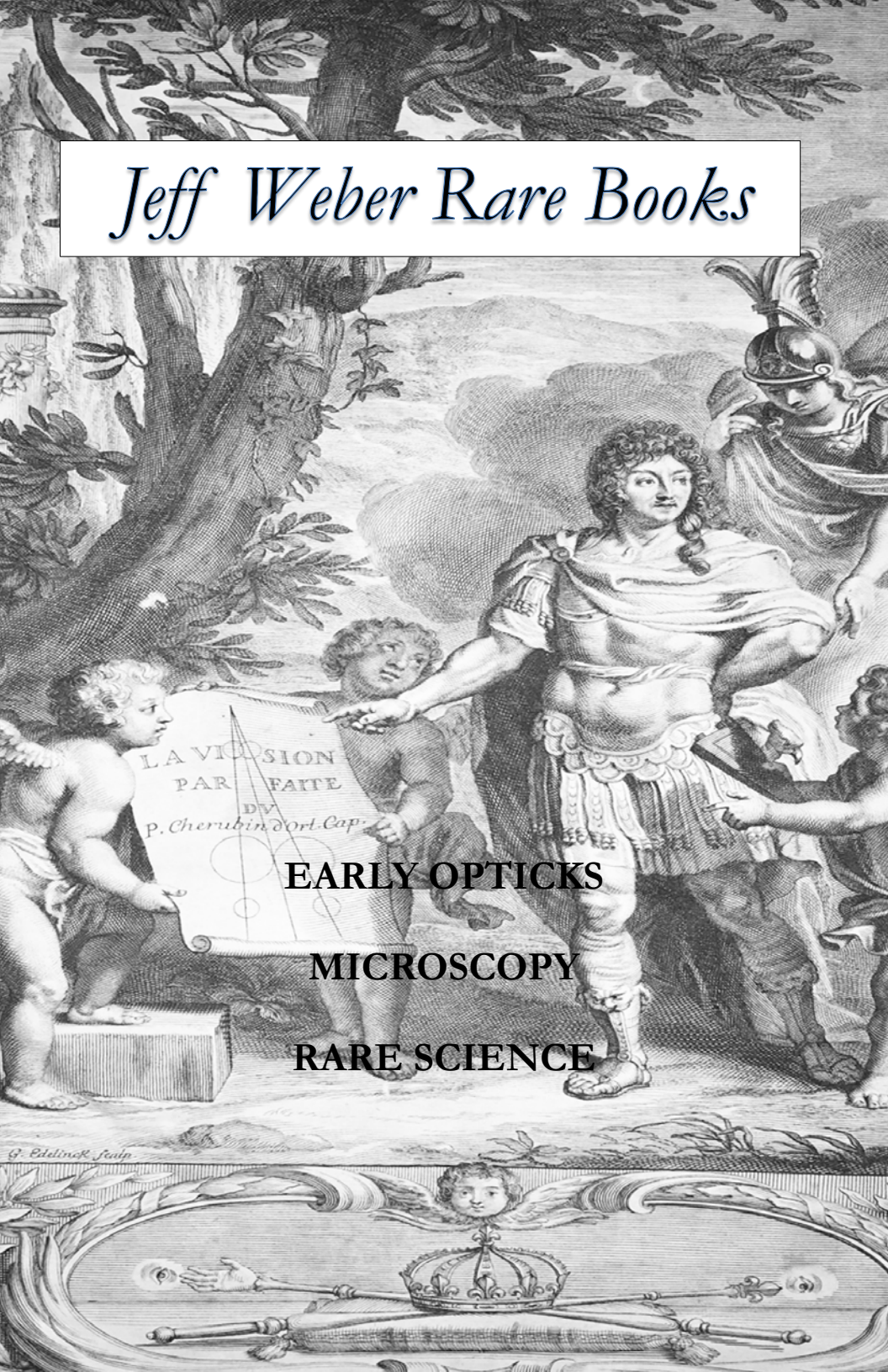
Jeff Weber Rare Books



EARLY OPTICKS

MICROSCOPY

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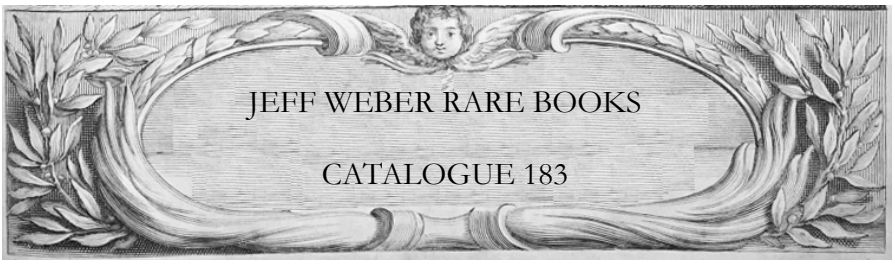

We have recently acquired the optics & microscopy library of a private collector. The collection has enough highlights to establish the importance of this collection as noteworthy in the history of science. Here is a selection – more to come. Enjoy!

www.WeberRareBooks.com

On the site are more than 10,000 antiquarian books in the fields of science, medicine, Americana, classics, books on books and fore-edge paintings. The books in current catalogues are not listed on-line until mail-order clients have priority.

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RECENT CATALOGUES:

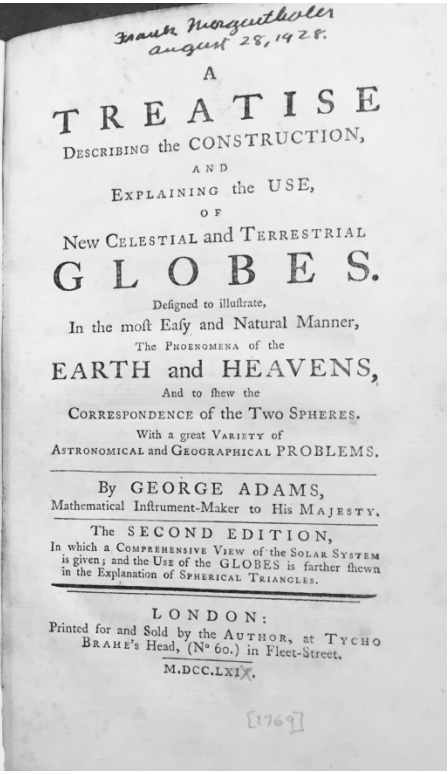
176: Revolutions in Science (469 items)
177: Sword & Pen (202 items)
178: Wings of Imagination (416 items)
179: Jeff's Fables (127 items)
180: The Physician's Pulse-Watch (138 items)
181: Bookseller's Cabinet (88 items)
182: Orientalism (48 items)

COVER: CHÉRUBIN D'ORLÉANS [12]

Jeff Weber & Mahshid Essalat-Weber

J E F F W E B E R R A R E B O O K S
1815 Oak Ave, Carlsbad, California 92008

TELEPHONES: 323 – 344 – 9332; 323 – 333 – 4140
e-mail: weberbks@pacbell.net



1. **ADAMS, George** (1709-1772), *Mathematical Instrument Maker, the Elder. A Treatise Describing the Construction, and Explaining the Use, of New Celestial and Terrestrial Globes. Designed to illustrate, in the most easy and natural manner, the phoenomena of the earth and heavens, and to shew the correspondence of the two spheres. With a great variety of astronomical and geographical problems. Second edition.* London: Printed for and Sold by the Author, at Tycho Brahe's Head, M.DCC.LXI[X], 1769.

   8vo. xxviii, 345, [vii] pp. Half-title, 14 engraved plates (13 folding + frontispiece [fore-edge trimmed] of the author's terrestrial globe); left margin frontispiece trimmed, occasional spotting, title-page defaced a bit [eliminating the "X" from the date, creating a date that didn't exist], offsetting on half-title from the ads [i.e. another copy, thus at the time of printing]. Modern period-style calf, gilt-stamped, raised bands, elegant red spine label, edges sprinkled red. Ownership ink signature of

Frank Mergenthaler, August 28, 1928, on title-page (upper margin).

$ 1,250

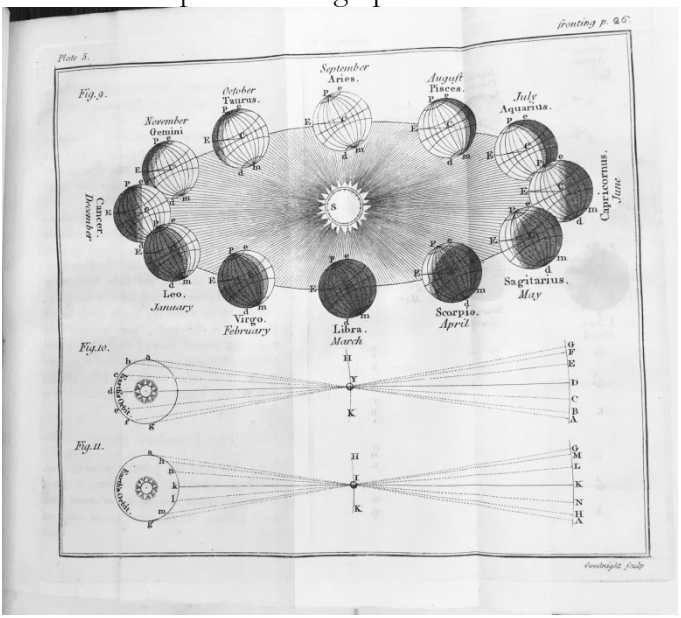
SECOND EDITION "in which a comprehensive view of the Solar System is given; and the Use of the Globes is farther shewn in the Explanation of Spherical Triangles." Includes the author's printed stock sheet (at rear): "A catalogue of mathematical, philosophical, and optical instruments. Made and sold by George Adams." Adams made many types of instruments and continued the trend of pocket globes along with Charles Price, John Senex, Robert Cushee, James Ferguson, and Nathaniel Hill. – Turner.

Some rascal defaced, by erasing one letter on the title-page, suggesting the book was printed 1761 instead of 1769.

Unsigned in the text, but it well documented that Samuel Johnson (1709-1784) wrote the dedication "To the King" in all editions of this text. See: Allen Tracy Hazen, "Samuel Johnson's prefaces & dedications", Yale University Press, 1937, p. [1]-4.

George Adams, the elder (1704-1773), "mathematical instrument maker to George III, obtained a world-wide reputation as a maker of celestial and terrestrial globes, and his 'treatise describing and explaining the construction and use of new celestial and terrestrial globes' passed through thirty editions. The book first appeared in 1766, and its dedication to the king has been attributed to Dr. Johnson. The thirtieth edition was issued in 1810, with a preface and additions by Adams's younger son Dudley. Adams was also the author of: 1. '*Micrographia Illustrata*, or the knowledge of the microscope explained' (1746), which included 'a translation of Mr. Joblott's observations on animalculæ,' and passed through four editions between its date of publication and 1771. 2. 'The Description and Use of a new Sea-quadrant for taking the altitude of the sun from the visible horizon' (1748). 3. 'The Description and Use of the Universal Trigonometrical Octant, invented and applied to Hadley's Quadrant' (1753). Adams died in 1773, according to the statement of his second son, Dudley Adams,

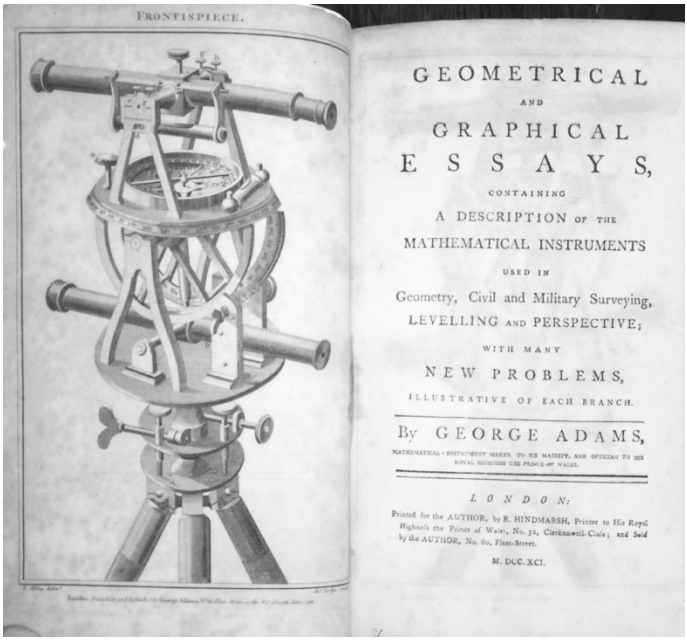
in his preface to the thirtieth edition of his work on the globes, and not in 1786 as previous biographers have stated." – *DNB*.



PROVENANCE: Frank Mergenthaler (1886-1971), born in Philadelphia, became an attorney and practiced in the Los Angeles/Pasadena area, he was Secretary of the Los Angeles Astronomical Society. He was also a member of the Amateur Telescope Makers Society.

☼ *Dictionary of National Biography*, vol. 1; ESTC T70774; Courtney and Nichol Smith, *Bibliography of Johnson*, page 112; Fleeman, J.D., *A Bibliography of the Works of Samuel Johnson*, (2000), 66.6AG/1; Nicholas Goodison, English *Barometers 1680-1860: A History of Domestic* ... (1977), Page 122.

See also: Joe Albree, David C. Arney, V. Frederick Rickey, *A Station Favorable to the Pursuits of Science: Primary Materials in the History of Mathematics at the United States Military Academy, American Mathematical Society & London Mathematical Society*, vol. 18, 2000, p.41; Elly Dekker, P. C. J. van der Krogt, *Globes from the Western World*, 1993, pp. 113, 171; Sylvia Sumira, *The Art and History of Globes*, 2014; Gerard L'Estrange Turner, *Scientific Instruments, 1500-1900*, 1998, page 27.


FRONTISPIECE.

GEOMETRICAL
AND
GRAPHICAL
ESSAYS,
CONTAINING
A DESCRIPTION OF THE
MATHEMATICAL INSTRUMENTS
USED IN
Geometry, Civil and Military Surveying,
LEVELLING AND PERSPECTIVE;
WITH MANY
NEW PROBLEMS,
ILLUSTRATIVE OF EACH BRANCH.
By GEORGE ADAMS,
MATHEMATICAL-INSTRUMENT MAKER, TO HIS MAJESTY, AND OPTICIAN TO HIS ROYAL HIGHNESS THE PRINCE OF WALES.
LONDON:
Printed for the AUTHOR, by R. HINDMARSH, Printer to His Royal Highness the Prince of Wales, No. 32, Clerkenwell-Close; and Sold by the AUTHOR, No. 60, Fleet-Street.
M.DCC.XCI.

2. **ADAMS, George** (1750-1795). *Geometrical and Graphical Essays, containing a description of the mathematical instruments used in geometry, civil and military surveying, levelling and perspective: with many new problems, illustrative of each branch.* London: Printed for the Author, by R. Hindmarsh, 1791. 8vo. xvi, 494 [of 500] pp. 32 engraved folding plates (many folding), including the author's catalogue of instruments [lacking pp.495-500 a portion of the "Catalogue of Instruments" after those labelled 'Instruments for Electricity']; edges chipped in places. Modern full antique-style calf, raised bands, blind and gilt-rules, gilt spine title. Some brittleness to paper edges, else very good.

$ 2,000

First edition of the author's second book, especially useful for the advancement of instrumentation relating to perspective (including instruments of perspective), surveying, mathematics, calculation, astronomical instruments, and military geometry. The Adams' instrument making firm was the source of some

of the "finest scientific instruments of the eighteenth century." – Milburn.

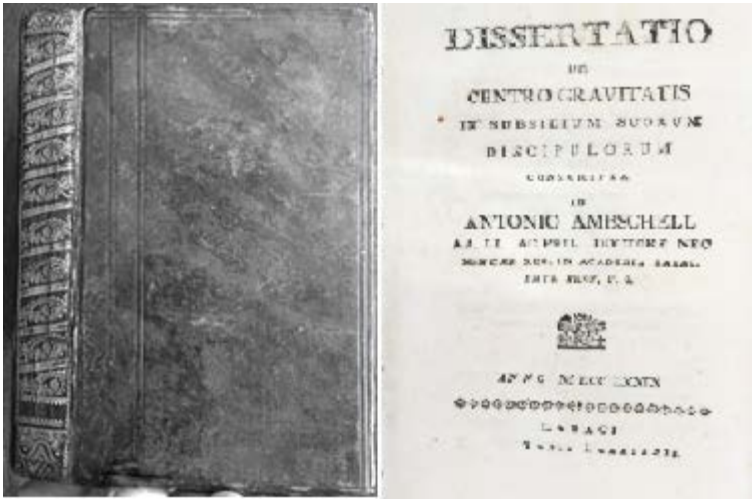
"In 1791 a maker of mathematical instruments named George Adams (1750–1795) published a large book on instruments entitled Geometrical and Graphical Essays. Among his instruments are two perspectographs ... His description of these devices is very brief, but he did begin with a twenty-two-page introduction on perspective in which he included some mathematical considerations (Adam 1791)." – Kirsti Andersen, *The Geometry of an Art: The History of the Mathematical* ... 2008, page 596.

George Adams, son of George Adams, Sr., was Mathematical - Instrument Maker to his Majesty, and Optician to his Royal Highness the Prince of Wales.

☼ *Dictionary of National Biography*, vol. 1; ESTC T70774; Courtney and Nichol Smith, *Bibliography of Johnson*, page 112; Fleeman, J.D., *A Bibliography of the Works of Samuel Johnson*, 66.6AG/1; Nicholas Goodison, *English Barometers 1680-1860: A History of Domestic* ... (1977), page 122.

See: John R. Millburn, *Adams of Fleet Street: Instrument Makers to King George III*, 2000.

See also: Joe Albree, David C. Arney, V. Frederick Rickey, *A Station Favorable to the Pursuits of Science: Primary Materials in the History of Mathematics at the United States Military Academy, American Mathematical Society & London Mathematical Society*, vol. 18, 2000, p.41; Elly Dekker, P. C. J. van der Krogt, *Globes from the Western World*, 1993, pp. 113, 171; Sylvia Sumira, *The Art and History of Globes*, 2014; Gerard L'Estrange Turner, *Scientific Instruments, 1500-1900*, 1998, page 27.


DISSERTATIO
DE
CENTRO GRAVITATIS
IN SUBSIDIUM SUORUM
DISCIPULORUM
CONSCRIPTA
AB
ANTONIO AMBSCHELL
AD D. XI. APRIL. HORTORE NEO
LABACI

Supporter of Boscovich

3. **AMBSCHELL, Anton [Antonio]; Martin JEELL**. *Dissertatio de Centro Gravitatis in Subsidium Suorum Discipulorum.* [With]: *Assertiones ex universa Physica et Mathesi Elememtari [sic] quas in aula Academica archiducalis gymnasii Labacensis ex praelectionibus Martini Jeell ... Antonii Ambschell ... mense Augusto ... anno MDCCLXXIX. propugnabit* ... Wolfgangus Muha Carn. Corgnial. ... auditor. Labaci, typis Egerianis, 1779. 2 works in 1 volume. Sm. 8vo. [ii], 239; 40 pp. 2 large folding engraved plates. Original full mottled blind-ruled calf, spine flat-backed but with elaborate gilt tooling, edges red. EXTREMELY RARE.

$ 1,800

First and only editions. The first work deals with the center of gravity and the second relates to physics and mathematics. Stanislav Juznic & Bruno Besser write of Ambschell's devoted support for Boscovich.

Anton Ambschell (1749/51-1821), Jesuit, a physicist and mathematician, was born December 10, 1749 in Cirknica, and died July 14, 1821 in Bratislava. He was accepted into the Jesuit order in 1768, from 1773 he was professor of physics at the Ljubljana Jesuit Lyceum. He was deposed in 1785 as rector because of improper conduct by a professor of logic and metaphysics, Nowak, then to 1804 prof. physics and mechanics

at the University of Vienna from 1809 onwards lector and canon in Bratislava, where he died. His library was left to the Bratislava Academy. He was a member of the Ljubljana Academy. He wrote the following books: in Ljubljana in 1778 in German, translated by Herbert I, "Dissertatio de Aqua aliorumque nonnullorum fluidorum elasticitate"; Dissertatio de centro gravitatis in subsidium suorum discipulorum, Ljubljana 1779 [the present work], which was dedicated to Baron Zois [Wolfgang] Mucha, as a second year student of philosophy at [his] beloved Lyceum August 1779, Ambschel publicly defended his "Assertiones" [the second work here] on general physics and elementary mathematics; Dissertatio de motu, 1780; Predigt an dem Festtage des hl. Antonius von Padua, gehalten zu Laibach and Krain 1782, printed in Vienna; Anfangsgründe auf der Allgemeinen Erscheinung und Versuch gebaute Naturlehre, I-VI. Wien, 1791-93; Matheseos element. Vindobonae, 1807-10; Element physicae e phaenomenis et experimentis deductae. Vindobonae. 1807. - Prim .: Pohlin; Radics, Bl. aus Cr., 1864, 102-4; Oest. Nat. Enz. I 75; Wurzbach 22, 463; Backer-Sommervogel I, 277 Gl. – Joza Glonar.

The Ljubljana Rector and later Viennese Professor Anton Ambschell promoted Boscovich in his textbooks which were famous for Ambschell and his teacher Herbert's very first comparatively exact measurement of the water compressibility. The suppression of the Jesuit order obstructed the development of Boscovich's ideas but in no way removed them from the scientific or students' scene. The Boscovich's followers and their students were able to develop strong high-schools supporting of Boscovich, who kept his great influence in 19th century and paved the way for the modern use of Boscovich's ideas in Faraday-Maxwell's electromagnetism, Kelvin's atomism, and Bohr-Heisenberg's quantum mechanics. – SYMPOSIUM 7: Exact Sciences in Habsburg Monarchy in 18th century (on 300th Anniversary of Boscovich's Birthday) Organizers Stanislav Juznic, University of Oklahoma, Norton, USA & Bruno Besser, Austrian Academy of Sciences, Graz, Austria, [within:] Gianna Katsiampoura, (editor), 5TH INTERNATIONAL CONFERENCE OF THE EUROPEAN SOCIETY FOR THE HISTORY OF SCIENCE Scientific

cosmopolitanism and local cultures: religions, ideologies, societies: BOOK OF ABSTRACTS. ATHENS, 1-3 NOVEMBER 2012, p. 45.

The first work is known in only one other copy in the National & University of Slovenia [WorldCat]. The second work, *Assertiones ex universa Physica et Mathesi Elememtari*, is held at two locations: National library information system of Slovenia, Maribor, and National and University Library [Narodna in univerzitetna knjiznica].

See: Južnič, Stanislav: Ambschell, Anton (1751–1821). *Slovenska biografija.* Znanstvenoraziskovalni center SAZU, 2013.

Inscribed by the Author to Charles Villiers, Member of Parliament

4. **BABBAGE, Charles**. *Observations on the Temple of Serapis at Pozzuoli Near Naples. With an attempt to explain the causes of the frequent elevation and depression of large portions of the Earth's surface in remote periods ... With a supplement. Conjectures on the physical condition of the Moon.* Privately printed, 1847.

8vo. 222 x 138 mm. 42 [4, advertisements] pp. 2 lithographed plates (1 partly hand-colored) and 6 figures, list of author's works. Original blind and gilt-stamped red cloth, with gilt motif of temple on upper cover, gilt spine title; spine ends worn, some soiling, small paper label on upper cover. Neat bookplate of the Stirling Public Library ("The Thomson Collection"), [Glasgow]. Very good copy. INSCRIBED BY THE AUTHOR on verso of front endpaper: "The Honble Charles Villiers, MP, from the Author."

$ 3,750

FIRST EDITION. This paper reports the author's geological observations on the Temple of Serapis at Pozzuoli, an ancient ruin situated on the seacoast near Naples that Babbage first studied during his European tour in 1828. From the strata in which [the temple] was embedded and encrustation on the marble columns [Babbage] was able to estimate the sea level at various earlier dates. ... [In March 1834]. "In some of the rooms

of the macellum Babbage found a dark brownish encrustation of salts, and a thicker encrustation up to a height of about 9 feet (2.7 m) from floor level. These have been interpreted as showing that as the building lowered, a little lake formed and allowed water to enter the building without there being a direct connection to the sea, then at a later stage the land subsided to the point where sea water came in, and the Lithophaga started drilling holes in the masonry up to 19 feet (5.8 m) from floor level." Wikip. [See: Liber, Lucio; Paola Petrosino; Valentina Armiero (2010). "Il Serapeo ed i Granai Imperiali di Pozzuoli = The Serapis Temple and the Imperial Granaries of Pozzuoli". Italian Journal of Geosciences 129 (2): 237–50.

Babbage read a paper to the Geological Society on his observations together with a theory of the movement of isothermal surfaces within the earth. He sought to prove that large tracts of the earth's surface subside through the ages, whilst other portions rise irregularly at various rates. – Hyman, Charles Babbage, 1982, p. 71.

An abstract of Babbage's paper was privately printed the same year (see Van Sinderen 1980, no. 48). A full treatment was not made until 1847, when the paper was privately printed with some additions. There is also a title listing of his publications. Both Babbage and Charles Lyell prominently illustrated the Temple of Serapis. For Lyell he used it for the frontispiece to the Principles of Geology (1830); Babbage includes two lithographs. John Herschel and Babbage are both credited with making the theory of geosynclines. As the key image for a certain kind of geological movement, the Temple of Serapis was later analyzed in great detail by Eduard Suess (1831-1914) in his theory of global plate tectonics and geopaleography. See: T. Nield, Supercontinent: Ten Billion Years in the Life of Our Planet. Cambridge, MA: Harvard University Press, (2007).

PROVENANCE: Honourable Charles Pelham Villiers, 1802-1866, was a British lawyer and politician who sat in the House of Commons from 1835 to 1898, making him the longest-serving Member of Parliament. He was the son of the Hon. George Villiers and the Hon. Theresa, daughter of John Parker,

1st Baron Boringdon. He was grandson of Thomas Villiers, 1st Earl of Clarendon and brother of George Villiers, 4th Earl of Clarendon. He was educated at East India Company College and St John's College, Cambridge, becoming a barrister at Lincoln's Inn in 1827. He was raised to the rank of an Earl's son in 1839 and thus entitled to be styled the Honourable Charles Pelham Villiers.

Both Babbage and Villiers were buried at Kensal Green Cemetery.

☼ Van Sinderen (1980), no. 57; Norman, *Origins of Cyberspace* 63.

See: Naomi Oreskes, *The Rejection of Continental Drift: Theory and Method in American Earth Science*. Oxford University Press, (1999); Marq de Villiers, *The End: Natural Disasters, Manmade Catastrophes, and the Future of Human Survival*, (2008).

5. **BAKER, Henry** (1698-1774). *Employment of the Microscope. In two parts. I. An examination of salts and saline substances, their amazing configurations and crystals, as formed under the eye of the observer: with plain directions how to prepare such substances, and preserve them in constant readiness for inspection; whereby the curious may always be furnished with numberless objects hitherto little known. Also occasional considerations on gems, poisons, the vegetation of metals, the resusciation of plants, the formation of amber, corals, and many other subjects. II. An account of various animalcules never before described, and of many other microscopical discoveries: with observations and remarks. Likewise a description of the microscope used in these experiments, and of a new micrometer serving to shew the size of magnified objects. Together with instructions for printing off any medal or coin. Illustrated with seventeen copper plates. By Henry Baker, fellow of the Royal Society, and member of the Society of Antiquaries of London. The second edition.* London: Printed for R. and J. Dodsley, 1764.

Two parts in one vol. 8vo. xii, 442, [10] pp. 17 engraved plates (some folding); lightly foxed, title-page creased, pl. facing p. 422 torn at fold. Modern full calf with original calf mounted on

sides [motto gilt-stamped: "Fide et Virtute" – belonging to Cha. Brandling], gilt and blind-stamped spine, gilt-stamped red leather label, new endleaves. Bookplates (4) of Cha. Brandling, Charles Adams, Fred C. Luck, and Max Erb. Very good +.

$ 650

Second edition. Features descriptions of various insects, crystals, chemicals, etc., as well as a description of the microscope and of Leeuwenhoek's microscopes. Baker, apprenticed to a bookseller, natural philosopher, microscopist, opened a school for deaf and dumb persons, received the Copley gold medal for microscopical observations on the crystallization of saline particles in 1744. He also studied the application of electricity. He married the daughter of Defoe, was a Fellow of the Royal Society and the Society of Antiquaries, and founded the Bakerian Lectures, for the Royal Society.

PROVENANCE: [1]: Charles Brandling (1733-1802), of Gosforth, Northumberland, son of a banker, served as Northumberland's Sheriff, 1781-82, a Member of Parliament for Newcastle from 1784 to 1797. His library seems to have been part of a general sale at Sotheby, Wilkinson & Hodge 30 January 1895, 'Parts of the libraries of John Melville, 9th Baron de Hochepied Larpent, Julia Child Villiers, Countess of Jersey afterwards Mrs. Charles Brandling and Charles Brandling, and part of the library of W. H. de Merle.' – Univ. of Toronto. [2]: Charles Adams "Libertas et Natale Solum"; [3]: Fred C. Luck of Canterbury, attended Pembroke College, Cambridge, had a tea plantation in Ceylon and later in Antwerp, Holland; he wrote, "A Ceylon Planter's Holiday," Health: A Home Magazine Devoted to Physical Culture and Hygiene, Volume 55, 1905. [4]: Max Erb: Max Erb Instruments, Santa Ynez, California. This company started in 1954 and specializes in microscopes.

Waller 10730. - Wellcome II, 88. - Blake 28. - Nissen ZBI 201. - *DSB* I, 412; Poggendorff I, 91 [1764 ed.].

6. [**BOSCOVICH**] **LA CAILLE, Nicolas Louis de (1713-1762); Roger Joseph BOSCOVICH** (1711-1787). *Clarissimi viri D. de La Caille,… Lectiones Elementares Opticae ex Editione Parisina anni MDCCLVI in Latinum Traductae a C.S. e S.J.; quibus auctarii loco accessit brevis theoria micrometri objectivi a R.P. Rogerio Josepho Boscovich e S.J. in Collegio Romano Matheseos Professore Concinnata*. Vienna: Typis Joannis Thomae Trattner, 1757.

Sm. 4to. [viii], 150 pp. Title vignette, 13 folded engraved plates, head and tail pieces, errata, corrige. Original plain boards, small red gilt-stamped spine label; rubbed. Very good. RARE.

$ 3,000

This work contains Boscovich's theory of the microscope objective, which is the most important part of this monograph with two contributions. The first is a Latin translation from the French of Karl Scherffer's, *Leçons élémentaires d'optique*, 1756.Within this work is a lot of discussion on all aspects of optics, including Catoptrica, dioptrics, vision, the telescope and microscope, perspective At the end of the volume one finds the contribution of Boscovich: "Auctarium. Theoria micrometri objectivi. Carolo Benvenuti Soc. Jesu. Rogerius Josephus Boscovich ejusd. Soc. S.P.D.", pages 143-150.

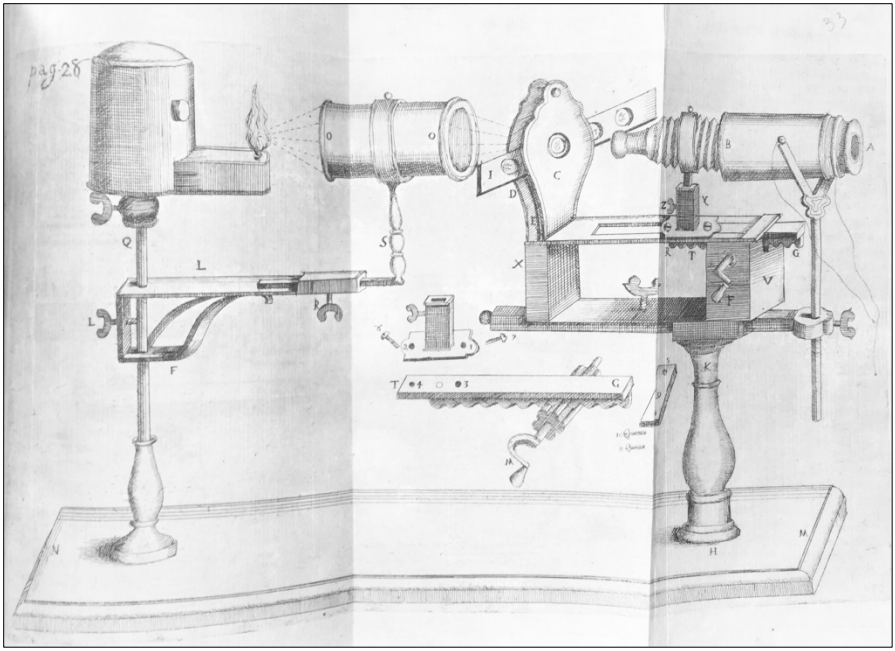
The first edition of La Caille on optics was issued in 1750 and was reprinted ten times according to I. S. Glass (p.22), who describes this work as "popular" and "a fairly uncomplicated treatment of optics as then known, especially as applied to lenses, mirrors, eye glasses, telescopes and microscopes" and being in alignment with Newtonian science as well. La Caille was an astronomer and compiled a catalogue of 398 stars in 1757. He also wrote another work on optics in 1750. He also became interested in determining the position of the Moon for the purpose of determining positions at sea. For this and his ephemerides tables he applied his mathematical skills. His work drew the attention of Lalande who was impressed with both his correctness and the quantity of work.

"Rudjer Josip Boscovich, Yugoslavian mathematician and natural philosopher, was born in Dalmatia at Ragusa on May 18, 1711. In 1725, at the age of fifteen, he entered the Society of Jesus, beginning his studies in mathematics and physics at Collegio Romano, the preeminent Jesuit college. After completing his novitiate in 1740, Boscovich was appointed professor of mathematical science at the Collegio where he continued to teach for twenty years, publishing many dissertations on topics such as sunspots, the Aurora Borealis, the effects of gravity, and the transit of Mercury." [UCB] He was elected a Fellow of the Royal Society from 1761.

See: Thomas Hockey et al., The Biographical Dictionary of Astronomers, Springer, 2007; Ian Stewart Glass, Nicolas-Louis De La Caille, Astronomer and Geodesist, Oxford University Press, 2012. "La Caille was the first real astronomer and the first geodesist to work in the southern hemisphere, and provided the data needed by the great French mathematicians Maupertuis, d'Alembert and Clairaut in their studies of planetary motions."

Select locations: Bayerische Staatsbibliothek (Germany); Frisian Historical and Literary Centre; Huntington Library (Burndy Collection); Linda Hall Library; Rice University; San Diego State University; Stanford University; Staatliche Bibliothek Regensburg (Germany); UC Berkeley; UCLA; Universiteitsbibliotheek Leiden; University of Oklahoma; Det Kongelige Bibliotek: Nationalbibliotek og Københavns Universitetsbibliotek; Utrecht University Library.

Note: Both the SDSU and the National Library of Israel a different title with collection of: [10], 280, [vi] pages and only 9 leaves of plates. The title differs as it contains the astronomy, geometry and physics parts, and the present issue is on optics and scientific instrumentation (telescopes and microscopes).



The Haskell F. Norman Copy

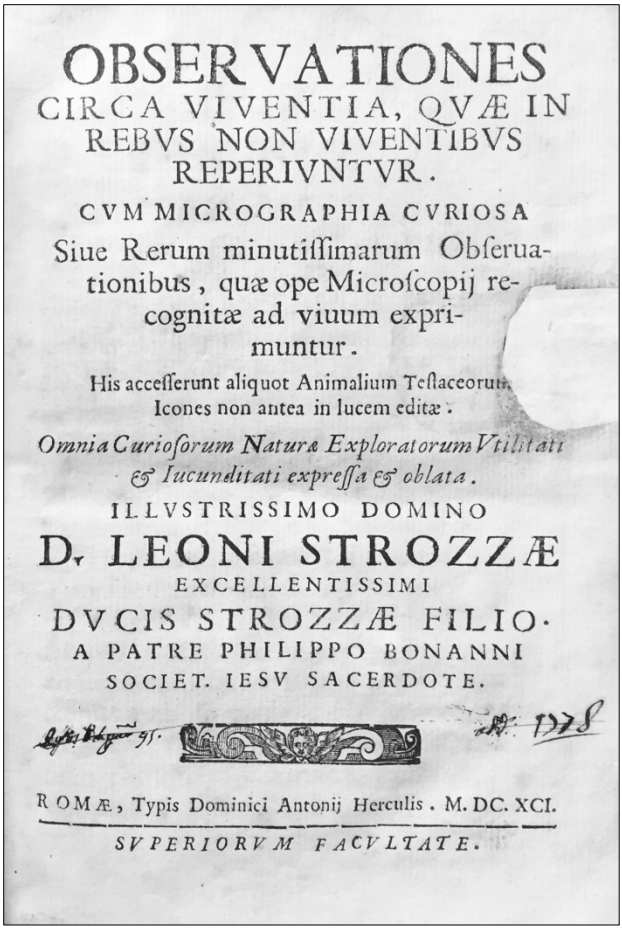
7. **BUONANNI, Filippo** (1638-1725). *Observationes circa Viventia, quae in Rebus non Viventibus Reperiuntur. Cum Micrographia Curiosa sive rerum minutissimarum observationibus, quae ope microscopij recognitae ad vivum exprimuntur. His accesserunt aliquot Animalium Testaceorum Icones non antea in lucem editae. Omnia Curiosorum Naturae Exploratorum Utilitati & Iucunditati expressa & oblata.* Rome: Typis Dominici Antonii Herculis, 1691.

Three parts in one volume. Small 4to. xx, 342, [2]; 106, [2 blank] pp. Title woodcut vignette, engraved title (pt. 2, facing p.309, signed "P.B. del. et exc.", dated "1683"), 69 engraved copperplate plates (some folding, including the microscope plates at pp. 26 + 28 (also folding)); title with mended hole [ownership mark excised] on outer margin (with slight affect to 1 letter), frequent browning. LACKS the famous frontispiece engraved by "Vincent d'après Leonardi," though not mentioned in the Haskell F. Norman catalogue 374. Original full vellum, gilt spine title, added ink manuscript "Bounanni … 92" on

spine. Bookplate of Haskell F. Norman; early ink ownership mark on title, 1778.

$ 3,750

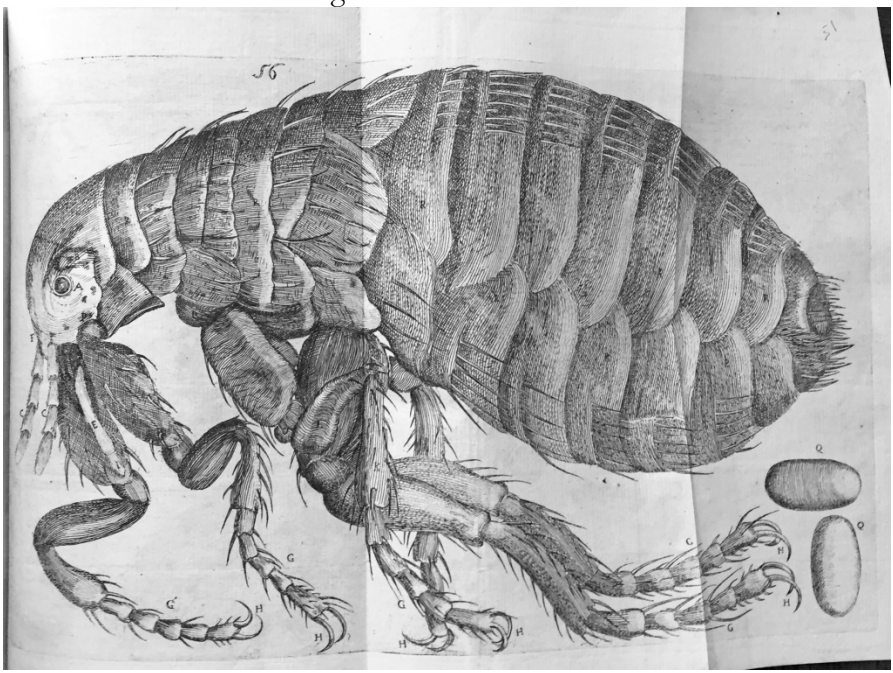
First edition. The *Micrographia* curiosa includes interesting observations on early microscopes and gives a precise description of the author's own model.



OBSERVATIONES
CIRCA VIVENTIA, QVÆ IN REBVS NON VIVENTIBVS REPERIVNTVR.
CVM MICROGRAPHIA CVRIOSA
Siue Rerum minutiſſimarum Obſeruationibus, quæ ope Microſcopij recognitæ ad viuum exprimuntur.
His acceſſerunt aliquot Animalium Teſtaceorum Icones non antea in lucem editæ.
Omnia Curioſorum Naturæ Exploratorum Vtilitati & Iucunditati expreſſa & oblata.
ILLVSTRISSIMO DOMINO
D. LEONI STROZZÆ
EXCELLENTISSIMI
DVCIS STROZZÆ FILIO.
A PATRE PHILIPPO BONANNI
SOCIET. IESV SACERDOTE.
ROMÆ, Typis Dominici Antonij Herculis. M. DC. XCI.
SVPERIORVM FACVLTATE.

"Buonanni, a pupil of Athanasius Kircher… constructed his own compound microscope for use in scientific investigations. Buonanni's precise descriptions and illustrations of these remarkable instruments aooear in his "Micrographia curiosa," a separately paginated addition to his Observationes circa viventia. The main body of the Observationes defends Buonanni's theories of spontaneous generation, first set forth in his Recreazione dell'occhio e della menta (1681), against the

criticisms of Francisco Redi, who had exposed Buonanni's numerous methodological errors in his own Osservazioni."



Father Buonanni, a Jesuit, entered intor the order at the age of seventeen, attending the Collegio Romano, Rome. He taught at the Jesuit Colleges of Orvieto and Ancona, eventually succeeding his master as a Professor of mathematics at the Collegio Romano and was appointed curator of the Kircher Museum in 1698. This appointment resulted in his catalogue of natural specimens, issued in 1709, the *Musaei Kircheriani*. For the present earlier study of natural specimens under the observation of a microscope of his own design, after the work of Tortona, using three lenses. The beautifully engraved microscopic instrument is depicted in two plates within this work. The highly effective device was the source of the remarkable plates found here, each drawn with the aid of this instrument. The plates depict specimens of malacology, entomology, and botanical objects. The high-quality of the illustrations resulted in the finest drawing of the mosquito depicted in the seventeenth century. As curator of the cabinet of curiosities at the Collegio Romano he made use of the vast

shell collection as a source for his book, *Recreatione dell'occhio e della mente*, 1681, being the first book on shell iconography. He also wrote a classic book on the techniques of Chinese lacquer, Trattato sopra la vernice communemente Cinese, 1720 (recently translated into English and issued by the Getty Museum).

☼ Garrison and Morton 264; *DSB* II, pp. 591-592; Nissen (Elisa), no. 752; Haskell F. Norman 374 (this copy).

The Great-Grandfather of the World Wide Web

8. **BUSH, Vannevar** (1890-1974). "As we may think" Contained in: *The Atlantic Monthly*, Vol. CLXXVI, No. 1, July 1945, pp. 101-8. Boston: Atlantic Monthly Co., 1945.

4to. 129 pp. Original maroon & gold printed wrappers; small hole on spine (with minor loss), overall some wear, creasing. Six rubber-stamped dates on p.1. Generally very good.

$ 800

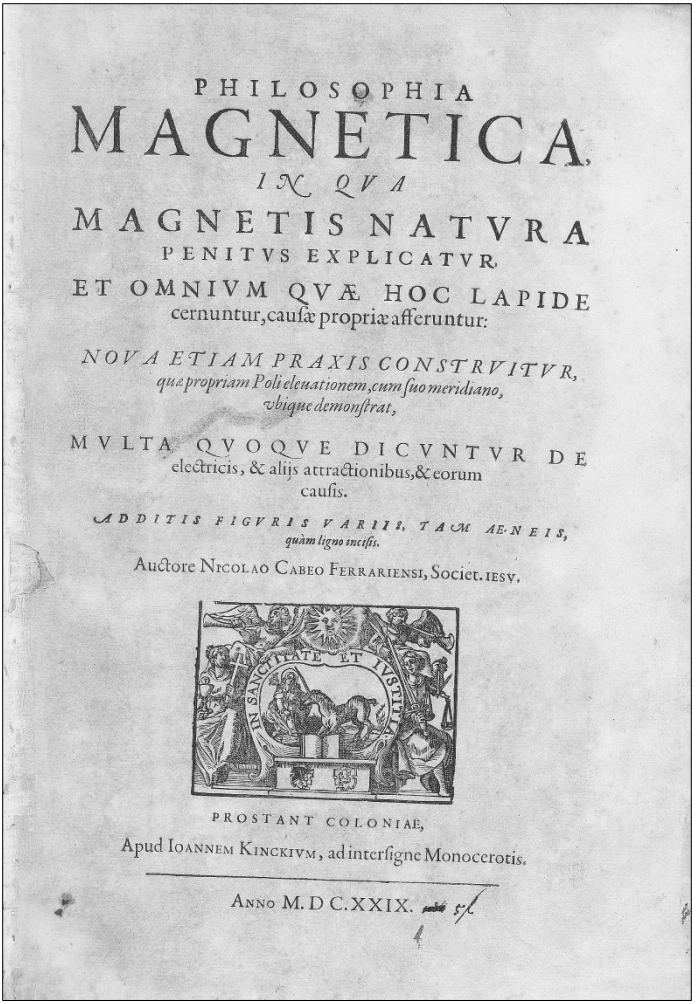
FIRST EDITION. In this article, "As we may think", Bush introduced the concept of what he called the memex during the 1930s, which is a microfilm-based "device in which an individual stores all his books, records, and communications, and which is mechanized so that it may be consulted with exceeding speed and flexibility. It is an enlarged intimate supplement to his memory." He wanted the memex to behave like the "intricate web of trails carried by the cells of the brain"; essentially, causing the proposed device to be similar to the functions of a human brain. The important feature of the memex is that it ties two pieces together. Any item can lead to another immediately. After thinking about the potential of augmented memory for several years, Bush set out his thoughts at length in the essay "As We May Think" in The Atlantic Monthly, which was published July of 1945. In the article, Bush predicted that "Wholly new forms of encyclopedias will appear, ready made with a mesh of associative trails running through them, ready to be dropped into the memex and there amplified."

An associative trail as conceived by Bush would be a way to create a new linear sequence of microfilm frames across any arbitrary sequence of microfilm frames by creating a chained sequence of links in the way just described, along with personal comments and side trails. At the time Bush saw the current ways of indexing information as limiting and instead proposed a way to store information that was analogous to the mental association of the human brain: storing information with the capability of easy access at a later time using certain cues (in this case, a series of numbers as a code to retrieve data). The closest analogy with the modern Web browser would be to create a list of bookmarks to articles relevant to a topic, and then to have some mechanism for automatically scrolling through the articles (for example, use Google to search for a keyword, obtain a list of matches, and then use "open in new tab" in your browser and visit each tab sequentially). Modern hypertext systems with word and phrase-level linking offer more sophistication in connecting relevant information, but until the rise of wiki and other social software models, modern hypertext systems have rarely imitated Bush in providing individuals with the ability to create personal trails and share them with colleagues - or publish them widely. [Wikip.].

Vannevar Bush was an American engineer and science administrator known for his work on analog computing, his political role in the development of the atomic bomb as a primary organizer of the Manhattan Project, and the idea of the memex, an adjustable microfilm-viewer which is somewhat analogous to the structure of the World Wide Web. As Director of the Office of Scientific Research and Development, Bush coordinated the activities of some six thousand leading American scientists in the application of science to warfare.

This half-year of *The Atlantic Monthly* covers the period of the end of World War II. In addition to many war-related articles (chief of which is Einstein on the atomic bomb), there are two chapters of Betty MacDonald's *The egg and I,* and Gannett's article, *John Steinbeck: Novelist at work*.

☼ Norman, *Origins of cyberspace* 519. S11759



PHILOSOPHIA
MAGNETICA,
IN QVA
MAGNETIS NATVRA
PENITVS EXPLICATVR,
ET OMNIVM QVÆ HOC LAPIDE
cernuntur, cauſæ propriæ afferuntur:

NOVA ETIAM PRAXIS CONSTRVITVR,
quæ propriam Poli elevationem, cum ſuo meridiano,
vbique demonſtrat,

MVLTA QVOQVE DICVNTVR DE
electricis, & aliis attractionibus, & eorum
cauſis.

ADDITIS FIGVRIS VARIIS, TAM AENEIS,
quàm ligno inciſis.

Auctore NICOLAO CABEO FERRARIENSI, Societ. IESV.

PROSTANT COLONIAE,
Apud IOANNEM KINCKIVM, ad interſigne Monocerotis.

ANNO M. D C. XXIX.

The First Work to Discuss Electrical Repulsion

9. **CABEO, Niccolo [Cabaeus]**. *Philosophia Magnetica, In Qua Magnetis Natura Penitus Explicatur. Et Omnium Quae Hoc Lapide cernuntur, causae propriae afferuntur: Nova Etiam Praxis Construitur. quae propriam Poli elevationem, cum meridiano, ubique demonstrat, Multa Quoque Dicuntur De electricis & aliis attractionibus, & eorum casis*. Cologne and Ferrara: Johann Kinckius, Francesco Succi, 1629.

Folio. [20], 412, [12] pp. Printer's mark of first title with the added fine engraved architectural title-page with scientific apparatus, 149 and wood-engravings including world map (p. 93); first title and dedication pages browned as usual. Contemporary full vellum, gilt spine title, edges colored.

The first [typographic title and dedication pages were added to this Cologne edition (see below). Aside from the two German leaves, the rest of the text is clean, crisp and very fine.

$ 13,000

First edition, Cologne issue, of the first work to discuss electrical repulsion, "perhaps the most significant discovery of the century following Gilbert." – Wolf.

"On p. 194 of this famous work of the great Italian Jesuit will be found the first recognition of electrical repulsion. Gilbert's discoveries and theories are freely discussed, the latter often adversely. Sympathetic telegraphy disproved (page 301); magnetic field mapped out by iron filings; also diagrams of the magnetic (lover's) telegraph. Cabeo opposed the views of Copernicus on astronomy, as well as those of Gilbert on terrestrial magnetism. Copies of this first edition are much sought after." – Wheeler Gift.

"An important work on the loadstone... A curious chapter...institutes a comparison between electrical and magnetical attraction...The *Philosophia Magnetica* is the second Latin book published on electricity." – Mottelay.

The Cologne issue adds a new typographic title-page and resets the dedication leaf (conjugate leaf) beginning "Ludovico XIII" [see Wellcome description]. The Papal arms which were at the top of the engraved title-page are replaced with the Jesuit emblem and the last line of the title beginning with "multa quoque dicuntur." has been added. It seems fairly obvious that Succi printed two variants of the book, one intended for the German trade; the paper of the book is distinctly a superior Italian printing on fine paper except for the added leaves which are on the typically browned paper of seventeenth century German books. Probably Kinkius printed these two leaves and sent them to Italy to be added to his issue of the book. This copy is in a typical Italian binding of the time which implies, in this cataloger's mind, that Succi supplied the books with the changes in a finished form to his German counterpart.

☼ Bakken 7; Bibl. Dt. Mus. Libri rari 060; Ferguson I, 136; Riccardi I, 205; Ronalds 92; Sotheran, 659; Wheeler Gift 97; De Backer-Sommervogel II, 483, 1; Thorndike VII, 267ff.; Wellcome I, 1171a.

10. **CAILLE, l'Abbe de la**. *Leçons Elémentaires d'Optique*. Paris: H.L. Guerin & L.F. Delatour, 1756. ¶ 8vo. IV, 204 pp. Title vignette, decorative head and tail pieces, 12 folding engraved

copperplates (ordered 7-12, 1-6). Disbound, yet in early marbled wrappers; spine exposed, some signatures loosening. Bookplate (signed TM) of A.C.S. van Heel (verso of title, see below). Handsome modern blue cloth drop-back box. Good.

$ 400

Second edition, revised, corrected and enlarged. Interesting work on the principles of the perspective and optics "especially as applied to lenses, mirrors, eye glasses, telescopes and microscopes" [Glass] applied to engineering and architecture. The first part (pp. 2-38) is devoted to optics, followed by a second part (pp.39-127) on the use of mirrors and reflected light, or catoptrics and the diopter, which is a unit of measurement of the reflective power of lenses. The author's 'diverse questions' (pp.118-127) of optical-inquiry are useful for understanding the questions of that time (including issues relating to the sun, the magic lantern, etc.; i.e.: Why does a wet paper appear gray and more transparent?). A third and final section (pp. 128-198) relates to the method, preparation and problems relating to optical perspective, including shadows and their 'properties'.

Cassini was a close friend of La Caille and introduced him to astronomy in 1750. Over the period of two years La Caille observed the southern hemisphere and recorded 10,000 star positions. This led to the Cassini family looking to answer the question about the size and shape of the earth. This became a problem that La Caille also applied his mathematical talents.

Nicolas-Louis of La Caille (1713-1762) was a famous scholar who worked on astronomy, optics, mechanical and nautical calculations. He was professor of mathematics at the Collège Mazarin (succeeding Varignon), a Member of the academies of Sweden, worked in Berlin and the Institute of Bologna. He was one of the first French scientists to recognize theories of Newton and contributed regularly to the Académie Royale des Sciences.

PROVENANCE: Abraham Cornelis Sebastiaan (Bram) (1899-1966), Dutch professor of physics, considered the "father of the technical optics in the Netherlands," born in Java, in the

Dutch East Indies. He studied in Leiden under H.A. Lorentz. He was best known for his ease of applying computational methods for optical systems and their practical application. He was designing optical instruments in the University of Utrecht. He was co-founder of the International Commission for Optics (ICO), 1948, and started the journal *Optics Acta*, 1954, later becoming the Journal of Modern Optics. See: Simons, C.A.J., "A.C.S. van Heel, vader van de Technische Optica in Nederland," in: OD 95 (1999-4).

See: L.S. Glass, Nicolas-Louis De La Caille, Astronomer and Geodesist, Oxford University Press, 2013, p.

11. **CAVENTOU, Joseph-Bienaimé** (1795-1877). *Nouvelle nomenclature chimique, d'après la classification adoptée par M. Thenard; ouvrage spécialement destiné aux personnes qui commencent l'étude de la chimie, et à celles qui ne sont pas au courant des nouveaux noms….* Paris: Chez Crochard and Chez Gabon, 1816. 8vo. [ii], xvi [misbound], 298, [2] pp. Half-title, title-page vignette, large fording table, index, 1 leaf of errata. Quarter calf, paste-paper over boards, parchment corners, red leather spine label, ornately gilt spine; rubbed. Ownership rubber stamp of Guitet, Pharmacien on half-title. Very good. RARE.

$ 750

FIRST EDITION. Joseph-Bienaime Caventou, important French chemist and toxicologist, is known for the discovery of quinine and the extraction of alkaline nitrogenous substances (alkaloids) from plants. In this early work, written before he had finished his chemistry education, Caventou sought to supplement the meager allowance from his father, conceived the idea of writing a book on chemical nomenclature according to the classification adopted by Thenard. The work, *Nouvelle nomenclature chimique*, appeared in 1816 as a practical handbook designed especially for beginners in chemistry and for those who were unfamiliar with the newest chemical terminology." *DSB*. Each section relating to a simple substance has information concerning its history properties, and more.

Cole, *Chemical literature*, 242; *DSB*, III, p. 159; Duveen, *Biblioteca alchemica et chemica*, p. 128; Partington, *A history of chemistry*, IV, p. 241; Poggendorf, I, col. 407.

The Quest for Perfect Vision

12. **CHÉRUBIN D'ORLÉANS, Père [François Lasseri].** *La Vision Parfaite: ou le concours des deux axes de la vision en un seul point de l'objet. Par le P. Chérubin d'Orléans, Capucin.* Paris: Chez Sebastien Mabre-Cramoisy, Imprimeur du Roy, 1677.

Four parts in one. Folio. [xxvi], 168, [20] pp. With large engraved allegorical frontispiece drawn by H. Vatele and engraved by G. Edelinck, title vignette, 16 engraved plates (including 1 double-page, and the marvelous "Oculaire Royal" folding engr. plate (by C. Simoneau), relative to optical instruments and perspective; worm trail found in the corner upper margin of parts II-IV. Contemporary full calf, gilt spine titles; extremities worn, joints repaired. Title-page with signature of Gilbert Govi, 1854; bookseller's description tipped-in (possibly that of Henry Sotheran). RARE.

$ 8,000

FIRST EDTION in French, also issued in Latin the same year, "of an important work on optics which is rarer than the author's *Dioptrique oculaire*. Chérubin, whose real name was François Lasseri, discussed the invention of a binocular telescope and also an opera glass. He hoped that a clearer image would be formed by the use of both eyes. There are many fine illustrations of different types of telescopes, and the book is an excellent specimen of 17th century printing" (BOA II: 20). A second volume, itself very rare, was issued separately in 1681.

First edtion "of an important work on optics which is rarer than the author's *Dioptrique oculaire*. Chérubin, whose real name was François Lasseri, discussed the invention of a binocular telescope and also an opera glass. He hoped that a clearer image would be formed by the use of both eyes. There are many fine illustrations of different types of telescopes, and the book is an excellent specimen of 17th century printing" – (BOA II:20). The author clearly points out the benefits of his invention for the use of gaining a military advantage. A second part was issued in 1681 (not present here). At page 27 the author gives the opinion of Pierre Gassendi (1592-1655).

Father Cherubin, aka François Lasseri (1613-1697), called Aureliansis, was born in Orleans, France. At fifteen years of age he entered the Capuchin order. He studied physics and learned to build optical instruments, perfecting a design for a binocular telescope as well as an acoustic apparatus for distance hearing. Living in a convent in Tours, he passed in 1697. His advances in the field of optics places him among the leaders of the field in

the seventeenth century. The present work presents the earliest depictions of eyeglasses. His dioptric monocle was also a first. – *Dictionnaire de Biographie Française.*

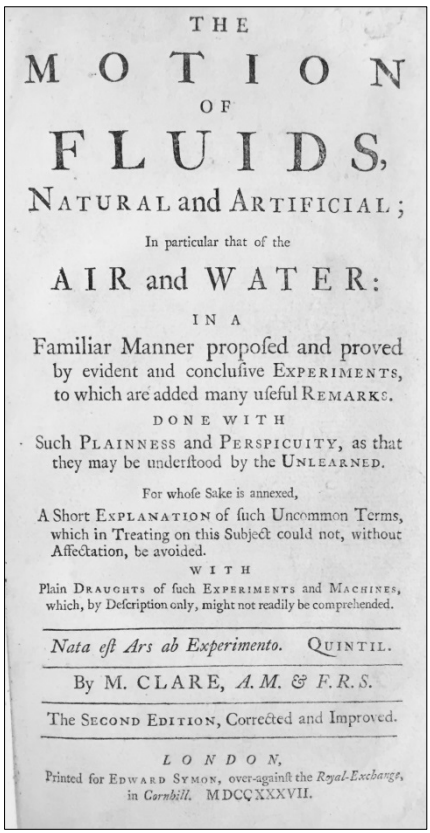
Montucla, in 1758 expressed his doubt of this system of Chérubin: "Su reste, cet avantage est compensé par l'incommodité de mirer au même objet, [et] malgré les éloges du P. Chérubin, nous doutons que les observatoires se garnissent jamais de Télescopes de cette espèce." – Montucla.

PROVENANCE: Gilberto Govi (1826-1889), born in Mantua, Italy, became the first Director of Physics at the University of Turin, was a member of the International Committee of Weights and Measures. He had a long interest in the history of science, including Galileo, da Vinci and optics; his library was later offered from Henry Sotheran. Late in life he became Professor of Physics at the University of Naples. See: Jean Etienne Montucla, *Histoire des mathématiques*, 1758, vol. III, pp. 173, 605; Terry Quinn, From Artefacts to Atoms: The BIPM and the Search for Ultimate Measurement Standards, Oxford University Press, 2010, page 91. See: Henry Sotheran, *Catalogue of rare books on exact and applied science: including the library of the late Prof. Olaus Henrici and of Gilberto Govi (1825-89),* removed during war time from Naples ... 1919.

Genuensis Dionysius, *Bibliotheca scriptorum ordinis Minorum S. Francisci Capuccinorum*, (1747), wrongly states that the French edition appeared in 1670. (p. 61-2, 272).

13. **CLARE, Martin** (d. 1751). *The Motion of Fluids, Natural and Artificial; In particular that of the Air and Water: In a Familiar Manner proposed and proved by evident and conclusive Experiments, to which are added many useful Remarks. Done with Such Plainness and Perspicuity, as that they may be understood by the Unlearned.* London: Edward Symon, 1737. 8vo. (197 x 123 mm) [16], 369, [23] pp. Nine engraved plates, engraved heraldic crest on the dedication page, engraved head and tail-pieces, red edges; very light foxing on two of the plates. Bound in modern half calf over marbled boards, raised bands and gilt rules on spine, black calf gilt-stamped spine title. Fine.

Second edition, corrected and improved. This fine series of lectures on hydraulics and the motion of fluids were written in the typical style of recreational instruction for the leisured gentleman. It is appropriately dedicated to Richard Boyle, nephew of the celebrated English scientist Robert Boyle. Indeed, the chapter on The Art of Diving makes clear the effect of increasing pressure as it affects the volume of a given amount of gas (Boyle's Law). Indeed, the relative volumes of air at 33, 66 and 99 feel (1, 2, and 3 atmospheres) are explicitly defined. This chapter, however, discusses the malady that we now know as Caisson's Disease or the Bends, but fails to explain the reason behind the resulting debility. The plates mostly deal with hydraulics, including siphons, water wells and decorative fountains. The author was apparently quite well known in his time as Benjamin Franklin cites Clare and this book in his own writings. Martin Clare was a London schoolmaster and Freemason. He … 'entertained' the members of the Grand Stewards' Lodge on 17 November 1735 with …an excellent Discourse containing some maxims and Advice that concerned the Society in general. Clare's grave and quiet method of delivery made a strong impression on the audience and [his] conclusion was received with loud approbation… [Stewart].



THE

MOTION

OF

FLUIDS,

NATURAL and ARTIFICIAL;

In particular that of the

AIR and WATER:

IN A

Familiar Manner propoſed and proved by evident and concluſive EXPERIMENTS, to which are added many uſeful REMARKS.

DONE WITH

Such PLAINNESS and PERSPICUITY, as that they may be underſtood by the UNLEARNED.

For whoſe Sake is annexed,

A Short EXPLANATION of ſuch Uncommon Terms, which in Treating on this Subject could not, without Affectation, be avoided.

WITH

Plain DRAUGHTS of ſuch EXPERIMENTS and MACHINES, which, by Deſcription only, might not readily be comprehended.

Nata eſt Ars ab Experimento. QUINTIL.

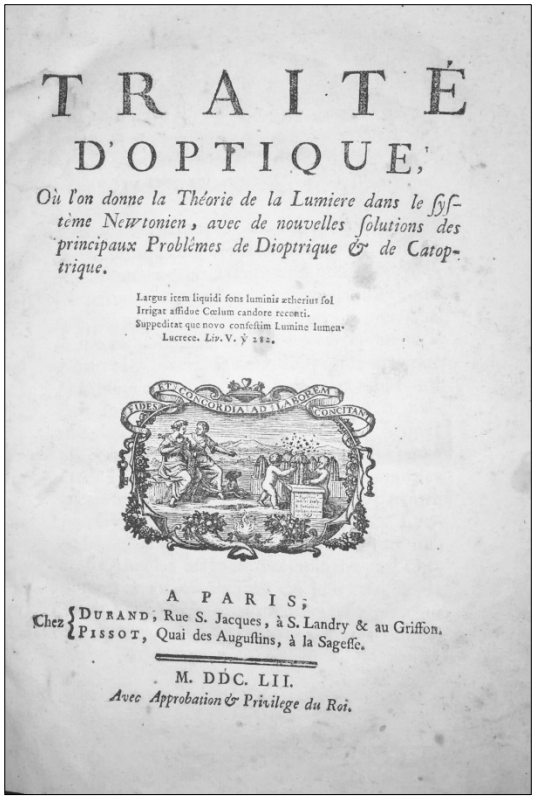
By M. CLARE, *A.M.* & *F.R.S.*

The SECOND EDITION, Corrected and Improved.

LONDON,

Printed for EDWARD SYMON, over-againſt the *Royal-Exchange*, in *Cornhill*. MDCCXXXVII.

☼ Blake/NLM p. 89; BM Readex, Vol. 5, p. 894; Stewart, *A Basic Historico-Chronological Model of the Western Hermetic Tradition*, Part 4. Societas Rosicruciana in Canada; Wellcome II, p. 350 (3rd ed.). [S8830]



TRAITÉ
D'OPTIQUE,
Où l'on donne la Théorie de la Lumiere dans le système Newtonien, avec de nouvelles solutions des principaux Problèmes de Dioptrique & de Catoptrique.

Largus item liquidi fons luminis ætherius sol
Irrigat assidue cœlum candore recenti.
Suppeditat que novo confestim lumine lumen.
Lucrece. *Liv.* V. *v* 282.

A PARIS;
Chez { DURAND, Rue S. Jacques, à S. Landry & au Griffon.
PISSOT, Quai des Auguſtins, à la Sageſſe.

M. DCC. LII.
Avec Approbation & Privilege du Roi.

Supporter of Newtonian Optics

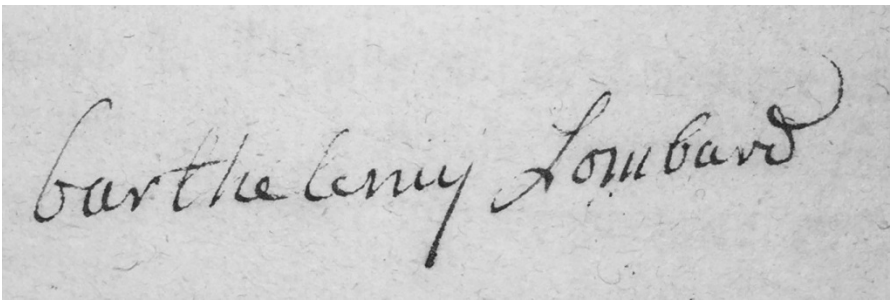
14. **COURTIVRON, Gaspard LeCompasseur Crequy-Montfort de** (1715-1785). *Traite d'Optique, Ou l'on donne la Theorie de la Lumière dans le système Newtonien: avec de nouvelles solutions des principaux Problèmes de Dioptrique et de Catoptrique.* Paris: Chez Durand & Pissot, 1752.

Small 4to. [2], v, [1], 192 [i.e. 202], [4] pp. Errors in pagination: p. 193-202 numbered 183-186, 185-188, 191-192: collated complete as issued. 7 engraved folding plates. Original full

mottled calf, raised bands, gilt spine compartments, brown leather title label; minor worming to joints and back cover. Signature of Barthelemy Lombard. RARE.

$ 3,750

First Edition of this brilliant commentary on Newton's mathematics optics, new solution of the main problems of dioptrics and catoptrics, offering new applications where Newton had not supplied demonstration. In particular he put forth a mathematical theory relating to the famous question of the rainbow.



Newton studied the appearances and optics of the rainbow, giving a mathematical analysis. Continuing in this field were Edmund Halley, Herman Bernoulli, Henry Pemberton, and the Marquis De Courtivron. – "Historical Account of Discoveries Concerning the Rainbow," *The Literary Magazine and British Review,* Volume 6, (1791), p. 177. Joseph Priestley, in his famous work, *The History and Present State of Discoveries Relating to Vision, Light, and Colours*, vol. II, 1772. (p. 590), discusses the optical study of rainbows.

"Newton had shown that sunlight is not simple but is compounded from the various colors that we see in the rainbow. When sunlight is passed through a prism, these colors are bent (refracted) through slightly different angles, red being bent the least and violet the most. But why is this? Newton thought this might happen because the particles of light were of different sizes, or densities. But in 1752 the Marquis de Courtivron suggested red light is the least refracted because it is traveling faster than the other colors and is therefore the most

difficult for the prism to deflect from its original direction – which sounded plausible." He studied the velocity of different colored light by examination of an eclipse of a star by a planet, "At the instant when the star emerged from eclipse, all the different colors that made up the star's light would simultaneously begin their journey from the edge of the planet to the observer on Earth. If red light traveled the fastest, it would arrive first and the star would briefly appear to be red. Them as the other colors also arrived, the star would revert to its normal color." – Michael Hoskin, *Discoverers of the Universe: William and Caroline Herschel*, Princeton University Press, (2011), p. 80.

"An 18th century optical treatise in which Newton's theory of light is discussed, and the author suggests solutions for various problems of dioptrics". – BOA I:46. A physician in the French cavalry and a member of the Académie des Sciences, Courtivron was the author of several works in optics, geometry, and physics. – *Bernard Becker Collection in Ophthalmology*, 87.1.

A physician in the French cavalry and a member of the Académie des Sciences, Courtivron was the author of several works on optics, geometry, and physics. "In his Treatise on optics Courtivron assails the Cartesian concept of light and champions the Newtonian. He did not servilely follow Newton, however, for in his view color results from differences in speed rather than from those in weight. Furthermore, in affirming that dense mediums slow down light corpuscules, he made use of Fermat's principle of least time, recently revived by Maupertuis." – *DSB*, III, p. 454.

"In 1752, the Marquis de Courtivron published his thoroughly Newtonian *Traite d'Optique*, which included a praise of Newtonian attractions, Clairaut's Newtonian derivation of the sine law of refraction, and large sections of Smith's treatise. The Secrétaire perpétuel of the Academy of Science, Grandjean de Fouchy …, praised this treatise as the best to be found in this department of knowledge." – See: Olivier Darrigol, *A History of Optics from Greek Antiquity to the Nineteenth Century*, Oxford University Press, 2012, page 125.

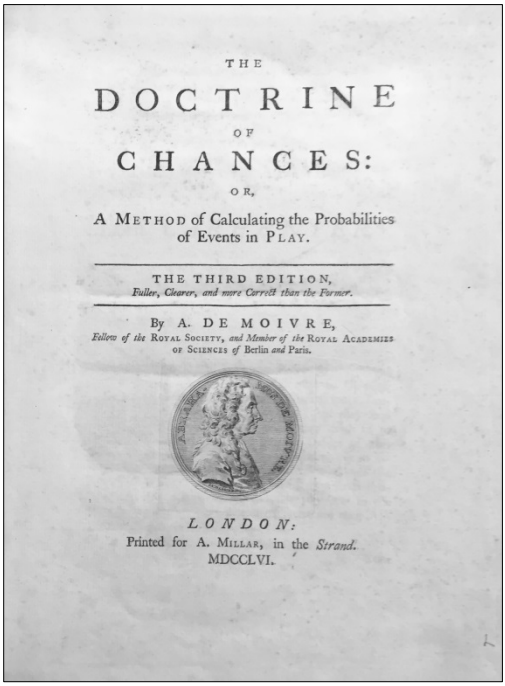
PROVENANCE: Barthelemy Lombard [1752 or later].

☼ *Babson Collection of the Works of Sir Isaac Newton, Second Supplement*, (2002), n° 99; Becker 87.1; Gray (G.J.), A bibliography of the works of Sir Isaac Newton, together with a list of Books illustrating his works, London, 1907, n° 202; Poggendorff I: 490; Walis P.& R., *Newton and Newtoniana*, 220.7. See also: Interlibrum Buchantiquariat (Vaduz, Liechtenstein), *Printing and the Progress of Man, Sourcebooks in the history of photography: theory and technology of optics, light, colours, physiology of colour-vision: rare books from the 16th-19th centuries*, 1988.

A key work by the father of probability theory

15. **DE MOIVRE, Abraham** (1667–1754). *The Doctrine of Chances: Or, a Method of Calculating Probabilities of Events in Play. The third edition, Fuller, Clearer, and more Correct than the Former.* London: A. Millar, 1756. Quarto. 348 pp. Portrait medallion vignette on title. Original full calf; joints repaired. Fine.

$ 2,500


THE
DOCTRINE
OF
CHANCES:
OR,
A METHOD of Calculating the Probabilities of Events in PLAY.
THE THIRD EDITION,
Fuller, Clearer, and more Correct than the Former.
By A. DE MOIVRE,
Fellow of the ROYAL SOCIETY, *and Member of the* ROYAL ACADEMIES OF SCIENCES *of* Berlin *and* Paris.
LONDON:
Printed for A. MILLAR, in the *Strand*.
MDCCLVI.

Third edition. This is a key work by the father of probability theory in which major steps in the measurement of uncertainty were achieved. De Moivre is "best known in statistical circles for his famous large-sample approximation to the binomial distribution, whose generalization is now referred to as the Central Limit Theorem. De Moivre was one of the great pioneers of classical probability theory." [Bellhouse-Genest, p.1]. It is the first systematic treatment of probability in

English. Abraham De Moivre became, with Edmund Halley, a founder of English actuarial science. The author's dedicatory letter is address to Lord George Carpenter (1702-1749) (the first edition had been dedicated to Newton), where the author states emphatically "that this *Doctrine* is so far from encouraging Play, that it is rather a Guard against it..." [*DNB*, vol. 38, p.116].

"The first edition of this work contains 175 pages, the second edition 258 pages and the third 348 pages. The following list will indicate the parts which are new in the third edition: the Remark pages 30/33 and pages 48 & 49, the greater part of the second Corollary pages 64/66, the Examples page 88; the Scholium page 95, the Remark page 149 and pages 151/159, the fourth Corollary page 162, the second Corollary pages 176/179, the note at the foot of page 187, the Remark pages 251/254. The part on life annuities is very much changed. The Introduction is very much fuller than the corresponding part of the first edition. In his third edition De Moivre draws attention to the convenience of approximating to a fraction with a large numerator and denominator by continued fractions, which he calls "the Method proposed by Dr. Wallis, Huygens and others". He gives the rule for the formation of the successive convergents. This third edition contains 74 problems exclusive of those relating to life annuities (in the first edition there were 53 problems). The pages 220/229 contains one of De Moivre's

most valuable contributions to mathematics, namely that of Recurring series. Pages 261/328 are devoted to Annuities on lives; an Appendix finishes the book, occupying pages 329/348: this also relates principally to annuities, but it contains a few notes on the subject of probability." – Todhunter. A very full account of the above third edition will be found in Todhunter's *History of the theory of probability*.

"De Moivre's first book on probability was based upon a short memoir entitled *De mensura sortis*, published in the 1711 volume of the Philosophical Transactions. The 1718 first edition is essentially a gambler's manual, giving a systematic presentation of the arithmetic principles upon which are based the solution of problems concerning the advantage of players and size of wager which may be lain in a wide variety of games of chance. [Walker]. It does not contain De Moivre's work on the normal approximation of the binomial probability distribution, which ranks as the most memorable of his discoveries; this discovery was first printed in its entirety in 1733 in a Latin pamphlet, which was later translated into English and incorporated, in successively expanded versions, in the second (1738) and [posthumous] third (1756) edition of The doctrine of chances." [Norman].

In terms of mathematics applied to the human actuarial lifespan, "De Moivre, French Huguenot mathematician and demographer, formulated the hypothesis that among a body of persons over a certain age the successive annual decreases by death are nearly equal." – Garrison & Morton.

"De Moivre's work on the theory of probability surpasses anything done by any other mathematician except Laplace. His principal contributions are his investigations respecting the duration of play, his theory of recurring series and his extension of the value of Bernouilli's theorem by the aid of Sterling's theorem". – Cajori.

De Moivre, born at Vitry, received a varied education and settled in London as a Huguenot refugee in 1688. In England he continued his study of mathematics while working as a

tutor. He is said to have acquired (and read) a copy of Newton's Principia and even to have carried loose sheets around with him to study at every available moment. This method of study worked so well that not only did he become one of England's foremost mathematicians, but Newton, in old age, was in the habit of referring questions about the Principia to De Moivre. De Moivre's *Doctrines of Chance* is in fact a revised and expanded translation of his essay *De mensura sortis* which had been published in Latin in the Philosophical Transactions in 1711. In its Latin form it thus preceded Jacob Bernoulli's Ars Conjectandi (1713) by a full two years.

De Moivre was a French mathematician famous for De Moivre's formula, which links complex numbers and trigonometry, and for his work on the normal distribution and probability theory. He was elected a Fellow of the Royal Society in 1697, and was a friend of Isaac Newton, Edmund Halley, and James Stirling. Among his fellow Huguenot exiles in England, he was a colleague of the editor and translator Pierre des Maizeaux.

Shafer points out that De Moivre, one of Jacob Bernoulli's successors, was among those who were applying Huygens' theories to both games and economies (p. 11). He points out that the 1718 first edition was influenced by Bermoulli in that he used the word "probability" which was a word he did not use in his *De mensura sortis*. He continues: "We should not exaggerate De Moivre's importance in the eighteenth century. In retrospect, he represents the pat that mathematical probability followed, but he was hardly a philosopher of Jacob's caliber, and Jacob retained a strong influence throughout the century among those who wanted to understand probability philosophically. Jacob's and Hooper's rules survived the whole course of that century in the works of philosophically sophisticated writers such as Lambert and Diderot. They disappeared only after Bayesian alternatives were developed by Laplace." (pp. 13-14). Steve Stigler and Lorraine Daston expand on the use of the word "probability" in the eighteenth century.

Theodore Porter (UCLA) writes that De Moivre introduced the astronomer's law error to probability theory (p. 93). "Like most early probability mathematics, it first arose in the context of games of chance; it appeared as the limit of the binomial distribution. Because of its usefulness in combination and permutation problems, the binomial had become the heart of the doctrine of chances…. De Moivre then showed in a paper of 1733, reprinted in 1738 in the second edition of his Doctrine of Chances, that the exponential error function gave a very good approximation to the distribution of possible outcomes for problems like the result of 1,000 coin tosses Now, for the first time, it was practicable to apply probability theory to indefinitely large numbers of independent events."

☼ Babson 181 (1st ed.); Ball, *A short account of the history of mathematics,* pp. 383-4; BM Readex Vol. 17, p. 751; Cajori, *History of Mathematics*, pp. 229-30; *DNB*, vol. 38, p.116; Kress S.2793; Institute of Actuaries (1935) p. 39; Mansutti 504; Norman 1529 (1st ed.); Pearson, *The History of Statistics in the 17th & 18th Centuries…*, pp. 155-60, 165-66; Smith, *Source book in mathematics*, pp. 440-54; Stigler, *The History of Statistics: The Measurement of Uncertainty before 1900* (1986), p. 70; Todhunter, *History of the theory of probability*; Walker pp. 12-13; Wellcome IV, p. 149; Westergaard pp. 104-5. Not in Goldsmiths or Hanson.

See: Raymond Clare Archibald, "Abraham de Moivre"; David, F.N., *Games, Gods and Gambling; The origins and history of probability and statistical ideas …* (1962), pp. 161-178.

16. **DEIDIER, l'Abbe** (1696-1746). *La Mechanique Générale contenant La Statique, L'Airométrie, L'Hydrostatique et L'Hydraulique pour servir d'introduction aux Sciences Physico-Mathématiques.* Paris: Chez Charles-Antoine Jombert, 1741.

Four books in one vol. 4to. [vi], XXXIV, [ii], 632 pp. Elaborate title-vignette (signed Soubey), dedication [Louis Auguste de Bourbo (1700-1755), Le Comte d'Eu], 29 [total] engraved plates [variously numbered], 2 allegorical headpieces engraved and drawn by C. Cochin & son (I: showing a hydraulic machine; II: cherubs and a stirring harbor scene with 2 viewable ships),

another 2 allegorical headpieces by Rigaud [III: showing the use of a hydraulic machine; IV: a country scene with a hydrostatic device as well as a hydraulic machine]. Original mottled calf; joints cracked, cords holding, extremities quite worn. BADLY WATERSTAINED THROUGHOUT. As is, but at a vastly reduced price. AS IS.

$ 275

First edition of this work on the general mathematical principles of motion and mechanics, dealing specifically with hydrostatics and hydraulics. Deidier is an important predecessor to Franz Reuleaux, sometimes called the father of kinematics. The preface refers to Leibniz, and Jean Bernoulli, de Mairan, Varignon, Wallis, Belidor, etc. The author determines the measurement of surfaces and solids, mass or volume, density of a liquid (fluid), hydrogeology, equilibrium of a liquid, movement of fluids (fluid dynamics), or the mechanism of either solids or fluids.

L'abbe Deidier, prolific French mathematician, who studied at le collège de l'Oratoire, theology with the Jesuits, and was himself ordained. He became professor of artillery at the École Militaire at La Fère, wrote about differential calculus (1740), mathematical principles for artillery/military engineering, perspective, and this work, all within the space of a few productive years.

See: Ruth Hagengruber, *Emilie du Châtelet between Leibniz and Newton*, 2011; Enzo O. Macagno, *History of Kinematics: Inception of Modern Kinematics*, University of Iowa Press; Iowa Institute of Hydraulic Research, 1991, (p. 118); Lawrence Barnet Phillips, *The Dictionary of Biographical Reference Containing One Hundred Thousand ...* (1871), p.312; Hunter Rouse, *History of Hydraulics*; Hunter Rouse, *Historic Writings of Hydraulics: a catalogue of the history of hydraulics collection in the University of Iowa Libraries*, 1984, p. 40; Wheatland, David. *The Apparatus of Science at Harvard, 1765-1800*, Cambridge: Harvard University, 1968 (p. 200).

17. **DEMONFERRAND, Jean-Fermin**. *Manuel d'Électricité Dynamique, ou Traité sur l'action mutuelle des conducteurs électriques et des aimans, et sur une nouvelle théorie du magnétisme; pour faire suite à*

tous les Traités de Physique élémentaire. Paris: Bachelier, 1823. ¶ 8vo. 8.25 x 5.25 inches. [4], 210, [2] pp. It appears that this work was issued in two printings in 1823. There is no mention of two issues in any reference work, so we can only guess at which issue is the first. Some institutional copies (such as the Wheeler copy) are numbered to page 210 (like ours) and in those copies the address of the publisher given on the title page is "Quai des grands-Augustins, no. 55" (with the issue point of a lower case "g" in "grands"). ILLUSTRATIONS: Five folding engraved plates with light, scattered foxing, but overall in very good plus condition. BINDING: Handsomely bound in modern calf over marbled boards with gilt-stamped spine label; corners rubbed, spine carefully repaired with ends missing small pieces. INTERIOR: Endpapers renewed. Some light foxing to half-title page and an occasional small, light brown spot scattered in the text, but overall the interior is in near fine condition. Scarce.

$ 750

FIRST EDITION of the first textbook on electrodynamics to incorporate the newly made discoveries of Ampère and Oersted (Bakken 174; Poggendorff, 548). Demonferrand's *Manuel d'Électricité Dynamique* illuminates the "fundamental phenomena and laws of electro-dynamics" and represents a first, important, and comprehensive treatment (written in scientific and mathematical language) of Ampere's theory of electromagnetism (Wheeler 797). This work was translated into English by James Cumming in 1872 as A Manual of Electro Dynamics, or, Treatise on the Mutual Action of Electric Conductors and Magnets.

"Demonferrand's account is more informative in some other respects than either of the previous written versions…The notion of an equilibrium is reported here for the first time, yet it agrees with a much later account given by Ampère himself in1833. Furthermore, Demonferrand indicated…that the object of [one of his] experiment[s] was to throw light on the question of whether electric currents already exist in iron when it is in the unmagnetized condition, or if they are brought into being as a result of magnetization. The result of the experiment did not settle this question…But once again we find Demonferrand anticipating a later statement (1833) by

Ampère of his objective in performing the experiment….Some years later, after the publication of Faraday's discovery, the history of this experiment suddenly acquired some importance" (Ross 92).

"Demonferrand's account of the Ampère-de La Rive experiment has a certain precision of description that suggests he may have derived it in part from Ampère himself; it is, at all events, a more explicit account than any previously published… Ampère, himself, promoted Demonferrand's work, sending many copies of *Manuel d'Électricité Dynamique* abroad, including one to Michael Faraday" (Ross 90).

Demonferrand (1795-1844) was a pupil of Ampère and a professor of mathematics and physics at the Colège Royale in Versailles. In this work, he describes many of Ampère's theories, supplemented with experimental research and theories of his own.

☼ Ronalds 132; Bakken 174; Poggendorff 548; Wheeler Gift of Books 797; Ross, *Sydney in Nineteenth-century Attitudes: Men of Science,* 1991, pp. 92-94. [S11082]

18. **FISCHER, Heinrich**. *Kritische mikroskopisch-mineralogische Studien*. [Parts I, and Continuation 1+2]. Freiburg: Carl Troemer, 1869, 1871, 1873.

3 works in 1. Sm. 8vo. [ii], 64; [ii], 64; [ii], 96 pp. 2 colored plates (chromolithography + lithograph), includes indexes; some brittleness to paper, quite browned. Early half brown morocco, lighter brown pebbled cloth, gilt-stamped spine, with original yellow printed wrappers bound in; rubbed, 1st printed wrapper chipped (others fine). Ownership signatures of R. Pumpelly, M.S. Very good. RARE.

$ 300

First edition, complete, of the author's three-part 'critical studies on the microscope and mineralogy.' Fischer was one of the first to understand and describe the difference between true turquoise and bone turquoise.

PROVENANCE: Raphael Pumpelly (1837-1923), American geologist and explorer, graduated in 1859 from the "Technische Universität Bergakademie Freiberg," later appointed Professor of Mining Science at Harvard University from 1866-1875, etc. It seems apparent that Pumpelly knew Fischer as they were both at the Freiberg University of Mining and Technology or Freiberg Mining Academy.

[19 FLUDD]

19. **FLUDD, Robert**. *Utriusque Cosmi Maioris scilicet et Minoris Metaphysica. Physica Atque Technica Historia In duo Volumina secundum Cosmi differentiam divisa. Tomus Primus: De Macrocosmi Historia in duos tractatus divisa. Tomus Primus [BOUND WITH:] Tractatus Secundus, De Naturae Simia seu Technica macrocosmi historia, in partes undecim divisa.* Oppenheim and Frankfurt: Johann Theodore de Bry, Hieronymus Galler (part I) and Kaspar Rotel (part II), 1617 - 1624.

Two parts bound in one. Folio. Collation: [-]^{1}, A2 [A1 signed], B-2B4, 2C8; A-3G4, 3H2, 3I-5G4, 5H3 [of4] [lacks 5H4 blank]. Pagination: [2], 206 (misprinted as 106), [10]; 788, [10] pp. [781/2 and 779/80 out of position] Two engraved title-pages, approximately 268 text plates (64 large) by Matthias Merian. Five inserted (not part of collation) plates in second part at page 161, two (one folding) after page 408, and two (double-page) after page 428; plate on Bb4v (page 200) pasted-over with corrected plate; folding plate at page 161 in part II with cellophane tape repairs at folds; some margins folded to protect them from being trimmed short in binding (thus the text was preserved); minor marginal wormhole with a few paper repairs; marginal repair in 5H3, second leaf of index with natural tear, final printed leaf with two cellophane tape repairs at gutter, some leaves are browned as usual.

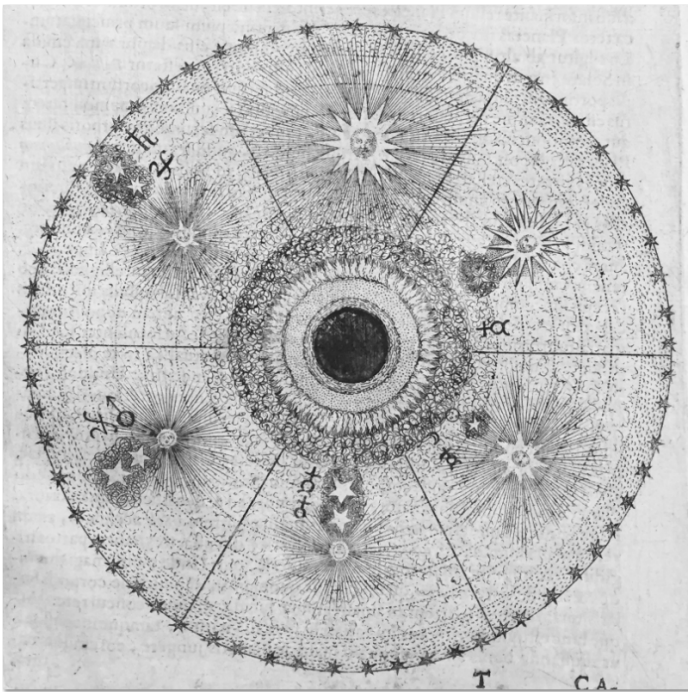
Early twentieth century vellum backed marble-paper covered boards, maroon morocco gilt-stamped spine label, edges red, marbled endpapers. Old owner's name on front free endpaper, stamps of Bibliothek des Goetheanum [Dornach, Switzerland – named after Johann Wolfgang von Goethe], on endpaper and inserted plates (on blank versos). Very good.

$ 17,500

First edition, second impression of part I; 'second' edition of part II. Though the first title-page is unchanged and has 1617 as the printing date, it has been widely accepted that the first volume was reissued with some corrections to accompany the

stated ‘second edition’ of volume two. Although usually found with the second title-page in the revised version with the top architectural border removed, unlike this copy which has the border intact.

“Fludd has been characterized as ‘a philosopher, physician, anatomist, physicist, chemist, mathematician and mechanician,’ and credited with ‘a rare gift of observation in the exact sciences.’ But he still thought it possible and advisable to combine with this science and medicine not only a cloak of religion but also much of the occult science that had come down from the past: magic and cabala, astrology and alchemy, physiognomy and chiromancy, geometry and weather signs. Natural, preternatural, supernatural, and things contrary to nature, were all closely related and even confused by him. Magic was science, and nature a mystery.” (Thorndike). In the second part he dealt extensively with math, music, geometry, perspective, painting, military art, machinery, sundials, cosmography, astrology and geomancy.



"The first of Fludd's philosophical works to appear was the account of the macrocosm and the microcosm, entitled *Utriusque cosmi é historia*. It consists in two massive folios which are copiously illustrated with remarkable mystical emblems representing relationships between man, the cosmos, and the godhead. It is very likely that Fludd himself was the draughtsman of these illustrations with their recurrent geometrical motifs of concentric circles, triangles, pyramids, hemispheres, blazing suns, and the interplay of areas of dark and light. The significance of the emblems is revealed in accompanying texts, which bring together quotations from the Bible and hermetic lore. In these volumes Fludd expresses both his adherence to a Judaeo-Christian interpretation of world history based on the text of the Bible and his hostility to the learning of the universities in the form of Aristotelian natural philosophy and Galenic medicine. Fludd's originality lay in his revival of the fifteenth-century neoplatonism of Ficino and Pico and their sources in the corpus hermeticum, and his uniting of these with an alchemical account of the creation based on a literal reading of the book of Genesis. The major explanatory mechanism of the workings and order of the world is the parallel between macrocosm and microcosm. Man is revealed to be the 'ape of nature', imitating and completing her work through the exercise of geometry, music, memory, astrology, physiognomy, chiromancy, and the mechanical arts, including cosmography, painting, and the art of warfare; all of these are in some sense founded on number. Fludd's metaphysics postulates a complex and all-embracing correspondence between the world of spirits and the physical world; this entailed opposition to Copernicanism. For Fludd the sun, source of heat, light, and spirit, goes round the earth and vivifies it, just as the Holy Spirit vivifies man." (Oxford *DNB*).

"Robert Fludd was a respected English physician (of Welsh origins) employed at the court of King James I of England. He was a prolific writer of vast, multi-volume encyclopaedias in which he discussed a universal range of topics from magical practices such as alchemy, astrology, kabbalism and fortune-telling, to radical theological thinking concerning the inter-

relation of God with the natural and human worlds. However, he also proudly displayed his grasp of practical knowledge, such as mechanics, architecture, military fortifications, armaments, military manoeuvres, hydrology, musical theory and musical instruments, mathematics, geometry, optics and the art of drawing, as well as chemistry and medicine. Fludd used the common metaphor for the arts as being the "ape of Nature," a microcosmic form of the manner in which the universe itself functioned.

"Fludd's most famous work is the *History of the Two Worlds* (*Utriusque Cosmi … Historia*, 1617-21) published in five volumes by Theodore de Bry in Oppenheim. The two worlds under discussion are those of the Microcosm of human life on earth and the Macrocosm of the universe (which included the spiritual realm of the Divine).

"Fludd himself was a staunch member of the Anglican Church. He was educated in the medical profession at St. John's College in Oxford. In 1598-1604/ 5 he set out for an extended period of travel on the continent. He spent a winter with some Jesuits, a Roman Catholic order deeply opposed to Protestantism who, nevertheless, tutored Fludd on magical practices. Fludd, however, always claimed to have worked out the theological and magical systems in his first volume of the Utriusque Cosmi … Historia, concerning the Macrocosm (1617), during his undergraduate days at Oxford. In this work Fludd devised a lavishly illustrated cosmology, based on the chemical theory of Paracelsus, in which the materials of the universe were separated out of chaos by God who acted in the manner of a laboratory alchemist. – Urszula Szulakowska, Robert Fludd and His Images of The Divine, The Public Domain Review.

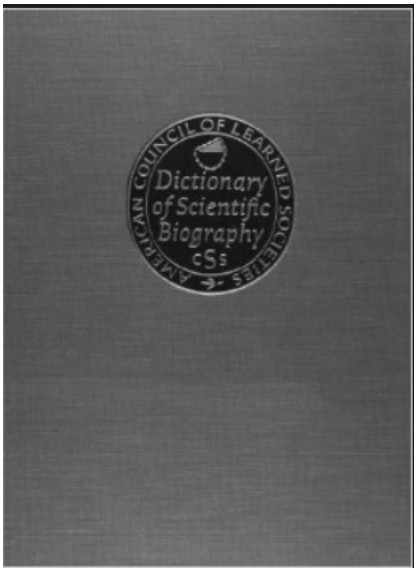
☼ J.B. Craven, *The Life and Mystical Writings of Dr. Robert Fludd*, p. 243-244; Shaaber 163; BL 17th German F549; Krivatsy, NLM 4144; Caillet 4042; Duveen 222; Neu 1453; Osler 2621-2622; Partington II, 325; Casanetense 478; Gardner, *Astrologica* 412; F. Leigh Gardner, *Bibliotheca Rosicruciana*, 217-218; Graesse, Magica, 113. Young 115; Smith and De Morgan 614; Thorndike, *A History of Magic and Experimental Science,* VIII,

pp.443-444; Wellcome 2324; Mellon 83; Ferguson I, 283; Houzeau/Lancaster I, 2925, 2966; Neville I, 458. Cantamessa I, 1538.

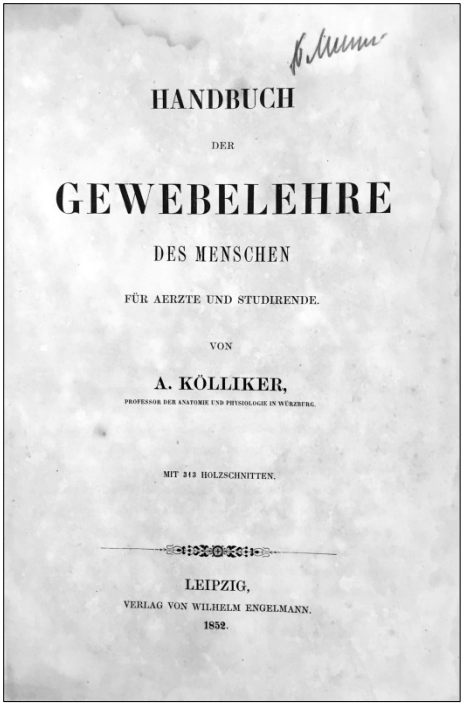
20. **GILLISPIE, Charles Coulston** (ed.). *Dictionary of Scientific Biography*. New York: Charles Scribner's Sons, (1970-81). Second edition. Eight volume set (two vols. bound in each vol.). 29 cm. xii, 624, x, 628; xiii, 624, xiii, 622; xiii, 624, xiii, 619; xii, 625, xii, 624;xiii, 620, xii, 622; xiii, 618, xiii, 620; xiii, 622, xiii, 640; xi, 818, xv, 503 pp. Green gilt and black stamped cloth. Fine. ISBNs: 0684169630 (vol. 1 & 2); 0684169649 (vol. 1 & 2); 0684169657 (vol. 5 & 6); 0684169665 (vol. 7 & 8); 0684169673 (vol. 9 & 10); 0684169681 (vol. 11 & 12); 068416969X (vol. 13-14); 0684169703 (15 & 16).

$ 900

Complete set. One of the most substantial reference works in the field of history of science. The *Dictionary of Scientific Biography* consists of personal biographies with scientific contributions of various scientists (in the areas of mathematics, physics, chemistry, biology, earth sciences, etc.) from antiquity to modern times, but excluding scientists who were alive when the *DSB* was being published. M13041



[20]



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A. KÖLLIKER,

PROFESSOR DER ANATOMIE UND PHYSIOLOGIE IN WÜRZBURG.

MIT 313 HOLZSCHNITTEN.

LEIPZIG,

VERLAG VON WILHELM ENGELMANN.

1852.

"The First Textbook of Histology"

21. **KÖLLIKER, Albert** (1817-1905). *Handbuch der Gewebelehre des Menschen für aerzte und studirende*. Leipzig: Wilhelm Engelmann, 1852.

8vo. X, 637 pp. 313 figures. Early half maroon sheep, marbled boards, black leather gilt-stamped label; extremities worn, spine faded, rubbed. Ownership signature of G.G. Bichlmaier, ink inscription on half-title.

$ 875

FIRST EDITION OF THIS CLASSIC TEXTBOOK ON HISTOLOGY FOR WHICH KÖLLIKER WAS A PIONEER IN THE SCIENCE OF MICROSCOPIC ANATOMY.

Among Kölliker's "earlier results was the demonstration in 1847 that smooth or unstriated muscle is made up of distinct units, of nucleated muscle cells. In this work, he followed in the footsteps of his master Henle. A few years before this, there

was doubt whether arteries had muscle in their walls – in addition, no solid histological basis as yet existed for those views as to the action of the nervous system on the circulation, which were soon to be put forward, and which had such a great influence on the progress of physiology. Kölliker's contributions to histology were widespread; smooth muscle, striated muscle, skin, bone, teeth, blood vessels and viscera were all investigated by Kölliker, and he touched none of them without discovering new truths. The results at which he arrived were recorded partly in separate memoirs, partly in his great textbook on microscopical anatomy, which first saw the light in 1850, and by which he advanced histology no less than by his own researches." – [Wikip.].

"A Swiss by birth, Kölliker received his medical education by attending Müller's lectures in Berlin and studying at Heidelberg where he was graduated. After serving as prosector for Henle in Zurich, Kölliker was called to Würzburg where he remained for half a century. A genius, possessing remarkable powers of observation, he made enormous strides in the understanding of human and animal tissue. He was the first to apply Schwann's cell doctrine to embryology and to isolate smooth muscle fiber. Charles Sedgwick Minot (1852-1914) said that Kölliker, 'knew more by direct personal observation of the microscopic structure of animals than anyone else who ever lived' – Fielding H. Garrison, An introduction to the history of medicine, 4th ed., Philadelphia, 1929, p. 462. *Handbuch der Gewebelehre des Menschen*, one of Kölliker's most important works, may be considered the first textbook of histology." – *Heirs of Hippocrates*.

PROVENANCE: "G.G. Bichlmaier" – [Munich?].

See: Garrison & Morton 546; Heirs of Hippocrates 1848 (1852 ed.); Lynn K. Nyhart, *Biology Takes Form: Animal Morphology and the German Universities, 1800-1900*, University of Chicago Press, (1995), pp. 78, 124, 125, 128, etc.; "Albert von Kölliker (1817–1905) Würzburger histologist", JAMA, 206 (9): pp. 2111–2. 1968; Waller 5356 (1867 ed.).

22. **LAVOISIER, Antoine Laurent** (1743-1794), et al. *Méthode de nomenclature chimique, proposée par MM. de Morveau, Lavoisier, Bertholet, & de Fourcroy. On y a joint un nouveau système de caractères chimiques, adaptés à cette nomenclature, par MM. Hassenfratz & Adet.* Paris: Chez Cuchet, 1787.

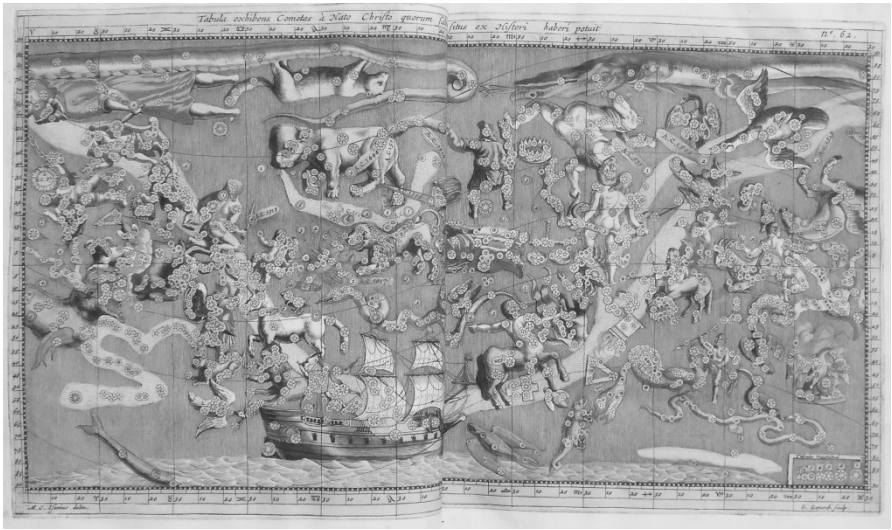
8vo. [iv], 314 pp. Half-title, woodcut title-page vignette, headpiece, tailpieces, 6 folding tables of chemical symbols, 1 folding plate; page 1 of the text trimmed at top margin and mounted on a stub, foxed. Contemporary full mottled calf, red leather spine label, gilt spine; foot of spine chipped, corners of rear cover chewed. Ownership signature on title. Good. [S9953]

$ 1750

FIRST EDITION, second issue, second printing, with the flowered vase on the title-page (previously a cherub) and no colophon on page 314. Lavoisier's new terminology of chemistry was an important part of his reforms in the science, and it has been in use, with some modifications, ever since its introduction. "The merits of the new nomenclature are, even today, more than evident since, with only slight modifications, it is still the basis of the language of modern chemistry." Duveen and Klickstein, pp. 119-126.

Louis Guyton de Morveau was trained as a lawyer who taught himself the subject of chemistry. From 1776-1789 he taught public courses in chemistry at the Dihon Academy. He was professor of chemistry at the École Polytechnique from 1794-1811, twice serving as its director.

☼ Blake, NLM, p. 191 (2nd printing); Cole, *Chemical literature*, 566; *DSB*, V, pp. 600-604; Duveen, B*ibliotheca alchemica et chemica*, p. 340; Duveen and Klickstein, 130; Gascoigne 7150.4; *Haskell Norman Library* 1291; Partington, *A history of chemistry*, III, p. 372; Poggendorf, I, col. 981; Wellcome, III, p. 185.



Extremely Rare Hand-Colored Copy

23. **LUBIENIECKI, Stanislaw** (1623-1675). *Historia Cometarum, a Diluvio usque ad praesentem annum vulgaris Epochae à Christo nato 1665. decurrentem, Unà cum Indiculo laetorum & tristium eventuum, Cometarum apparitionem secutorum, In qua simul Synopsis quaedam Universalis Historiae proponitur.* Amsterdami, apud Danielem Baccamude, Pro Francisco Cupero [Daniel Baccamude for Francis Cuyper] … 1666. [With]: *Theatri Cometici Exitus de Significatione Cometarum.* Amsterdam, 1668.

Volume two, Parts II & III. Folio. [xii], 464; [3], 78, [6] pp. Collation: [ ]^{2}, (*)^{4}, A^{4} [i.e. A$^{3-4}$], B^{4}-3H^{4}, 3I^{6}, 3K^{4}-3M^{4} ; [ ]^{2}, A-I^{4}, K^{6}. With 2 a full allotment of 26 HAND-COLORED PLATES ON COMETS, CONSTELLATIONS, DIAGRAMS OF ORBITS, ETC., including 2 hand-colored title-pages (copperplate engravings by Bastiaen [Sebastiaan, or Sebastiaen] Stopendael [Stopendaal], 1637-1693/1707?) after M. Scheits, 1 hand-colored portrait of Joannes Ernestus de Rautenstein, 2 hand-colored double-page plates, and 21 full-page hand-colored plates, by Stopendaal, Gerardi, Gerritsz and others after M.C. Isenius and others. While the plates are numbered, there is no discernable arrangement if looking at just the numbering sequence [the lowest numbered plate is 60; the highest

numbered plate is 88]. With addenda, index of the plates for both volumes I & II, appendix – all at rear. Pages 3/4 torn with considerable loss to lower corner; pp. 57/58, 175/176, 203/204 torn (no loss). Original full dark calf [ca. 1668], with gilt fillets and a wreath-like device on both upper and lower covers, all edges gilt and gauffered; crudely rebacked with blackish corded cloth (no attempt to match leather), with a very old spine mounted and weirdly stained white – the spine gilt decoration obscured by the white and yet with enough manuscript title (for this vol.) to indicate it belongs together, imitation nineteenth century-style marbled leaves and later endleaves (associated with the time of rebacking). 7 leaves with faint waterstaining to outer margin (at front), some minor foxing. Inscription on title of the Collegii Neoburgensis … Jesu, 1667. Two plates with minor manuscript notations to the margins, one line manuscript with internal references (at rear). Very good.

Plates: 2 double-page: nos. 60 (weakness in paper causing split at gutter), 62; 21 full-page: nos. 62 (facing p.12), 63 (p.26), 64, (p.48), 71, (p.76 – ms. note), 67 (p.104), 70 (p.144), 77 (p.172 – torn at gutter), 66 (p.226), 85 (p.230), 81, (p.242), 79 (p.302 - upper margin torn), 79 (p.320), 74 (p.332), 72 (p.338 – torn at gutter), 70 (p.372), 71 (p.380 – ms. note), 73 (p.383), 68 (p.386), 88 (p.406 [Halley's comet]), 86 (p.412), 77 (p.428).

$ 20,000

FIRST EDITION [Parts III & III only], but complete in itself. Lubieniecki's encyclopedic treatise on comets contains a history of all known comets observed up to 1665. The first, and largest, part (lacking here) comprised Lubieniecki's correspondence with 40 of the leading astronomers of his time. Lubieniecki had enlisted the cooperation of the leading European astronomers in the investigation and survey of the 1664-65 comet. He corresponded with, and printed both sides of the correspondence, with more than forty astronomers including: Petrus van Bruxelles and Ismaël Boulliau, Rautenstein, Hevelius, Kircher, Schott, Bartholinus, Henry Oldenburg, Riccioli, Huyens, Regiomontanus, Voss, Langius, Guericke, Bullialdus, and others. Also in the first volume is the announcement of Geuricke's *Experimentum novum Magdeburgicum de vacuo spatio*. The correspondents also supplied the author with

illustrations on the comet, appearances and courses traversed. The second part (present here) contained a history of all the comets ever recorded in any chronicle or historical work. The third part in on the significance of comets. Halley's Comet is shown during its 1607 apparition (facing p.406), in Ursa Major during late September-October. In another woodcut plate the destructive influence of a fourth century comet is shown (facing p.48). Another plate shows Pegasus, the winged horse (facing p.383).

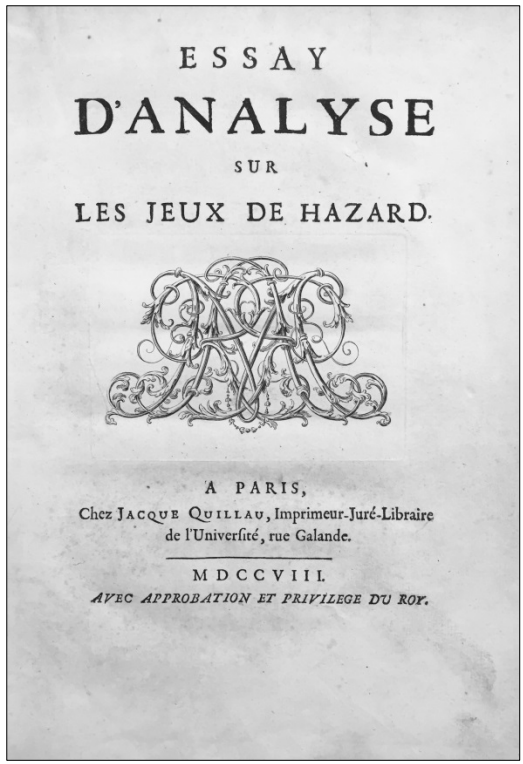
THIS FULLY CONTEMPORARY HAND-COLORED COPY IS ONLY 1 OF 2 RECORDED COPIES* OF LUBIENIECKI FOUND. BOUND AND EMBELLISHED FOR A SPECIAL PATRON. Lalande states, "Contient une vaste érudition"

The fine engravings consist of celestial maps showing the paths of comets and the figures of the constellations traversed. "Since each map represents the observations of a different astronomer, taken together they illustrate the variety of cartographic traditions popular during the seventeenth century. On many of the maps the choices of constellations, of constellation style, and of constellation names are strongly reminiscent of the celestial globes of Blaeu and Hondius. Several other maps carry the Judaeo-Christian constellations introduced by Plancius. From Rome, Kircher sent a map derived from those of Grienberger. On only a few maps are the stars identified by Bayer letters. None of the maps reflects any of the traditions popular during the previous century" – Warner, The sky explored, p 164.

Only two complete copies of the first edition are recorded at auction since 1975 by *ABPC*: the Honeyman (lot 2052, a presentation copy) and Dunham copies. A third copy, with 3 additional titles and 81 plates, but lacking one of the 2 portraits, was sold by Sotheby's, London, 13 April 1989 (lot 94). Of the three copies held by the British Library, two are substantially defective.

Stanislaw Lubieniecki (Rakow 1623 – Hamburg 1675) is a Polish aristocrat, astronomer, preacher, historian and writer. He travelled in France and the Netherlands in 1650, took a position preaching in 1652 (Torun). Because of his religious beliefs, he was twice persecuted and deported from Poland and found refuge in Hamburg; then again persecuted in 1667 he was forced to relocate to Altona in the Netherlands. He studied astronomy and in particular the study of comets. In addition to the *Theatrum Cometicum*, he is also known for his *Historia Reformationis Polonicae*, (1685) (*History of the Polish Reformation*). Christof A. Plicht reported that the author died of a poison, perhaps given by a servant, or perhaps from ergotism, a toxic fungus [Hockey]. See: *Biographie Universelle.*

☼ Brown, Basil, *Astronomical Atlases, Maps and Charts*, p. 44 (1681 edition, "interesting but rather rare work"); Brunet III, 1194;Gascoigne 2310; Graesse, II, 270; Hockey, Thomas, *Biographical Encyclopedia of Astronomers,* I, p. 715; Poggengorff, I, 1508; Sotheby-Honeyman 2052; Thorndike, *History of Magic and Experimental Science*, VIII, p. 336; Warner, *The sky explored*, p 164; Yeomans, Donald K., *Comets; A Chronological History of Observation, Science, Myth, and Folklore*, (1991), pp. 69-94, 266. Not in Houzeau and Lancaster. LV1837


ESSAY
D'ANALYSE
SUR
LES JEUX DE HAZARD.
A PARIS,
Chez JACQUE QUILLAU, Imprimeur-Juré-Libraire de l'Université, rue Galande.
M DCCVIII.
AVEC APPROBATION ET PRIVILEGE DU ROY.

24. **MONTMORT, Pierre Rémond de** (1678-1719). *Essay d'analyse sur les Jeux de Hazard.* Paris: Chez Jacque Quillau, 1708.

4to. xxiv, 189, [3] pp. Engraved title vignette (author's initials?), 3 vignettes depicting gambling scenes (chapter headings: pp. 1, 109, 156) by Sébastien Leclerc (1637-1714), graveur, decorative initials and tailpieces, 3 folding tables (p. 28[a], 28[b], 74), 2 figs. (p. 127, 130) of trictrac; occasional browning, pp. 53-54 with puncture (paper flaw, some loss), pp. 127-8 with closed tear, small marginal burn hole pp. 101-102. Original full vellum with maroon calf spine label. Ink inscription in an early hand, "Written … by de Moivre's preface to his doctrine of Chance by Monsieur de Montmort." Armorial bookplate of Sir Francis Hopkins, 1st Baronet. (1756-1814), of, Athboy Lodge, Meath, Ireland. Very good copy.

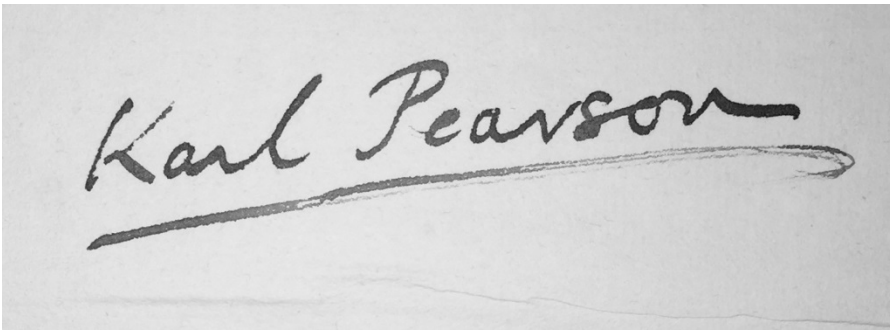
$ 7,000

FIRST EDITION. Montmort's important book on probability, the first devoted entirely to the subject, made his reputation among scientists. It is not clear why Montmort undertook a systematic exposition of the theory of games of chance. Gaming was a common pastime among the lesser nobility whom he frequented, but it had not been treated mathematically since Christiaan Huygens' paper of 1657. Montmort continued along the lines laid down by Huygens and made analyses of fashionable games of chance in order to solve problems in combinations and the summation of series. The greatest value of the *Essay d'analyse sur les jeux de hazard* lay perhaps not in its solutions but in its systematic setting out of problems about games, which are shown to have important mathematical properties worthy of further work. The book aroused Nikolaus I Bernoulli's interest in particular and the 1713 edition includes the mathematical correspondence of the two men. The most famous of these letters is that of N. Bernoulli containing a description of the St. Petersburg Paradox is first printed in this 1713 edition (see Sept. 9, 1713 letter from Bernoulli, pp. 401-402). This correspondence in turn provided an incentive for N. Bernoulli to publish the *Ars conjectandi* of his uncle Jakob I. Bernoulli, thereby providing

mathematics with a first step beyond mere combinatorial problems in probability. This edition contains a letter of Pascal to Fermat (pages 166-174 in the first edition; pages 233-241 in this 1713/1714 issue – some minor differences in the first table). Montmort's book on probability made his reputation among scientists and led to a fruitful collaboration with Nikolaus I Bernoulli. The Royal Society of London elected Montmort fellow when he was visiting England in 1717 to watch the total eclipse of the sun in the company of the astronomer royal, Edmond Halley. The Académie Royale des Sciences made him an associate member the following year but he could not be granted full membership because he did not reside in Paris.

PROVENANCE: Francis Hopkins, 1st Baronet. (1756-1814), of, Athboy Lodge, Meath, Ireland.

☼ *DSB*, IX, pp. 499-500; F.N. David, *Games, Gods and Gambling* [her copy]; Stigler, *History of Statistics*, pp. 71-72; Todhunter, *History of the theory of probability*, (1865), Chapter VII; Tomash M121.



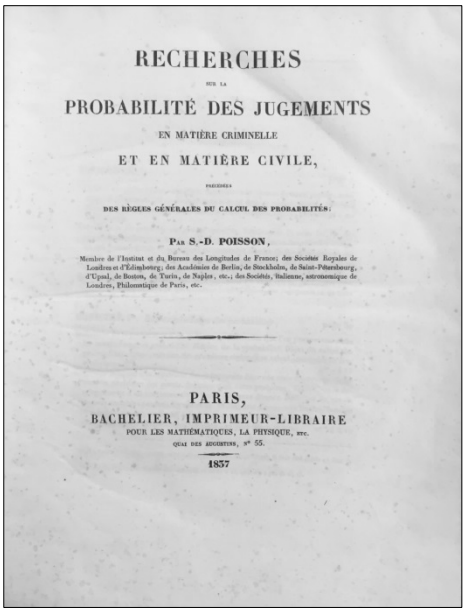
Karl Pearson's Copy with His Bold Signature

25. **POISSON, Siméon-Denis** (1781-1840). *Recherches sur la probabilité des jugements en matière criminelle et en matière civile, précédées des règles générales du calcul des probabilités*. Paris: Bachelier, 1837.

4to. [4], ix, [3], 415, [1] pp. Half title; light foxing within. Original quarter dark green gilt-stamped calf, marbled boards; extremities worn. Very good. PROVENANCE: SIGNATURE OF KARL PEARSON (1857-1936).

$ 4,000

First edition of the work that presented Poisson's 'Law of large numbers.' "He improved Laplace's work by relating it explicitly to Jacob Sernoulli's fundamental theorem and by showing that the invariance in the prior probabilities of mutually exclusive events is not a necessary condition for calculating the approximate probabilities. It is also from Poisson that we derive the study of a problem that Laplace had passed over, the case of great asymmetry between opposite events, such that the prior probability of either event is very small." – *DSB* (p. 489).


RECHERCHES

SUR LA

PROBABILITÉ DES JUGEMENTS

EN MATIÈRE CRIMINELLE

ET EN MATIÈRE CIVILE,

PRÉCÉDÉES

DES RÈGLES GÉNÉRALES DU CALCUL DES PROBABILITÉS;

PAR S.-D. POISSON,

Membre de l'Institut et du Bureau des Longitudes de France; des Sociétés Royales de Londres et d'Édimbourg; des Académies de Berlin, de Stockholm, de Saint-Pétersbourg, d'Upsal, de Boston, de Turin, de Naples, etc.; des Sociétés, Italienne, astronomique de Londres, Philomatique de Paris, etc.

PARIS,

BACHELIER, IMPRIMEUR-LIBRAIRE

POUR LES MATHÉMATIQUES, LA PHYSIQUE, etc.

QUAI DES AUGUSTINS, n° 55.

1837

"Poisson's major work on probability was a book, Recherches sur la probabilité…, published in 1837. The book was in large part a treatise on probability theory after the manner of Laplace, with an emphasis on the behavior of means of large numbers of measurements. The latter portion (p. 318-415) dealt with the subject matter of the title. Some of this material was taken from memoirs Poisson published in the two preceding years. Only a charitable modern reading could identify a new concept in the work; yet the book contains the germ of the two things now most commonly associated with the Poisson's name. The first of these is the probability distribution now commonly called the Poisson distribution… In a section of the book concerned with the form of the binomial distribution for large numbers of trials, Poisson does in fact derive this distribution in its cumulative form, as a limit

to the binomial distribution when the chance of a success is very small. The distribution appears on only one page in all of Poisson's work (see p. 206). Although it is given no special emphasis tis brief notice did catch the eye of Cournot, who republished it in 1843 with calculations demonstrating the effectiveness of the approximation (Cournot, 1843 …). The second most common appearance of Poisson's name in modern literature is in connection with a generalization of the Bernoulli law of large numbers." – Stigler.

"[This work is] significant for the author's participation in an important contemporary debate. The legitimacy of the application of the calculus to areas relating to the moral order, that is to say within the broad area of what is now called the humanistic sciences, was bitterly disputed beginning in 1820 in politically conservative circles... Poission was bold enough to take pen in hand to defend the universality of the probabilistic thesis and to demonstrate the conformability to the order of nature of the regularities that the calculus of probability, without recourse to hidden causes, reveals when things are subjected to a great number of observations." –*DSB* (pp. 489).

Laid within this volume are five pages (on four leaves) of mathematical notations in French, suggesting an ownership (unknown) prior to Pearson.

Karl Pearson (1857-1936) "was a major player in the early development of statistics as a serious scientific discipline in its own right. He founded the Department of Applied Statistics (now the Department of Statistical Science) at University College London in 1911; it was the first university statistics department in the world. The present departments of Statistical Science and Computer Science, as well as the Genetics and Biometry group in Biology and the physical side of Anthropology are all part of his legacy to UCL." A major proponent of eugenics, Pearson was also a protégé and biographer of Sir Francis Galton.

"Karl Pearson was born in London on the 27th March 1857. "He was educated privately at University College School, after

which he went to King's College Cambridge to study mathematics. He then spent part of 1879 and 1880 studying medieval and 16th century German literature at the universities of Berlin and Heidelberg - in fact, he became sufficiently knowledgeable in this field that he was offered a post in the German department at Cambridge University."

"His next career move was to Lincoln's Inn, where he read law until 1881 (although he never practised). After this, he returned to mathematics, deputising for the mathematics professor at King's College London in 1881 and for the professor at University College London in 1883. In 1884, he was appointed to the Goldshmid Chair of Applied Mathematics and Mechanics at University College London. 1891 saw him also appointed to the professorship of Geometry at Gresham College; here he met W.F.R. Weldon, a zoologist who had some interesting problems requiring quantitative solutions. The collaboration, in biometry and evolutionary theory, was a fruitful one and lasted until Weldon died in 1906. Weldon introduced Pearson to Francis Galton, who was interested in aspects of evolution such as heredity and eugenics, and this was another very rewarding partnership, more for the developments in statistics it led to than for the eugenics, some of which is rather problematic for a modern reader with knowledge of subsequent developments.

"Galton died in 1911 and left the residue of his estate to the University of London for a Chair in Eugenics. Pearson was the first holder of this chair, in accordance with Galton's wishes. He formed the Department of Applied Statistics, into which he incorporated the Biometric and Galton laboratories. He remained with the department until his retirement in 1933, and continued to work until his death in 1936.

"Pearson married Maria Sharpe in 1890, and between them they had 2 daughters and a son. The son, Egon Sharpe Pearson, succeeded him as head of the Applied Statistics Department at University College.

"Aside from his professional life, Pearson was active as a prominent free thinker and socialist. He gave lectures on such issues as "the woman's question" (this was the era of the suffragette movement in the UK) and upon Karl Marx. His commitment to socialism and its ideals led him to refuse an OBE (Order of the British Empire) when it was offered in 1920, and also a Knighthood in 1935." – University College London.

☼ F. Fraunberger, within *DSB*, XV, Supple., I, pp. 480-491; Dodge, Yadolah, *The Concise Encyclopedia of Statistics*, (2008), p. 427; Stigler, *The History of Statistics*, pp. 182-3.

Pearson, E.S., *Karl Pearson: an appreciation of some aspects of his life and work*. Cambridge University Press, (1938).

26. **PRITCHARD, Andrew** (1804-1882). *History of Infusoria, living and fossil; arranged according to "Die Infusionsthierchen" of C. G. Ehrenberg; Containing Coloured Engravings, Illustrative of all the Genera & Descriptions of all the Species in that Work, with Several New Ones*. London: Whittaker, 1841.

8vo. ix, [1], 439, [1] pp. With tipped in notice of author, errata, 1 fig. (p.27), 12 plates (of which 10 are colored), errata, subscriber's list, index; heavy staining between pages 126-178. Original brown embossed cloth; rebacked preserving original spine. SUBSCRIBER'S COPY: with ownership signature on title, in pencil of J. Jones Tucker, R.N., Dublin. Very good (but noting internal staining).

$ 175

First edition. Being a description of various "infusoria", following the author's earlier Natural History of Animalcules, (1834), each book important for their study of microscopic organisms. Pritchard was an optician and had a shop where he sold microscopes and mounted slides. The *DNB* says of this work, "… his *History of the Infusoria,* … was long a standard work, and the impetus it gave to the study of biological science cannot be overestimated." The text is devoted to the microscope and his innovations for the use of the microscope. Includes general history of "animalcules" or aquatic micro-

organisms, that he describes and arranges by family, and includes an appendix by Dr. Ehrenberg's on infusoria belonging to chalk formations. "The first book to render accessible to inquirers respectable microscopic figures of numerous minute organisms with which many become familiar through the microscope ... a valuable contribution to science, of great practical use. . .illustrations are beautifully engraved." – *The Canadian Journal of Industry, Science and Art*, volume VII.

PROVENANCE: J. Jones Tucker, R.N., Dublin, was an original subscriber to the edition.

PRIESTLEY ON THE THEORIES OF LIGHT

27. **PRIESTLEY, Joseph**. *The History and Present State of Discoveries relating to Vision, Light, and Colours*. London: Printed for J. Johnson, 1772.

4to. v, [i], [viii], xvi, 422; [ii], 423-812, [xii] pp. Folding frontispiece, subscriber's list, errata, 24 folding plates, index, list of books in Dr. Priestley's research; title, frontispiece with offsetting. Original full calf, with gilt stamps "lending Library T.C.D." on upper covers, original red gilt-stamped spine labels; spine broken, covers reattached with kozo. Copy of JOHN KNOTT, MD [November 21, 1904], with his red inked signature (light) on title and FREQUENT MARGINAL NOTES THROUGHOUT; bookplate of Trinity College, Dublin, Lending Library (Duplicate sold).

$ 1,600

FIRST EDITION of one of the earliest works on optics, and at the time of its publication the first comprehensive work in English on the subject. The second volume of a projected history of the experimental science (The History of Electricity was the first), this was the only English work on optics for 150 years and the only one in any language for fifty. The work owes a great deal to Boŝković's theory of matter, to which Priestley had been introduced by a neighboring rector, John Michell. The use of Boŝković's theory allowed Priestley to support the corpuscular, or "emission" theory of light in opposition to Newton's "optical ether" by providing an alternative

explanation for "Newton's rings." Organized on the Baconian design of an exhaustive chronicle, the work contains and collates the views of all previous writers on the subject with great care and intelligence. Furthermore, it contains chapters on the development and construction of instruments such as telescopes and microscopes. Unfortunately, the History failed to pay the costs of all the books collected to write it and the project was discontinued. [*DSB*] This copy retains its original paper boards and spine, and is in remarkably good condition.

Joseph Priestley occupied a variety of teaching posts, supported the phlogiston theory against Lavoisier, and Unitarianism against the Established church; the latter position led to his house and laboratory being destroyed by a mob. Priestley spent his final years in the United States.

PROVENANCE: John Knott, MD [1904], Dublin, graduate of the University of Dublin, wrote a paper, "Angina Pectoris," *The Dublin Journal of Medical Science*, Volume 104, pp.195-197, and "The Birth and Origins of Syphilis," [*JAMA*] *Journal of the American Medical Association,* Volume 42, Part 1, (1904), pp. 113-114. "Colle's Fracture," appeared in the *Transactions of the Royal Academy of Medicine in Ireland*, Volume 20, 1902 [pp.361-386]. Another paper was entitled, "Old Age – Its Prevention and Cure." – *St. Louis Medical Review*, Jan. 7, 1905. Also: "Dr. Tobias Venner: His 'Via Recta ad Vitam Longam." – *St. Louis Medical Review*, vol. 50, Oct. 15, 1904. In 1910 was issued, "Animal Therapy." *St. Louis Medical Review*, vol. 59, Aug. 1910, pp. 235-237. He was elected a Fellow of the Royal Academy of Medicine in Ireland and a member of the Royal College of Physicians of Ireland and also a member of the Royal Irish Academy.

Blake/NLM, p. 363; BM Readex, vol. 20, p. 934; British Optical Association Catalogue, I, p. 171; Crook: *Bibliography of Joseph Priestley,* p. 157; *DSB*, XI, pp. 139-147; Honeyman, VI, 2534; Osler 1190; Claire Parkinson, *Breakthroughs: A Chronology of Great Achievements in Science and Mathematics*, G K Hall, (1985), 1772; Roller, II, 327; Waller 15652.

28. **PRITCHARD, Andrew** (1804-1882). *The Microscopic Cabinet of Select Animated Objects; with a description of the Jewel and Doublet Microscope, test objects, &c. To which are subjoined, Memoirs on the Verification of Microscopic Phenomena, and an Exact method of Appreciating the Quality of Microscopes and Engiscopes - by C.R.Goring, M.D.* London: Whittaker, Treacher, and Arnot, 1832.

8vo. 246, [2] pp. Numerous unnumbered figs., 21 numbered figures, 13 plates (10 colored, 2 folding, pl. VII is the frontis., pl. XI bound after pl. XIII). Modern quarter calf, original marbled boards, black spine label, orig. calf corners, new endleaves. Bookplate of Fred C. Luck. Early pencil ownership signature on title of Thomas B. Hart[?], 1834. Very good.

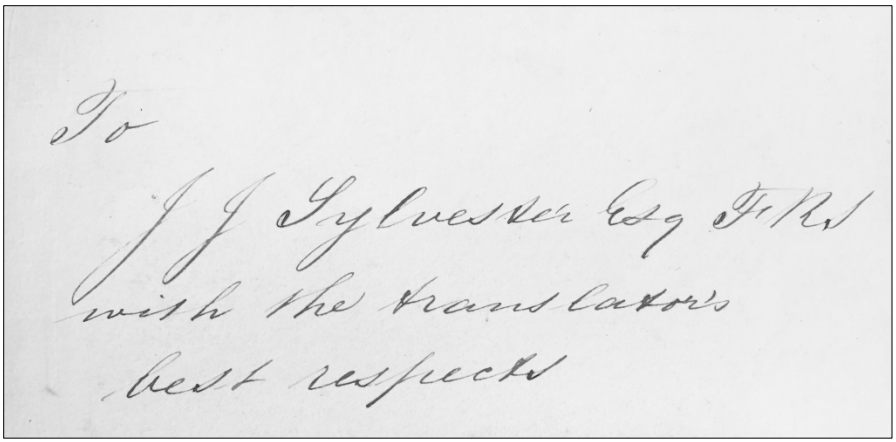
$ 875

First edition. A significant work by an important author in which he describes his experiments in the making and use of jewel lenses and his collaborator Goring contributes chapters on the evolution of the quality of microscopes and engiscopes. – *DNB*.

This book describes Pritchard's studies of the biology and anatomy of minute organisms. It also includes a stimulating account of the author's experiments with precious jewel lens systems in his attempt to perfect and color correct the optics of the microscope. "While almost every part of nature has within the last few years been explored, and our knowledge augmented, the living objects described in this work, have been nearly overlooked by naturalists, and such representations as we possess of them are delineated in the most incorrect and grotesque manner that can well be conceived; for these reasons the Author has presumed to call the attention of the public to this interesting branch of natural history." (author). The first thirteen chapters are devoted to descriptions of Living Objects including the Aquatic Larvae of Insects, gnats, Dytiscus larva (crocodiles), dragonfly, boat-fly, brown polype, shrimp, Crustacea, and Animalcules. He then describes the Jewelled and Doublet Microscopes.

The importance of certain objects in determining the qualities for Microscopes and Engiscopes (compound microscopes) is acknowledged. Dr. C.R. Goring's account follows (pp.191-246) has given a Memoir on an Exact Method of ascertaining the Quality of Microscopes and Engiscopes. The reviewer from *The Gentleman's Magazine,* expressed admiration for the plates: "some of the best executed plates and cuts, from drawings by the two naturalists, that we have seen on the subject. Further commenting, "we never saw a subject more scientifically treated" than the present 'outline'. See: *The Gentlemen's Magazine, and Historical Chronicle. From* ... 1832 (p.155).

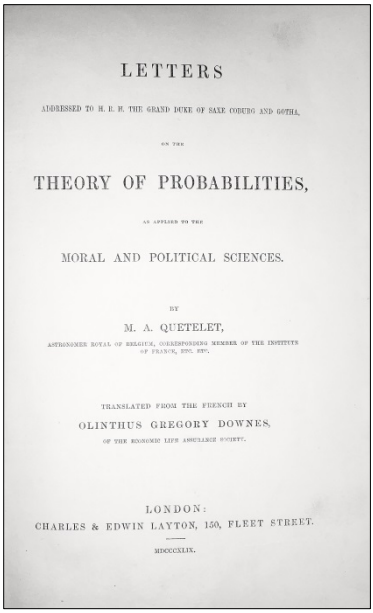
PROVENANCE: Fred C. Luck of Canterbury, attended Pembroke College, Cambridge, had a tea plantation in Ceylon and later in Antwerp, Holland; he wrote, "A Ceylon Planter's Holiday," *Health: A Home Magazine Devoted to Physical Culture and Hygiene*, Volume 55, 1905.



Remarkable Provenance

29. **QUETELET, Lambert Adolphe Jacques** (1796-1874). *Letters Addressed to H. R. H. the Grand Duke of Saxe Coburg and Gotha on the Theory of Probabilities, as Applied to the Moral and Political Sciences. Translated from the French by Olinthus Gregory Downes*. London: Charles & Edwin Layton, 1849.

8vo. xvi, 309 pp. Tables. Original blind-stamped brown cloth, by Lewis (binder's ticket at rear); rebacked, new spine label. Fine.


LETTERS

ADDRESSED TO H. R. H. THE GRAND DUKE OF SAXE COBURG AND GOTHA,

ON THE

THEORY OF PROBABILITIES,

AS APPLIED TO THE

MORAL AND POLITICAL SCIENCES.

BY

M. A. QUETELET,

ASTRONOMER ROYAL OF BELGIUM, CORRESPONDING MEMBER OF THE INSTITUTE OF FRANCE, ETC. ETC.

TRANSLATED FROM THE FRENCH BY

OLINTHUS GREGORY DOWNES,

OF THE ECONOMIC LIFE ASSURANCE SOCIETY.

LONDON:
CHARLES & EDWIN LAYTON, 150, FLEET STREET.

MDCCCXLIX.

Inscribed by the translator Olinthus Gregory Downes, "To J.J. Sylvester Esq, F.R.S., with the translator's best respects." Bookplate of Percy Alexander MacMahon (engraved by C.M. Patt, R.E. 1904). Bookplate of the Francis Galton Laboratory; initials of Florence Nightingale David, 1945.

$ 1,000

First edition in English, originally issued in Brussels, 1846. This is a translation of Lettres à S.A.R. le duc régnant de Saxe-Cobourg et Gotha sur la théorie des probabilités, appliquée aux sciences morales et politiques. "This book is really an original, if elementary, treatise on probability and social statistics, written in the form of a series of letters to the Belgian king's two nephews, Ernest (the duke to whom the book was dedicated) and Albert (who by 1846 was husband to Queen Victoria of Great Britain). Quetelet had tutored the two in the 1830's, and in writing his book as a series of letters he was adopting a form that had been used with great success by Euler in 1768, with Letters to a German Princess, a popular exposition of physical science." – Stigler, History of Statistics, p. 206.

PROVENANCE: James Joseph Sylvester (1814-1897), British mathematician, Fellow of the Royal Society, made fundamental contributions to matrix theory, invariant theory, number theory, partition theory and combinatorics. He came to Johns Hopkins University and was founder of the American Journal of Mathematics. He was at a young age (14) student of Augustus De Morgan at University of London. In 1837 he placed second in the Cambridge mathematical tripos. In 1838 he became

professor of natural philosophy at University College London. Briefly he went to Trinity College, Dublin, then to the University of Virginia, returning to England in 1843. He studied law with Arthur Cayley, with whom he made significant contributions to matrix theory while working as an actuary. At this time one of his private pupils was Florence Nightingale. Then in 1855 he took his first teaching position as professor of mathematics at Royal Military Academy, Woolwich (see MacMahon), retiring in 1869. "The Woolwich academy initially refused to pay Sylvester his full pension, and only relented after a prolonged public controversy, during which Sylvester took his case to the letters page of The Times." Life took more turns for him and in 1877 he went to Johns Hopkins. Then in1883 he became Savilian Professor of Geometry at Oxford University. See: Karen Hunger Parshall, James Joseph Sylvester: Life and Work in Letters, Oxford: Oxford University Press, 2013, and Raymond Clare Archibald, "Unpublished Letters of James Joseph Sylvester and Other New Information concerning His Life and Work", OSIRIS, vol. 1, 1936, pp. 85-154.

Percy Alexander MacMahon (1854-1929), was a British mathematician, especially noted in connection with the partitions of numbers and enumerative combinatorics. See: Dr. Paul Garcia, "The life and work of Percy Alexander MacMahon." [PhD thesis]. Amazingly, MacMahon, also attended (1871-1873) the same school, Royal Military Academy, Woolwich, that Thomas Simpson had taught in over one hundred years earlier. Perhaps some of these books came into his possession. It would not make sense that a youngster had such books, but in fact he returned to the Academy and taught there from 1882. He met Alfred George Greenhill, Professor of Mathematics, who was part of the faculty. There MacMahon taught electricity from 1891. He was elected a Fellow of the Royal Society in 1890. He received the Royal Society Royal Medal in 1900, the Sylvester Medal in 1919, and the Morgan Medal by the London Mathematical Society in 1923. MacMahon was the President of the London Mathematical Society from 1894 to 1896. He was a puzzler, registering a puzzle patent, and MacMahon's colored cubes are named for him.

Florence Nightingale David, whose initials are found on the Francis Galton Laboratory bookplate, bears the date 1945, right at the time when she came back to University College London (the location of the lab). See: F.N. David, Games, Gods and Gambling: The Origins and History of Probability and Statistical Ideas From the Earliest Times in the Newtonian Era, (1962).

The Galton Laboratory researched eugenics and then human genetics, was based at University College London. The Eugenics Record Office was originally founded by Francis Galton in 1904. In 1907 the Office was reconstituted as the Galton Eugenics Laboratory as part of UCL and under the direction of Karl Pearson the Professor of Applied Mathematics. See: Magnello, M. E. "The Non-correlation of Biometrics and Eugenics: Rival Forms of Laboratory Work in Karl Pearson's Career at University College London, (in two parts)," (1999), History of Science, 37: pp. 79–106; 125–150.

Stigler, Stephen M., Statistics on the Table; the History of Statistical Concepts and Methods, (1999), pp. 206, 161-220.

See: Theodore M. Porter, Karl Pearson: The Scientific Life in a Statistical Age, (2010), page 237, 254, 259.

30. **SANDER, Bruno** (1884-1979). *Einführung in die Gefügekunde der geologischen Körper. In zwei Teilen. (Originalausgabe!) Erster Teil: Allgemeine Gefügekunde und Arbeiten im Bereich Handstück bis Profil. Mit 66 Abbildungen im Text. / Zweiter Teil: Die Korngefüge*. Wien, Insbruck: Springer-Verlag, 1948, 1950.

2 volumes. 8vo. X, 215; XII, 409, [3] pp. Illus. (some color), index. Black gilt-stamped cloth; heavily worn, with kozo repairs. Ex-library copies with usual stamping. Good, but rare complete.

$ 95

First editions. Sander was an Austrian geologist. From 1913 Sander, on behalf of the Imperial Geological Institute [Geologischen Reichsanstalt], surveyed Bulgaria and Turkey.

After the war he went to the Geological State Institute in Vienna (1920) and then became Professor of Mineralogy and Petrology at the University of Innsbruck in 1922.

The First Western Catalogue of Chinese [Eastern] Star Names

31. **SCHLEGEL, Gustave** (1840–1903). *Uranographie Chinoise ou preuves directes que L'astronomie primitive est originaire de la Chine, et qu'elle a été empruntée par les anciens peuples occidentaux à la sphère chinoise ; ouvrage accompagné d'un atlas céleste chinois et grec. Publié par l'institut royal pour la philologie, la géographie et l'ethnologie des indes orientales néerlandaises à la Haye*. La Haye: Librairie de Martinus Nijhoff; Leyde: Imprimerie de E. J. Brill Relié 1875. [Text vols. have, at head of title, a Chinese title and its transliteration, given as: Sing chin khao youen.]

Two volumes with separate atlas volume. Large 8vo. xiv, 646; [vi], 647-929 pp. Atlas: 7 large plates. [Complete] Text in French and with some Chinese. Modern quarter navy blue cloth, marbled paper over boards, gilt spine. Atlas wrapper is a remnant, but printed cover is present, preserved in a modern navy blue quarter cloth folder with inner pocket. Over all, very good. VERY RARE.

$ 985

FIRST EDITION of "the first comparative study of constellations between China and the Middle East." Allen adds that Schlegel nearly doubles the recorded entries of comets (comparing those named by John Williams or Flamsteed).

"As early as 1875, Gustav Schlegel made a tremendous effort to study the star names. In his huge volume *Uranographie Chinoise* he made a complete survey of Chinese star names which had appeared in ancient literature. About 760 star names were identified based on textual research and about 700 other variant star names were mentioned. He managed to correlate all these star names with western ones basically according to the star map in the Tianyuan lili quanshu … (Complete Treatise on

Calendars) by Xu Fa … (early Qing). The number of star names became very large because he counted all synonymous and variant astrological names. These names, of course, sometimes helped to understand the meaning of the constellations, but in most cases only added confusion. Schlegel's major effort was to search for as many analogies as possible between the Chinese and the European nomenclatures, the latter, as he correctly pointed out, actually being derived from ancient Egyptian and Babylonian nomenclatures. Thus his book was the first comparative study of constellations between China and the Middle East." – Xiaochun Sun & Jacob Kistemaker, *The Chinese Sky During the Han: Constellating Stars and Society*, 1997 (p. 8).

Gustaaf Schlegel [or Gustav Schlegel] (1840–1903) was a Dutch sinologist and field naturalist.

"Son of Hermann Schlegel—a native of Saxony who had moved to the Netherlands in 1827 to work at the natural history museum of Leiden and became its second director—, Gustaaf begun to study Chinese at the age of 9 with Leiden japanologist J. J. Hoffmann initially, it seems, without the knowledge of his parents. Gustaaf made his first trip to China in 1857 in order to collect bird specimens, but his notoriety as naturalist was overshadowed by that of Robert Swinhoe who completed much field work in China ahead of Schlegel."

"In 1861, after having learned the Fuzhou dialect, he moved to Canton to study Cantonese. In 1862, Schlegel took a job as an interpreter for the supreme court of the colonial government of Batavia. While working on this job, in 1866 he published a monograph on the Tiandihui (Heaven and Earth Society)—the first on the topic in Dutch—, and another one on prostitution in Canton. In 1869 he was awarded a doctorate from the University of Jena; his thesis was on the customs and pastimes of the Chinese, but this writing was apparently a formality because his reputation had been established by his previous publications."

"Schlegel fell seriously ill in 1872 and was granted two years' sick leave to Holland. On his return, Hoffmannn met him and asked Schlegel to take his place in educating Dutch-Chinese translators. Schlegel accepted, and in 1873 he pursued the matter further writing a pro domo letter to the Colonial Minister, asking for the government to establish a university position. He was successful, and in 1875 was appointed as an "extraordinary professor" of Chinese at Leiden University, on the first position of its kind, and advanced to full professor in 1877."

"In 1878 he married Catharina Elisabeth Gezina Buddingh. They had no children and divorced in 1890. The last years of his life were significantly affected by diabetes, as a result of which he lost sight in both eyes. He retired in 1902 and died next year. His chair at Leiden remained vacant until 1904 when Jan Jakob Maria de Groot accepted the position."

"Schlegel also wrote extensively on the geographical accounts found in Chinese historical texts like the Book of Liang. His articles on this theme were published in T'oung Pao, initially in French in a series entitled Problèmes Géographiques: Les Peuples Étrangers Chez Les Historiens Chinois, and later continued in English as Geographical Notes. The first article in this series was on Fusang. His articles on ancient Chinese geography were later collected and republished as standalone books." – *Wikipedia*.

Partial known locations: British Library; Cambridge University; Durham; Glasgow; Imperial College; Leeds; Oxford University; School of Oriental & African Studies (SOAS); University of Zurich; University of London; University of New South Wales.

☼ Allen, Richard H., *Star Names; their lore and meaning*, p 22; *Catalogue of the Crawford Library of the Royal Observatory*, Edinburgh, 1890, p. 404; Houzeau & Lancaster 609. Not in Thomas Hockey, *Biographical Ency. of Astronomers*.

32. **SCHOTT, Gaspar** (1608-1660). *Magia Optica, Das ist Geheime doch naturmässige Gesicht- und Augen-Lehr In zehen unterschidliche Bücher abgetheilet Worinnen was das Gesicht und dessen Gegenstand oder wormit dasselbige umgehet / anbelangt / deßgleichen was die Seh- Spiegel- Brill- Bildvorstell- und Farb- so dann in Brennspiegel- und Brennglas-, auch Spiegelschrifft- künstlichen Sachen und dergleichen Wissenschafften / Künsten / Ubungen und Geheimnussen / wie nicht weniger was sonsten seltsam / rar / wunderbar / und über deß gemeinen Pöbels Verstand gehetgehandelt wird / Alles Lehrartig und deutlich mit allerhand ungemeinen Werckstellungen und Probirstücken außgeführet / Hibevor durch den ... in Latinischer Sprach beschriben / Anjetzo aber ins Hochdeutsche übersetzt und vermehret von M. F. H. M. Mit dreyen Registern verschen.* Bamberg: Johan Martin Schönwetters, 1677.

Sm. 4to. [xxviii], 512, [44] pp. Allegorical frontispiece ["Magia Universalis Naturae et Artis"], 25 engraved copper plates, index; variously browned, foxed or stained. Contemporary quarter calf, decorative boards; extremities very worn. Ownership signature [L. Orssingner, VK?] and inscription [Ex Libris P. Lemigii Antles?] on ffep and upper margin of title ["Fini tod-- Ludovii Kappourr?], title with three additional rubber-stamps (Clinique Optical Hologique, Lyon; "Faculté de Médecine Annule par decision" --- … Mars 1934; Wallerstein).

$ 3,000

First German edition, issued originally as the Optics part of the Latin title of *Magia Universalis Naturae et Artis*, 1657-59. As referenced in the Haskell F. Norman collection (no. 1911 note), Schott's works contain a "vast uncritical collection of scientific and psudo-scientific information extracted from books and from communications received from Jesuit and lay scientists… His works contain much useful information, descriptions of scientific instruments and mechanical technology." – Norman (p. 693).

A.G. Keller writes, "Schott's chief works, the *Magia universalis* and the two companion volumes, *Physica curiosa* and *Technica curiosa*, are huge, uncritical collections, mines of quaint information in which significant nuggets must be extracted from a great deal of dross. Like many of his time, Schott believed that the principles of nature and art are best revealed in their exceptions. This makes him a useful source of the history of scientific instruments and mechanical technology …" – *DSB*.

Within this volume are the treatments of the scientific instruments, especially of optical nature, including studies of perspective, microscopes and telescopes. It contains the famous illustration of four simple microscopes depicted in gigantic proportions (facing p. 492), handled by tiny men. This plate is the subject of some controversy pointed out by Harald Moe and R.S. Clay & T.H. Court. However, in my opinion, many of the plates show images that are not to scale, but the function is made evident by the numerous illustrations. The microscope is discussed on pages 503-505. The telescope is given on pages 461-465, 467, 492. See: Harald Moe (1918-2000), *The Story of the microscope*, (2004), pp. 39-40; R.S. Clay & T.H. Court, *History of the Microscope*, (1932), pp. 14-16.

In discussing the camera obscura, X offers, "Gaspar Schott mentions Barbarus and Benedictus in connection with Porta and the camera obscura in his *Magia universalis Naturae et Artis* … Spectacle glasses seem to have come into common use about the end of the thirteenth century, and it is possible that their use in connection with the camera may have been known

earlier than Barbaro, and by Alberti …" Spectacles are shown on the plate [XXIV] involving p. 444. – Major-General J. Waterhouse, "Notes on the Early History of the Camera Obscura," within, *The Photographic Journal*, Volume 25, (1902), p. 276.

Gaspar Schott also knew of the camera obscura and describes a small device in this text: "describes a small camera obscura he was made aware of (Part 1, "*Magia Optica*", Book 4, p. 200). Schott also names every type of magic lantern and names Kircher as the inventor. He also describes optical illusions using a rapidly revolving wheel producing distorted figures (the Phantasmagoria became popular in the late 18th century, as did Dissolving Views and the Wheel of Life)." – Paul T. Burns, The History of the Discovery of Cinematography, 1990; 1997.

"German physicist, b. 5 Feb., 1608, at Königshofen; d. 12 or 22 May, 1666, at Augsburg. He entered the Society of Jesus 20 Oct., 1627, and on account of the disturbed political condition of Germany was sent to Sicily to complete his studies. While there he taught moral theology and mathematics in the college of his order at Palermo, He also studied for a time at Rome under the well-known P. Kircher. He finally returned to his native land after an absence of some thirty years, and spent the remainder of his life at Augsburg engaged in the teaching of science and in literary work. Both as professor and as author he did much to awaken an interest in scientific studies in Germany. He was a laborious student and was considered one of the most learned men of his time, while his simple life and deep piety made him an object of veneration to the Protestants as well as to the Catholics of Augsburg. Schott also carried on an extensive correspondence with the leading scientific men of his time, notably with Otto von Guericke, the inventor of the air-pump, of whom he was an ardent admirer. He was the author of a number of works on mathematics, physics, and magic. They are a mine of curious facts and observations and were formerly much read. His most interesting work is the "*Magia universalis naturæ et artis*", 4 vols., Würtzburg, 1657-1659, which contains a collection of mathematical problems and a large number of physical experiments, notably in optics and

acoustics. His "*Mechanica hydraulica-pneumatica*" (Würtzburg, 1657) contains the first description of von Guericke's air-pump. He also published "Pantometricum Kircherianum" (Würtzburg, 1660); "Physica curiosa" (Würtzburg, 1662), a supplement to the "Magia universalis"; "Anatomia physico-hydrostatica fontium et fluminum" (Würtzburg, 1663), and a "Cursus mathematicus" which passed through several editions. He also edited the "Itinerarium extacticum" of Kircher and the "Amussis Ferdidindea" of Curtz." – *Catholic Encyclopedia.*

☼ DSB, XII, pp. 210-11.

Great Work on Cryptography by the
Assistant to Athanasius Kircher

33. **SCHOTT, Gaspar** (**Caspar, Kaspar**). *Schola Steganographica, In Classes Octo Distributa quibus, praeter alia multa, ac jucundissima, explicantur Artificia Nova, Queis quilibet, scribendo Epistolam qualibet de re, & quocunque idiomare, potest alteri absenti, eorundem artificiorum conscio, arcanum animi sui conceptum, sine ulla secreti latensis suspicione manifestare & scriptam ab aliis eâdem arte,quacunque linguâ, intelligere & interpretari.* Nuremberg: Jobus Hertz for Johann Andrea Endter & Heirs of Wolfgang Junior, 1665.

Sm. 4to. [36], 346, [6] pp. Extra-engraved title page (signed T.F.F.), half-title, title page printed in red and black, engraved arms of Ferdinand Maximilian (1625-1669), Hereditary Prince of Baden-Baden, 8 engraved plates (6 double-page, 2 folding), 3 tables (1 folding, 1 double-page), text engravings, woodcut initials, head and tail pieces. Lacks 2Y1-2 book-list of Schott's works, found in some copies [supplied in photo-copy facs.]. Contemporary vellum, title in old hand on spine, edges speckled red; minor toning and foxing, vellum browned as usual; one tie remains. Bookplate of Hedwig & Eberhard Frey dated 1920, drawn by Reinhold Nägele (1884-1972). One plate with repaired tears at blank tab; otherwise a fine copy.

$ 3,250

First edition of this early work on cryptography and ciphers, and more specifically secret writing. Noel Malcolm points out that political and religious authorities want to conceal the

knowledge of esoteric or secret doctrines in order to control power and stressing the importance of keeping secret one's counsel. –See: "Private and Public Knowledge," by Noel Malcolm, in Findlen [below], p.305.

Schott (1608-1666) Jesuit, student and assistant of Athanasius Kircher, during the last years of his life he decided to publish the mass of material he had collected on scientific subjects both from his own researches and those of others. He produced in a period of eight years (1658-1666) eleven books. He taught mathematics and physics at Mainz and Würzberg. He "...yearned for the intellectual delights of Rome, and after twenty-five years in Italy he suffered from German winters and had to have his own hypocaust installed...Exhausted, it is said, by overwork on his books, he died in 1666." - *DSB* XII, p.211.

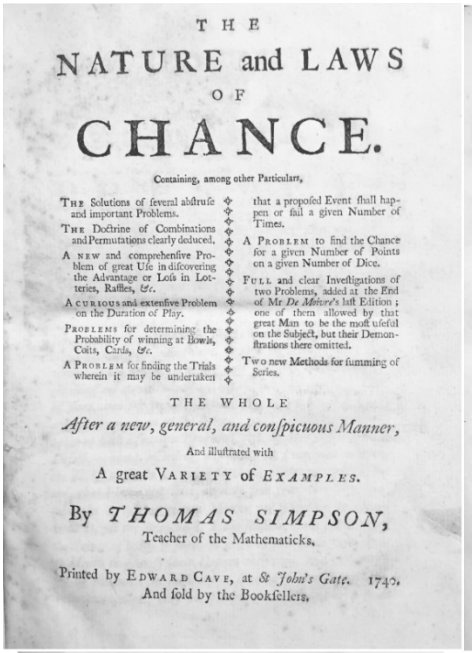
"Steganography falls into two branches, linguistic steganography and technical steganography. Only the first is closely related to cryptography. The technical aspect can be covered very quickly: invisible inks have been in use since Pliny's time. Onion juice and milk have proved popular and effective through the ages (turning brown under heat or ultraviolet light)." – Friedrich L. Bauer, *Decrypted Secrets: Methods and Maxims of Cryptology*, p.8.

PROVENANCE: Hedwig & Eberhard Frey. Eberhard Frey (1872-1963) was a German writer and art critic and a collector (and writer about) of bookplates. See: Richard Braungart, *Deutsche Exlibris und Andrere Kleingraphik der Gegenwart*. (1922), p.71.

☼ VD 17 3:006423R; Dunnhaupt (2ed.) V,12.1; Caillet 10007;. Graesse VI, part 1 315. Hirsch III,551;. Jantz II,2262; De Backer/ Sommervogel VIII, 910; Wheeler Gift I,190; BL 17th German S1254; Galland 163.

See: Umberto Eco, "Kircher Tra Steganografia E Poligrafia," in *Athanasius Kircher S.J.* Il Museo del Mondo, Rome, 2001, pp. 211-213, for a discussion of Schott's revision of Kircher's work

on secret-writing. See: Paula Findlen *Athanasius Kircher*: *The Last Man who Knew Everything*. Routledge, 2004.



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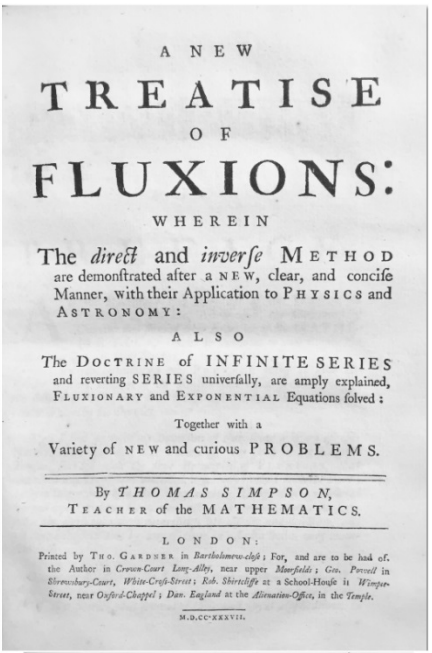

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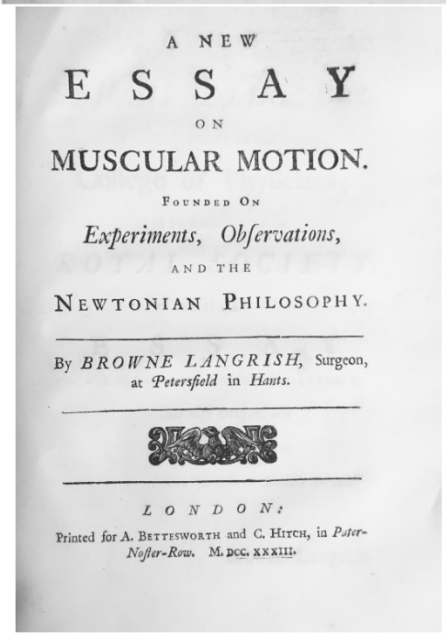

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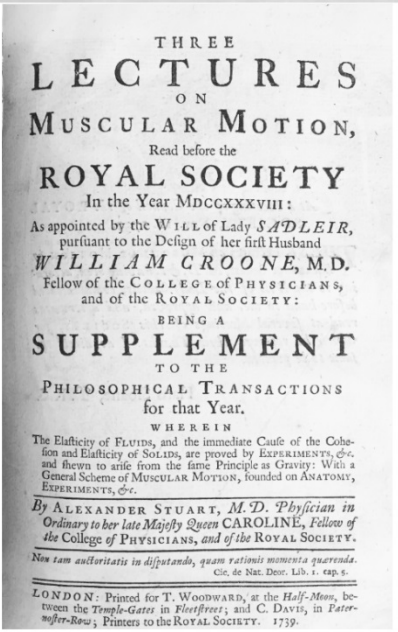

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In the Year MDCCXXXVIII:

As appointed by the WILL of Lady *SADLEIR*, pursuant to the Design of her first Husband
WILLIAM CROONE, M.D.
Fellow of the COLLEGE of PHYSICIANS, and of the ROYAL SOCIETY:

BEING A
SUPPLEMENT
TO THE
PHILOSOPHICAL TRANSACTIONS
for that Year.

WHEREIN
The Elasticity of FLUIDS, and the immediate Cause of the Cohesion and Elasticity of SOLIDS, are proved by EXPERIMENTS, &c. and shewn to arise from the same Principle as GRAVITY: With a General Scheme of MUSCULAR MOTION, founded on ANATOMY, EXPERIMENTS, &c.

By ALEXANDER STUART, *M.D. Physician in Ordinary to her late Majesty Queen* CAROLINE, *Fellow of the* College *of* PHYSICIANS, *and of the* ROYAL SOCIETY.

Non tam auctoritatis in disputando, quam rationis momenta quærenda.
Cic. de Nat. Deor. Lib. 1. cap. 5.

LONDON: Printed for T. WOODWARD, at the *Half-Moon*, between the *Temple-Gates* in *Fleet-street*; and C. DAVIS, in *Pater-noster-Row*; Printers to the ROYAL SOCIETY. 1739.

SAMMELBAND ON BRITISH PROBABILITY, DIFFERENTIAL CALCULUS AND MEDICINE ALLUDING TO A SYSTEM OF NEWTONIAN PHILOSOPHY

34. **SIMPSON, Thomas** (1710-1761). *The Nature and Laws of Chance. Containing, among other Particulars, The Solutions of several abstruse and important Problems... the whole after a new, general, and conspicuous manner, and illustrated with a great variety of examples*. London: Printed by Edward Cave, 1740. Lowndes p. 1685. First edition.

[With:] **SIMPSON**. *A New Treatise of Fluxions: wherein the direct and inverse method are demonstrated ... also the doctrine of infinite series ... are amply explained, ... together with a variety of new and curious problems*. London : Printed by Tho. Gardner… ; For, and are to be had of, the author …, 1737. First edition.

[With:] **STUART, Alexander** (1673-1742). *Three Lectures on Muscular Motion Read before the Royal Society in the Year MDCCXXXVIII … William Croone … Being a supplement to the Philosophical Transactions* … London: Printed for T. Woodward; and C. Davis … 1739. See: Russell, K.F. British anatomy (2nd ed.), 782. First edition.

[With:] **LANGRISH, Browne** (d.1759). *A New Essay on Muscular Motion. Founded on Experiments, Observations, and the Newtonian Philosophy*. London: Printed for A. Bettesworth and C. Hitch, 1733. First edition.

8vo. [2], iv, 85, [1]; [2], iv, [5]-216; [v], x, "[liv]", [2]; 103, [1] pp. Frontispiece (Stuart), 3 folding engraved plates – the three folded plates are signed: "J. Mynde sc."; the frontispiece is signed "I Fayram inven. deli et sculp."; small stab-holes deep in gutter (center) pp. 95-216 (Fluxions). Modern full calf with gilt-extra tooled spine and compartments, black title label, preserving original endleaves. Early armorial bookplates of Thomas Salwey, L.L.D. [ca.1740-60] of Richard's Castle [motto: "Crucem gerentes salvaegentes"], Salop; J.W.L. Glaisher, Sc.D., Trinity. Bookplate of The Francis Galton Laboratory for

National Eugenics (Jan. 1930); initials "F.N.D." for Florence Nightingale David of University College London. David presented this book to statistician Margaret Stein (married to fellow statistician Charles Stein). EXTREMELY RARE COLLECTION.

$ 5,500

SAMMELBAND ON BRITISH PROBABILITY, DIFFERENTIAL CALCULUS AND MEDICINE ALLUDING TO A SYSTEM OF NEWTONIAN PHILOSOPHY. All first editions and each are rare on the market. The lead work is Simpson's response to and challenge towards Abraham de Moivre's (1667-1754), Doctrine of Chances, issued in a second edition in 1738.

Simpson's work in the preface directly addresses Mr. De Moivre, "I should be poorly ambitious of appearing the Author of a Performance, that would, was every Bird to claim his own Feather, be stript as naked as the Jay in the Fable." See also: Karl Pearson, (edited by Egon Sharpe Pearson), History of Statistics in the 17th and 18th Centuries, (1978), pages 169, 171-2.

Stephen Stigler describes how this book and the author's 1742 title, The Doctrine of Annuities and Reversions, irritated De Moivre. Both titles were based on the work of De Moivre, whom Stigler indicates was intellectually the superior to Simpson. – (Stigler, p. 88). De Moivre's second edition of his Annuities book is scathing of Simpson's work, saying he "mutilates my Propositions." The two exchanged barbs and accusations as evidenced in their own writings. Stigler observes

that Simpson as a mathematician-writer tends to the reactionary and chooses to point out the distribution of errors and not on the mean observation. "Even though the position of the body observed might be considered unknown, the distribution of errors was, for Simpson, known." (p. 91).

Bland writes that it was Edmond Halley who first considered the aspect of chance and the duration of human life. In 1690 he published his Essay on the Determination of the Degrees of Mortality, followed by another study entitled, Isaac Newton's, *Observations on Chronology*, 1728, similarly considered the problem. Simpson added his own tract on chance but wrote more directly on the issue of the length of life in his Doctrine of Annuities and Reversions, deduced from general and evident principles, 1742, added tables on the values of single and joint lives. – Theodorick Bland, *Reports of Cases Decided in the High Court of Chancery of* ... 1841, vol. 3, pp. 227-8.

THOMAS SIMPSON (1710-1761), son of a weaver, was an autodidact British mathematician and inventor, became a Fellow of the Royal Society. He is most famous for promulgating "Simpson's rule" which is a method of numerical approximation for a definite integral. He observed the solar eclipse of 1724 and began thus studying mathematics and maintained an interest in astrology and horoscopes. From 1725-1733 he taught at Nuneaton. He married his landlady (much older himself). An odd episode occurred with either he (or an assistant) was clad as the devil – this was not well received and subsequently forced both he and his wife to flee to Derby. His first book, *A New Treatise of Fluxions*, (1737), was an entrée to employment. Later he relocated to London and from 1743 taught mathematics, engineering and fortification at the Royal Military Academy, Woolwich. He was a member of the Spitalfields Mathematical Society, the membership being largely made-up of weavers as per his own original profession. Abraham de Moivre and Simpson both belonged to a group of itinerant lecturers who at night taught at the London coffee houses. Suzuki states that Simpson was "perhaps the most distinguished of the coffee-house teachers." Thus he became aware of de Moivre's work in statistical theory and games of

chance. In 1754 he was made editor of the *Ladies Diary*, later editing the *Gentleman's Magazine*, Miscellanea Curiosa Mathematica as well as the *Gentleman's Diary*. In 1758 he became a Fellow of the Royal Swedish Academy of Sciences. See: Jeff Suzuki, *Mathematics in Historical Context*, 2009, page 242; Frances M. Clarke, *Thomas Simpson and His Times*, (1929); Charles Hutton, "Memoirs of the Life and Writings of the Author," preface within: Simpson's Select Exercises, London, 1792. See: Nicholas Hans, *New Trends in Education in the Eighteenth Century,* (1966), p. 190; Florian Cajori, *A History of the Conceptions of Limits and Fluxions in Great Britain, from Newton to Woodhouse*, (1919), pp. 210-11.

ALEXANDER STUART (1673-1742), British natural philosopher and physician, was born in Aberdeen, Scotland. He took his MA degree from Marischal College in 1691 and signed on as ship's surgeon on the London (1701-1704) and the Europe (1704-1707). The specimens he found as naturalist were sent to Hans Sloane (to whom the book is dedicated). He took his medical degree from Leeds in 1711 and elected to the Royal Society in 1714. He became the first practitioner at Westminster Hospital (1719), and became physician-in-ordinary for Caroline of Ansbach (1728) and elected to the Royal College of Physicians. He started at St. George's Hospital in 1733 and retired three years later.

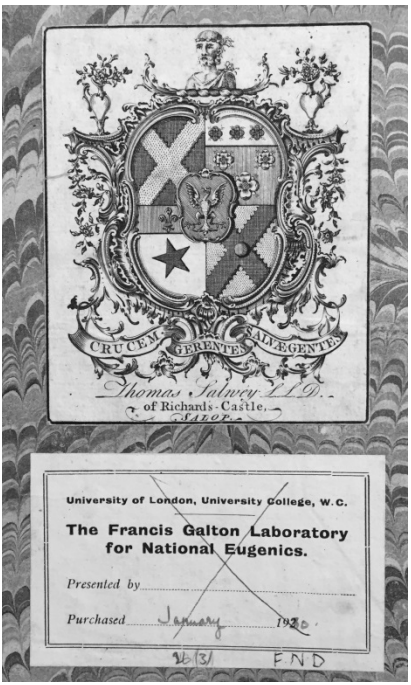
BROWNE LANGRISH, M.D. (d. 1759), "physician, born in Hampshire, was educated as a surgeon. In 1733 he was in practice at Petersfield, Hampshire, and published 'A New Essay on Muscular Motion,' in which the structure of muscles and the phenomena of muscular contraction are discussed with much ingenuity, but with no more satisfactory conclusion than that muscular motion arises from the influence of the animal spirits over the muscular fibres. On 25 July 1734 he became an extra licentiate of the College of Physicians, and began practice as a physician. He was elected a fellow of the Royal Society on 16 May 1734, and in 1735 published 'The Modern Theory and Practice of Physic,' in which he displays considerable originality in clinical research, and describes experiments in the analysis of excreta and the examination of the blood. A second edition

appeared in 1764. He practised in Winchester, and in 1746 published 'Physical Experiments on Brutes, in order to discover a safe and easy Method of dissolving Stone in the Bladder.' Experiments on cherry laurel water are added, and he concludes that this poisonous liquid may be used in medicine with advantage. He delivered the Croonian lectures on muscular motion before the Royal Society in 1747, and they were published in 1748. In the same year he graduated M.D., and published also 'Plain Directions in regard to the Small-pox,' a sensible and interesting quarto of thirty-five pages, showing extensive reading as well as acute clinical observation. He died at Basingstoke, Hampshire, on 29 Nov. 1759." [*DNB*]. See also: Munk's College of Physicians, vol. ii. p. 130; Thomas Thomson, History of the Royal Society, from its institution to the end of the eighteenth century, 1812.

PROVENANCE: Rev. Thomas Salwey (ca.1705- after or on 1759), of Ludlow, L.L.D. * Salwey was Rector of Richard's Castle. He married Constance (only daughter of Francis Biddulph) in 1742.
[Note this is not the famous Shropshire Botanist Rev. Thomas Salwey (1791-1877) of the same name].

PROVENANCE: James Whitbread Lee Glaisher, Sc.D. (1848-1928), Fellow of Trinity College, was a prolific English mathematician and astronomer. He studied at Trinity where he was second wrangler in 1871. "He was also the 'tutor' of the philosopher Ludwig Wittgenstein (tutor being a non-academic role in Cambridge University). He was president of the Royal Astronomical Society 1886-1888 and 1901-1903." See: Hockey, Thomas (2009). *The Biographical Encyclopedia of Astronomers*.

PROVENANCE: Francis Galton Laboratory. Karl Pearson In the twentieth century Francis Galton and Karl Pearson led the way in developing statistics into a mathematical discipline. This is mentioned partly because the provenance of this copy of Simpson comes from the Francis Galton Laboratory and was likely in the possession of Pearson himself. Indeed he inscribed his name to some of the books in his collection, though not with this volume. The Galton Lab bookplate is present however and the book is further signed with the initials of one of its known researchers, that of Florence Nightingale David (see below).



PROVENANCE: F.N.D. Florence Nightingale David (1909-1993), also known as F. N. David was an English statistician, born in Ivington, Herefordshire, England. She was named after Florence Nightingale, who was a friend of her parents. David did not like her forenames and thus always referred to herself as "F. N. David". She attended Bedford College for Women in London, earning her degree in mathematics in 1931. She then joined University College, London to work with Karl Pearson who obtained a scholarship for her, working as his research assistant, resulting in a doctorate received in 1938 (Pearson died in 1934). In 1938 her first book was published, Tables of the Correlation Coefficient. During that period she was working with Jerzy Neyman. "During World War II she served as Experimental Officer in the Ordnance Board for the Ministry of Supply, Senior Statistician for the Research and Experiments Department for the Ministry of Home Security, Member of the Land Mines Committee of the Scientific Advisory Council, and as Scientific Advisor on Mines to the

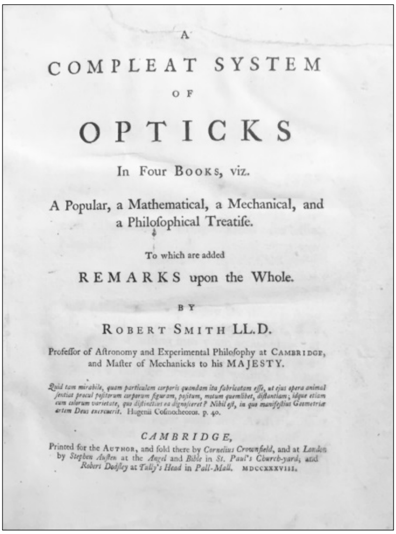
Military Experimental Establishment. Her work during this time ranged from the study of bombing patterns and damage to the problem of discovering the placement of enemy land mines and a methodology for randomly placing land mines so as to avoid the semblance of any pattern in their placement." [Garber et.al.] After WWII she came back to University College, London, and was appointed professor in 1962. Five or six years later she took a position at the University of California, Riverside, becoming head of the Department of Statistics in 1970. Retiring in 1977 she came to Berkeley and continued her research. This copy of Simpson bears her initials on the Francis Galton Laboratory bookplate; she gave her books to Margaret Stein of Stanford University. See: M. J. Garber D. V. Gokhale J. M. Utts R. J. Beaver, Chair, "Florence Nightingale David, Statistics: Riverside." [Obituary]; "A conversation with F.N. David," Statistical Science, Vol. 4, No. 3,235-246 by Nan Laird; J. Utts, "Florence Nightingale David 1909-1993: Obituary," Biometrics, (1993) 49, 1289-1291; Norman L. Johnson & Samuel Kotz (eds.), Leading Personalities in Statistical Sciences from the Seventeenth Century to the Present, Wiley, 1997 (pp. 91-92).

See: Blanco, Mónica. "Thomas Simpson: Weaving fluxions in 18th-century London." *Historia Mathematica*, vol. 41 (1) (2014), pp. 38—81. "The main part of this historical paper deals with a comparison of Thomas Simpson's 1737 and 1750 treatises on fluxions, and with their place in the exposition and development of Newtonian calculus in the 18th century. The author highlights some of the differences in emphasis and content between the two works, explaining several of those differences in helpful detail." – Douglas Bridges, Christchurch, New Zealand.

ESTC [Simpson, *Laws of Chance*] T78204; [Simpson, *Fluxions*] N7839; [Stuart, *Three lectures*] N14306; [*Langrish*] T65047.

See: Theodore M. Porter, *Karl Pearson: The Scientific Life in a Statistical Age*, (2010), page 290-1: "Simpson … was a scoundrel, supporting himself by converting De Moivre's great discoveries into textbook routines."

35. **SMITH, Robert**. *A Compleat System of Opticks: in four books, viz. A Popular, a Mathematical, a Mechanical, and a Philosophical Treatise: To which are added Remarks upon the Whole.* Cambridge and London: Printed for the Author, … by Stephen Austen, … and Robert Dodsley, 1738.



Two volumes. 4to. [vi], vi, 280; [ii], [281]-455, [1], 171, [13] pp. 83 folding engraved plates (incl. various optical and perspective instruments), numerous figures, index, errata, advertisement, directions to the binder; vol. I title upper margin expertly replaced (ownership signature torn away?), 2 pls. with short tears (pl.14), 1 pl. slightly worn. Contemporary mottled calf, rebacked in plain calf, gilt spine titles; rubbed, old rebacking, corner showing wear, all raised bands worn. Binders' stamp applied to both front fly leaves, "Stoakley, Cambridge" – responsible for restoring the original binding, fl.ca.1896. Occasional stains, but a clean copy. Very good.

$ 2,850

FIRST EDITION of what was "probably the most influential optical textbook of the eighteenth century" – *DSB*. The author and other contributors deal with theories of light, color, vision, practical elements of construction and design for both microscopes and telescopes (reflecting, meridian telescope, how to find time, Graham's astronomical sector), as well as techniques for making tools, grinding and polishing lenses, astronomical discoveries using telescopes (Sun, Mercury, Venus, the Moon, Mars, Jupiter, Saturn). Chapter VII is devoted to the Royal Observatory at Greenwich. Editions were translated into Dutch, French and German.

The work was issued in four "books": the first deals with the fundamental experiments in optics; the second provides a formal treatment of the geometrical theory; the third book, and perhaps the most important as it gives the mechanical workings of the instrumentation, describes apparatus for grinding and polishing lenses, with original contributions by Samuel Molyneux and John Hadley, and gives a complete account of the construction and use of the principal optical instruments, especially the microscope; the fourth is a history of celestial discoveries with the telescope. It concludes with "An Essay upon Distinct and Indistinct Vision," by the physician James Jurin (1684—1750) (pp. 115-171). See: Abraham Wolf, *History of Science, Technology and Philosophy in the Eighteenth Century*, (1939), vol. II, p. 171.

"Smith developed a very comprehensive set of geometric propositions for the computation of the focus, location, magnification, brightness, and aberrations of systems of lenses and mirrors. Apparently he was the first person to construct images by means of an unrefracted central ray and a ray parallel to the axis that is refracted through the focus. He also derived a particular case of the relationship now known as the Smith-Helmholtz formula or the theorem of Lagrange." – *DSB.*

Binding note: George Frederick Stoakley & Sons, Cambridge, binders, must have repaired the original binding at the end of the nineteenth century, applying the company stamp to the front endpapers on both volumes.

"Old Focus" was a collegial sobriquet for Professor Robert Smith (1689-1768) who taught mathematics at the University of Cambridge. This book brought him much acclaim and he was also a strong supporter of Newtonian mathematics, optics and physics. He was the Plumian Professor of Astronomy (1716-1760) at Trinity College. He suffered with poor health and gout.

☼ Babson 161; Becker 345; Blake, NLM, 422; *DNB* BOA I p. 194; Gjertsen, *The Newton Handbook*, pp. 548-549: "the standard account of Newtonian optics"; Martin Kemp, *The Science of Art: Optical Themes in Western Art from Brunelleschi to Seurat,* Yale University Press, 1992, p. 153, etc.: "a book of considerable importance."

36. **VALENTINER, Karl Wilhelm** (1845-1931) [ed.]. *Handwörterbuch der Astronomie Unter Mitwirkung*. Wrocław: Eduard Trewendt, 1897-1902. 4 vols. in 5 books [I, II, III.1, III.2, IV]. 8vo. xiv, 839; ix, 644; x, 496; xi, 611; ix, 432 pp. Numerous illustrations, 11 plates; end-leaves occasionally faintly foxed. Beautiful modern half gilt-stamped black morocco over blue pebbled cloth; a few corners gently rubbed, Vol. IV front cover slightly smudged. Near fine.

$ 1500

SPECTACULAR SET of Valentiner's comprehensive cyclopedia of astronomy.

Valentiner was director of the Karlsruho Observatory and a professor of astronomy at the University of Heidelburg.

[36]

37. **WALDENBURG, Louis** (1837-1881). *Die Messung des Pulses und des Blutdrucks am Menschen*. Berlin: August Hirschwald, 1880.

8vo. VI, 258 pp. Figs. Original quarter maroon gilt-stamped cloth, marbled boards, cloth tips. Bookplate of Charles Atwood Kofoid. Very good. Rare.

$ 160

First edition of this author's principal study on pulse and blood pressure.

Waldenburg, a German physician, graduated from the University of Berlin (1860), specializing in diseases of the chest and throat. His studies on the lungs and respiratory tract

included the pulse and blood pressure. His inventions include a heart-rate monitor and an instrument for measuring the voltage, charge and size of the human pulse.

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