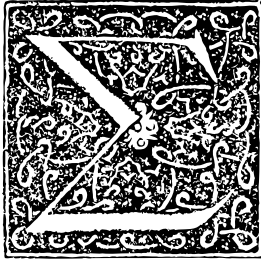


Rare and important books & manuscripts in science, by Christian Westergaard, M.Sc.



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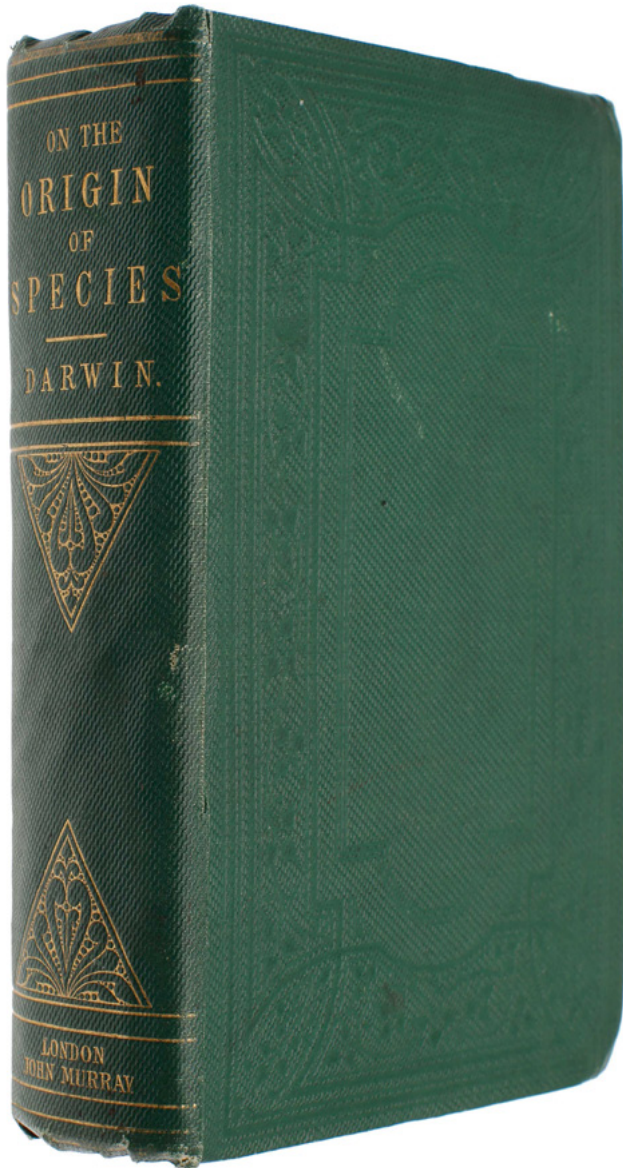
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(The descriptions in this list are abbreviated; full descriptions are available)

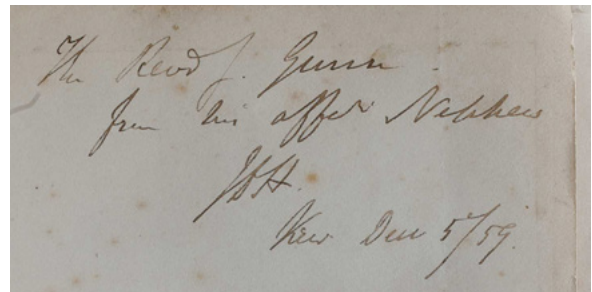
'The most important biological book ever'

First edition, untouched in its original binding, inscribed by Darwin's closest collaborator Joseph D. Hooker just eleven days after its publication. A magnificent association copy.



Hooker collaborated with Darwin on the manuscript of *On the Origin of Species* and was the first person Darwin trusted with his theory of evolution by natural selection. In a letter Darwin wrote to Hooker 'it is like confessing a murder'.

Hooker was also, together with Lyell, responsible for the famous joint publication in 1858 by Darwin and Wallace.



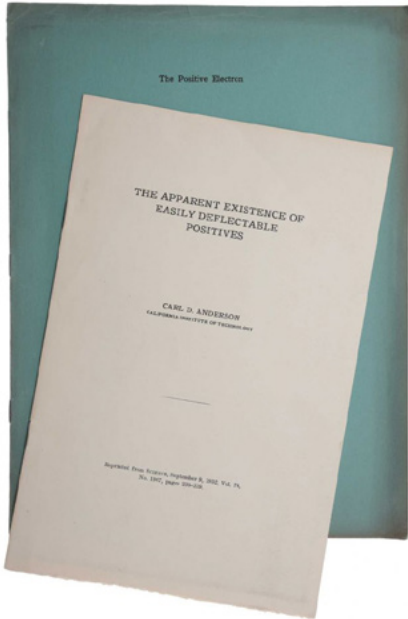
Item # 15

'No single set of letters was more important to Darwin than those exchanged with his closest friend, the botanist Joseph Dalton Hooker' (*The Darwin Correspondence Project*)

The discovery of anti-matter

3. **ANDERSON, Carl David.** *The Apparent Existence of Easily Deflectable Positives*. Offprint from *Science*, 1932. [Offered with:] *The Positive Electron*. Offprint from *Physical Review*, 1933.

\$25,000

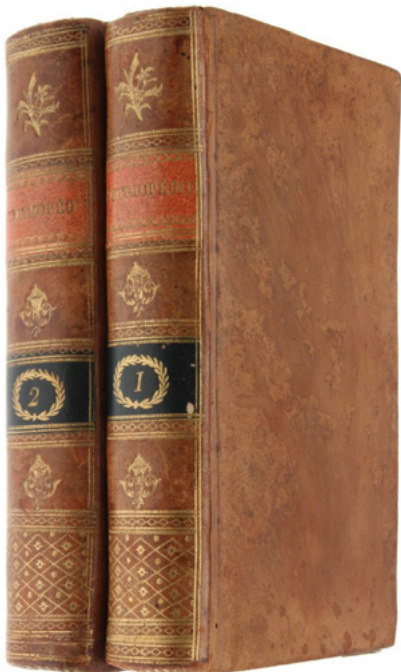


First editions, in the extremely rare offprint form, of the two papers constituting the first announcement, and the later detailed account (containing the famous cloud chamber photograph), of Carl Anderson's discovery of the positron, an elementary particle with the same mass as the electron but carrying a positive charge. This was the first example of a particle consisting of antimatter. Its existence had been predicted by P. A. M. Dirac three years earlier in his paper 'Quantised Singularities in the Electromagnetic Field.' "The prediction and subsequent discovery of the positron rank among the great triumphs of modern physics" (Pais, *The Genius of Science*, p. 60). "It was this note [the *Science* paper] which established Anderson's priority as discoverer of the positron' (Brandt, *Harvest of a Century*, p. 216). The name 'positron' first appeared in print in the second offered paper (Dirac called it an 'anti-electron'). Anderson shared the 1936 Nobel Prize in Physics "for his discovery of the positron." We know of no other copy of the first offprint having appeared on the market, and only one of the second.

The first book on orthopaedics

4. **ANDRY, Nicolas.** *L'orthopédie ou l'art de prévenir et de corriger dans les enfants, les difformités du corps*. Paris: Chez la veuve Alix; Lambert & Durand, 1741.

\$16,000



Rare first edition, and a very fine copy, of the "first book on orthopedics" (Garrison-Morton). A work "of supreme importance" (Bick). "Nicholas Andry coined the word *orthopaedics* in French as *orthopédie*, derived from the Greek words *orthos* ('correct', 'straight') and *paidion* ('child'), when he published *Orthopedie* (translated as *Orthopaedia: or the Art of Correcting and Preventing Deformities in Children*) in 1741. Though as the name implies it was initially developed with attention to children, the correction of spinal and bony deformities in all stages of life eventually became the cornerstone of orthopedic practice" (*Wikipedia*).

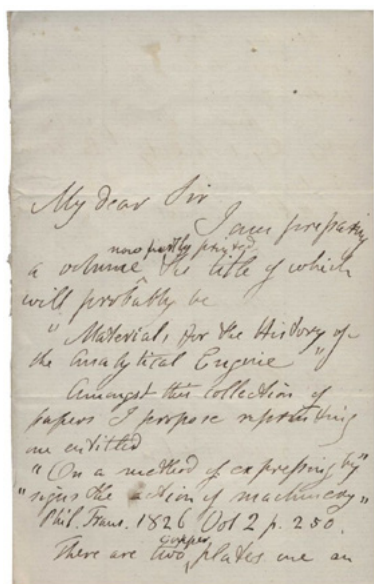
📖 Grolier/Medicine 42; Lilly, *Notable Medical Books* 113; Norman 55; *Heirs of Hippocrates* 697; Garrison-Morton 4301.



Historically important letter by Babbage

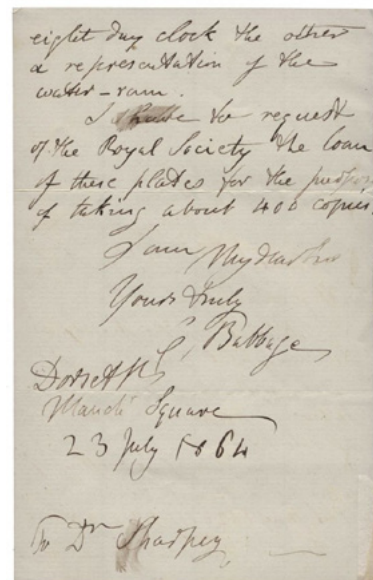
5. **BABBAGE, Charles.** Autograph letter relating to the Analytical Engine, signed 'C. Babbage' to 'Dr Sharpey,' dated 23 July 1864 and addressed from his house at Dorset Street, Marylebone.

\$8,500



A Babbage letter of great historical interest in which he refers to a book on the history of the Analytical Engine he is preparing, and which he says is 'partly printed.' Babbage (1791-1871) did not live to see the work published, but it was completed by his son Henry Prevost and appeared as *Babbage's Calculating Engines* in 1889. This is still the principal source of information for the technical operation of Babbage's Difference and Analytical Engines. Babbage writes: 'I am preparing a volume, now partly printed, the title of which will probably be "Materials for the History of the Analytical Engine." Amongst this collection of papers I propose reprinting one entitled "On a method of expressing by signs the action of machinery," Phil. Trans. 1826, Oct. 2, p. 250. There are two copper plates one an eight day clock the other a representation of the water-ram. I have to request of the Royal Society the loan of these plates for the purpose of taking about 400 copies.'

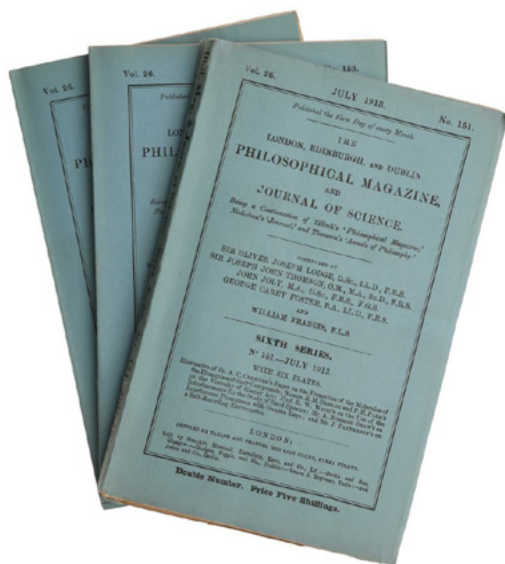
Babbage's request seems to have been granted as his 'On a method of expressing by signs the action of machinery' duly appeared in the published work (pp. 236-41).



'This is one of the greatest discoveries' (Albert Einstein)

6. **BOHR, Niels Henrik David.** *On the Constitution of Atoms and Molecules, I-III.* London: Taylor & Francis, 1913.

\$15,000



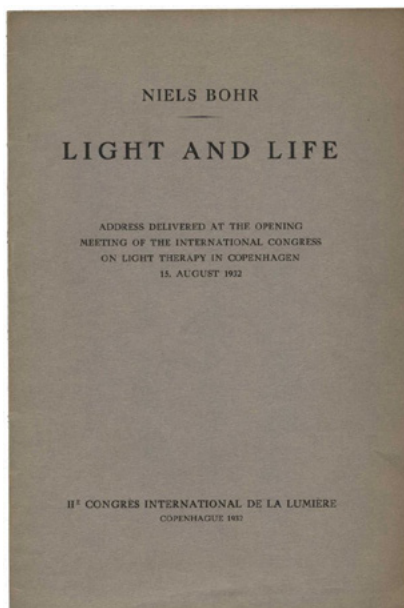
First edition, a virtually mint set, of all three parts of this great landmark of twentieth-century physics, the birth of the quantum theory of atomic structure. Bohr received the Nobel Prize for Physics in 1922 "for his services in the investigation of the structure of atoms and of the radiation emanating from them." "Bohr's three-part paper postulated the existence of stationary states of an atomic system whose behavior could be described using classical mechanics, while the transition of the system from one stationary state to another would represent a non-classical process accompanied by emission or absorption of one quantum of homogeneous radiation, the frequency of which was related to its energy by Planck's equation" (Norman 258). Shortly after 7 February 1913, Bohr heard of the Balmer formula for the frequencies in the Hydrogen spectrum. He told Léon Rosenfeld: "As soon as I saw Balmer's formula, the whole thing was immediately clear to me." "By 6 March [Bohr] had completed a paper containing its interpretation ['On the constitution of atoms and molecules']. That event marks the beginning

of the quantum theory of atomic structure" (Pais, *Niels Bohr's Times*, p. 144).

Quantum physics applied to biology

7. **BOHR, Niels.** *Light and life.* Address delivered at the opening meeting of the International Congress on Light Therapy in Copenhagen 15. August 1932. Copenhagen: Ile Congrès International de la Lumière, 1932.

\$3,200

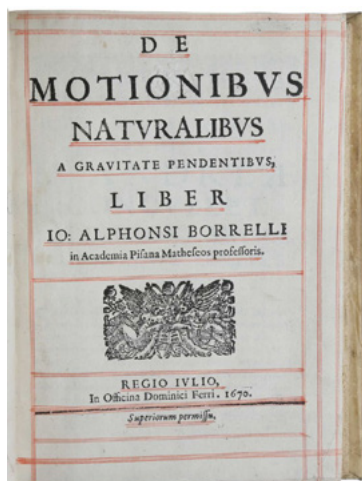


First edition of this famous lecture, which marks Bohr's first detailed attempt to apply concepts arising from quantum mechanics (particularly complementarity) to areas outside physics. "Here, for the first time, Bohr raised a question that was to preoccupy him, off and on, until his death: Would it ever be possible to push the analysis of living processes to the limit where they can be described in terms of pure physics and chemistry?" (Pais, *Niels Bohr's Times*, p. 441). Bohr's lecture can be viewed as one of the foundation stones of molecular biology in that it inspired the young physicist Max Delbrück—who was in the audience when Bohr delivered it—to switch from physics to biology. "It is fair to say that with Max, Bohr found his most influential philosophical disciple outside the domain of physics, in that through Max, Bohr provided one of the intellectual fountainheads for the development of 20th century biology" (quoted in Pais, p. 442). This pamphlet, dated 1932, apparently predates both the lecture's publication in Danish in *Naturens Verden*, in English in *Nature*, and in German in *Naturwissenschaften*, all of which were published in 1933.

Fluid mechanics before Newton and Bernoulli

8. **BORELLI, Giovanni Alfonso.** *De motionibus naturalibus a gravitate pendentibus.* Bologna: Dominici Ferri, 1670.

\$8,500



A fine copy of one of the most important early treatises on fluid mechanics. "[*De motionibus naturalibus*] was well known among Borelli's contemporaries and is quoted by Varignon in his *Projet d'une nouvelle mécanique*. It is reviewed in the first volume of *Philosophical Transactions Abridged*, where it is praised for its thoroughness, for the discussion of Torricelli's experiments and for Borelli's stand against Descartes on the nature of fluidity" (Roberts & Trent). "This work is important as the first treatise on capillarity, and for containing important investigations on the action of capillary tubes, in which the author, *inter alia*, formulates the law that the height of the ascent of liquids in capillary tubes is inversely proportional to their diameters. His investigations also led him to the conclusion that the phenomenon of capillarity is independent of the pressure of air" (Zeitlinger in Sothoran, *First supplement*, 3060). Borelli regarded this work, together with his *De vi percussionis* (1667), as necessary preparation for his masterpiece, *De motum animalium* (1680-81), on which he had worked since the early 1660s. *Provenance*: The Earls of

Macclesfield (bookplate on front paste-down and blind-stamps on first three leaves), sold Sotheby's London, 19 June 2004 (lot 387, £5040).

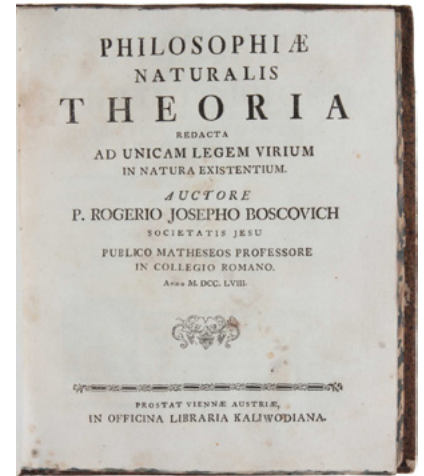
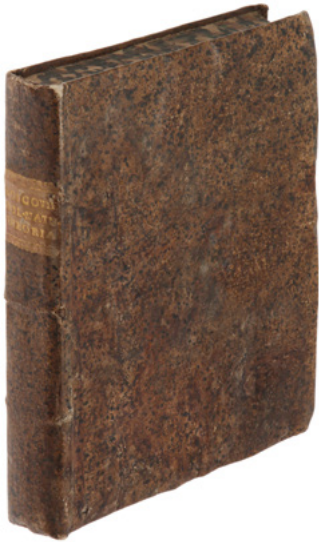


'The birth of atomic physics' (PMM 203)

9. **BOSCOVICH, Rogerius Josephus.** *Philosophiae naturalis theoria redacta ad unicam legem virium in natura existentium.* Vienna: In Officina Libraria Kaliwodiana, 1758.

\$140,000

Fine copy in contemporary boards of "Boscovich's masterpiece" (Norman), a work "now recognized as a fundamental influence on modern mathematical physics" (*Printing and the Mind of Man*), and a notorious rarity. Only two copies of this rare work have appeared at auction: 1. The Honeyman-Garden copy - this lacked the 16-page letter to Scherffer. 2. The Norman-Freilich copy - this had one gathering supplied from another, shorter, copy, and was in a 19th-century binding. Its impact was felt by such scientific luminaries as Joseph Priestley, Humphry Davy, Michael Faraday, James Clerk Maxwell, Lord Kelvin, J. J. Thompson, and Niels Bohr.



Boscovich suggests that a single law is the basis of all natural phenomena and of the properties of matter, and that the multiplicity of physical forces is only apparent and due to inadequate mathematical knowledge, anticipating the modern search for a unified field theory. The chapter *De Spatio, & Tempore, ut a nobis cognoscuntur* (Space and Time as They are Perceived by Us) can be seen as an anticipation of the theory of relativity, and his discussion of cosmology postulates a version of the current many-universes scenario. His attempt to explain the structure of matter in terms of point atoms, together with a law of force acting between them, anticipates the modern theory of quarks.

☛PMM 203; Norman 277; Garden Sale 150; Freilich Sale 73; Honeyman Sale 427.

'The plates are among the finest medical illustrations known' (Friedman)

10. **BRIGHT, Richard.** *Reports of Medical Cases, selected with a view of illustrating the symptoms and cure of diseases by a reference to morbid anatomy.* London: Richard Taylor, 1827-31.

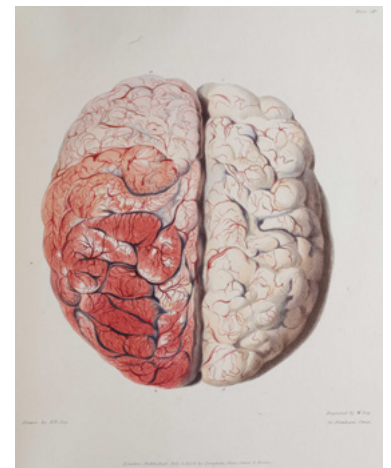
\$85,000



A fine copy of Bright's most important work. The 47 large hand-coloured engraved "plates in Bright's Reports are among the most beautiful of medical illustrations" (Grolier/Medicine). Most were drawn by Frederick Richard Say, a distinguished portraitist whose portrait of Bright now hangs in the Royal College of Physicians of London. "In order to achieve the most poignant reproductions of his post-mortem material, Bright was probably required to bring Say to the autopsy room whenever a specimen of interest arose. Say presumably produced a water color

image of the specimen on the spot which was subsequently copied by the engraver" (Fine). Say's father William, who produced the majority of the plates, used mezzotint variously combined with line-engraving, stipple, and soft-ground etching to create the printed images.

☛Grolier Medicine 60a; Lilly, *Notable Medical Books* 183; Norman 341; Garrison-Morton 2285 & 4206; *Heirs of Hippocrates* 1451. Fine, 'Pathological specimens of the kidney examined by Richard Bright,' *Kidney International* 29 (1986), pp. 779-83



The earliest treatise on modern economics

11. CANTILLON, Richard. *Essai sur la Nature du Commerce en Général*. London [but Paris]: Fletcher Gyles, 1755.

\$135,000



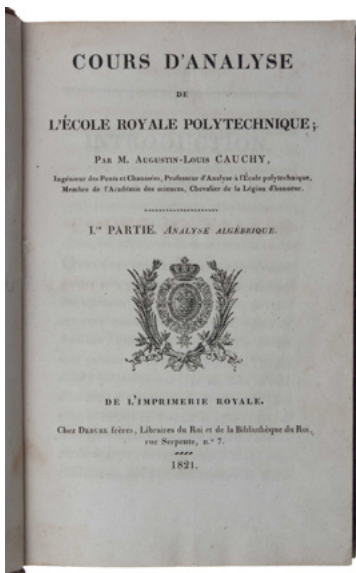
The exceptionally fine La Rochefoucauld-Liancourt copy in untouched armorial binding. Cantillon is the “founding father of modern economics” (Rothbard) and the *Essai* has been declared “more emphatically than any other single work, the cradle of political economy” (Jevons), and “the most systematic statement of economic principles before the *Wealth of Nations*” (Roll). It “is notable for its model building, its analysis of market forces and the role of the entrepreneur, its outline of the circular flow of income, and its monetary theory. Cantillon was the first real model builder in economics” (ODNB). The book was chosen among the 400 most influential books ever written in French in the 1990 exhibition at the Bibliothèque Nationale, *En français dans le texte*, no. 159. *Provenance*: A superb copy bound at the time for François-Alexandre-Frédéric, duc de La Rochefoucauld-Liancourt, with his coat of arms gilt on sides and the armorial engraved ex-libris of the Bibliothèque de Liancourt. A philanthropist, traveller, and statesman, the Duke de La Rochefoucauld-Liancourt was one of the leading figures of the end of the 18th century. As a liberal, he participated in the French Revolution from the outset, remaining loyal to the King. He fled France and found refuge in England before travelling to the United States. Back in France after the Revolution, he continued to promote his liberal ideas, helping the poor and creating a school. Two other copies with the coat of arms of the La Rochefoucauld family have appeared on the market in the last twenty years; they both came from the La Roche-Guyon branch of the family, but this copy is the only one with the Liancourt ex-libris, stating its provenance. It is difficult to imagine a better copy.



One of the most influential mathematics books ever written

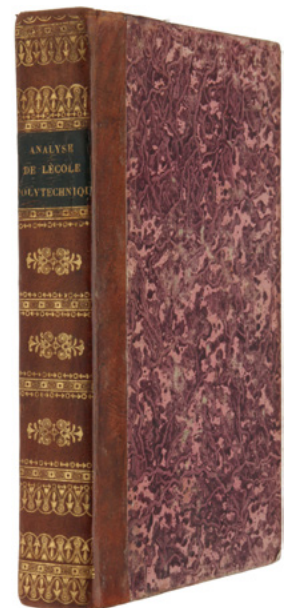
12. CAUCHY, Augustin-Louis. *Cours d'analyse de l'École Polytechnique; I.re Partie. Analyse algébrique*. Paris: De l'imprimerie Royale, chez Debure frères, 1821.

\$6,850



An exceptionally fine copy of the first edition of Cauchy’s great textbook, one of the most influential mathematics books ever written, in which “Cauchy gave the foundation of the calculus as we now generally accept it”. (D.J. Struik). “In 1821, Augustin-Louis Cauchy (1787-1857) published a textbook, the *Cours d'analyse*, to accompany his course on analysis at the École Polytechnique. It is one of the most influential mathematics books ever written. Not only did Cauchy provide a workable definition of limits and a means to make them the basis of a rigorous theory of calculus, but he also revitalized the idea that all mathematics could be set on such rigorous foundations. Today the quality of a work of mathematics is judged in part on the quality of its rigor; this standard is largely due to the transformation brought about by Cauchy and the *Cours d'analyse*” (Bradley & Sandifer, p. vii).

☛ *Landmark Writings in Western Mathematics 25; En Français dans le texte 231.*



Historically important manuscript lecture notes

13. CAUCHY, Augustin-Louis. *Manuscript volume of lecture notes on analysis and mechanics delivered at the École Polytechnique.* [Paris, 1824-25].

\$17,500



A remarkable survival, the only recorded set of notes of Cauchy's first-year undergraduate lectures at the École Polytechnique for 1824-25, taken by his student Louis de la Moricière. No other set of notes of Cauchy's lectures at the École Polytechnique has appeared in commerce, and we have been able to trace only three sets in French public libraries (for the years 1815-16, 1822-23 and 1828-29). "The most important figure in the initiation of rigorous analysis was Augustin-Louis Cauchy. It was, above all, Cauchy's lectures at the École Polytechnique in Paris in the 1820s that established a new attitude toward rigor and developed many characteristic nineteenth-century concepts and methods of proof" (Grabiner, pp. 2-3). These notes are of considerable historical importance: although the lectures on analysis were

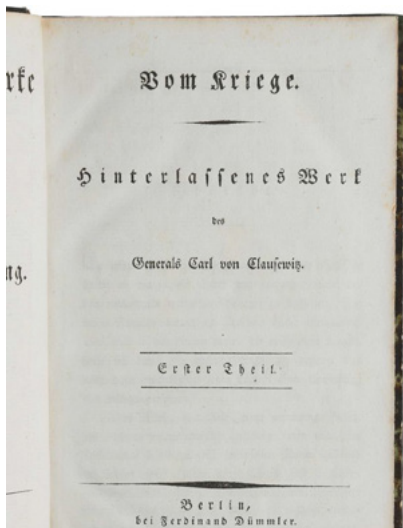


published in four great treatises, the content of the lectures evolved significantly during Cauchy's 15 years of teaching so that the content of a particular series of lectures may differ significantly from the published version. Moreover, the notes provide a unique insight into Cauchy's lectures on mechanics, which were never published.

PMM 297 - *The philosophy of war*

14. CLAUSEWITZ, Carl von. *Hinterlassene Werke über Krieg und Kriegführung.* Berlin: Ferdinand Dümmler, 1832-1837.

\$65,000



Very scarce complete set of Clausewitz's writings on warfare, with all 10 volumes in fine contemporary uniform bindings, which includes the celebrated *Vom Kriege* (PMM 297), appearing in the first 3 volumes. "These thousand pages of 'On Warfare' occupy a unique position among military writings of any age and nation. The book is less a manual of strategy and tactics, although it incorporates the lessons learned from the French revolutionary and Napoleonic wars, than a general inquiry into the interdependence of politics and warfare and the principles governing either or both. War, Clausewitz maintained, must always be regarded 'as a political instrument'; for war, his most famous aphorism runs, 'is nothing but politics continued by different means'. Consequently, he scorns the notion of 'the harmful influence of politics upon the conduct of war', since blame, or praise, must be attached to politics itself. If the course of

politics is sound, political influence on the conduct of war can only be advantageous: 'The French revolutionary victories over twenty years resulted mainly from the faulty politics of the opposing governments'... the book was published by his widow and won immediate recognition as the most profound exposition of the philosophy of war - a place that has never been disputed." (*Printing and the Mind of Man*).



Presented by Darwin's closest collaborator

15. DARWIN, Charles. *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life.* London: John Murray, 1859.

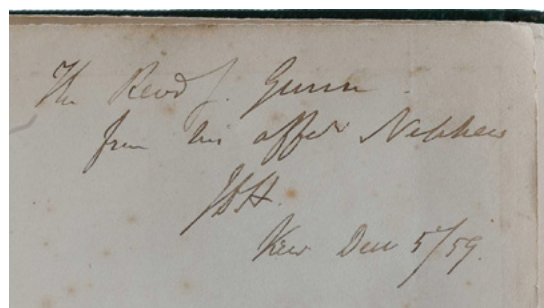
\$340,000



First edition, a magnificent association copy, untouched in its original binding, of “the most influential scientific work of the nineteenth century” (Horblit) and “the most important biological work ever written” (Freeman). Presented by Darwin’s closest friend and intellectual confidant Joseph Hooker just eleven days after publication, it is hard to imagine an association that would bring us closer to Darwin’s inner circle. Hooker was the only person Darwin thanked by name in his great work. On page 2, Darwin writes: “I much regret that want of space prevents my having the satisfaction of acknowledging the generous assistance

which I have received from very many naturalists, some of them personally unknown to me. I cannot, however, let this opportunity pass without expressing my deep obligations to Dr. Hooker, who, for the last fifteen years, has aided me in every possible way by his large stores of knowledge and his excellent judgment.” We are not aware of any comparably important association copy having appeared on the market for many years. The only copies of similar interest might be inscribed copies, although no copy of the first edition inscribed by Darwin himself is known; the last fine copy inscribed (by a publisher’s clerk) sold at auction was the Houghton copy (Sotheby’s New York, 11 December 2007, lot 78, \$325,000).

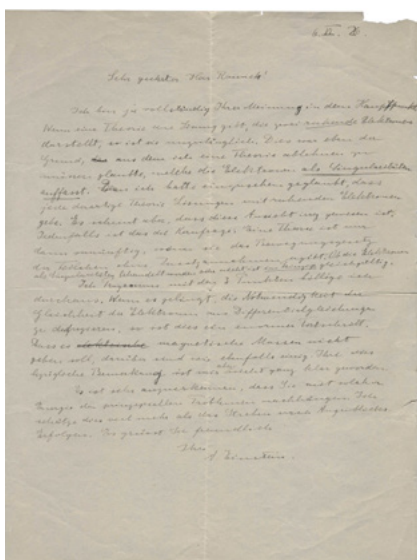
☛Dibner 199; PMM 344b; Evans 110; Grolier/Horblit 23b; Grolier/Medicine 70b; Sparrow 49; Norman 593.



Einstein discusses unified field theory

16. EINSTEIN, Albert. *Autograph letter signed 'A. Einstein' to physicist Rainich discussing field theory.* [Berlin], 6 June 1926.

\$35,000



Important autograph letter in which Einstein discusses the Einstein-Maxwell unified theory of gravitation and electromagnetism. George Yuri Rainich (1886 – 1968) was a leading mathematical physicist whose research centered around general relativity and, in particular, the unified field theory of gravity and electromagnetism. In 1924, Rainich found a set of equivalent conditions for a Lorentzian manifold to admit an interpretation as an exact non-null electrovacuum solution in general relativity; these are now known as the Rainich conditions. Einstein took great interest in Rainich’s work. In the present manuscript Einstein discusses an aspect of electron theory and explains that any theory which postulates a solution representing two electrons at rest is unacceptable. He admits he was mistaken in his earlier views and states it would be an enormous step forward to be able to prove through differential equations the need for electrons to be identical. He concludes his letter praising Rainich for his tenacious research on the problem which he finds far more valuable than the search for instant success.

Provenance: Sold Sotheby’s 2 December 1987, lot 13, \$7,000.

Euler's great treatise on hydrostatics

17. EULER, Leonhard. *Scientia navalis seu tractatus de construendis ac dirigendis navibus.* St. Petersburg: Typis Academiae Scientiarum, 1749.

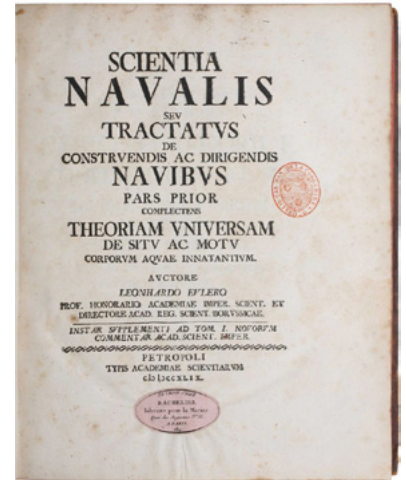
\$12,500



First edition, a very good and entirely unrestored copy, in contemporary binding, and with outstanding provenance, of Euler's first large work on fluid mechanics, which enunciated for the first time the principles of hydrostatics. "Together, these [two volumes] are second among the great treatises on rational mechanics by which Euler created the field as we now know it [following his *Mechanica* of 1736] ... [In this work Euler] builds a 'mansion of analysis' that includes all the elementary parts of hydrostatics as we know them today" (Eneström).

Provenance: Charles Marie de La Condamine (1701–74), French explorer, geographer, and mathematician. La Condamine led an Academy-sponsored expedition to Peru in 1735 to measure an arc of longitude about 3 degrees south of the Equator, while Pierre-Louis Moreau de Maupertuis led a parallel expedition to Lapland in 1736 to

measure a degree of northernmost latitude. Their common mission was to determine once and for all whether the earth was an oblate or prolate sphere – whether Isaac Newton or Jacques Cassini had been correct.



One of Euler's rarest publications

18. EULER, Leonhard. *Theoria Motus Lunae Exhibens Omnes Eius Inaequalitates.* St. Petersburg: Academiae Imperialis Scientiarum, 1753.

\$15,000

Very rare first edition, untouched and unopened in its original wrappers, of Euler's 'first lunar theory', the theoretical basis for Tobias Mayer's lunar tables that won the British Parliament prize for the longitude problem (see below). "Based on Newton's universal law of gravitation, Euler first developed his first lunar theory with the aid of his method of variation of orbital parameters. This method is fairly general in the sense that it cannot only be applied to the theory of lunar motion, but also to the planetary motion. Euler published his first lunar theory in his celebrated treatise 'Theory of lunar motion' in 1753. He continued his research for almost the next three decades to make significant improvement of his first lunar theory including the lunar orbit, Moon's position, equations for the Moon's motion, lunar eclipses and the period of revolution of the Moon." (Debnath, *The Legacy of Leonhard Euler*, p.365). "Astronomy owes to Euler the method of variation of arbitrary constants. By it he attacked the problem of perturbations, explaining, in case of two planets, the secular variations of eccentricities, nodes, etc. He was one of the first to take up with success the theory of the moon's motion by giving approximate solutions to the 'problem of three bodies'. He laid a sound basis for the calculation of tables of the moon." (Cajori, *History of Mathematics*, p.240).

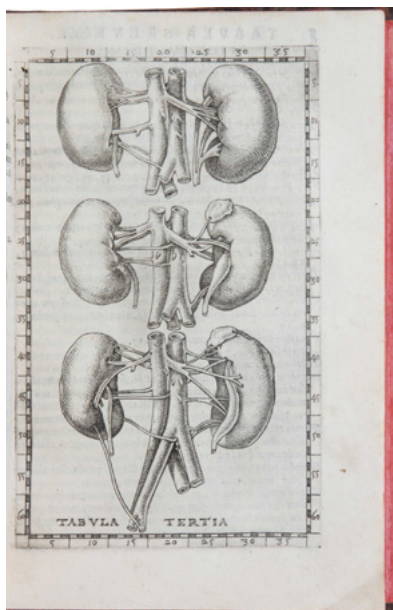


A founder of modern anatomy

19. EUSTACHIUS, Bartholomaeus. *Opuscula anatomica.* Venice: Vincentius Luchinus excudebat, 1564.

\$65,000

First edition, very rare, of one of the most important of all anatomical books. It includes the first specific treatise on the kidney, the first account of the Eustachian tube in the ear, the first description of the thoracic duct, and the Eustachian valve, as well as the first systematic study of teeth. The fine etchings illustrating the edition “were the first eight in an intended series of forty-seven anatomical plates engraved by Giulio de’ Musi after drawings by Eustachi and his relative, Pier Matteo Pini, an artist. These were prepared in 1552 to illustrate a projected book entitled *De dissensionibus ac controversiis anatomicis*, the text of which was lost after Eustachi’s death. Had the full series of plates been published at the time of their completion, Eustachi would have ranked with Vesalius as a founder of modern anatomy” (Norman).



✦ Grolier, *One Hundred Books Famous in Medicine* 21; *Heirs of Hippocrates* 322; Norman 739. Garrison-Morton 801.



Discoveries that led to the atomic bomb and nuclear energy

20. FERMI, Enrico, AMALDI, Edoardo, D’AGOSTINO, Oscar, RASETTI, Franco & SEGRÈ, Emilio. [With:] AMALDI, E., D’AGOSTINO, O., FERMI, E., PONTECORVO, Bruno, RASETTI, F. & SEGRÈ, E. *Artificial Radioactivity produced by Neutron Bombardment, I-II.* [London: Harrison], 1934-35.

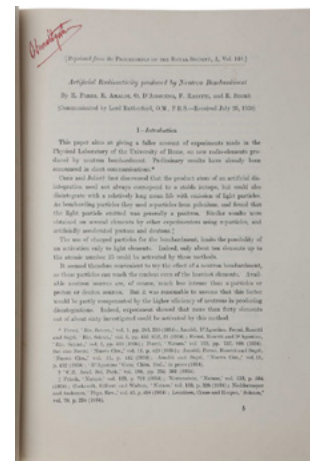
\$15,000



First edition, extremely rare offprint issues, inscribed by one of the authors, of the first detailed description of artificial radioactivity produced by neutron bombardment, and the enhanced effect due to slowing of the neutrons. These were the discoveries that later made possible both the nuclear reactor and the atomic bomb. “Fermi’s laboratory was the first to create and identify elements with atomic numbers greater than 92 (uranium), the highest naturally occurring element. In honor of this work, the artificial element number 100 is named “Fermium” ... Fermi’s work with slow neutrons prepared the way for the discovery of nuclear fission, the key to extracting energy from nuclear reactions” (Marburger, ‘Enrico Fermi’s impact on science,’ *Nuclear News*, Vol. 45 (2002), pp. 27-30). Fermi’s team had actually observed nuclear fission four years before Hahn and Strassmann, although at the time they

placed a different interpretation on their results. Fermi was awarded the 1938 Nobel Prize in Physics “for his demonstrations of the existence of new radioactive elements produced by neutron irradiation, and for his related discovery of nuclear reactions brought about by slow neutrons.”

Provenance: Oscar d’Agostino (1901-75), inscribed by him on the title page of both parts. D’Agostino was one of the ‘Via Panisperna boys,’ the group of young scientists led by Fermi at the Physics Institute of the University of Rome La Sapienza.



The first systematic treatise on pathology - Nicolas Fouquet's copy

21. FERNEL, Jean François. *Medicina*. Paris: André Wechel, 1554.

\$35,000



Exceptionally fine copy, and with distinguished provenance, of “the first systematic treatise on pathology, which also introduced the names for the sciences of pathology and physiology. In the second part, entitled ‘Pathologia’, Fernel provided the first systematic essay on the subject, methodically discussing the diseases of each organ. Fernel was the first to describe appendicitis, endocarditis, etc. He believed aneurysms to be produced by syphilis, and differentiated true from false aneurysms” (Garrison-Morton).

Provenance: ‘Double-phi’ cipher of Nicolas Fouquet (1615-80), finance minister to Louis XIV penned on upper margin of title. From the renowned, but undocumented library of the French non-practicing physician, music publisher, and connoisseur, Jean Blondelet. Contemporary marginalia, including index of diseases related to biblical names on final flyleaf.

Norman 785; Pincus 107; PMM 68n; Garrison-Morton 2271.



The speakable and unspeakable in quantum mechanics - inscribed

22. FEYNMAN, Richard. *The Concept of Probability in Quantum Mechanics*. Berkeley: University of California, 1951.

\$15,000

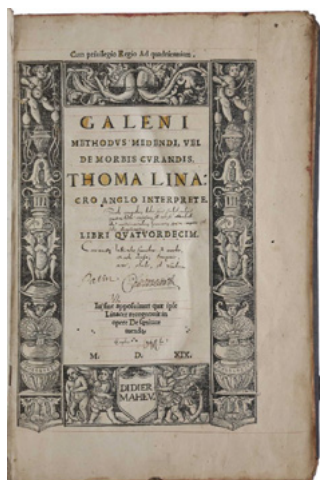


First edition, extremely rare offprint, inscribed by Feynman, of this famous lecture in which Feynman for the first time argues the necessity for a ‘quantum probability’ (a well developed subject in its own right today), and sets out clearly his own interpretation of the meaning of quantum mechanics, particularly what John Bell later called ‘the speakable and unspeakable in quantum mechanics.’ All this is done through a brilliant analysis of the ‘double-slit’ experiment, in which electrons pass through two holes and then fall on a screen. His analysis later became famous when it was included in the Feynman *Lectures on Physics*, but this is its first appearance in print. No copies of this offprint located in institutional collections worldwide. Although signed works by Feynman occasionally appear on the market, they are almost always his popular autobiographical works; technical scientific works inscribed by Feynman are extremely rare in commerce (none are located in auction records).

Two Galen first editions

23. GALEN. *Galenii methodus medendi, vel de morbis curandis. Thoma Linacro Anglo interprete.* Paris: Didier Maheu for Godefrid Hittorp, June 1519. [Bound with:] *Galenii de sanitate tuenda libri sex. Thoma Linacro interprete.* Paris: Guillaume le Rouge, September 1517. [Bound with:] *Galenii de differentiis febrium libri duo. Interprete L. Laurentiano.* Paris: Didier Maheu, 1519.

\$40,000



An exceptional copy, with copious contemporary annotations and fascinating provenance, of the first Latin editions of two of Galen's greatest and most influential works: *Methodus medendi* (Method of Medicine), Galen's comprehensive account of the principles of treating injury and disease, and *De sanitate tuenda* (On the preservation of health), containing Galen's views on maintaining health and hygiene and preventing disease. "For nearly fifteen hundred years [Galen's] authority was unassailable and every medical question was automatically referred to him: there was no appeal. Galen's influence on medical practice remained powerful even into the nineteenth century" (PMM 33). "Galen (129 – ca. 216 A.D.) stands second only to Hippocrates in importance in ancient Greek medicine. His writings dominated Byzantine, Arabic, and medieval medicine for over a millennium, being superseded in anatomy only with Vesalius, in physiology with Harvey, and in pathology with Boerhaave" (Garrison and Morton). The translator Thomas Linacre (ca. 1460-1524) was

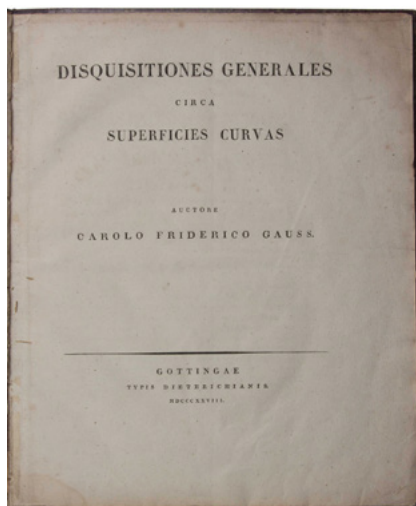
personal physician to Henry VIII, and it was at his instigation that Henry established the College of Physicians in 1518. But Linacre was also the finest Greek scholar of the day, and his greatest contribution to the medical world of the sixteenth century was probably as a translator of classical texts.



A founding work in modern geometry

24. GAUSS, Carl Friedrich. *Disquisitiones generales circa superficies curvas.* Göttingen: Dieterich, 1828.

\$15,000



First edition, the rare offprint, from the library of Haskell F. Norman, of the founding paper of modern differential geometry, a "masterpiece of the mathematical literature" (Zeidler, *Quantum field theory*). This work provided the foundations for Riemann's famous 1854 Habilitationsschrift 'Über die Hypothesen welche die Geometrie zu Grunde liegen' (i.e., PMM 293b). "... the crowning contribution of the period, and his last great breakthrough in a major new direction of mathematical research, was *Disquisitiones generales circa superficies curvas* (1828), which grew out of his geodesic meditations of three decades and was the seed of more than a century of work on differential geometry" (DSB). "A decisive influence on the entire course of development of differential geometry was exerted by the publication of [the present] paper of Gauss. It was this paper, carefully polished and containing a wealth of new ideas, that gave this area of geometry more or less its present form and opened a large circle of new and important problems whose development provided work for geometers for many decades" (Kolmogorov & Yushkevitch,

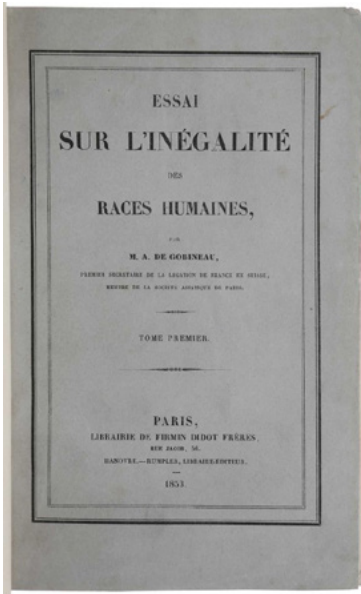
Mathematics of the 19th century). "In his approach to differential geometry, Riemann used ideas from Carl Friedrich Gauss's theory of surfaces, but liberated them from the restriction of being embedded in (three-dimensional) Euclidean space" (*Companion Encyclopedia*, p. 928).

☛Norman 880 (this copy).

PMM 335 - Hitler's French mentor

25. GOBINEAU, Arthur de. *Essai sur l'inégalité des Races Humaines*. Paris & Hanover: Didot & Rompler, 1853-55.

\$15,000



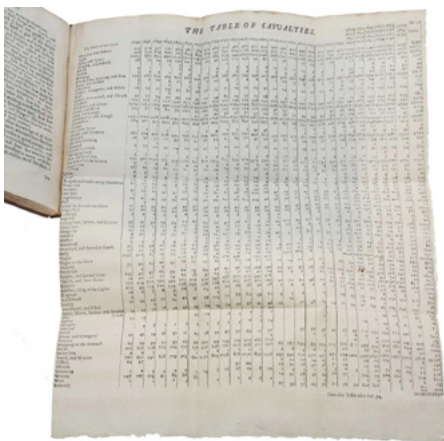
The very fine Bradley Martin copy with all the original wrappers preserved, exceptionally clean and crisp (Sotheby's 1989, \$5,000). Scarce: according to *En français dans le texte* only 500 sets were printed. We can trace no other copy in the auction records with the original printed wrappers as here. Gobineau's magnum opus and a work which made a deep and dark impression on European thought and action, albeit one "quite disproportionate to its scholarly insignificance and inconsequential argumentation" (*Printing and the Mind of Man*). Gobineau (1816-1882) "proclaimed the theory, since entirely disproved, that 'race' is a permanent and immutable phenomenon, and he proclaimed the unchallengeable superiority of the white race over all others (...). This farrago of biological nonsense, wishful romanticism and imperialistic dreams was lapped up eagerly by French and German intellectuals" (PMM). The influence on German thinkers and artists such as Nietzsche and Wagner led to Gobineau's theories feeding down to Hitler and the Nazis.

☛PMM 335; *En français dans le texte* 271.

The foundation work of demographics - 'Graunt's remarkable book' (PMM)

26. GRAUNT, John. *Natural and political observations mentioned in a following index and made upon the bills of mortality... with reference to the government, religion, trade, growth, ayre, diseases, and the several changes of the said city*. London: Tho: Roycroft, for John Martin, James Allestry, and Tho: Dicas, 1662.

\$160,000



Very rare first edition of the foundation work of demographics and medical statistics: the beginning of studies about why people die, and the beginning of disease control. "The application of critical scientific methods to medical and vital statistics, which underlies so much of modern government and economics, can be traced back to John Graunt's remarkable book" (*Printing and the Mind of Man*). This is a fine copy in unrestored English calf from the library of John Murray, 1st Duke of Atholl. Flawless copies as this are exceptionally rare on the market: the Honeyman and Phillipps copies lacked the tables and the Norman and Tufte copies were in modern bindings.



☛PMM 144; Norman 933; Garrison-Morton 1686; Parkinson, *Breakthroughs* 1662.

Invention of the air pump and the first electric generating machine

27. GUERICKE, Otto von. *Experimenta Nova (ut vocantur) Magdeburgica de Vacuo Spatio.* Amsterdam: Johanned Jansson Waesberge, 1672.

\$57,500



First edition and a fine copy in contemporary binding. A book of prime importance in electrical discovery, air-pressure and the vacuum pump. “At Ratisbon in 1654 Guericke had performed one of the most dramatic experiments in the history of science, when, before the Imperial Diet, he showed how two teams of eight horses each could not separate a bronze pair of hemispheres from which he had exhausted the air” (Dibner, *Founding Fathers of Electrical Science*). To create the vacuum, Guericke invented the air-pump, and in a series of experiments that followed he demonstrated the weight and elasticity of air. The air-pump became of fundamental importance for the study of the physical properties of gases. Guericke also demonstrated electrical attraction and repulsion, the discharging power of points, and constructed the first electrical generator. “Guericke constructed a spherical rotor of sulphur mounted on a crank; its rotation and contact upon it generated the first visible and audible electric sparks” (*ibid.*). As the Wheeler Gift catalogue remarks, “this remarkable work



on experimental philosophy ranks next to Gilbert’s in the number and importance of the electrical discoveries described.” Guericke’s experiments were motivated by his profound Copernican cosmological views on the nature and composition of space, which are fully set forth in the present work (see DSB).

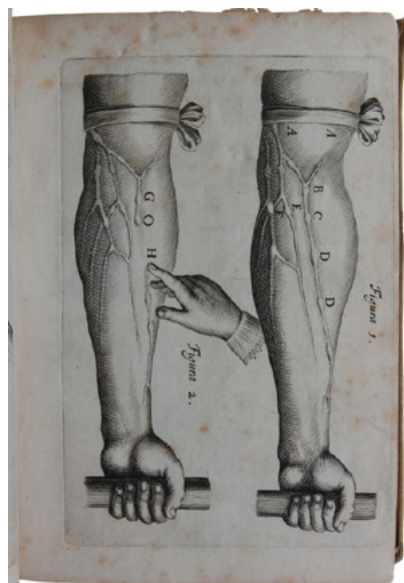
☛Dibner 55; Evans 30; Horblit 44; Norman 952; Sparrow 99; Wheeler Gift 170.

‘The most important book in the history of medicine’

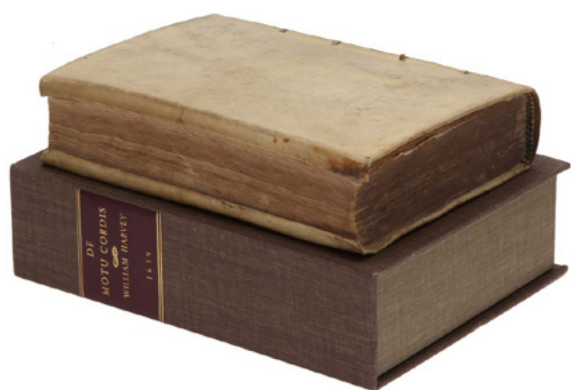
28. HARVEY, William. *De motu cordis & sanguinis in animalibus, anatomica exercitatio: cum refutationibus Aemylii Parisani et Jacobi Primirosii.* Leyden: Johann Maire, 1639.

\$55,000

Third, but second complete, edition of the single most important and famous medical book ever published, containing Harvey’s discovery and experimental proof of the circulation of the blood, which created a revolution in physiology comparable to the Copernican revolution in astronomy. Harvey’s discovery was to become “the cornerstone of



modern physiology and medicine” (Garrison-Morton). *De motu cordis* “is probably the most important book in the history of medicine. What Vesalius was to anatomy, Harvey was to physiology; the whole scientific outlook on the human body was transformed, and behind almost every important medical advance in modern times lies the work of Harvey” (*Heirs of Hippocrates*). This is the earliest edition that collectors can reasonably expect to obtain, the first edition (Frankfurt, 1628) being of the greatest rarity. The second edition (Venice, 1635), published with the *Exercitationes* of Emilio Parigiano was fragmentary, lacking the plates, parts of the introduction and chapters I and XVI. In this edition, the publisher Maire restored these passages and included the illustrations.

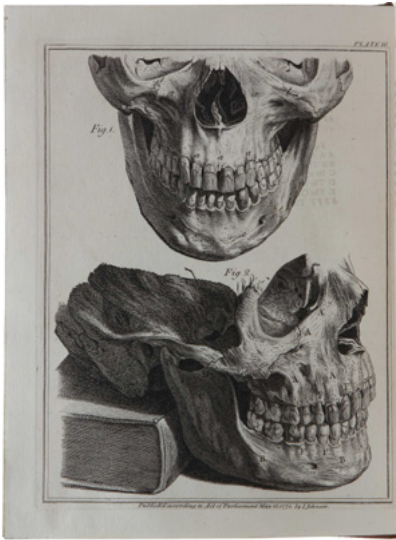


☛*Heirs of Hippocrates* 417 (this edition); Grolier/Medicine 27; PMM 127 (describing the first edition).

'Basic to all modern dentistry'

29. HUNTER, John. *The Natural History of the Human Teeth*. London: J. Johnson, 1771.

\$12,500



An exceptionally fine copy of “the first scientific study of the teeth and basic to all modern dentistry” (*Heirs of Hippocrates*). “Hunter’s work on the structure and diseases of the teeth began a new era for dentistry in England, placing what had been an empirical art upon a basis of careful scientific observation, and providing a foundation for further research. In the *Natural history*, Hunter gave detailed accounts of the anatomy and physiology of the oral cavity and jaw, introduced the modern scientific nomenclature for the teeth, established the tooth’s construction of bone, pulp and enamel, and examined the processes of tooth development in fetuses and children” (Norman). “In a busy life devoted to research, teaching, and the practice of surgery, Hunter found time to study the structure, development, and diseases of the teeth and to collect and arrange a series of dental specimens... In [the present] book, Hunter classified the teeth in the system still used today and was the first to state definitely that the human teeth ‘are never more than thirty-two.’ He traced their development in the fetus and the child and established

their structure of pulp, bone, and enamel. At the end of the book are descriptions of devices to correct malocclusion and even suggestions for a method of transplantation” (Lilly).

☛ Norman 1116; Lilly, *Notable Medical Books* 131; *Heirs of Hippocrates* 968; Garrison-Morton 3675.



Perspective for painters

30. HURET, Grégoire. *Optique de portraiture et peinture, en deux parties*. Paris: De l’Imprimerie d’André Cramoisy, rue S. Jacques, au Sacrifice d’Abraham, proche S. Severin, 1670.

\$6,500



First edition of this important work on perspective and painting. “The draughtsman and engraver Grégoire Huret (1610-70) – an academician who was also close to the king took over Bosse’s lectures at the Royal Academy of Painting and Sculpture. In 1670, Huret published *Optique de portraiture et peinture* (Optics of portraying and painting) in which he expressed great concern about the state of the art, particularly criticizing Bosse’s book from 1665 [*On the practices of geometrical planes and perspectives*] and previous publications. Huret claimed that his book should be seen as a contribution to the education of the young, especially to teaching them useful rules for drawing perspective. Huret was well-read and discussed books on other subjects than perspective. Naturally enough these included general works on painting, but also Desargues’s and Pascal’s works on projective geometry” (Andersen, [*The Geometry of an Art: the History of the Mathematical Theory of Perspective from Alberti to*

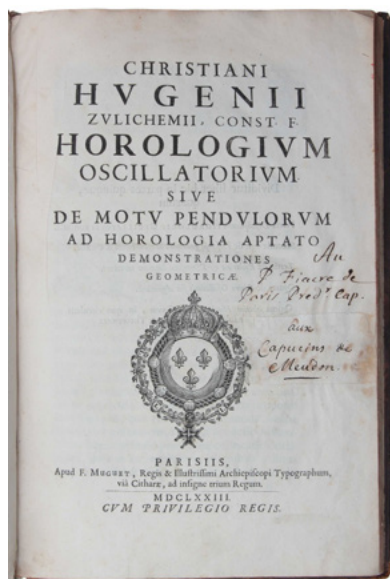
Monge], 2007, pp. 465-6).



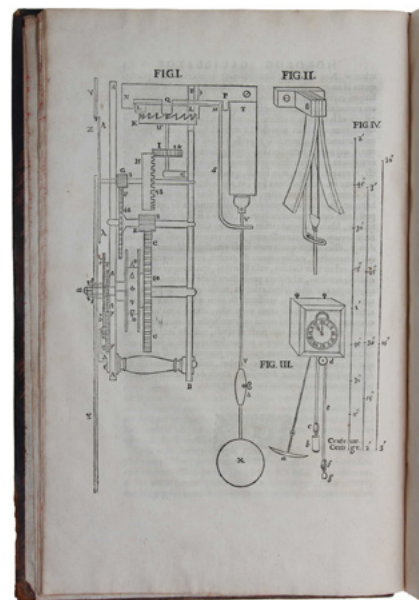
Second only to Newton's Principia

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

\$60,000



First edition and a very fine copy, in unrestored contemporary binding, of the author's most important work, "a superb tapestry woven from the three strands of the science of Christiaan Huygens (1629–1695): mathematics, mechanics, and technology" (*Landmark Writings in Western Mathematics*, p. 34). It was the most original work of this kind since Galileo's *Discorsi*" (PMM), and a "work of the highest genius which has influenced every science through its mastery of the principles of dynamics. It is second in scientific importance perhaps only to Newton's *Principia*, which is in some respects based on it" (Charles Singer, *A Short History of Science to the Nineteenth Century*, 1941, p. 258). It is also probably the single most important book in the literature on clocks.

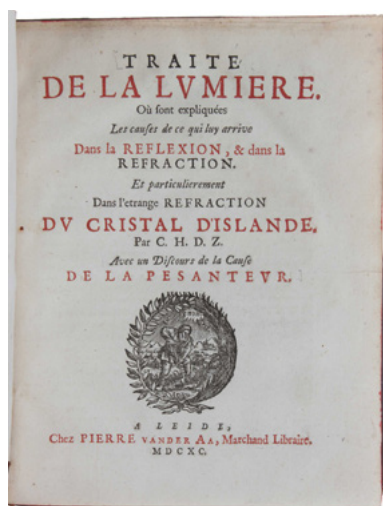


☛ PMM 154; Dibner 145; Horblit 53; Evans 31; Sparrow 109; Norman 1137.

The wave theory of light

32. HUYGENS, Christiaan. *Traité de la Lumière. Où sont expliquées les Causes de ce qui luy arrive dans la Reflexion, & dans la Refraction. Et particulièrement dans l'étrange Refraction du Cristal d'Islande. Avec un Discours de la Cause de la Pesanteur.* Leyden: Pierre vander Aa, 1690.

\$42,500



An excellent copy of Huygens' path-breaking exposition of his wave theory of light. Huygens was able to explain reflection and refraction using this theory, of which he became completely convinced in August 6, 1677, when he found that it explained the double refraction in Iceland spar. His view of light was opposed to the corpuscular theory of light advanced by Newton. Huygens' work fell into oblivion during the following century, but his theory of light was confirmed at the beginning of the 19th century by Thomas Young, who used it to explain optical interference, and by Jean-Augustin Fresnel a few years later. Modern physics has reconciled Newton's and Huygens' theories in discerning both corpuscular and wave characteristics in the properties of light. In the second part of the work, the *Discours de la cause de la pesanteur*, written in 1669, Huygens expounded



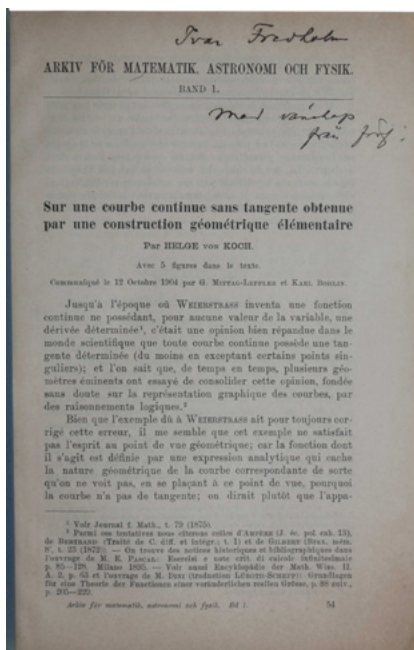
his vortex theory of gravity, a purely mechanistic theory that contrasted markedly with Newton's notion of a universal attractional force intrinsic to matter.

☛ Grolier/Horblit, *One Hundred Books Famous in Science* 54; Dibner, *Heralds of Science* 145; Evans, *First Editions of Epochal Achievements in the History of Science* 32; Sparrow, *Milestones of Science* 111.

The first geometric fractals

33. KOCH, Helge von. *Sur une courbe continue sans tangente, obtenue par une construction géométrique élémentaire.* Stockholm: P.A. Norstedt & Soner, 1904.

\$3,850



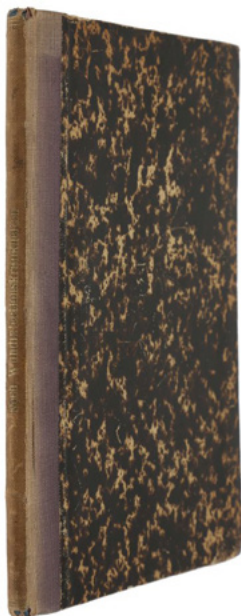
First edition, extremely rare offprint issue, inscribed by the author to the great Swedish mathematician Ivar Fredholm (the founder of functional analysis). Koch's paper contains the first examples of geometric fractals, the famous 'Koch curve' and 'Koch snowflake.' The term 'fractal' was coined much later, by Benoit Mandelbrot in his 1975 book *Les objets fractals, forme, hasard et dimension*. Today, fractals have found a bewildering variety of applications in both the arts and sciences (fractal patterns have been found in the works of Jackson Pollock).

The first example of a fractal was the 'Cantor set,' introduced by Georg Cantor in 1883, but this was not a genuine curve. Modifying Cantor's construction, Koch started with a straight line segment, erected an equilateral triangle with base the middle third of the original segment, and then erased that middle third; this produces a shape with four line segments; the same construction is now applied to each of these four segments; the Koch curve is the result of iterating this process indefinitely. It has the properties essential to fractals: it is self-similar, in the sense that any part of it, when magnified, looks the same as part of the original curve; and it has 'fractional' dimension – $\log 4 / \log 3 = 1.26186$ – between a curve (dimension 1) and a plane (dimension 2).

PMM 366 - The life-history of bacteria

34. KOCH, Robert. *Untersuchungen über die Aetiologie der Wundinfektionskrankheiten.* Leipzig: F.C.W. Vogel, 1878.

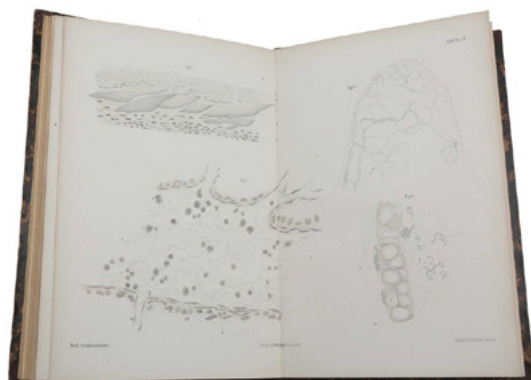
\$8,000



A fine copy of this epochal work by one of the greatest German scientists of any era. "Koch's epochal work on the etiology of traumatic infectious disease established his reputation. He inoculated animals with material from various sources and produced six types of infection, each due to microorganisms. He carried these infections through several generations of animals. His great work determined the role of bacteria in the etiology of wound infections and demonstrated for the first time the specificity of infection. It also contains the first explicit statement of the criteria implicit in Henle on contagion, which later became known as Koch's postulates." (Garrison-Morton).

Provenance: Exlibris and autograph signature of Hermann Werner Siemens (1891 - 1969), German dermatologist who first described many skin diseases and was one of the inventors of the twin study; exlibris rubber stamp of Ernst Georg Ferdinand Küster (1839 - 1930), German surgeon. He is credited for developing the foundation of modern radical mastoidectomy for treatment of chronic ear disease. Küster's radical mastoid operation is described as an extension of the simple mastoidectomy introduced by otologist Hermann Schwartze.

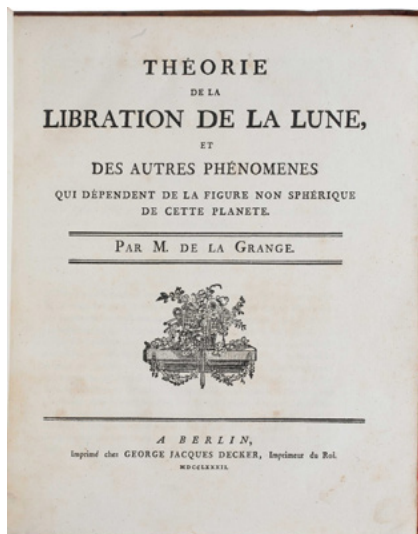
PM 366b; Norman; 1229; *Heirs of Hippocrates* 2053; Garrison-Morton 2536.



The first general proof of the 'Lagrange equations' of motion

35. LAGRANGE, Joseph-Louis. *Théorie de la libration de la lune et des autres phénomènes qui dépendent de la figure non sphérique de cette planète*. Berlin: George Jacques Decker, 1782.

\$20,000



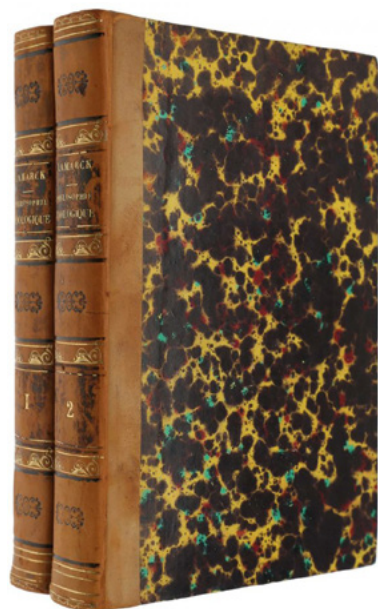
First edition, extremely rare separately-paginated offprint, of this work in which Lagrange introduced the potential function of a system of gravitationally-interacting bodies and gave the first proof of his general laws of motion, now called the 'Lagrange equations,' which were to play a central role in his masterpiece, *Mécanique Analytique* (1788). "Lagrange's work on the libration of the Moon was significant mainly because of the mathematical tools he used to study it, rather than for the results themselves. In his treatment of this particular problem from celestial mechanics, he derived general equations that have served as the basis for the study of dynamical systems ever since" (Linton, *From Eudoxus to Einstein*, p. 320). The present work was published in *Nouveaux memoires de l'Académie des sciences et belles-lettres* (Berlin), 11 (1782), pp. 203-309. OCLC lists copies of this offprint at Berlin and Utrecht only (no copies in US).



PMM 262 - The dawn of evolution

36. LAMARCK, Jean-Baptiste. *Philosophie Zoologique*. Paris: Dentu, printed for the Author, 1809.

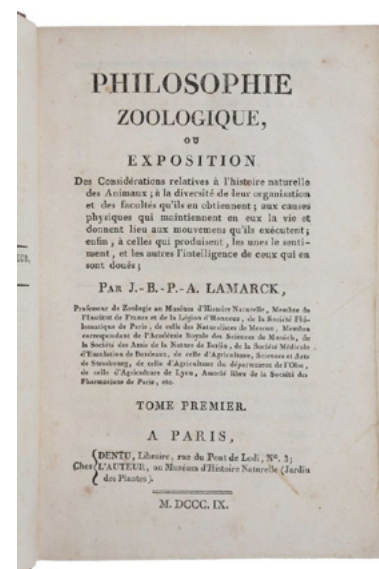
\$18,000



First edition, and a fine copy in unrestored contemporary bindings. "Lamarck was one of the greatest of the comparative anatomists. This work is considered the greatest exposition of his argument that evolution occurred by the inheritance of characteristics acquired by animals as a result of the use or disuse of organs in response to external stimuli" (Garrison & Morton). "Taking the whole of organic life in one broad view he demonstrated the possibility of ranging all living forms in a single series, starting with the lowest and simplest and progressing to the highest and most complicated. The idea itself was as old as Aristotle; what was new was Lamarck's suggestion that this scale corresponds to an order of historical development of the higher forms. This he did by tracing the progression in the reverse direction and observing the gradual changing, simplification and ultimate disappearance of the features distinguishing the higher forms as each lower scale is reached. From this it followed that the history of development of the higher forms of life

was a continual and continuous process of specialization with no gap or interruption at any stage. This is a clear adumbration of the evolutionary theory" (*Printing and the Mind of Man*).

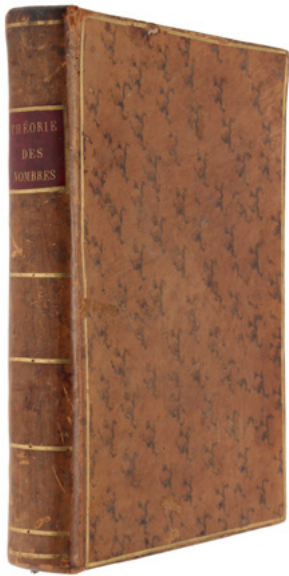
☛ PMM 262; Evans, 03; Dibner 194n; Sparrow, 121; Norman 1267; Garrison-Morton 216.



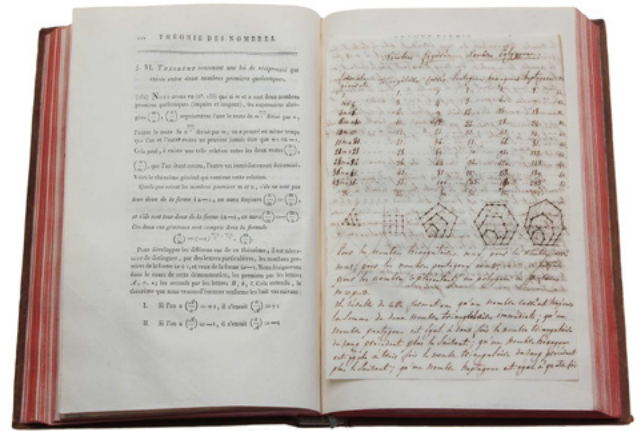
The most important book on number theory (before Gauss)

37. LEGENDRE, Adrien Marie. *Essai sur la théorie des nombres*. Paris: Duprat, 1797-1798.

\$4,000



A fine copy of the first book entirely dedicated to number theory. The work contains Legendre's discovery of the law of quadratic reciprocity, which Gauss referred to as the 'golden theorem' and for which he published six proofs, the first in his *Disquisitiones arithmeticae* (1801). "The theory of numbers in the eighteenth century remained a series of disconnected results. The most important works in the subject were Euler's *Anleitung zur Algebra* (1770) and Legendre's *Essai sur la théorie des nombres* (1798)." (Kline). "Legendre was one of the most prominent mathematicians of Europe in the 19th Century... His texts were very influential. In 1798



he published his *Theory of Numbers*, the first book devoted exclusively to number theory. It

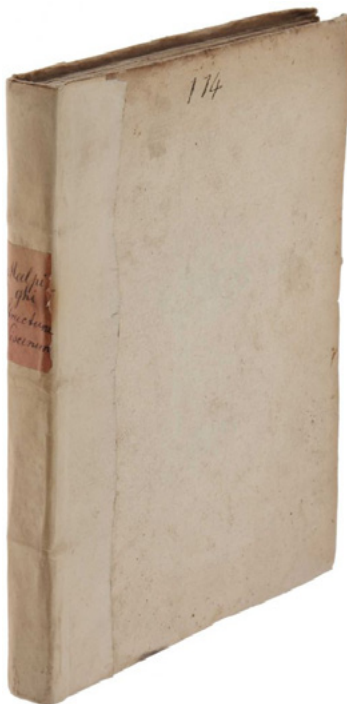
underwent several editions, but was soon to be superseded by Gauss' *Disquisitiones arithmeticae*." (Kleiner).

☛Norman 1325; Parkinson, *Breakthroughs* 231.

Important treatises on the kidney, red blood corpuscles, Hodgkin's disease, ...

38. MALPIGHI, Marcello. *De viscerum structura exercitatio anatomica*. Bologna: Giacomo Monti, 1666.

\$32,500



Very rare first edition, and a beautiful copy uncut in original boards, of this classic which includes Malpighi's famous treatise on the kidney, *De renibus premium*, in which he described the uriniferous tubules as well as the 'Malpighian bodies', which have perpetuated his name. The book also includes the first description of Hodgkin's disease... "The great detail and clarity of Malpighi's description was unsurpassed until Bowman [1842]" (Garrison-Morton). "This collection of anatomical treatises contains Malpighi's account of the Malpighian bodies (glomeruli) of the kidney (in 'De renibus'), his observation of red blood corpuscles (in 'De polypo cordis'), and the first description of Hodgkin's disease (in 'De liene'). Malpighi's studies of the kidney gave support to his iatromechanical theory of glands as secretion machines; he concluded that the glomeruli were in direct contact with both arteries and veins, and postulated a similar connection between the glomeruli and urinary vessels. In his treatise on heart polyps, Malpighi demonstrated that the polyps consisted of coagulum found in normal blood; it was while examining a clot of coagulum under the microscope that Malpighi observed a number of red 'atoms' (corpuscles) in the interstices of the coagulum fibers" (Norman).

☛Norman 1427; Friedman 121; Pincus 175; Garrison-Morton 535 & 1230.

Established obstetrics as a science

39. MAURICEAU, François. *Des maladies des femmes grosses et accouchées. Avec la bonne et veritable méthode de les bien aider en leurs accouchemens naturels, & les moyens de remedier à tous ceux qui sont contre-nature, & aux indispotions des enfans nouveau-nés.* Paris: Chez Jean Henault, Jean d'Houry, Robert de Ninville, Jean Baptiste Coignard, 1668.

\$8,500



First edition, the copy of Maurice Villaret, of the book which “established obstetrics as a science” (G&M). This was the outstanding textbook of the time, the first important textbook of obstetrics for nearly sixty years (since that of Jacques Guillemeau in 1609), and the first important obstetrical text to be published in five vernacular languages as well as Latin. “Perhaps the first obstetric text in the modern sense, Mauriceau’s *Maladies des femmes grosses et accouchées* established obstetrics as a science and as a separate medical specialty. Through its various

translations, it exercised a dominant influence on seventeenth-century obstetrical practice” (Grolier/Medicine).

✪ Grolier, *One Hundred Books Famous in Medicine* 33; Lilly, *Notable Medical Books* 85; Norman 1461; Garrison-Morton 6147.



First illustrated Spanish anatomy

40. MONTAÑA DE MONSERATTE, Bernadino. *Libro de la anathomia del ho[m]bre.* Valladolid: Sebastian Martinez, 1551.

\$58,500



First edition, an unrestored copy in contemporary binding of the first separate, and first illustrated, anatomical work in the vernacular printed in Spain. “While Valverde di Hamusco’s *Historia de la composicion del cuerpo humano* (1556) is often credited with introducing into Spain the Vesalian anatomical iconography coupled with a vernacular text, this honor actually belongs to Montaña de Monseratte’s *Anathomia...* [It] represents the first separate anatomical work in the vernacular printed in Spain, as Lobera de Avila’s unillustrated *Libro de Anatomia* was only a section of the more general *Remedio de cuerpos humanos* (1542?). Montaña’s text, like that of another Vesalian propagandist, Thomas Geminus, was largely derived from the popular Anatomy of the medieval surgeon Henri de Mondeville, and was

thus more likely than that of Valverde to have been immediately accessible to Spain’s barber-surgeons” (Norman).

✪ Norman 739. Garrison-Morton 801.



Algebra for navigators, by the greatest Portuguese mathematician

41. NUÑEZ, Salaciense Pedro. *Libro de algebra en arithmetica y geometria*. Antwerp: heirs of Arnold Birckman, 1567.

\$52,000



Exceptionally fine copy, bound in citron morocco for Jacques-Auguste de Thou (1553-1617), of this rare and celebrated treatise on algebra. “Considered the greatest of Portuguese mathematicians, Nuñez reveals in his discoveries, theories, and publications that he was a first-rate geographer, physicist, cosmologist, geometer and algebraist” (DSB). Only three other copies have appeared at auction in the last 50 years. J.A. de Thou assembled one of the greatest libraries of his time. Thou’s library later became the property of Jean-Jacques Charron, marquis de Ménars (1643-1718) before being sold off in 1789. “Both as Royal Cosmographer under King John III (the Pius) of Portugal and as professor of mathematics at the University of Coimbra, Nuñez gave instruction in the art of navigation to those associated with Portugal’s merchant and naval fleets. His *Libro de algebra* provided the mathematical underpinnings of that instruction — and much more — adopting Pacioli’s abbreviated notational style and treating the solution not only of linear and quadratic equations but also that of a cubic equation of the type $x^3 + cx = d$ following the spectacular mid-sixteenth-century work of the Italians Niccolo Tartaglia and Girolamo Cardano” (Katz & Parshall, *Taming the Unknown*, p. 205).

☛ Frank Streeter 392; Macclesfield 1548; Honeyman 2354; Peeters-Fontainas 845 (this copy).

His chef d'oeuvre

42. PARÉ, Ambroise. *Cinq livres de chirurgie*. [Bound with:] *Traicté de la peste*. Paris: André Wechel, 1572; 1568.

\$235,000



Very rare first editions of these important works, unrestored in contemporary binding. “The *Cinq livres* contains all new material. It had been called by several serious writers Paré’s chef d’oeuvre, in it appears the first description of the fracture of the head and of the femur. Secondly, it is the first appearance of the whole teaching of bandages, fractures, and dislocations which has come down to us from the ancients, broadened by Paré’s own experience ... It is undoubtedly one of his most important works” (Doe 19). Since 1916 ABPC has recorded the sale of only two copies: one in 1963 in New York, and another (incomplete) in 1981 in London. The second work, *Traicté de la peste*, was written from direct experience of the plague: “Having passed the winter of 1564-65 on tour in Provence with Catherine de’ Medici and the young king Charles IX, where the ravages of a plague epidemic, added to poverty and general misery, were painfully apparent, Paré was requested by the queen mother to make whatever

knowledge he possessed of the disease available to the world. He therefore puts into a book his ideas as to its cause, transmission, and treatment, and says he writes only of what he has seen by long experience during his three years at the Hôtel-Dieu, his travels, his practice in Paris, and his own slight attack while he was serving his internship. This is one of Paré’s most systematic treatises; for its careful symptomatology and thorough description of treatment, it deserves to rank among the best of his writings” (Doe 14).

Durling 3526.



A key document in the history of twentieth-century physics

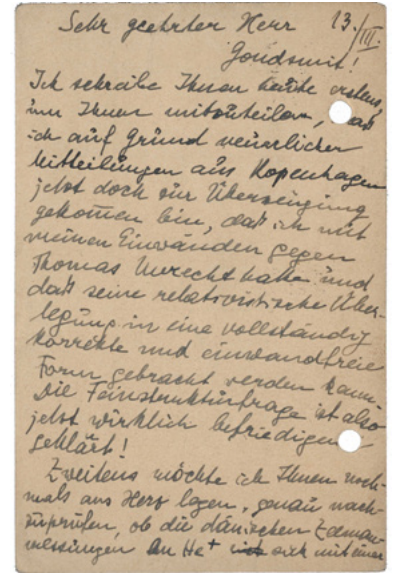
43. PAULI, Wolfgang. Autograph postcard signed 'W. Pauli' to Samuel Goudsmit, in which Pauli finally accepts the concept of electron spin proposed by Goudsmit and George Uhlenbeck. Hamburg, postmarked 13 March, 1926.

\$28,500



An iconic artefact of twentieth-century physics of great historical significance, this is the postcard in which the 26-year old Pauli finally acknowledges that Samuel Goudsmit and George Uhlenbeck were correct in their discovery of electron spin. "First of all I am writing to you today to inform you that because of recent communications from Copenhagen I have realized that I have been wrong in my objections against Thomas and that his deliberations about relativity can be put into an entirely correct and

faultless form. Therefore the questions referring to fine structure can really be satisfactorily answered!" Known as the 'conscience of physics', Pauli's imprimatur was essential before the concept of spin could be accepted by the wider physics community. Spin is now one of the key concepts in quantum physics. Pauli's bitter initial opposition to spin is doubly ironic: its discovery was based on Pauli's exclusion principle, formulated less than a year earlier, for which Pauli received the Nobel Prize (Goudsmit and Uhlenbeck did not receive the Nobel); and it was Pauli himself who eventually showed how to incorporate spin into quantum mechanics, which had been invented by Werner Heisenberg just nine months earlier.



A classical work in orthopaedics

44. PLATTER, Felix. *Observationum, in hominis affectibus plerisque, corpori & animo, functionum laesione, dolore, aliave molestia & vitio incommodantibus, libri tres.* Basel: Ludwig König for Conrad Waldkirch, 1614.

\$2,800



First edition of this important medical work which contains "the first known case report of the death from hypertrophy of the thymus (in an infant) and an account of a meningioma" (Norman). "The work also contains the first mention of the thickening of the palmar fascia which results in retraction of the fingers and later called Dupuytren's contracture". (*Heirs of Hippocrates*). A disciple of Eustachi, Falloppio and Vesalius, Platter was one of the foremost pathologists of the sixteenth and early seventeenth centuries, occupying a place midway between Fernel (1497-1558) and Bonet (1620-89). "Platter proposed a classification of diseases based on symptoms, a system very different from that followed by contemporary practitioners. He performed over 300 dissections, making numerous significant pathological observations, including sublingual calculi, giantism, intestinal parasites, and cystic liver and kidneys associated with terminal anasarca. Platter also made the first attempt to classify mental diseases, grouping them under mental



weakness (caused by heredity, trauma or physical illness), mental consternation Oistlessness, stupor, paralysis, agitation or catalepsy), deep sleep (comatose or torpid states) and mental alienation". (Norman).

Norman 1716; *Heirs of Hippocrates* 373; G&M 3789 (endocrinology), 4297.9 (the earliest book listed on orthopaedics), and 4511.1 (neurology).

Editio princeps of 'one of the most influential scientific works of all time' (PMM)

45. **PTOLEMY.** *De geographia libri octo, summa cum vigilantia excusi.* Basel: Froben & Episcopius, 1533.

\$48,500



Editio princeps, the first printing of Ptolemy's celebrated *Geography* or *Cosmology* in the original Greek. This is a fine, unrestored copy in its original binding. A rare book on the market: only one other copy has appeared at auction since 1977, i.e., the Evelyn-Garden copy (Sotheby's 1989) which was bound in restored seventeenth-century calf. "Ptolemy's *Geography* is the only book on cartography to have survived from the classical period and one of the most influential scientific works of all time. Written in the second century AD, for more than fifteen centuries it was the most detailed topography of Europe and Asia available and the best reference on how to gather data and draw maps. Ptolemy championed the use of astronomical observation and applied mathematics in determining geographical locations. But more importantly, he introduced the practice of writing down coordinates of latitude and longitude for every feature drawn on

a world map, so that someone else possessing only the text of the *Geography* could reproduce Ptolemy's map at any time, in whole or in part, at any scale" (Berggren & Jones, *Ptolemy's Geography: An Annotated Translation of the Theoretical Chapters*, 2000).

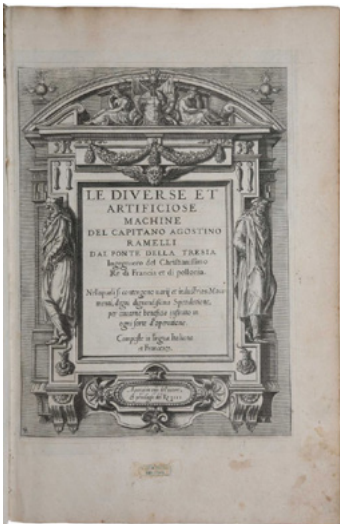
☛PMM 18 (1462 edition); Garden Sale 23 (this edition).



An exceptionally fine copy with distinguished provenance

46. **RAMELLI, Agostino.** *Le diverse et artificiose machine.* Paris: for the author, 1588.

\$280,000



First edition of one of the most important books on the science and technology of machines in the renaissance, and one of the most famous illustrated books of the sixteenth century – a tour de force of book design. This is a splendid copy in contemporary French gilt vellum, ruled in red, and entirely untouched. We are not aware of a copy of similar quality on the market since the Norman-Freilich copy (sold Sotheby's 2001, \$291,750). *Provenance:* Françoise d'Espinay de Bretagne, first wife of Henri de Schomberg, comte de Nanteuil (1604 gift inscription on front free endpaper); Princes of Liechtenstein (stamp on title); Otto Schäfer (sold Sotheby's 1995, £38,900). A fundamental book in the history both of technology and of book design, and "one of the most elegantly produced of all technological treatises" (Norman). The scientific import of Ramelli's work resides in his demonstration of "the unlimited possibilities of machines. For example, the dozens of water-powered pumps and mills shown in his treatise clearly demonstrated that non-muscular power could be substituted for horse- or human-power in any mechanical task requiring continuous or repetitive application of force, and the portrayal of over twenty types of water pump ... destroyed

the notion that there were necessary limits to the configuration or arrangement of a machine" (*ibid.*)

☛Dibner 173; Norman 1777; Mortimer French 452; Wellcome 5323; Adams R52; Cockle 788.



17th century manuscript discussing work of Galileo, Boyle, Torricelli

47. RINALDINI, Carlo. *Philosophia Naturalis*. [Manuscript on paper, ca. 1680. Small 4to (215 x 150 mm), 280 leaves. Latin text in a neat cursive hand with many illustrative diagrams in the text. Contemporary vellum-backed boards].

\$75,000

Important scientific manuscript, the text of lectures delivered by Rinaldini at the University of Padua, where he served as professor of natural philosophy for 30 years from 1667. Rinaldini had been a close friend of Galileo at Pisa, and was the first to lecture there on his discoveries. As well as discussions of Galileo's work, the present manuscript also contains an account of Rinaldini's own important discoveries, including that of the convection of heat. Among other authors cited and discussed are Brahe, Barrow, Borelli, Boyle, Copernicus, Descartes, Gassendi, Kepler, Riccioli and Torricelli. Rinaldini is an important transitional figure, presenting in this manuscript Aristotelian ideas alongside those of the 'new science' of Galileo and his supporters, to whose circle he belonged.



Provenance: Sir Thomas Phillipps (1792 – 1872), with his signature and the catalog number 9608 on the title. Scholar and bibliophile, Phillipps was the most important collector of books and, especially, manuscripts of the nineteenth century, his collection containing some sixty thousand manuscripts at its peak.



The Caesarean section

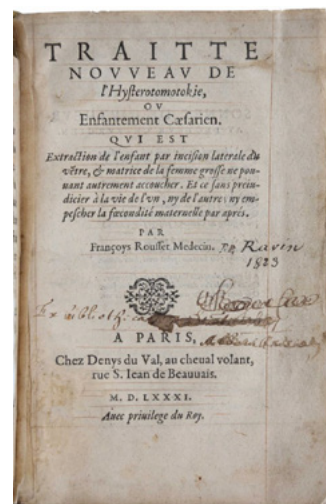
48. ROUSSET, François. *Traite nouveau de l'Hysterotomotokie, ou Enfantement Caesarien*. Paris: Denys du Val, 1581.

\$18,500



Very rare first edition of the work which coined the term 'Caesarean section' and was the first to advocate its use, in appropriate circumstances, on a living woman. Only three copies located in auction records, two of which were in modern bindings. This copy is beautifully bound in contemporary vellum gilt and ruled in red throughout. "As the earliest advocate of caesarean section on a living woman (in cases where no other means of delivery appeared possible), François Rousset, a 16th-century French physician, defied conventional medical wisdom. His contemporaries expected caesareans to be performed if the mother had died during the labour, in order to allow the

fetus a chance of survival, but it was widely assumed that to perform a caesarean on a living woman would be to condemn her to certain death. Hence Rousset's treatise on the subject, published in French in 1581, and then in Latin translation from 1586, provoked almost universal scepticism, yet also exercised a marked fascination. Despite the fact that as a physician (rather than a surgeon) he had never performed the operation himself, he had witnessed some rare deliveries by caesarean, collected other case histories and reflected on analogous operations, before presenting his research in [the present work]" (Valerie Worth-Stylianou, 'Caesarean Birth: The work of François Rousset in Renaissance France,' *Wellcome History*, 15 December 2010).

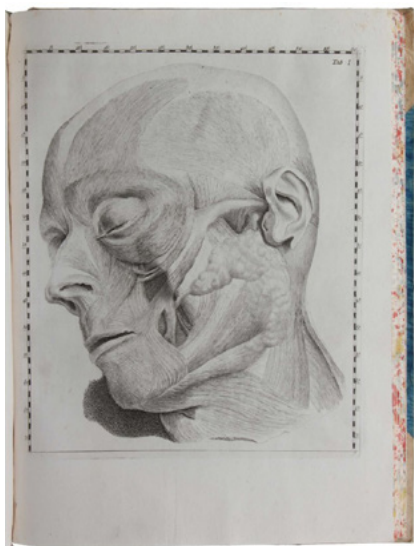


✂ Garrison-Morton 6236; Wellcome 5593.

One of the finest anatomies of the eighteenth century

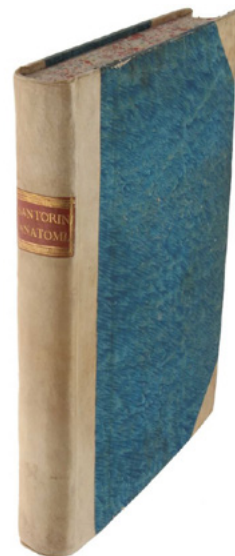
49. SANTORINI, Giovanni Domenico. *Anatomici summi septemdecim tabulae quas nunc primum edit atque explicat iisque alias addit de structura mammarum et de tunica testis vaginali.* Parma: [Giambattista Bodoni], 1775.

\$7,500



First edition, and a very fine copy. “The book is one of the finest anatomies of the eighteenth century because of its excellent illustrations and comprehensive commentary.” (*Heirs of Hippocrates*). It is also one of the rarest of the few medical books printed at the celebrated Bodoni Press in Parma, as well as one of the few medical books issued by a private press. “Santorini was generally acknowledged as the outstanding anatomist of his time. Many corrections and discoveries in the detailed anatomy of the different organs of the human body go back to Santorini. Even today a facial muscle (risorius), a pair of cartilages (comicula) of the larynx, the emissary veins of the skull, and a part of the superior and inferior turbinates of the ethmoid are named after Santorini” (Hagelin, *Rare and Important Medical Books*, p. 112).

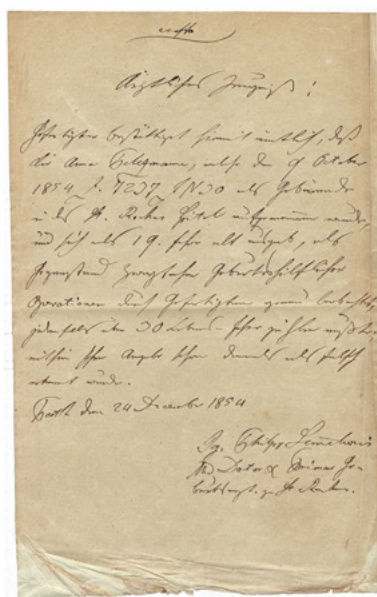
Norman 1888; Garrison-Morton 399.1; *Heirs of Hippocrates* 788; Pincus 248.



One of a handful of autograph manuscripts

50. SEMMELWEIS, Ignaz Philipp. *Extremely rare autograph document in Semmelweis' hand, from his time at the St. Rochus Hospital in Pest where he eliminated childbed fever, medical testimony regarding a female patient, signed and dated 24. December 1854.*

\$42,000



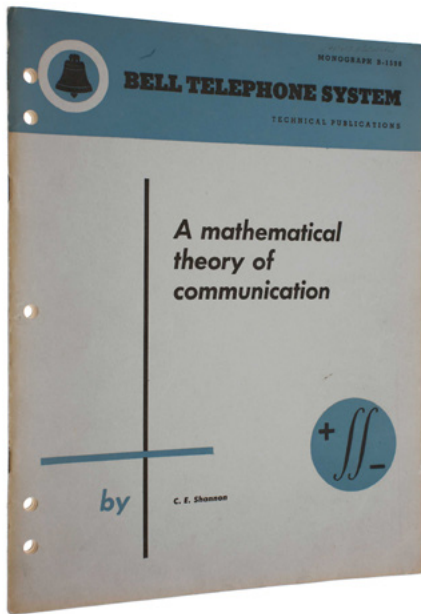
Extraordinarily rare autograph manuscript. Despite the wide interest there has been for more than a century in Semmelweis' work and personality, there are still today extremely few examples of autograph material by him. In their 1968 article on Semmelweis manuscripts, Antall, Harko, and Vida note: “He left only few manuscripts; the first drafts of his published works are irretrievably lost. In 1940 György Korbuly summarized the number of the discovered Semmelweis manuscripts and he stated in his article: ‘if we inquire, how many manuscripts of Semmelweis we know today, the reply is expressively depressing. We know today only 5 original letters of him’”. (*Semmelweis Ignac összegyűjtött kéziratjai*, Budapest 1968). The authors continue to mention that since 1940 some new Semmelweis manuscripts had come to light in London and Budapest, but that still in 1966 when Ákos Palla described a newly discovered document he estimated a total number of documents known worldwide to be 20-30. We cannot locate any other autograph material in the auction records. This large and impressive document (380 x 240 mm) is a medical testimony written by Semmelweis when he was primary obstetrician at the St. Rochus Hospital in Pest. The patient, Anna Petermann, claimed when she was hospitalized for birth on 9 October 1854, that she was 19 years of age. Due to two obstetric surgeries, however,

Semmelweis realized that the patient must be at least thirty. The document is signed with a large and bold signature by Semmelweis “Ig. Philipp Semmelweis, Med Doctor & Primar-Geburtsarzt zu St. Rochus” and dated “Pest den 24 December 1854”.

'Few other works of the twentieth century have had a greater impact'

51. SHANNON, Claude Elwood. *A Mathematical Theory of Communication*. New York: American Telephone and Telegraph Company, 1948.

\$10,000



First edition, the rare offprint, of “the most famous work in the history of communication theory” (*Origins of Cyberspace*, 880). “Probably no single work in this century has more profoundly altered man’s understanding of communication than C. E. Shannon’s article, ‘A mathematical theory of communication,’ first published in 1948” (D. Slepian (ed.), *Key papers in the development of information theory*, Institute of Electrical and Electronics Engineers, Inc., New York, 1974).

“In 1948 Shannon published his most important paper, entitled ‘A mathematical theory of communication.’ This seminal work transformed the understanding of the process of electronic communication by providing it with a mathematics, a general set of theorems rather misleadingly called information theory. The information content of a message, as he defined it, has nothing to do with its inherent meaning, but simply with the number of binary digits that it takes to transmit it. Thus, information, hitherto thought of as a relatively vague and abstract idea, was analogous to physical energy and could be treated like a measurable physical quantity ... So wide were its repercussions that the theory was described as one of humanity’s proudest and rarest creations, a general scientific theory that could profoundly and rapidly alter humanity’s view of the world. Few other works

of the twentieth century have had a greater impact; he altered most profoundly all aspects of communication theory and practice” (*Biogr. Mem. Fell. R. Soc.* Vol. 5, 2009).

Spontaneous generation rejected

52. SWAMMERDAM, Jan. *Historia insectorum generalis; ofte, algemeene verhandeling der bloedeloose dierkens*. Utrecht: Merinardus van Dreunen, 1669.

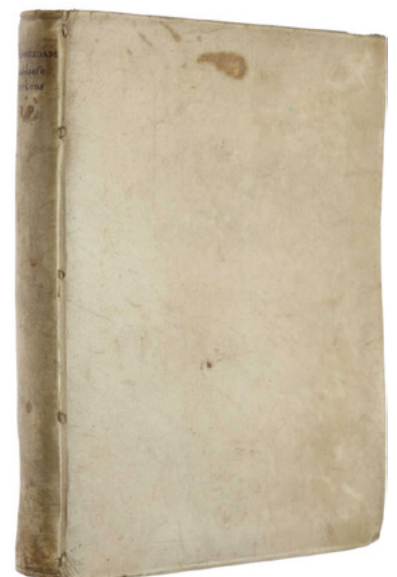
\$11,500



The very rare first edition of Swammerdam’s important entomology work in which he “rejected spontaneous generation and proposed that the process of decay in organic matter was the result of living organisms” (Dibner on the later reworked edition of this work by Boerhave from 1737, i.e., *Bybel der natuure*). The *Biblia natura*, Swammerdam’s major work, was published fifty-seven years after his death by Herman Boerhaave, who assembled it from unpublished manuscript materials integrated with a slightly revised version of Swammerdam’s *Historia insectorum generalis* (1669) [the offered work]” (Norman). “The 1669 *Historia* was devoted to the overthrow of the idea of

metamorphosis, as its title explains: ‘General Account of the Bloodless Animals, in Which Will be Clearly Set Forward the True Basis of their Slow Growth of Limbs, the Vulgar Error of the Transformation, Also Called Metamorphosis, Will be Effectually Washed Away, and Comprehended Concisely in Four Distinct Orders of Changes, or Natural Budding Forth of Limbs.’

♣Garrison-Morton 294; Barchas 2018. See Dibner 191; Norman 2037; Sparrow 187 for the later *Bybel der natuure*.



'One of the most important direct sources of Leonardo's mathematical knowledge'

53. VALLA, Giorgio. *De expetendis, et fugiendis rebus opus*. [Colophon:] Venice: Aldus Manutius for Giovanni Pietro Valla, December 1501.

\$58,500



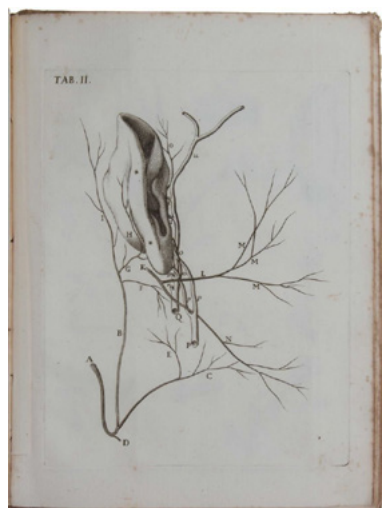
First and only edition of the first great humanistic Renaissance encyclopedia, an extraordinarily rich collection of translations from classical authors, and "une des plus belles productions des presses Aldines" (Graesse). Previously sold (this copy): Christie's London, 3 May 1995, lot 33, £10,125 (\$16,072); Christie's Rome, 16 June 1999, lot 14, Lit 91,700,000 (\$49,709). "For the next forty years at least, *De Rebus Expetendis* remained almost the only printed source of reference for the works of Apollonius, Archimedes, the Eutocius commentaries, and Hero. It was used extensively by Leonardo [da Vinci] and Copernicus" (Rose, *The Italian Renaissance of Mathematics*, p. 48). Leonardo owned a copy of *De Expetendis*, translated sections from it into Italian, and used it in his work on geometric proportions. *De Expetendis* was "one of the most important direct sources of Leonardo's mathematical knowledge" (Kelley & Popkin, *The Shapes of Knowledge from the Renaissance to the Enlightenment*, p. 45, n. 55). Copernicus, who studied the book in Padua, learned from it of the heliocentric ideas of Aristarchus; he also "made heavy use of the mathematical excerpts translated by Valla from such Greek authors as Archimedes, Autolycus and Ptolemy. Moreover, Copernicus used a star-catalogue printed by Valla which differs significantly from that of Ptolemy" (Rose, pp. 123-4).



The first full account of the minute anatomy of the ear

54. VALSALVA, Antonio Maria. *De Aure Humana Tractatus, in quo integra ejusdem auris fabrica, multis novis inventis, & iconismis illustrata, describitur; omniumque ejus partium usus indagantur. Quibus interposita est musculorum uvulae, atque pharyngis nova descriptio, et delineatio*. Bologna: Constantino Pisari, 1704.

\$7,500



Rare first edition, and a fine copy, of "the first full account of the minute anatomy of the ear" (Norman). "This remarkable book became a standard on the subject for over a century" (*Heirs of Hippocrates*). "The 'Treatise' is arranged in six chapters. The first three are anatomic and deal with the parts of the ear; the last three are physiologic and explain the functions of these parts. The auricle and auditory meatus, the tympanum and middle ear, and the labyrinth and inner ear are discussed. Chapter 2 includes Valsalva's report, promised on the title page, of the musculature of the uvula and pharynx; these are depicted on separate plates. The ten illustrations are good line engravings, of which the most striking are those of the nerves and blood vessels of the outer ear, the carotid artery, the semicircular canals, and the structure of the whole ear" (Lilly).

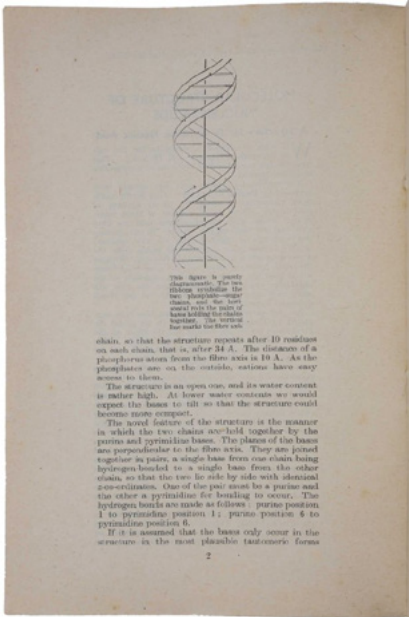
♣Norman 2125; Lilly, *Notable Medical Books* 101; Garrison-Morton 1546; *Heirs of Hippocrates* 729.



The birth of molecular biology

55. WATSON, J. D. & CRICK, F. H. C.; WILKINS, M. H. F., STOKES, A. R. & WILSON, H. R.; FRANKLIN, R. E. & GOSLING, R. G. *Molecular Structure of Nucleic Acids: A Structure for Deoxyribose Nucleic Acid; Molecular Structure of Deoxypentose Nucleic Acids; Molecular Configuration in Sodium Thyminucleate*. St. Albans: Fisher, Knight & Co., 1953.

\$17,000



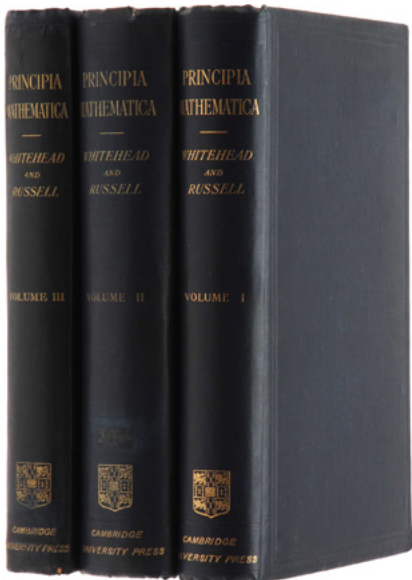
First edition, in the rare offprint form, of one of the most important scientific papers of the twentieth century (accompanied in the same offprint by two related papers), which “records the discovery of the molecular structure of deoxyribonucleic acid (DNA), the main component of chromosomes and the material that transfers genetic characteristics in all life forms. Publication of this paper initiated the science of molecular biology. Forty years after Watson and Crick’s discovery, so much of the basic understanding of medicine and disease has advanced to the molecular level that their paper may be considered the most significant single contribution to biology and medicine in the twentieth century” (*One Hundred Books Famous in Medicine*, p. 362). The double helix describing the molecular structure of DNA has not only reshaped biology, it has become a cultural icon, represented in sculpture, visual art, jewellery, and toys. In 1962, Watson, Crick, and Wilkins shared the Nobel Prize in Physiology or Medicine “for their discoveries concerning the molecular structure of nucleic acids and its significance for information transfer in living material.”

☞ Grolier Club, *One Hundred Books Famous in Medicine*, 99; Dibner, *Heralds of Science*, 200. Garrison-Morton 256.3; Judson, *Eighth Day of Creation*, pp. 145-56.

One of the greatest rarities of modern mathematics

56. WHITEHEAD, Alfred North & RUSSELL, Bertrand. *Principia mathematica*. Cambridge: at the University Press, 1910-12-13.

\$120,000



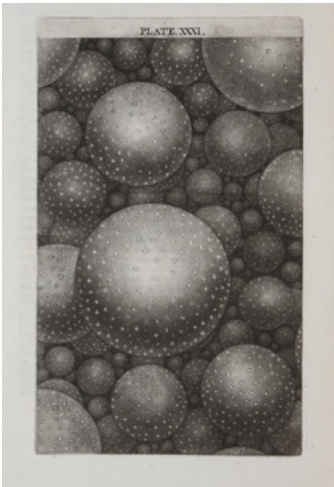
First edition of all three volumes of this monumental work. Complete sets of the first edition are very rare on the market. Probably named after Isaac Newton’s great work, *Principia Mathematica* was Whitehead and Russell’s detailed account of their ‘logician’ thesis that mathematics could be derived solely from logical concepts and by logical methods...[It] has had an influence, direct and indirect, of near Newtonian proportions upon the spheres of its chief influence: mathematical logic, set theory, the foundations of mathematics, linguistic analysis and analytical philosophy” (Grattan-Guinness, p. 89). “Whether they know it or not, all modern logicians are the heirs of Whitehead and Russell” (Palgrave, p. 20). “After the failure of Frege’s *Grundgesetze*, due to Russell’s paradox, it was the *Principia Mathematica* of Whitehead and Russell which first successfully developed mathematics within a logical framework” (ibid., p. 21). The first volume of *Principia Mathematica* was published in December 1910 in an edition of 750 copies, priced 25 shillings; volumes II and III had a print run of only 500 copies, and were priced at 30 shillings and 21 shillings, respectively. A fourth volume, dealing with applications to geometry, was written by Whitehead alone, but was not published.

☞ Landmark Writings in Western Mathematics 16; *The Collection of the Garden Ltd.* 219; Norman 1868.

The nature of the Milky Way explained

57. **WRIGHT, Thomas.** *An original theory or new hypothesis of the universe.* London: Printed for the Author, and sold by H. Chapelle, 1750.

\$52,000



Exceptionally fine copy of this extraordinary book, remarkable not only for its prophetic views on cosmology, but also for its mezzotint plates which have an almost surreal beauty not found in any other astronomical work. This is an outstanding copy, free of the foxing that normally affects this book, and in a beautiful, unrestored contemporary English binding in almost perfect condition. “For the first time in the history of astronomy the view is expressed here that the fixed stars are not distributed at random in space, but mainly concentrated in a flat disc” (Paneth). He also speculates on the nature of nebulae. “The dawn of extragalactic astronomy can be attributed to the year 1750, in which Thomas Wright speculated that some of the nebulae observed in the sky were not actually part of the Milky Way, but rather independent Milky Ways themselves” (Beckman & Shrader). “These views were more than 150 years ahead of their time and did not become accepted by the scientific community until they were substantiated by observational evidence in the

1920s” (*Biographical Dictionary of Scientists*). Wright also suggested that the rings of Saturn consisted of a multitude of unconnected particles, each revolving independently round the planet: in 1859, James Clerk Maxwell demonstrated this as the only scientifically tenable theory against the rival hypotheses of fluid or solid rings.

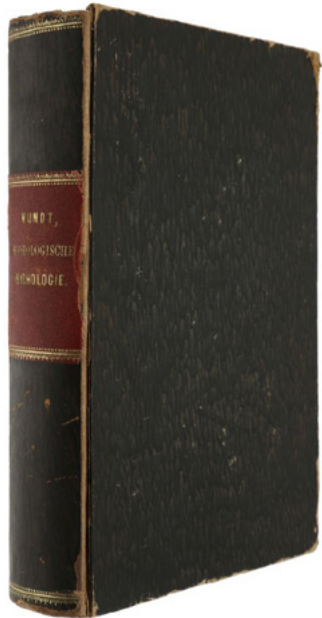
☛Norman 2265; Honeyman 3143; *Parkinson, Breakthroughs*, 1750.



The most important book in the history of modern psychology

58. **WUNDT, Wilhelm Max.** *Grundzüge der physiologischen Psychologie.* Leipzig: Wilholm Engelmann, 1874.

\$3,200



First edition, the Herbert McLean Evans copy, of “the most important book in the history of modern psychology” (Evans). “Wundt made experimental investigations of normal individual reactions, reflex responses, and general behavior, and interpreted them in terms of neural mechanisms. He is the founder of experimental psychology, and his book remains the most important on the subject” (Garrison-Morton). “The foundation of experimental psychology, which uses quantitative methods to study psychological processes such as perception and the formation of ideas. Wundt first conceived of a physiological psychology in 1858 while working as an assistant to Helmholtz, and produced two works on the subject before publishing the *Gründzuge*, the book that made his reputation. His greatest importance lay in his ability to stimulate research and in his role as the leader of a crusade; he constituted an important rallying point for the generation of young men who saw experimental psychology as a new avenue to man’s self-understanding” (Norman).

☛Evans, *First Editions of Epochal Achievements in the History of Science* 113 (this copy); Grolier/Horblit, *One*

Hundred Books Famous in Science 100a; Norman 2270; Garrison-Morton 4976.

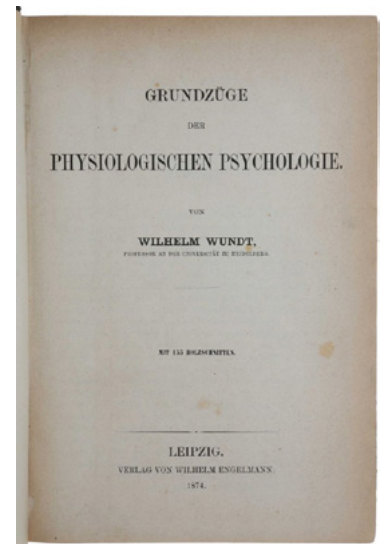
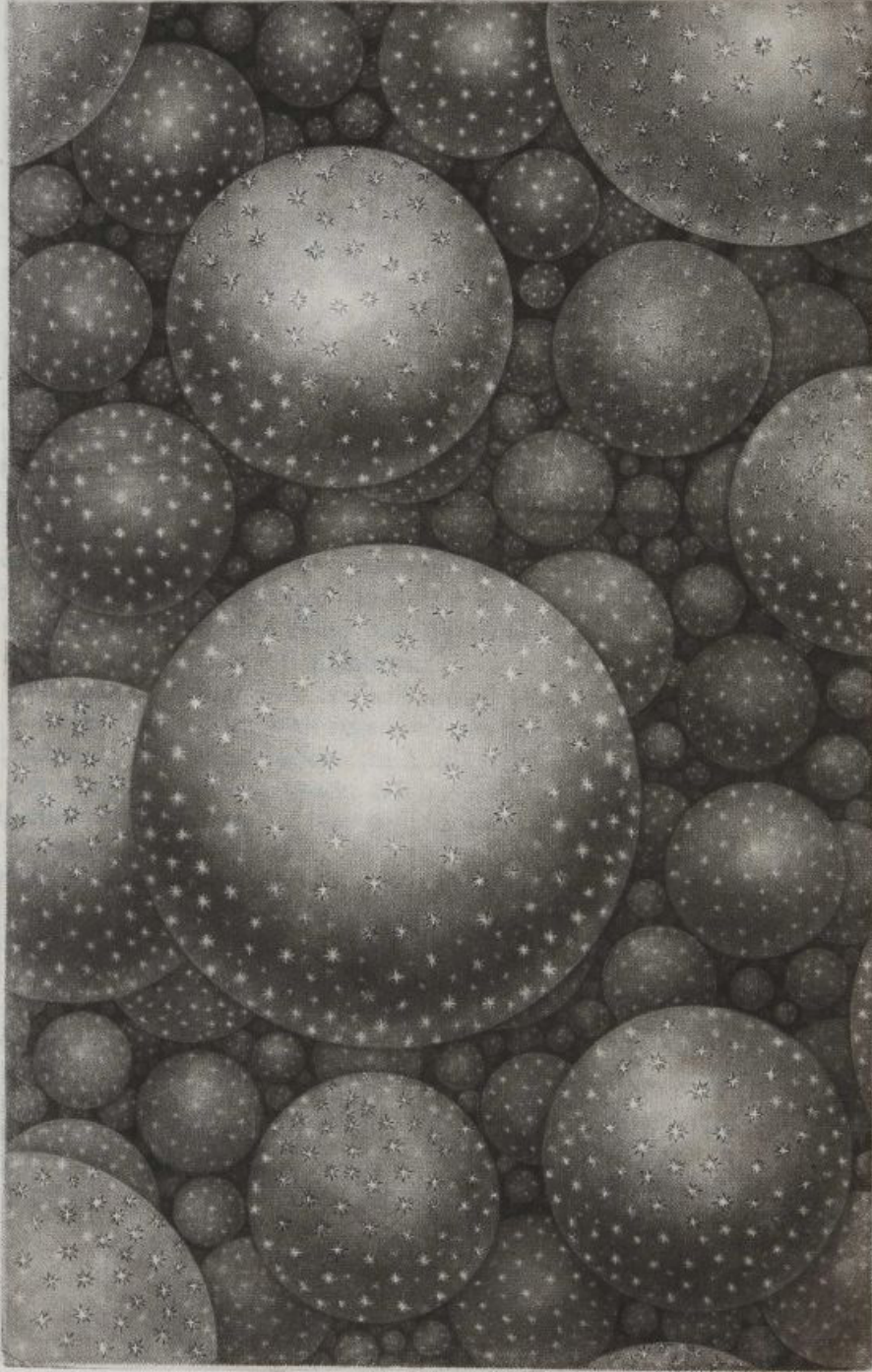


PLATE. XXXI.



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