen*

ORIGINAL OFFPRINTS OF THE INVENTION OF X-RAYS

95. RÖNTGEN, Wilhelm Konrad

Eine neue Art von Strahlen. 8vo. 10, [2] pp., including final blank. Original printed yellow wrappers, with the ownership signature of Dr. H. Michaelis (?) on front wrapper.

(together with)

Eine neue Art von Strahlen. II. Mittheilung (Fortsetzung und Schluss). 8vo. 9 pp., plus 3 pages publisher's advertisements. Original orange printed wrappers.

Two separate papers. Original offprints from *Sitzungs-Berichten der Physikalisch-medicinischen*. Würzburg: Stahel, 1895; 1896. Preserved in a folding clamshell box. $25,000.00

First edition of the first published reports on the sensational discovery of X-rays—a form of light invisible to the eye which had never before been observed. With remarkable insight, Röntgen first suspected a new phenomenon while investigating the fluorescence produced near a Crookes tube in late 1895. He immediately began a thorough set of experiments that revealed the uses of the new ray for science and medicine. Hundreds of articles and

books on the new Röntgen-rays were published in the year following their discoverer's announcement.

Röntgen (1845–1923), a German physicist, was awarded the first Nobel Prize in physics in 1901. His research spanned nearly all the branches of physics, from work with gases and solutions to investigations of the electromagnetic theory of Maxwell.

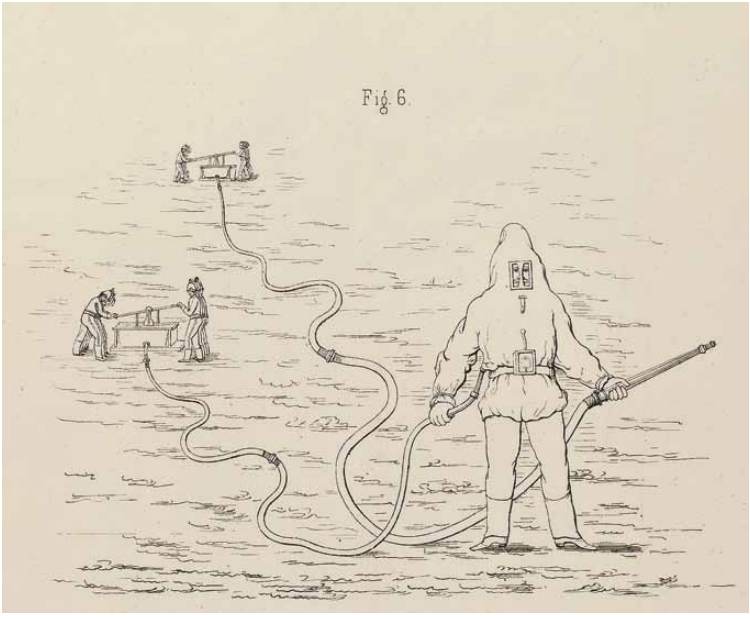
Dibner, 171; Glasser (ed.), *The Science of Radiology*, p. 204; Horblit, 90; Klickstein, *On a New Kind of Rays. A Bibliographical Study*, 2, 10; Norman, *One Hundred Books Famous in Medicine*, 83; *Printing & the Mind of Man*, 380; Sparrow, *Milestones in Science*, 45 (198, 199)

WONDERFUL PLATES OF FIREFIGHTERS AND THEIR EQUIPMENT

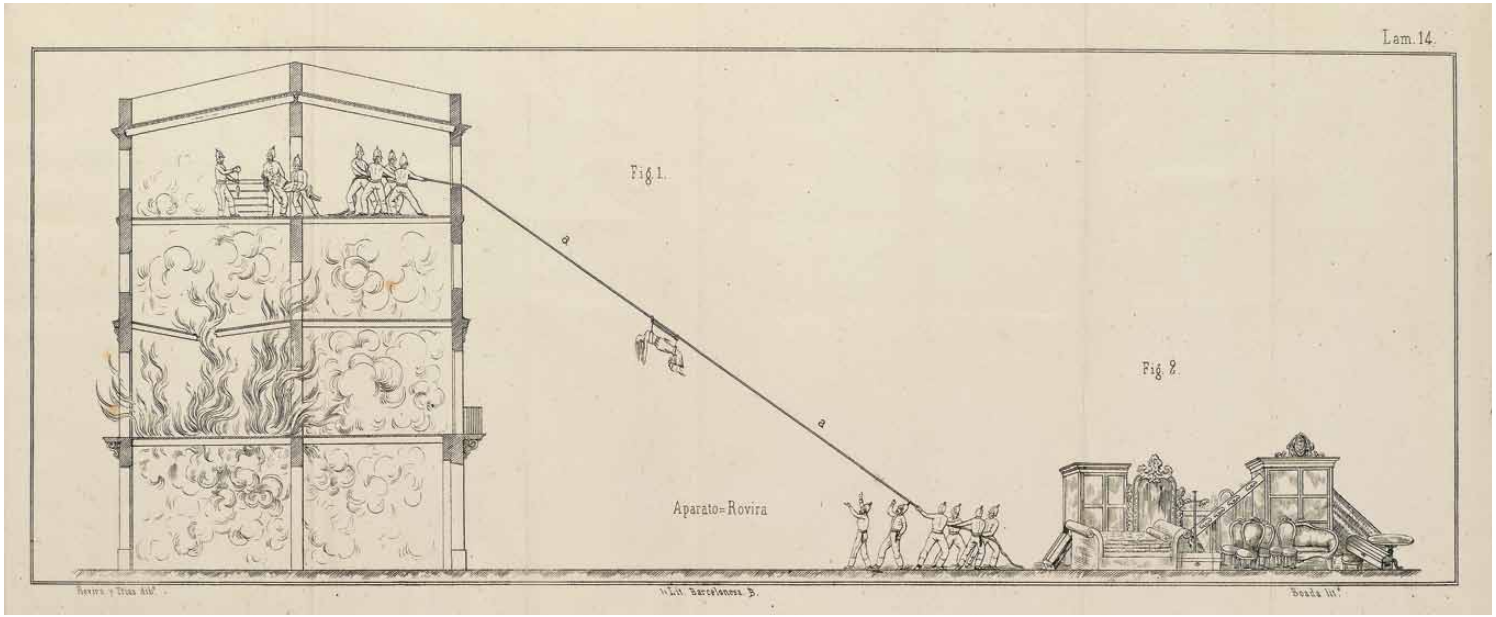
96. ROVIRA Y TRIAS [Antoni]

Tratado de la estincion de incendios. Barcelona: Imprenta de la Publicidad, 1856.

4to. [xi], 280 pp. Complete with half-title and 14 folding plates. Contemporary calf-backed boards, worn on the edges; interior in excellent condition. Presentation to Mariano Lopez from A. Rovira, the author's son. $3500.00



96. Rovira y Trias



96. *Rovira y Trias*

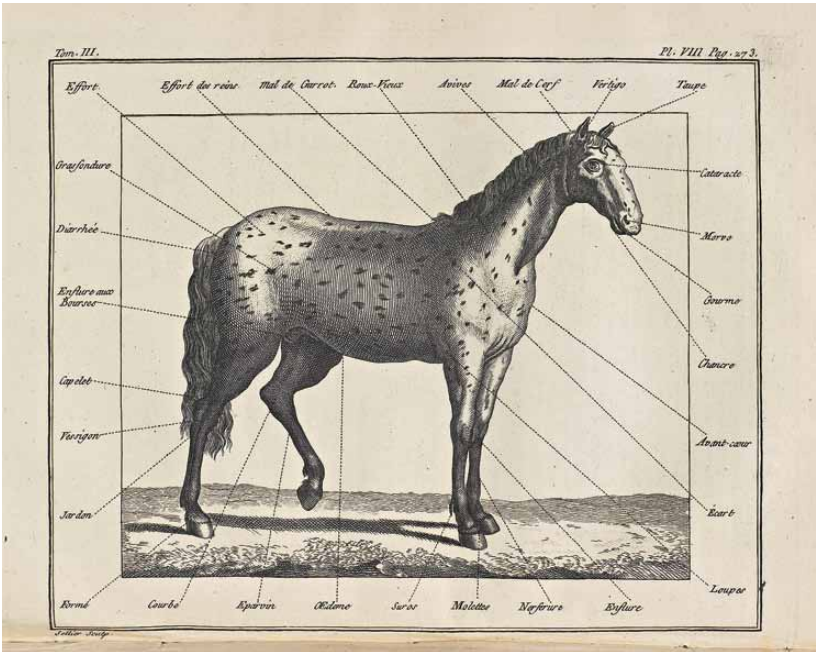
First edition of this historic treatise devoted to extinguishing fires and the job of a firefighter, the first work on the subject to be published in Spain. In this extremely rare work, the author describes in detail the organization and administrative side of firefighting, as well as the physical training, equipment, and maneuvers used by firefighters to save victims from blazes. The exquisite engravings demonstrate what firefighters do; of special interest are the plates of the early fire engines.

Rovira y Trias (1816–1889) was an important architect, urban planner, founder of several associations, and radical egalitarian. He was apparently very vital in the development of Barcelona, constructing numerous buildings and markets such as El Born (1876), Sant Antoni (1879), and Theatre Circ Barcelones (1853), just to list a few. In addition, the author was a founding member of the first corps of firefighters in Barcelona.

OCLC locates 1 copy in America (NY State Library); Palau, 279828

97. ROZIER, Abbé Jean Baptiste François

Cours complet d'agriculture théorique, pratique, économique et de médecine rurale et vetérinaire ou dictionnaire universel d'agriculture. Paris: Delalain, 1797–1805.



97. *Rozier*

Twelve volumes. 4to. Over 8000 pages printed in double columns. Engraved frontispiece in Volume 10, title vignettes, large decorative headpiece at beginning of each chapter. With 20 folding tables and charts (a few oversized) and 269 engraved plates. Contemporary half-calf over hand-blocked marbled boards; a couple of signatures browned, otherwise a superb set, with a number of signatures printed on blue paper. $3000.00

First edition of this celebrated work on agriculture and related subjects, written by the Abbé Rozier (1734–1793), distinguished French botanist and president of the Société d'Agriculture. Rozier, probably the most prolific writer of the eighteenth century on agriculture, completed the first nine volumes before he was killed in his house by a bomb during the 1793 siege of Lyons. The last three volumes, which also included an essay on his life and work, were edited by Chaptal, Parmentier, Biot, Lasteyrie, and others. This series is still considered the most significant work on the subject at the time. Rozier also edited the *Journal de Physique* for the ten years between 1771 and 1780.

Brunet, IV, p. 140; Plesch, III, 667; Pritzel, 7855

THE BIRTH OF PHYSICAL ANTHROPOLOGY AS A SCIENCE

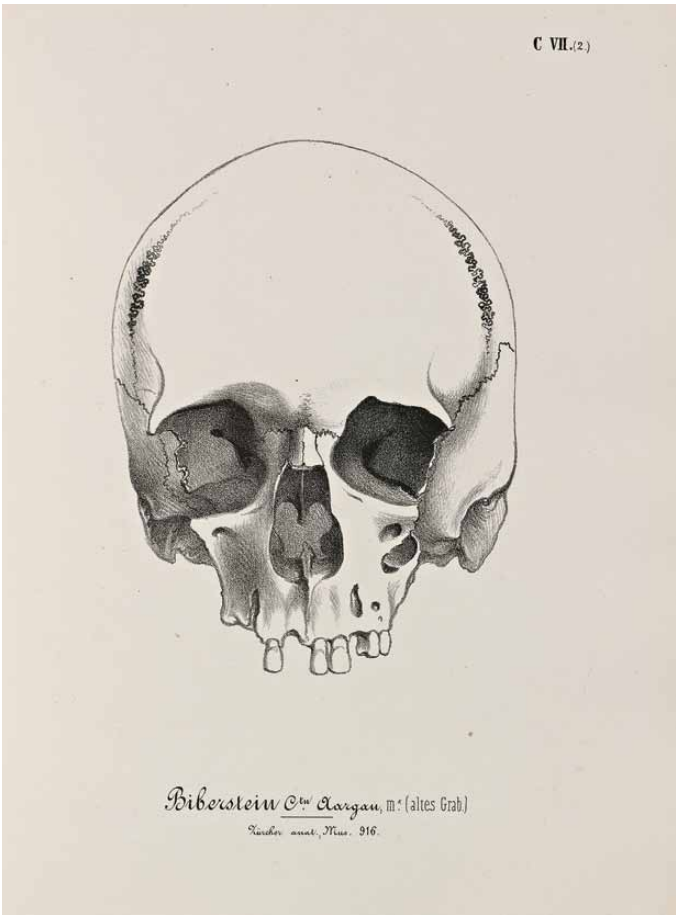
98. RÜTIMEYER, Ludwig & HIS, Wilhelm

Crania Helvetica. Sammlung schweizerischer Schädelformen. Basel und Genf: H. Georg's Verlagsbuchandlung, 1864.

Seven volumes (6 fascicles and text volume). 4to. viii, 63, [12] pp. With 82 unbound double-plate lithographs loose in the 6 fascicles. Text and fascicles in original printed wrappers, all contained in the original publisher's printed slipcase. Apart from slight fraying on spine of slipcase, a superb copy. $3500.00

First edition of this elaborate and valuable contribution to ancient and modern crania, and vertebrate paleozoology. With the publication of Darwin's *Origin* in 1859 and its inescapable implication that living and fossil species are linked by a common phylogeny, the primate fossil took on a new significance for documenting human genealogy in earlier epochs. Thus, in the 1860s, the fossil record of primates was only a potential source of evidence relevant to the theory of evolution.

Rütimeyer (1825–1895) was professor of zoology and comparative anatomy at the University of Basel, and one of the most celebrated paleontologists in the domain of fossil mammalia. With the tremendous advances in the dis-



98. *Rütimeyer*

covery of new primate species, Rütimeyer was the first to recognize fossil prosimian. It was at this time that physical anthropology started to develop as an independent direction of research, and the need for standardization of techniques was evident. For the measurement of the skull, the use of the horizontal plane line was drawn through the nasal spine and center of the auditory meatus. It was in the present work that the horizontal plane was defined.

His (1831–1904) created the science of histogenesis, or the study of the embryonic origins of different types of animal tissue. He was also one of the originators of the neuron theory. A brilliant investigator, he studied with Johannes Müller, Robert Remak, and Rudolf Virchow. He invented

a mechanical device used to slice thin tissue sections for microscope examination. Of special interest is the story of his finding the remains and then confirming the identity of Johann Sebastian Bach, and helping the famous sculptor Adolf von Donndorf create an authentic Bach monument.

According to Zittel, Rütimeyer was a convinced, although cautious, adherent of the Darwinian theory of evolution, and a correspondent of Darwin. His genealogical trees of the mammalia show a complete knowledge of all data concerning the different members in the succession, and are among the finest results hitherto obtained by means of strict scientific methods of investigation.

Garrison & Morton, 203.1; Spencer, *History of Physicial Anthropology*, I, 406; Zittle, *History of Geology and Palaeontology*, p. 421

GOVERNMENT OVERSIGHT OF HEALTH CARE

99. SANTORELLI, Antonio

Il protomedico Napolitano, ò vero dell'autorita di esso. Dialogo raccolto da un discepolo del Dottor Antonio Santorello protomedico del regno di Napoli. E dato in luce dal Signor Fabio Cava. Naples: Roberto Mollo, 1652.

Three parts in one (continuous pagination). 4to. [xvi], 136 pp. Woodcut device on title, woodcut initials, head- and tailpieces. Eighteenth-century vellum-backed marbled boards, spine lettered in ink; other than a couple of leaves lightly browned, a very good copy. $5500.00

First edition of this fascinating discussion on medical services in Naples during the seventeenth century, and more specifically the role of a "protomedico," an appointee whose job was to oversee all medical activities. In detailed chapters, the organization of the services is examined and discussed in a dialogue between Santorello and a disciple. The work begins with Charles V granting imperial permission to the protomedico of the time to "examine, recognize, and castigate all non-graduate physicians, surgeons, apothecaries, grocers, alchemists, barbers, enchanters, healers, midwives, etc." The final section gives the oaths sworn by those in various professions.

Santorelli (1583–1653), a protomedico himself, was also a professor at Naples University, and published many works on topics in the medical industry.

OCLC locates 2 copies (British Library and Germany's Herzog August Bibliothek)

RARE EARLY NEUROPATHOLOGY

100. SCHAEFFER, Johann Ulrich Gottl. von

Versuche aus der theoretischen Arzeneykunde. Erster. Ueber Bewegung und Mischung der Säfte. Nurnberg: Grattenauer, 1782–1784.

Two volumes in one. 8vo. [iv], [vi], 126, xxiv, 414 pp. With a lovely woodcut chapter vignette. Contemporary half-calf and boards, gilt spine, edges stained red, boards rubbed, but generally an excellent copy. From the library of Professor Speilmann with his bookplate on the front paste-down. $2500.00

First edition of this rare and valuable treatise, in which the author discusses the importance of neuropathology. He here describes his individual medical theories, "such as the consideration of age and sex as an indispensable prerequisite for a correct diagnosis and treatment of diseases. In addition, he discusses the importance of preventative medicine." Schaeffer was not a romantic, like many in his time, but believed in hands-on medicine and rationality. An indefatigable writer, he was actively involved in health politics and scientific discussions with his colleagues, especially the neuropathologist Scotsman William Cullen.

Schaeffer (1753–1829), son of Johann Gottlieb Schaeffer, who in 1763 introduced the inoculation of smallpox to Regensburg, began his career as physician to the Oettingen-Wallerstein court in 1777. He was a member of the Health Council in 1804, published numerous scientific publications, and was awarded the Order of Civil Merit of the Bavarian Crown in 1824.

OCLC locates no copies in America; Hirsch-Hübotter, 5, p. 50

101. SCHEELE, Karl Wilhelm

The chemical essays of Charles-William Scheele. Translated from the Transactions of the Academy of Sciences at Stockholm. With additions. London: J. Murray, 1786.

8vo. xiii, [i], ii, 406 pp. Contemporary calf. A fine copy from the library of Sir Lucius O'Brien, Bart., with his bookplate. $2000.00

First English edition of a most desirable and now very rare book. "A collection of some of the author's most important memoirs, edited by Thomas Beddoes. It contains accounts of his discovery of hydrofluoric, tartaric, benzoic, arsenious, molybdic, lactic, citric, malic, oxalic, gallic and other acids.

He also separated independently chlorine, baryta, oxygen, glycerine, H_2S and obtained salts of manganese and showed how the latter colored glass" (Duveen, p. 533).

Scheele (1742–1786) was a Swedish apothecary who devoted his life to chemical research. "Scheele was an experimental genius; he made more discoveries of first-rate importance with fewer opportunities and scantier appliances than any one else, and his skill, insight and power of illuminating experimental results have never been surpassed, if, indeed, they have ever been equalled" (Ferguson, II, p. 331).

Torchbearers of Chemistry, pp. 225–227, contains reproductions of his portrait and two sculptures.

AN EPOCH-MAKING BOOK IN MEDICAL LITERATURE

102. SEMMELWEIS, Ignaz Philipp

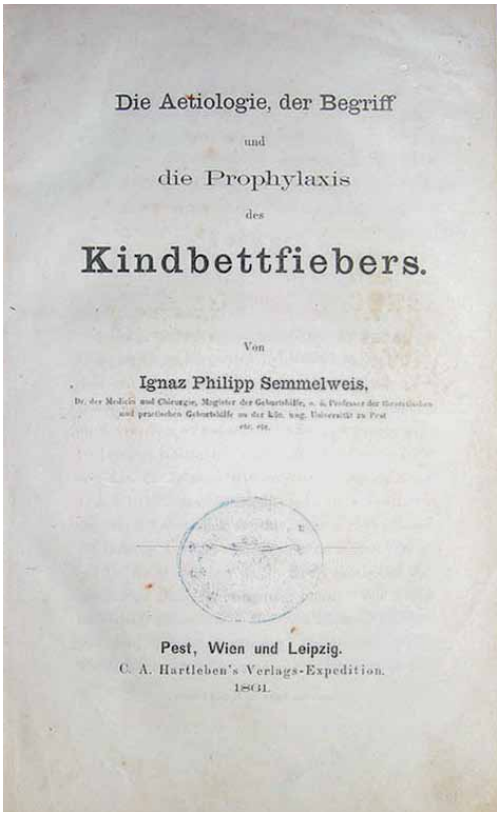
Die Aetiologie, der Begriff und die Prophylaxis des Kindbettfiebers. Pest, Vienna, and Leipzig: C. A. Hartleben, 1861.

8vo. vi, 543, [1] pp. Contemporary cloth-backed marbled boards, spine lightly faded, tiny chip to lower joint; old library stamps removed with slight abrasion. Preserved in a morocco box.

$40,000.00

First edition of one of the rarest of the great books in medicine. Few copies of this work have survived and ours is notable for being in excellent condition.

"Medicine has witnessed few dramas as compelling as the heroic, yet tragic, career of Ignaz Semmelweis (1818–1865), which stands as a monument to moral and scientific courage." While a young Hungarian physician in the obstetric clinic in Vienna, he noted the high rate of puerperal fever among patients attended by medical students who also worked in the morgue, as opposed to midwives, who were not permitted in the morgue. After initiating a policy that required all medical students to wash their hands before touching a pregnant woman, there was a significant decline in the mortality rate. He reported his findings to the Vienna Medical Society with overwhelming evidence to support his contention that the disease could be spread by attending physicians. However, his theory was violently rejected and resisted by the obstetricians of the day. A notable exception was Oliver Wendell Holmes, who had published a paper in America on the contagiousness of puerperal fever. Apparently Holmes and Semmelweis did not know of each other's work. Semmelweis returned to Hungary to become professor of obstetrics at the University of Pest. By the time his theory


Die Aetiologie, der Begriff

und

die Prophylaxis

des

Kindbettfiebers.

Von

Ignaz Philipp Semmelweis,

Pest, Wien und Leipzig.
C. A. Hartleben's Verlags-Expedition.
1861.

102. *Semmelweis*

gained acceptance, he had died in a mental hospital from septicemia, a variant of the disease he had tried to eradicate during his life.

Garrison & Morton, 6277; Lilly Library, *Notable Medical Books*, p. 219; *Printing & the Mind of Man*, 316(b2)

REFLEX OF THE BRAIN

103. SETSCHENOW, J. [SECHENOV, Ivan Mikhailovich]

Physiologische studien über die hemmungsmechanismen für die reflexthätigkeit des rückenmarks im gehirne des frosches. Berlin: August Hirschwald, 1863.

8vo. [iv], 51 pp. Wrappers; a fine copy in folding case.

$9500.00

First edition of this extraordinarily rare treatise on the reflexes of the brain, a pioneer work on cerebral reflex activity. According to Sechenov, higher brain function, including any so-called voluntary act, was basically reflex in nature for it was a response to sensory stimulation which led to a motor act. "Thus the nervous system as a whole functioned exclusively by means of reflex activity: lower or spinal reflexes, and cerebral or 'psychic' reflexes which included emotions and thoughts" (Clarke & O'Malley, p. 362). "Sechenov considered cerebral reflex activity the source of voluntary actions. Stimulations, according to him, arise in the peripheral sense organs and are mediated to the psychic realm, which determines the nature of muscular response. Absence of all senses would thus make psychic life impossible. However, the reflex activity itself is regulated by other cerebral centers (especially that in the mid-brain), which serve in an inhibitory capacity" (Haymaker & Schiller).

Sechenov (1829–1905), the father of Russian physiology, laid the foundation for the study of reflexes, animal and human behavior, and neuroscience. He showed that brain activity is linked to electric currents and was the first to introduce electrophysiology. Among his discoveries was the cerebral inhibition of spinal reflexes, and he described how the physiochemical factors in the environment of the cell are of equal if not greater importance.

Garrison & Morton, 1362; Haymaker & Schiller, *The Founders of Neurology*, pp. 264–267

104. SHAPLEY, Harlow

Collection of 10 offprints. 1917–1958.

We are pleased to offer a collection of works by Harlow Shapley (1885–1972). Shapley, an American astronomer, worked at Mt. Wilson Observatory from 1914 to 1921, when he became director of Harvard Observatory. He did notable research work in photometry and spectroscopy, devoting particular study to the structure of the universe. He determined the size of the Milky Way and the position of its center as well as the position of the sun in the galaxy. Among his other distinguished contributions were his investigations in the fields of Cepheid variables (he established that they are pulsating stars rather than eclipsing binaries) and globular clusters. The collection includes eight items by Shapley and two from his library. $900.00

1. "Note on changes in the period and light-curve of the cluster variable SW Andromedae." From *Monthly Notices of the Royal Astronomical Society*, Vol. LXXXI, No. 3, January 1921, pp. 208–213. Original printed wrappers.

2. "On the astronomical dating of the earth's crust." From *American Journal of Science*, Vol. 243-A, Daly Volume, 1945, pp. 508–522. Original printed wrappers.
3. "Shapley's work on globular clusters." Reported in the *Monthly Bulletin of the Eastbay Astronomical Association*, Vol. V, No. 9, July 1930, pp. 25–28. Folded as issued.
4. "Studies of magnitude in star clusters. VII. A method for the determination of the relative distances of globular clusters." In *Proceedings of the National Academy of Sciences, of the United States of America*, Vol. 3, No. 7, July 1917, pp. 479–484. Original printed wrappers.
5. "Note on the problem of great stellar distances." From *Proceedings of the National Academy of Sciences*, Vol. 8, No. 4, April 1922, pp. 69–71. Original printed wrappers.
6. "Henry Norris Russell 1877–1957. A biographical memoir." From *Biographical Memoirs*, Vol. XXXII. New York: Columbia University Press, 1958.
7. (With CURTIS, Heber D.). "The scale of the universe." In *Bulletin of the National Research Council*, Vol. 2, Part 3, No. 11, May 1921, pp. 171–217. Original printed wrappers.
8. "Star clusters and the structure of the universe." From *Scientia*, Vols. XXVI & XXVII, 1919–1920, 37 pp. Original printed wrappers.

PLUS:

Two works by G. A. Tikhoff, from the library of Harlow Shapley, each with the author's presentation inscription, as follows:

9. *Photographies de la chromosphère et des protubérances obtenues à Poulkovo pendant l'éclipse du Soleil du 17 avril 1912.* St. Petersbourg: Imprimerie de l'Académie Impériale des Sciences, 1913. Original printed wrappers.
10. *Etude de la lumière cendrée de la lune au moyen des filtres sélecteurs; Photographies de Saturne, obtenues à Poulkovo au moyen du 30 pouces.* St. Petersbourg: Imprimerie de l'Académie Impériale des Sciences, 1914. Original printed wrappers.

105. SHELLEY, George Ernest

A monograph of the Nectariniidae, or family of Sun-Birds. London: published by the author, 1876–1880.

4to. With 121 hand-colored lithographed plates by J. G. Keulemans. Half-crushed morocco, gilt edges, covers spotted, spine a bit faded; occasional light scattered spotting, some offsetting to text leaves, but overall a wonderful copy from the library of

105. *Shelley*

K. A. Baird with his ownership inscription dated 1925 on the paste-down. $24,000.00

First edition of one of the most attractively illustrated of Keulemans' works, limited to 250 copies. In the preface, Shelley acknowledges the contributions of Keulemans (1842–1912) and praises his illustrations for their accuracy and artistry, specifically pointing out that Keulemans' notes on sunbirds at Prince's Island were incorporated into the text. "An excellent monograph of an interesting family of birds, with descriptions in Latin and English, critical notes, and discussions of habits, etc., from accounts by many different observers. A total of 138 species of the group are recognized" (Zimmer, II, 588).

Shelley (1840–1910), geologist and ornithologist, was the nephew of Percy Bysshe Shelley.

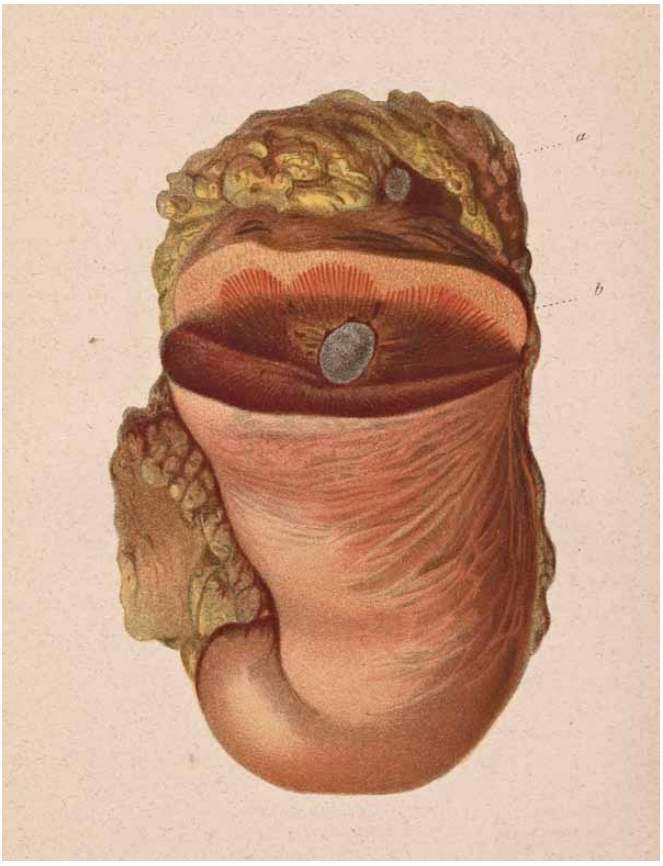
Nissen, IVB, 873

106. SIMON, Gustav

Chirurgie der Nieren. Erlangen & Stuttgart: Ferdinand Enke, 1871–1876.

Two volumes in one. 8vo. viii, 89, [1]; x, 314, [2] pp. With 9 lithographed plates (2 chromolithographs); wood-engraved text illustrations. Half-morocco over marbled boards; front blank leaf lacking, large library label on first paste-down, paper is brittle and occasionally chipped on a few fore-edges. $2500.00

First edition of this historic landmark in urology. In 1869 Simon performed the first successful intentional nephrectomy on a woman patient. That date marks the beginning of renal surgery, which he here describes in great detail in Volume I. The second volume, issued five years after the first, treats the subject of kidney surgery on both injured and diseased kidneys. He had proved that one healthy kidney can take over the entire excretion process. The illustrations are remarkable.



106. *Simon*

Simon (1824–1876) was a distinguished German surgeon who first served as a military physician. He specialized in the fields of gynecology, orthopedics, and military surgery, publishing a well-known work on gunshot wounds. As professor of medicine at Rostock, he published monographs on gynecological plastic surgery as well as numerous other literary works in many areas of surgery.

Garrison & Morton, 4214; Murphy, *History of Urology*, pp. 251–254

107. SNELL, James

A practical guide to operations of the teeth to which is prefixed a historical sketch of the rise and progress of dental surgery. Philadelphia: Carey and Lea, 1832.

8vo. vii, [i], 207 pp. With frontispiece and 4 leaves of plates. Original boards, rebacked, covers somewhat discolored; interior browned from paper stock as usual. An uncut copy from the library of P[atrick] W. Brown of Richmond, Va., with his signature dated Dec 2, 1836, and small book label. $300.00

First edition of probably one of the most valuable dental works in the history of operative dentistry. In this work Snell describes his design of the first dental chair that featured a seat with a foot- and headrest just for dental work. Prior to its introduction, dentists usually held the head of the kneeling patient between their knees to acquire leverage during extractions. In addition, he here describes forceps for extracting teeth, uses a mirror made of polished steel in patients' mouths, and describes using a file wherever possible to remove caries.

Snell (1795–1850) was brilliant in his development of ingenious new cautery. He wrote in detail on current practices and on his most creative inventions. Of special interest was a steel instrument with a bulb on the end from which protruded a platinum wire; heat was retained in the bulb long enough to allow the wire to penetrate the root canal.

Bennion, *Antique Dental Instruments*, pp. 75, 116, 130; Crowley, 1763; Poletti, p. 185; Weinberger, I, p. 129

108. STOEFFLER, Johann

PETRUS JORDAN Lectori S.D. en tibi nunc iterum candide lector, Coelestium rerum disciplinae, atque totius sphaericae peritissimi, Johannis Stoeflerini . . . uariorum astrolabiorum compositionem seu

Petrus Iordan Lectori S. D.

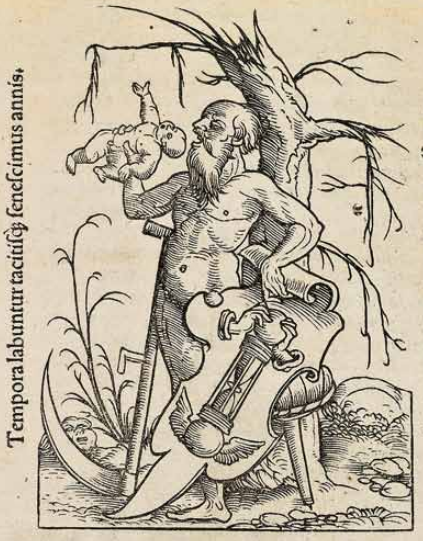
EN TIBI NVNC ITERVM CANDIDE LECTOR,

COELESTIVM RERVM

DISCIPLINAE, ATQVE TOTIVS SPHAERICAE

peritissimi, Iohannis Stœflerini Iustingensis, uiri Germani, uariorum Astrolabiorum compositionem seu fabricam, necnon eorundem usuum ac uariarum utilitatum explanationem, ex postrema autoris recognitione summa diligentia, ac pari fide, typis nostris cudenda præsumpsimus, & in aliquot locis præcipuè cum propositionibus, tum earum expositionibus, in meliorem formam quàm antea fuerant, redigenda, atq; imprimenda curauimus. Vale.

Tempus nosce.



Tempora labuntur tacitisq; senescimus annis.

Et fugiunt freno non remorante dies.

Omnia uorat edax, uel sint adamantina Tempus.

Serenissimo Inuictissimoq; Cæsari Ferdinando Romanorum, Bohemiæ, Hungariæq; Regi &c. inclytissimo dicatum.

Anno Salutis. M. D. XXXV. Mense Martio.

fabricam, necnon eorundem usuum, ac uariarum utilitatum explanationem, . . . typis nostris cudenda praesumpsimus . . . redigenda, atq[ue] imprimenda curauimus. [Moguntiae (Mainz): Petrus Jordan exudebat, impensis Petri Quentel, 1535].

Folio. [viii], 77, [1] leaves. Complete with all of the woodcut plates of astrolabes (with extended folding parts), text illustrations and diagrams, many full-page and 2 folding. Wonderful printer's device on title and full-page device on the final colophon leaf. Early vellum-backed paste boards; interior very clean, probably washed, small discoloration on title and marginal wormholes on a few leaves. Some contemporary annotations. From the library of Owen Gingerich, with his bookplate. $8500.00

The work was originally printed in 1512/13 under the title *Elucidatio fabricae ususque astrola . . .* The present edition is probably the third printing, but published for the first time by Peter Jordan, who had just established his workshop in Mainz. Stoeffler's treatise on the construction and use of the astrolabe was the most influential of the Renaissance. It was reprinted sixteen times and virtually every treatise on the astrolabe since has referenced it. The success of this work stems from the fact that it is clear, concise, and complete, and that it required only a modest background to understand. There are detailed instructions on how to lay out the components of a planispheric astrolabe and how to use it for common problems, such as measuring the depth of a tank buried underground. Wonderful illustrations depict how to use astrolabes to solve different mathematical and other problems. The second part contains treatises on sundials, on geometrical measuring of altitudes, plane surfaces and depths, as well as chapters on horoscope casting and prognostics.

Stoeffler (1452–1531), mathematician, astronomer, cosmographer, and professor of astronomy at Tübingen, was the teacher of Melanchthon, Schoener, and Sebastian Muenster. His calendars, almanac, and astronomical tables enjoyed a great reputation throughout Europe for half a century. He was especially known for this work on the astrolabe and was considered "a leading authority on the methods of defining latitude and longitude in vogue at the beginning of the new era" (Sabin).

Adams, S1893; Zinner, 1593

109. STRONG, Nathan

An inaugural dissertation on the disease termed petechial, or spotted fever. Hartford: Printed by Peter B. Gleason, 1810.

8vo. 52 pp. Unbound as issued, stitched; uncut, wide margins, occasional light browning, slightly heavier on title and final leaves. $3500.00

First edition of the first treatise published exclusively on what is now known as cerebrospinal meningitis. As Strong explains in his introduction, the deadly disease named for the red spots commonly exhibited on the body had first appeared in the United States four years earlier in Massachusetts. Despite having been around for several years, few newspaper articles on the subject had been published in the country when the author presented his study to the Connecticut Medical Society. Though it was first described by Volcher Coiter in 1573, very little was known about the disease. The name itself was misleading, as spots were not exhibited in every case, and it later became known as cerebrospinal fever until the meningococcus bacteria was determined to be the cause by Anton Weichselbaum (1845–1920) in 1887. The work provides a brief timeline of the progress of the disease, outlines the effects of the disease on the functions of the body, and then proposes a number of causes of the illness. It also discusses several treatments of symptoms, suggesting remedies including camphor, opium, and muriate of mercury (a combination of mercury and muriatic acid). He also includes several cases studies of the disease (three milder cases in which the patient survived and two fatal).

Nathan Strong (1781–1837) began his career in theology, earning an A.M. from both Yale and Williams. He studied under prominent Connecticut physician Mason Fitch Cogswell, and he was an active member of the Connecticut Medical Society until he resigned in 1821.

Austin, *Early American Medical Imprints*, p. 193; Garrison & Morton, 4675; Kelly & Burrage, *Dictionary of American Medical Biography*, p. 1178; Krumbhaar, *Pathology*, p. 162; Schmidt, *Medical Discoveries*, p. 296

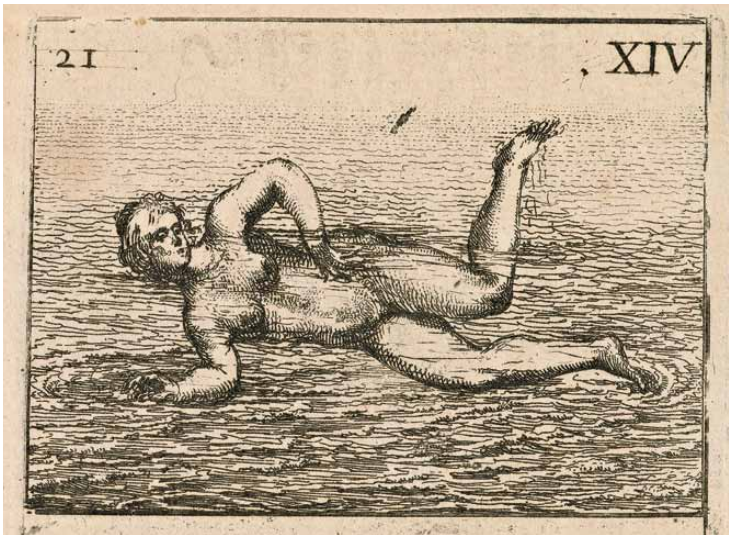
THE VERY RARE FIRST PRINTING OF
ONE OF THE EARLIEST SWIMMING MANUALS

110. THÉVENOT, Melchisédech

L'art de nager, demontré par figures. Avec des avis pour se baigner utilement. Paris: Thomas Moette, 1696.

12mo. [xii], xii, 47 pp. Both blanks present. With 35 full-page plates. Tree-skin calf binding, gilt spine, edges stained red; corners slightly rubbed. An excellent copy. $8500.00

First edition of this extremely scarce treatise on swimming, considered one of the earliest books on the subject. In the introduction, the author notes only two earlier works known to him, Digby's *De arte natandi* (1587) and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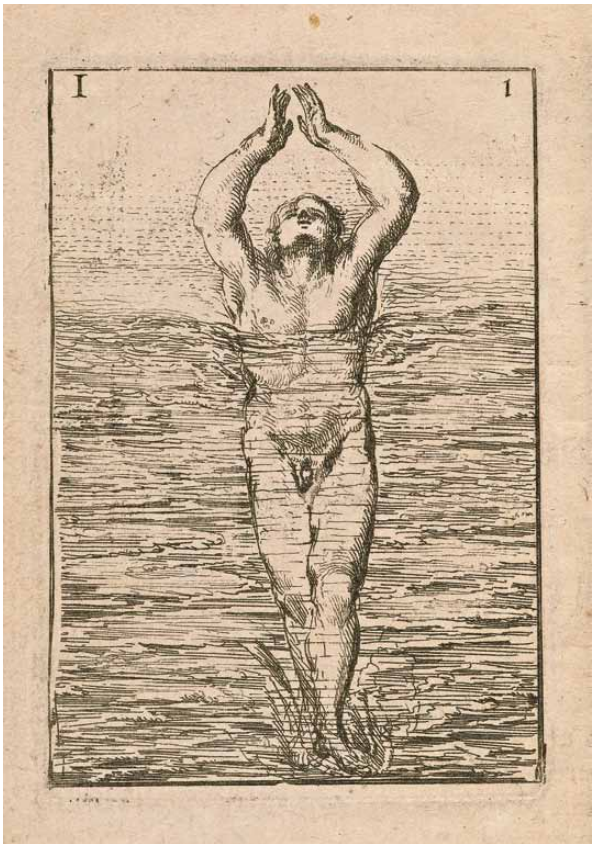
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Nicholas Wynman's dialogue, *Colymbetes* (1538). Translated into English in 1699, Thévenot's manual became the standard eighteenth-century reference for learning to swim (for those who read about it before attempting it). Among many topics, he discusses ways of getting into the water, various aquatic feats and maneuvers, and stroke technique. Following Thévenot's description, the breaststroke became the most common swimming motion for centuries. The text is complemented by lively illustrations throughout engraved by Charles Moette.

An amateur scientist, Thévenot (1620–1692) studied astronomy, physics, medicine, and magnetism. Born into nobility, the wealthy and erudite Thévenot was also an important patron to innumerable scientists and mathematicians. He was equally a renowned cartographer and traveler, served as a diplomat in Italy, and was the Royal Librarian to King Louis XIV.

Brunet, V, 813; Grasse, VII, 133; Hofer, *Baroque Book Illustration*, 56

THE PHYSIOLOGY AND SOCIAL SIGNIFICANCE OF BEARDS
A CONTEMPORARY SHAKESPEARE CONNECTION

111. ULMI [ULMUS], Marco Antonio

Physiologia barbae humanae in tres sectiones diuisa, hoc est de fine illius philos. & medico, in quarum prima declarantur nonnulla ad barbae naturam pertinentia. . . . Bologna: Giovanni Battista Bellagamba, 1603.

Folio. [xx], 317, [1] pp. Title in red and black with woodcut printer's device, woodcut initials, head- and tailpieces, large woodcut illustrations on Y_1, and printed marginalia. Colophon on last leaf. Seventeenth- or eighteenth-century half-calf over marbled boards; some browning and spotting, waterstains to final 15 leaves, a few wormholes, but overall a good copy of a rare book. $5500.00

Only edition, third issue, of one of the earliest treatises on the bearded races of mankind, containing detailed descriptions of facial and body hair on men and women. Not a lot was known about the growth of facial hair. Ulmus, like the physiognomer Thomas Hill before him, explains beard growth in terms of heat and moisture originally arising out of the genitals. The beard is thus figured as a kind of seminal excrement. This is fitting, for in the Renaissance, all hair was thought to be an "excremental" residue left by the "fumosities" as they passed out of the pores of the body.

In early modern Europe, facial hair often conferred masculinity. Previous works dealt with sexuality related to body hair, with a focus on gender

differences. Ulmus' work is devoted fairly exclusively to the physiology and social significance of beards. His theme and main argument is that "nature gave to mankind a beard, that it might remaine as an index in the face, of the masculine generative faculty." Yes, his correlation is not limited to sexuality, but to beard growth and reproductive capacity, and not symbolically, but literally. Ulmus ties the growth of facial hair to the production of semen. In addition, he treats the physiology of the growth of hair all over the body, and not just on the face. Such growth apparently made a significant difference in the anatomical make-up of people, and Ulmus writes chapters on those differences, which include not only men and women, but also men and boys. There is even a chapter on eunichs. It is quite possible that this work had an influence on the writings of Shakespeare, who included a significant amount about beards in all but four of his plays, especially *As You Like It* (see reference to Fisher's article below).

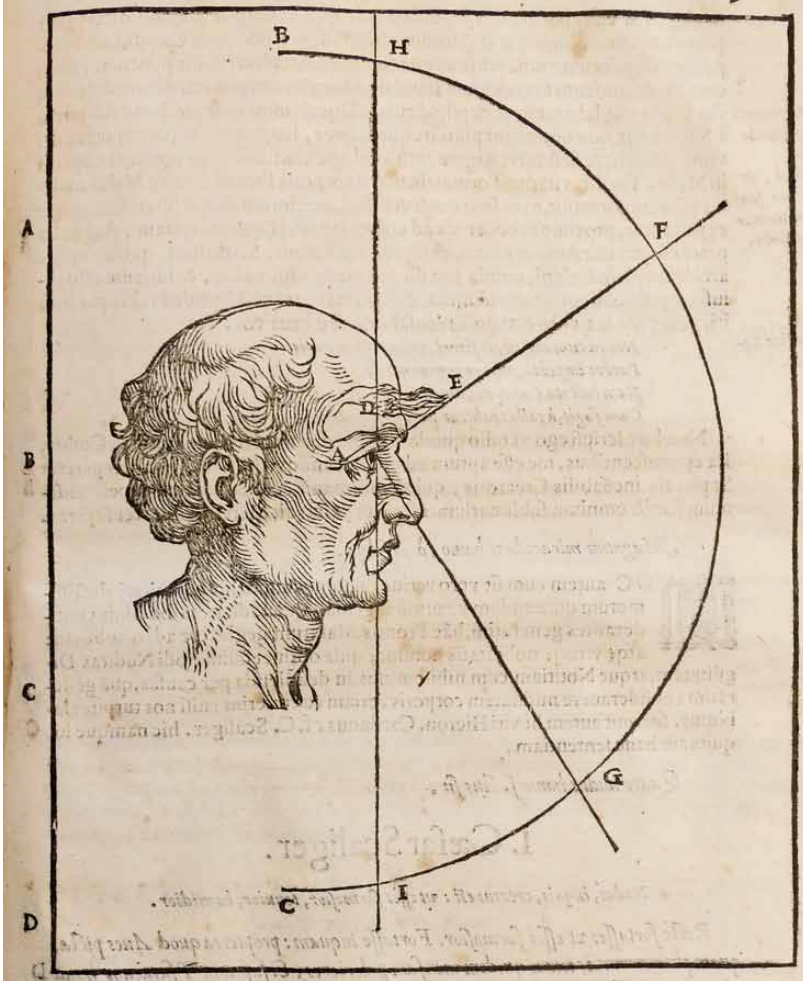
Ulmus (fl. 1599–1603) was a surgeon and friend of Tagliacozzi, both of whom performed plastic surgery. Of major interest, he here discusses several reconstructive surgeries, including a nasal reconstruction in a town called Montechiaro. Apparently "on the eleventh day we separated the skin grafted from the arm, that had been completely joined on to the defective nostrils; and it was freezing winter time, for it was the holy day of Saint Lucia. We informed Gaspar Taliacotius of this example. In this operation I was always helped by D. Jacob Senior, to whom my parents gave my sister, Francesca, to wife." Another surgery was performed with the help of his brother-in-law, Giacomo Zenaro, who also had an outstanding reputation as a restorer of mutilated noses. So even after Taliacozzi, Ulmus was still making noses (see Gnudi & Webster, *The Life and Times of Tagliacozzi*, pp. 272–273).

OCLC locates copies at the University of Kansas and the NLM. It is noted that in the 1601 printing the appendix (pages 73–80) was not bound in. The book was reissued in 1602 with the index and again in 1603 complete. See Fisher, "The Renaissance Beard: Masculinity in Early Modern England," *Renaissance Quarterly*, March 2001, at http://www.thefreelibrary.com.

112. [VETERINARY MEDICINE]

Viehartznei. Erziehung, Gbrauch, Lernung, Artznei in zúfelligen vnd natürlichen Kranckheyten, aller zahmen, dem menschen gebräuchlichen, vnd geheymen Thier vnd viehs. Frankfurt: Christian Egenolff, [1535].

4to. [i], xxv, [i] leaves. Woodcuts by Hans Weiditz depict a charming stockyard scene on the title page, and a trio of men with a horse on the first leaf (two of the three men have their



SI qui ſunt minus idonei ad intelligendum, quod ſcripſimus, ij additamento lanæ aut digitorum omnino percipient. Audite. Vos experiamini in Fronte veritatem hoc pacto. Stet ceruix (homine in recta Figura poſito) atque acies oculi, vel oculus ſurſum quam maxime promoueatur, & hoc ſit in cubiculo aliquo, noteturque locus, ad quem vſque pertingit oculus, vel actionis viſoriæ radius decurrens per Frontem nudatam pilis, qui locus ex. gratia ſit A. mox experiamini, ſtãtes eodem ſitu, quouſque promoueatur oculus,

Declaratio altera pro intellectu opinionis Autoris.

Viehartzney.

Erziehung/ gbrauch Kernung/ Artzney in zufelligen

vnd Natürlichen franckheyten/ aller zahmen/ dem menschen gebräuchlichen/ vnd geheymen Thier vnd viehs.

¶ Als nämlich. { Pferd/ Esel/ Ochsen/ Küe/ Säwe/ Schaaf ꝛc. Tauben/ Hüner/ Gänß/ Wasser vnd lufftvögel. ꝛc. Immen. } ¶ Inhalt nachgehnds Registers.

Auß VARRONE, PLINIO, VERGILIO, PALLADIO &c.

Zu Franckfurt, Bei Christian Egenolff.

eyes gouged out, presumably by a previous owner), plus 16 additional smaller text woodcuts of animals. Later vellum; interior with occasional light browning, faint waterstain on first and last leaves, unobtrusive repair on the title page, otherwise an excellent copy. $12,500.00

This rare treatise on veterinary medicine is distinguished for being the first illustrated edition from the 1530 printing. Much of the text is focused on equestrian care and medicine, with information on treating a variety of maladies including equine cancer and gallbladder disease. The latter part of the treatise explains the husbandry and medical treatment of other livestock, including mules, donkeys, oxen, sheep, pigs, dogs, and birds, along with a short section on apiculture. A two-page index follows the text.

Although the author's name is unknown, the illustrations were done by Weiditz (1495–1537), a member of an elite group of woodcutters of the German Renaissance, which also included Albrecht Dürer, Hans Holbein, and Weiditz's teacher, Hans Burgkmair. Weiditz is known for his illustrations of secular books, particularly Otto Brunfels' acclaimed *Herbarum vivae eicones*; his innovative, realistic depictions of plant life in that volume were greatly influential.

OCLC locates 3 copies, with only one in America (University of Michigan); Durling, 4600 (1550 ed.); Wellcome, 6603 (1550 ed.)

113. WALLACE, Alfred Russel

Island life: or, the phenomena and causes of insular faunas and floras, including a revision and attempted solution of the problem of geological climates. London: Macmillan and Co., 1880.

8vo. xvii, [iii], 526 pp., including half-title, plus 2 pages publisher's advertisements. With 3 full-page maps (1 hand-colored and 2 tinted) and numerous text maps and illustrations. Original cloth, gilt decoration on front cover; minor foxing, still a fine, uncut copy. $1200.00

First edition of one of the foundation works of zoogeography. Unlike the broad and general principles discussed in Wallace's *Geographical distribution of animals*, this book provides very specific details relating to problems of animal dispersal. "Wallace was the first scientist to use the new knowledge of Pleistocene glaciations to explain certain phenomena of animal distribution, speculating about possible causes of the ice ages" (Norman).

Norman, II, 2179

114. WATSON, James C.

Theoretical astronomy relating to the motions of the heavenly bodies revolving around the sun in accordance with the law of universal gravitation. London: Trubner & Co., 1868.

4to. [xiv]. 662 pp. Publisher's pebbled cloth binding with gilt lettering on the spine, spine a bit worn at head and faded, corners worn; interior in good condition with browning only on the first and last blanks, small library book label on the flyleaf verso. $1650.00

First edition of this thorough and valuable investigation of theoretical astronomy. Watson provides an in-depth analysis of planetary motion and the discovery of new comets, noting in his preface the fundamental complications of dynamics and all the problems presented. He states historical facts relating to difficulties with theoretical astronomy, citing Newton, Euler, Boscovich, Lagrange, and Laplace, among others. Through a series of observations and tables, Watson attempts to determine the orbit of the "heavenly bodies."

At age fifteen, Watson (1838–1880) matriculated at the University of Michigan, where he began studying classical languages and later focused on astronomy with professor Franz Brünnow. He then became the second director of Detroit Observatory, succeeding his late professor.

Watson is best known for his announcement of the discovery of the planet Vulcan, a body between Mercury and the sun. It is now assumed that what he actually viewed were the results of sun spots and small planetoids, which may exist. It is also assumed (in astronomical lore) that his imagined celestial body was the inspiration for the planet Vulcan in the *Star Trek* series.

Dictionary of American Biography, X, pp. 543–544

115. WEIDLER, Johann Friedrich

Institutiones mathematicae decem et sex purae mixtaeque matheseos disciplinas complexae; sub finem accedunt tabulae sinuum, tangentium et logarithmorum contractae et index generalis. . . . Vitembergae: Georg Marcum Knochium, literis Godofredi Gaeberdti, 1725.

8vo. [xvi], 876, [20], 32 pp. Title in red and black. With 48 leaves of plates. In a contemporary full calf binding dated 1729 in blind on the back cover. Overall in excellent condition, with only minor wear. $3500.00

Second edition, greatly enlarged, with over 100 additional text pages and illustrations. This early encyclopedia of science is Weidler's most important work, of significant value for its abundance of data and details in each area of science. Among the subjects covered are arithmetic, geometry, plane trigonometry, optics, perspective, spherical trigonometry, spherical and dynamical astronomy, geography (on the sphere), chronology, dialing, mechanics, hydrostatics, hydraulics, civil and military architecture, fortifications, and mathematical analysis concluding with differential and integral calculus. The work is notable for Weidler's method of stating, defining, and presenting results, or answers to problems. The format was typical of the Continental approach to education. Thus, because it is one of the best examples of its kind, this book is of great value to today's scholar.

Weidler (1691–1755) held the chair of mathematics at the University of Wittenberg, was a Fellow of the Royal Society, and wrote many esteemed books on scientific subjects. His most notable was the first general bibliography of astronomy as well as the first complete history of astronomy (see Houzeau & Lancaster, 11 and 86; and Lalande, pp. 414 and 458).

OCLC locates 5 copies; Poggendorff (1863), II, p. 1281

THREE WEISMANN OFFPRINTS FROM HIS OWN LIBRARY

116. Three offprints by Weismann, each in the original printed wrappers. $2400.00

1. WEISMANN, August & ISCHIKAWA, Chiyomatsu
Weitere untersuchungen zum zahlengesetz der richtungskorper (Further investigations into the statutory number of polar bodies). Zoologischen Jahrbuchern, Jena: Gustav Fischer, 1888.
8vo. viii, 80 pp. Weismann has inscribed his name in the upper right-hand corner, and written the date (1888) on the top printed wrapper.
First edition. The authors here seek to lay the foundation for the laws regarding the number of polar bodies in animals, polar bodies being cell structures found inside an ovum and produced during oogenesis. Weismann addresses the importance of polar bodies for inheritance factors, crucial to his stance against Lamarckism. He reiterates his position that acquired characteristics are inheritable, a discussion that Weismann would continue to conduct for many years. This paper provides the evidentiary basis for Weismann's article *Uber die bilding der richtungskoper bei thierischen eiern (On the number of polar bodies and their importance for the inheritance)*, published the prior year.

2. WEISMANN, August
Äussere Einflüsse als Entwicklungsreize (External influences as a stimulus for development). Jena: Gustav Fischer, 1894.
8vo. viii, 80 pp., including half-title. Uncut and unopened. Presentation copy from Weismann.
First edition. This paper sets out Weismann's views on the importance of external factors on animal development. He treats both preformation (the theory that all organisms were created at the same time, and that succeeding generations grow from fully formed but miniature versions of themselves that have always existed) and epigenesis (that each embryo or organism is gradually produced from an undifferentiated mass by a series of stages during which new parts are added). These were crucial arguments in the continuing discussions between Lamarckists and neo-Mendelian theories, at a time before the rediscovery of Mendel's work. Lamarck's theory of evolution, that characteristics taken on by an organism during its lifetime (by external factors) can be passed on to future generations, was still prevalent and the subject of debate with those in the Darwin camp. Weismann was generally an opponent of Lamarck, and this paper forms an important retort to the arguments of Lamarck supporters Herbert Spencer and Oscar Hertwig.

3. WEISMANN, August
Neue gendanken zur vererbungsfrage (New thoughts on inheritance). Jena: Gustav Fischer, 1895.
8vo. iv, 72 pp. Presentation stamp "Ueberreicht vom Verfasser" on the top wrapper.
This constitutes the final rebuttal in Weismann's ongoing dispute with Spencer over inheritance; it is particularly noteworthy for his first proposal of germinal selection, the theory of hierarchical selection, that germ plasm is made up of chromosomes composed of thousands of minute particles carrying hereditary information. Weismann here approaches the difficulties of explaining certain phenomena through natural selection which were frequently a focus of Lamarckian attention, such as the disappearance of useless organs. Weismann argues that heritable peculiarities occurred among the biophors and cells, and that these were variations in the primary cell constituents which might be influenced by natural selection, a further move toward Weismann's belief that "natural selection was adequate even beyond Darwin's hopes."

Weismann (1834–1914) was one of the founders of modern genetics. Born in Germany, he studied medicine at Göttingen, subsequently practicing as an army doctor. In 1860 he began teaching at Freiburg University, becoming the first director of their zoological institute and museum

and remaining there until his retirement in 1912. Weismann's major contribution was his formulation of germ-plasm theory, that a multicellular organism consists of both germ cells that pass on hereditary information and somatic cells that perform body functions. Critically, Weismann argued that the germ cells are not affected by anything the body learns or any ability it acquires during its life, and cannot pass this information on to the next generation; this came to be known as the "Weismann barrier." This theory propelled him into hard-line opposition of Lamarckism, and he always remained an ardent supporter of Darwin. Weismann's work essentially led toward the validation of Mendel's laws.

Biographical Dictionary of Scientists, Vol. II, pp. 961–962; *Dictionary of Scientific Biography*, XIV, pp. 232–239; Eimas, *Heirs of Hippocrates*, 1994; Winther, *Journal of the History of Biology* 34, pp. 517–519, 533, 543

117. WILKINS, John

Mercury, or the secret and swift messenger: shewing, how a man may with privacy and speed communicate his thoughts to a friend at any distance. . . . London: I. Norton, 1641.

8vo. [xviii], 180 (i.e., 170) pp. Title and text within ruled borders. Contemporary morocco; bookseller's description with annotations tipped in. Other than some minor waterstains on a few leaves, a very nice copy. $6500.00

First edition, quite rare, of Wilkins' valuable treatise, considered to be the basis for his later tracts on universal language and popular education. It contains a wealth of examples on cryptography, and also includes discussions on cryptology (secret communication by speaking) and semiology (communication by signs and gestures). It is primarily a discussion on means of communication and broaches the possibility of universal symbols to be used as a primary method of communication for all men.

Wilkins (1614–1672), 14th Bishop of Chester, was the warden at Wadham College, Oxford. He was among a number of individuals who would get together at an Oxford laboratory during this time to discuss their interests in experimental philosophy and science. They were the nucleus of the future Royal Society: John Wallis, Jonathan Goddard, William Petty, Thomas Willis, Robert Boyle, Hooke, and many more. Wilkins was one of the founders of the Royal Society, and its first secretary.

Dictionary of Scientific Biography, XIV, pp. 361–374; Thornton & Tully, p. 89; *Wheeler Gift Catalogue*, I, 117; Wing, W2207

118. ZANCHI, Giovanni Battista

Del modo di fortificar le città. Venice: Plinio Pietrasanta, 1554.

4to. 63, [1] pp., including the errata. Title within elaborate architectural border, separate leaf with portrait of the author, 17 decorative woodcut initials, and 8 woodcut text illustrations (5 full-page). Modern boards; other than a couple of very small and mild dampstains, a lovely, large copy. $12,500.00

First edition of the first Italian book devoted exclusively to fortification of cities. It was preceded only by Dürer's *Etliche underricht, zur befestigung der Stett* (1527). Italian works by Valle (1521) and Cataneo and Tartaglia (both 1554) contained only chapters on the subject.

Zanchi (1515–1586), a military engineer in the Venetian service under Marcantonio Colonna, took part in several campaigns—including the long siege of Siena, where he became acquainted with Belluzzi—and was a friend of Girolamo Maggi. He remarks that "the invention of artillery had necessitated a new system of fortifying cities, and that those who might have been qualified by experience to write on the subject were not sufficiently versed in its theory to do so" (Cockle, 767). The system he describes herein is the favored Italian bastion trace, limited to the square (with acute-angled bastions but already with an attempt to reinforce the curtains) and the octagon (again strengthening the curtains). This design improved the defense of the fortress, as covering fire had to be provided often from multiple angles. The woodcuts are among the earliest showing the new pentagonal form of bastion.

Zanchi left the manuscript of his work with Girolamo Ruscelli when he had to leave Venice; on his return, Ruscelli sought and obtained permission to edit and publish the work, which he recognized as a pioneering effort.

D'Ayala, 126; Marini, 13–14; Riccardi, II, 649

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119. ZATTA, Antonio

Atlante novissimo. Venice: Antonio Zatta, 1774–1785.

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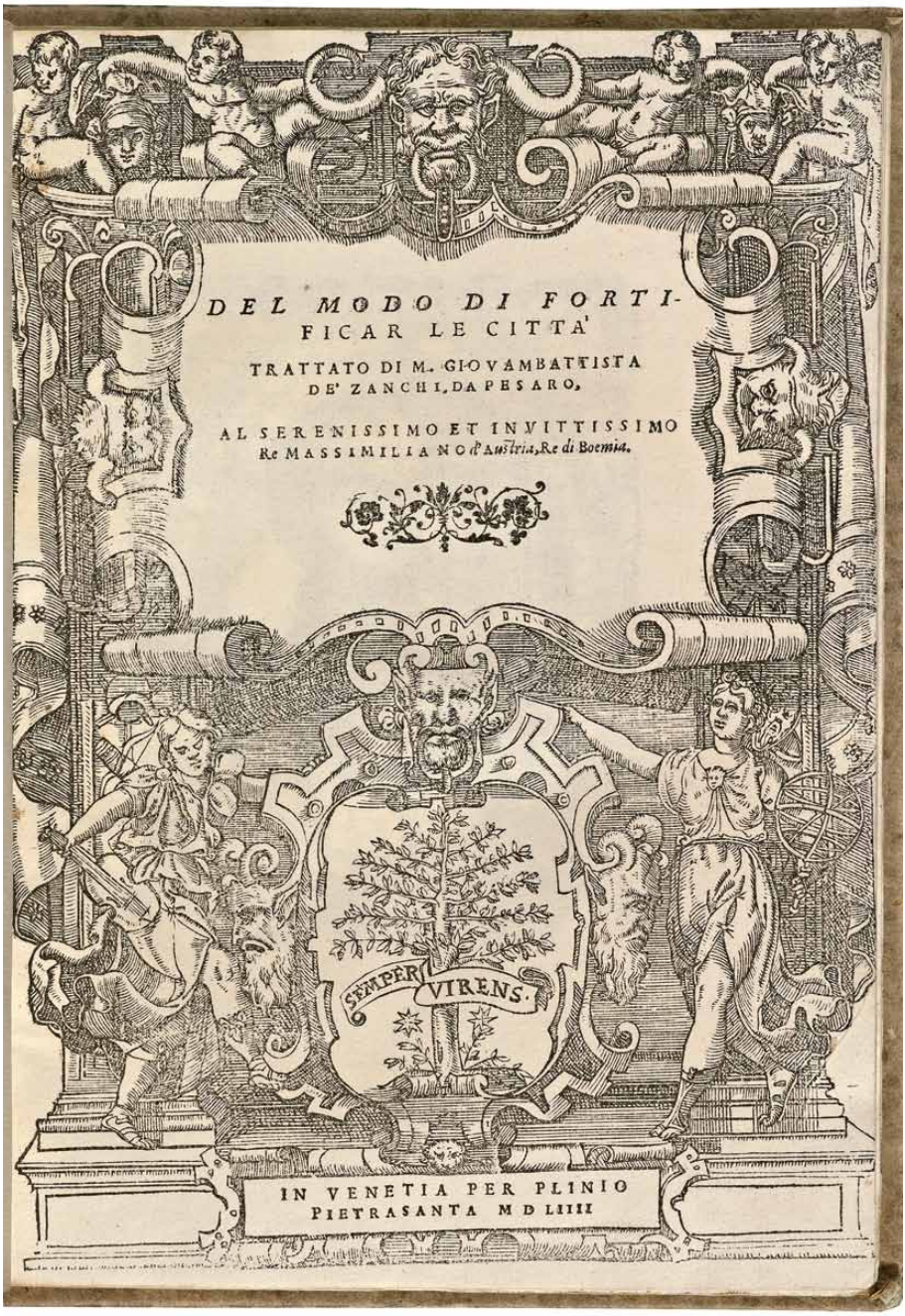
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DE' ZANCHI, DA PESARO,
AL SERENISSIMO ET INVITTISSIMO
Re MASSIMILIANO d'Austria, Re di Boemia.
SEMPER VIRENS.
IN VENETIA PER PLINIO
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118. *Zanchi*


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119. *Zatta*

insignificant wormholes on spines. Ownership inscription of Girolamo Bossi (likely the Marquis Benigno Girolamo Bossi) and bookplate of Andrea Tontoli, an Italian priest and lawyer. A lavish copy in superb condition.

Collation. Volume I: xvi, 50, 1 pp., 70 double-page maps, [2] pp.; Volume II: [iv] pp., 49 double-page maps; Volume III: [iv] pp., 54 double-page maps; Volume IV: [iv] pp., 42 double-page maps. $90,000.00

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Zatta (1757–1797), based in Venice, was the most prominent Italian map publisher of the late eighteenth century. His maps marked a transition from eighteenth- to nineteenth-century cartographic styles. He updated and redefined the traditional title cartouche by replacing the mythic elements common to the earlier styles with more representative images. His maps contain magnificent details while striving for accuracy. In addition, Zatta's published works were renowned for their high artistic qualities and modern colors, especially the fresh tones of his pinks, greens, and yellows. This atlas is considered his magnum opus, though he also produced a number of Italian classics. It is extremely rare to find this atlas complete.

Bossi (1788–1870) was a friend and defender of Italian revolutionaries, including Federico Confalonieri (1785–1846). He took refuge in Switzerland after his exile from Milan following the 1821 Piedmont revolt against the Austrians.

Haskell, *Patrons and Painters*, p. 339; Perry et al., *A Guide to the Maps of Australia in Books Published 1780–1830*; Sabin, 106276; Tooley, *Maps and Mapmakers*, p. 123

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The collection comes from the Zoologiska Institutionens Bibliotek in Uppsala, Sweden, with its stamp on most of the title pages/covers. A great many of the works are from the libraries of distinguished scientists Alexander Götte, Wilhelm Lilljeborg, and Axel Wirén, and have their stamp or ownership inscription.

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Alexander Wilhelm von Götte (1840–1922) was an eminent German zoologist born in St. Petersburg. His main interest was invertebrate embryology, his major work (on the *Bombinator igneus*, a European aquatic toad) appearing in 1875. Though sometimes presented as an opponent of Darwinism, Götte acknowledged the theory of descent, though he was highly skeptical of Darwin's acceptance of the inheritance of acquired characteristics; during the 1870s, he was involved in a famous dispute over Darwinism with eminent biologist Ernst Haeckel. Götte was a pioneer in the research of developmental physiology, which soon became its own field of study, and he became a major figure in zoology of the late nineteenth century.

Wilhelm Lilljeborg (1816–1908) was a noted Swedish zoologist and a professor at the University of Uppsala. He specialized in the study of the Swedish cladocera (water flea), and his particular contribution to research in that field was his work on the importance of cladocera in the food chain. He is also well known for his work on whales, discovering a sub-fossil in 1861 which he named *Balaenoptera robusta* (Atlantic gray whale); this was later placed in a new genre of whales, Eschrichtius, by the British researcher John Gray.

Axel Wirén (1860–1925) was a prominent Swedish zoologist, specializing in malacology (the study of molluscs). He received his Ph.D. from the University of Uppsala in 1885, taking a professorship there in 1908; he was also a researcher at the Kristineberg Marine Research Station. He became a member of the Swedish Royal Academy of Sciences (KVA) in 1902, and was the founder of the prestigious Wirén scholarship.

A selection of the various periodicals in which articles appear includes:

Acta Zoologica
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