SOPHIA ∑ RARE BOOKS

58th New York International Antiquarian Book Fair
The Park Armory, 8-11 March 2018

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

Flæsketorvet 68 – 1711 København V – Denmark
Cell: (+45)27628014

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Arabic astronomy

AL-FARGHANI, Ahmad; AL-BATTANI, Muhammad. *Continentur in hoc libro Rudimenta astronomica Alfragani...; De motu stellarum...* Nuremberg: Johann Petreius, 1537.

$48,500

First edition, extremely rare, combining two major Arabic works on planetary astronomy: al-Battani's *The Motions of the Stars*, printed here for the first time, and al-Farghani's *Elements of Astronomy*, here in its second printed edition but the first with the additions and geometrical proofs of Regiomontanus.

Two parts in one vol., 4to (200 x 144), ff. [x], 26; 90, with woodcut initials and several woodcut diagrams in text; ff. 51, [1]. Contemporary blind-tooled calf, spine strengthened with paper, very worn.

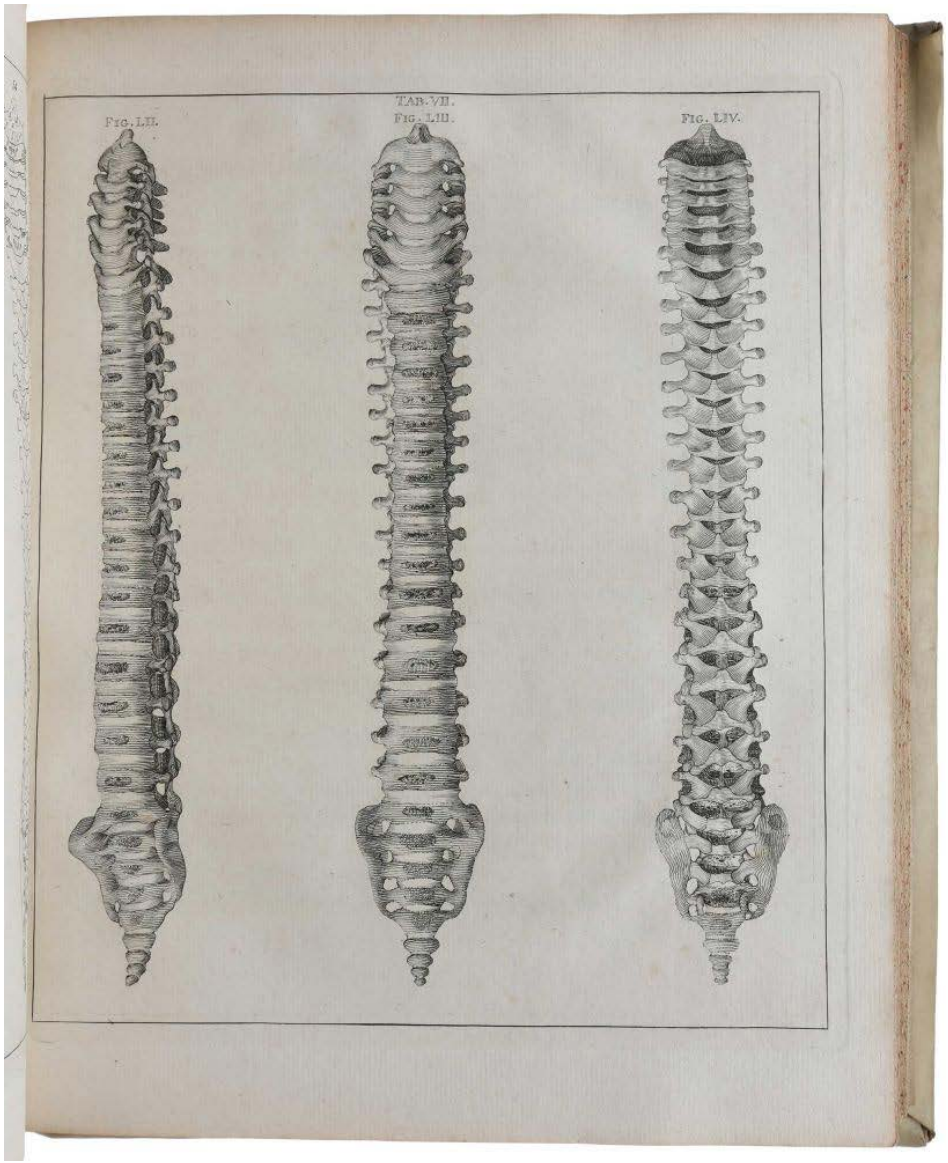
http://sophiararebooks.com/4037

ALFRAGANVS

ratione diuisionis climatum, et quod accidit in eis de diuersitate noctis atq; dici unius, incipiamus narrare de stellis fixis. Et præcedant memoriæ figuræ circulorum et ordinis eorum. Sequamurq; in hoc sententias antiquorum in quibus conuenerunt. Dicamusq; quòd numerus circulorum circundantium uniuersos motus planetarũ atq; stellarum sit 8. ex quibus 7. sunt 7 planetis erraticis attributi, et octauus, q̃ est superior uniuersis stellis fixis, qui est circulus signorum. Et figura horum circulorum, est ut figura intra se positorum inuicem. Eritq; minor omnib9, & propior terræ, sphæra Lunæ, et secunda Mercurij. Tertia est Veneris. Quarta Solis. Quinta Martis. Sexta Iouis. Septima Saturni. Octaua stellarum fixarum.

Hic cadit figura infra posita.

Cuspis autem circuli signorũ, qui est circul9 stellarum fixarum, est cuspis terræ. Cuspides uero cæterarũ stellarum 7, q̃ sunt sphæræ planetarum erratiorũ, sunt remotæ à cuspide terræ in partibus diuersis. Et in unaquaq; harũ sphærarũ 8 est circulus abscindens sphærã per duas medi



The finest descriptive anatomist of his day

ALBINUS, Bernhard Siegfried. *Icones ossium foetus humani.* Leiden: Verbeek, 1737.

$3,200

First edition of this classic work on osteology with 32 plates by the master engraver Jan Wandelaar. "Albinus is particularly remembered for his descriptions of the bones, and this first edition of his treatise on fetal bones is one of his finest atlases. All of the fetal bones are illustrated with great detail and are finely lined in the sixteen plates and sixteen line drawings..." (*Heirs*).

Heirs of Hippocrates 830.

4to (244 x 198 mm), pp [4], 162, [2] and 32 engraved plates. Bound with Index supellectilis anatomicae (1725). Contemporary, unrestored Dutch vellum. A fine copy.

http://sophiararebooks.com/3794

The first book on orthopedics

ANDRY, Nicolas. *L'orthopédie ou l'art de prevenir et de corriger dans les enfans, les difformités du corps.* Paris: Alix; Lambert & Durand, 1741.

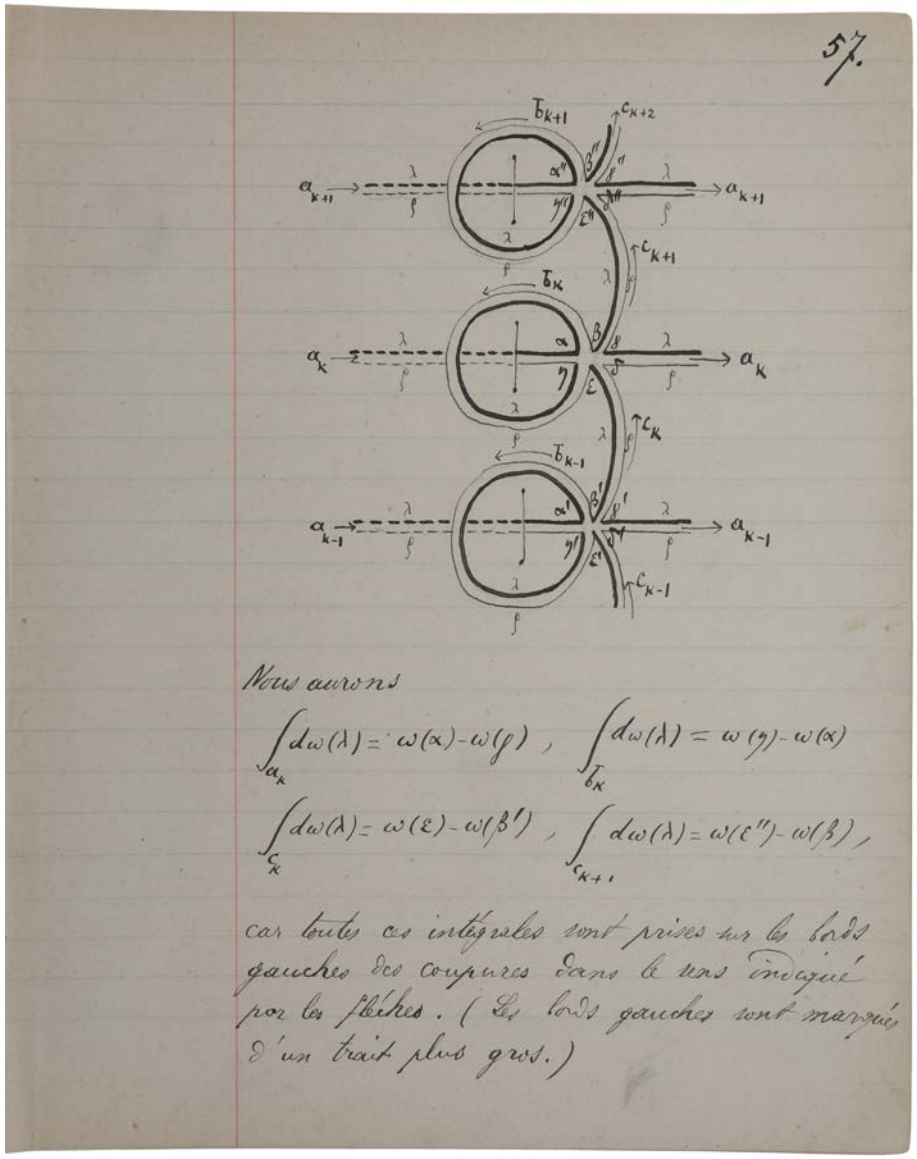
$16,000

Rare first edition, and a very fine copy, of the "first book on orthopedics" (Garrison-Morton). A work "of supreme importance" (Bick). Andry coined the word 'orthopaedics' in this work.

Grolier, *One Hundred Books Famous in Medicine* 42; Lilly, *Notable Medical Books* 113; Norman 55; *Heirs of Hippocrates* 697.

2 vols, 12mo, contemporary calf with richly gilt spines,, pp. [4], 47 [1], i-cxviii [i.e., xcviij] 345 [3], frontispiece, 14 engraved plates; [2] i-v [vi] 365, [5].

http://sophiararebooks.com/3807



The original manuscript for one of his most important works

APPELL, Paul Émile. *Sur les intégrales de fonctions à multiplicateurs et leur application au développement des fonctions abéliennes en séries trigonométriques.* [ca. 1890].

$9,500

Important autograph manuscript in which Appell generalises the theory of Abelian functions, due principally to Abel, Jacobi, Riemann and Weierstrass, to a class of functions he terms 'fonctions à multiplicateurs', and investigates their integrals and Fourier expansions.

Autograph manuscript in 8vo (220 x 175 mm), 278 leaves written on recto page. Undated, but first published in Acta Mathematica 13 (1890).

http://sophiararebooks.com/4293

A landmark in the history of logic and probability

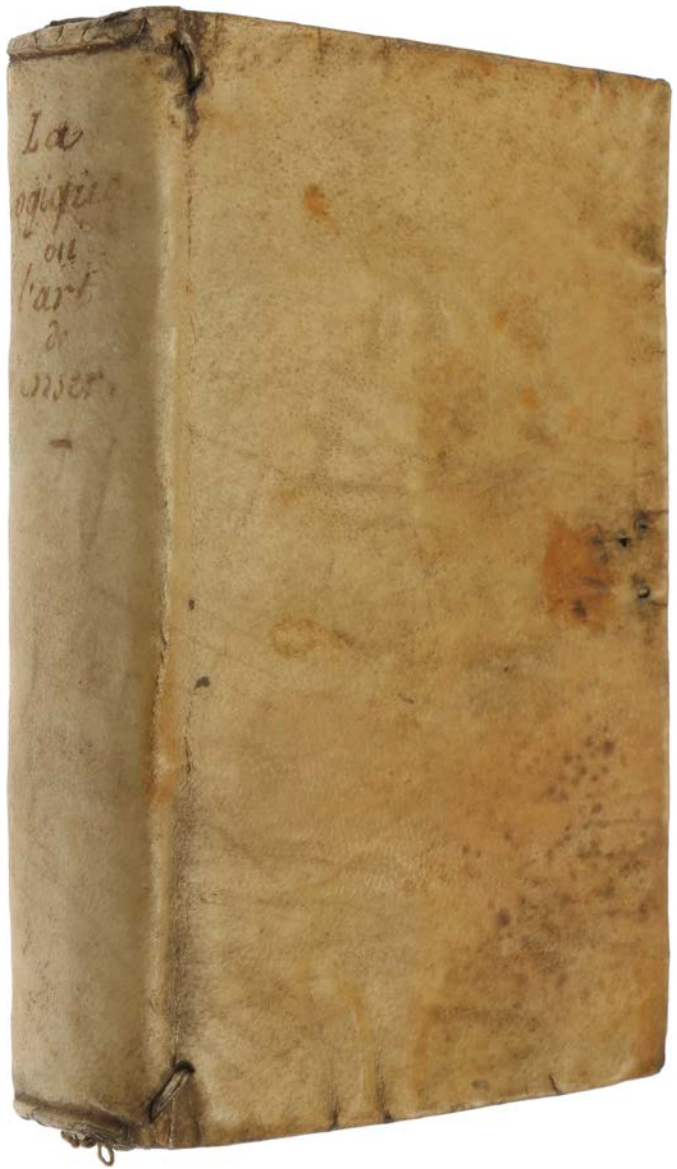
ARNAULD, Antoine & Pierre NICOLE [Blaise PASCAL]. *La Logique ou l'Art de Penser.* Paris: Guignart, Savreux, 1662.

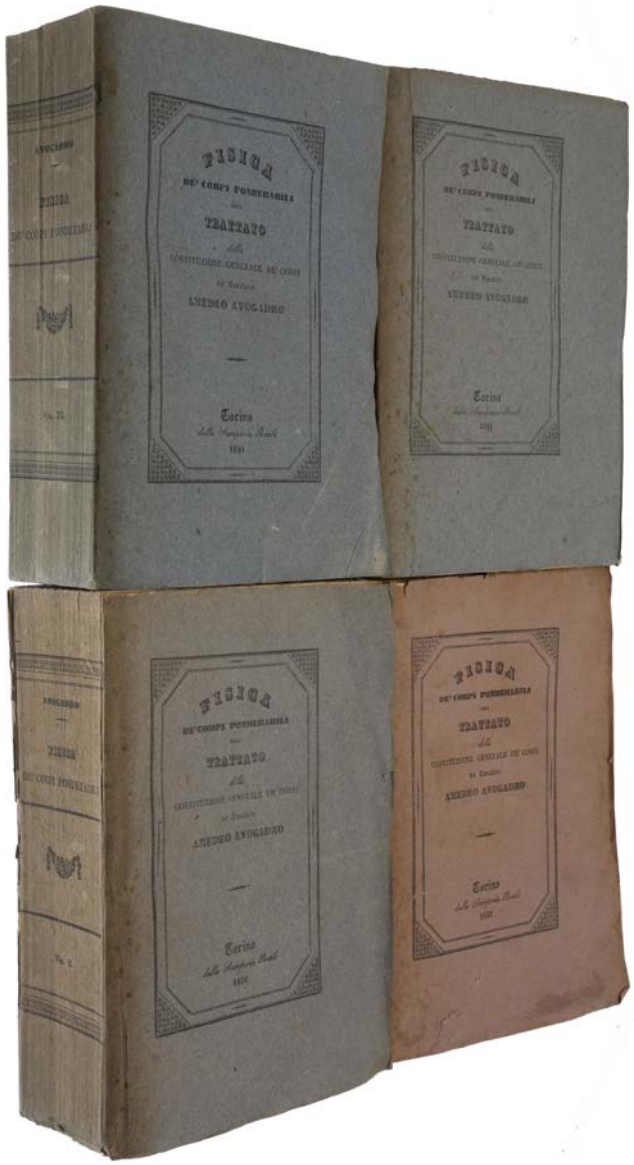
$12,500

First edition, very rare, of the famous 'Port-Royal Logic', "the most influential logic text from Aristotle to the end of the nineteenth century" (*Stanford Encyclopedia of Philosophy*). It is also of fundamental importance in the history of probability, as it contains the earliest printed account of work by Pascal on the subject. Indeed, "it is the first occasion on which 'probability' is actually used in what is identifiably our modern sense, susceptible of numerical measurement" (Hacking).

12mo, pp. 473, [7]. Contemporary vellum (a few leaves damp-stained, but generally very good and completely unrestored).

http://sophiararebooks.com/4476





One of the great rarities of chemistry

AVOGADRO, Amadeo. *Fisica de' Corpi Ponderabili ossia Trattato della Costituzione Generale de' Corpi del Cavaliere.* Turin: Stamperia Reale, 1837-41.

$35,000

First edition of one of the great rarities of chemistry, and especially rare in the original printed wrappers as here. This monumental work is the only large-scale publication of Avogadro (1776-1856), famous for his eponymous hypothesis (1811) that equal volumes of all gases at the same pressure and temperature contain the same number of molecules. "Avogadro also wrote a large book [offered here] which was read with interest by Faraday and contains an account of his hypothesis" (Partington).

4 vols, 8vo, original printed wrappers, uncut, crack in spine of vol. 1, otherwise a very fine set.

http://sophiararebooks.com/4470

Richly illustrated manuscript on physiology

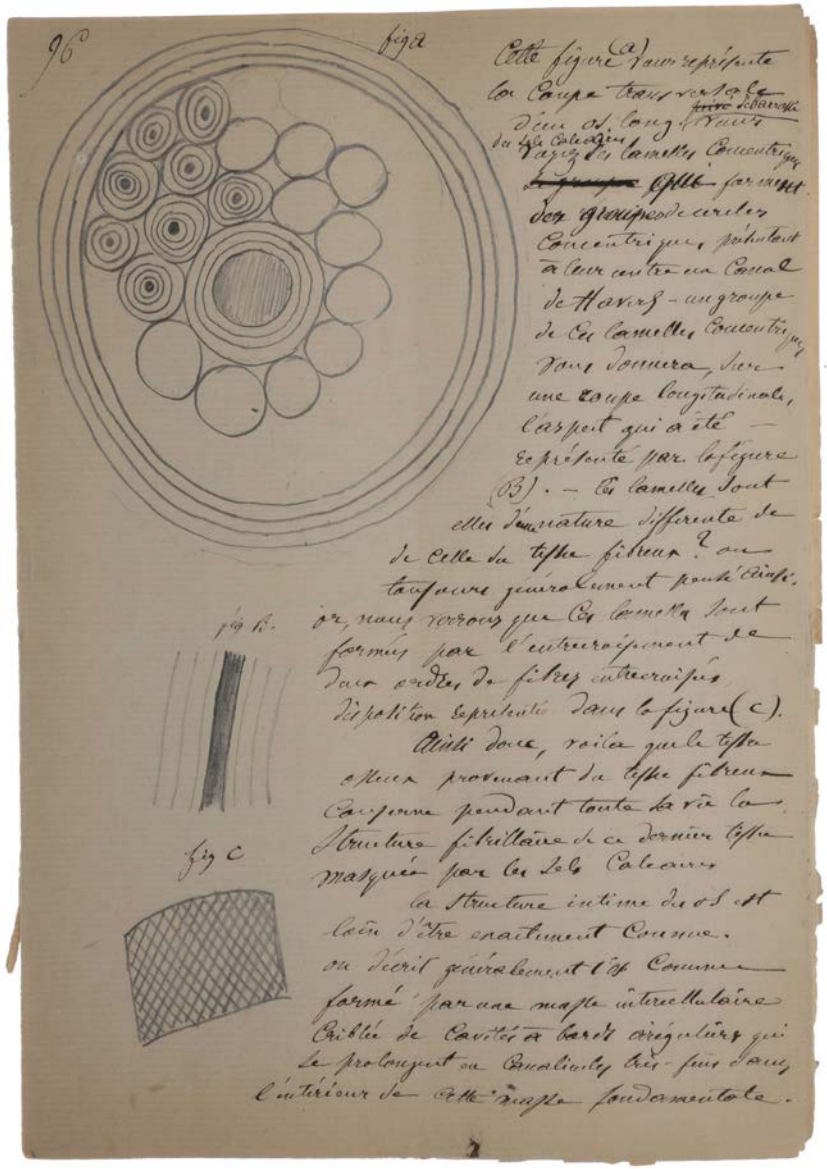
BERNARD, Claude. *Cours de Physiologie.* Paris: [January 1869].

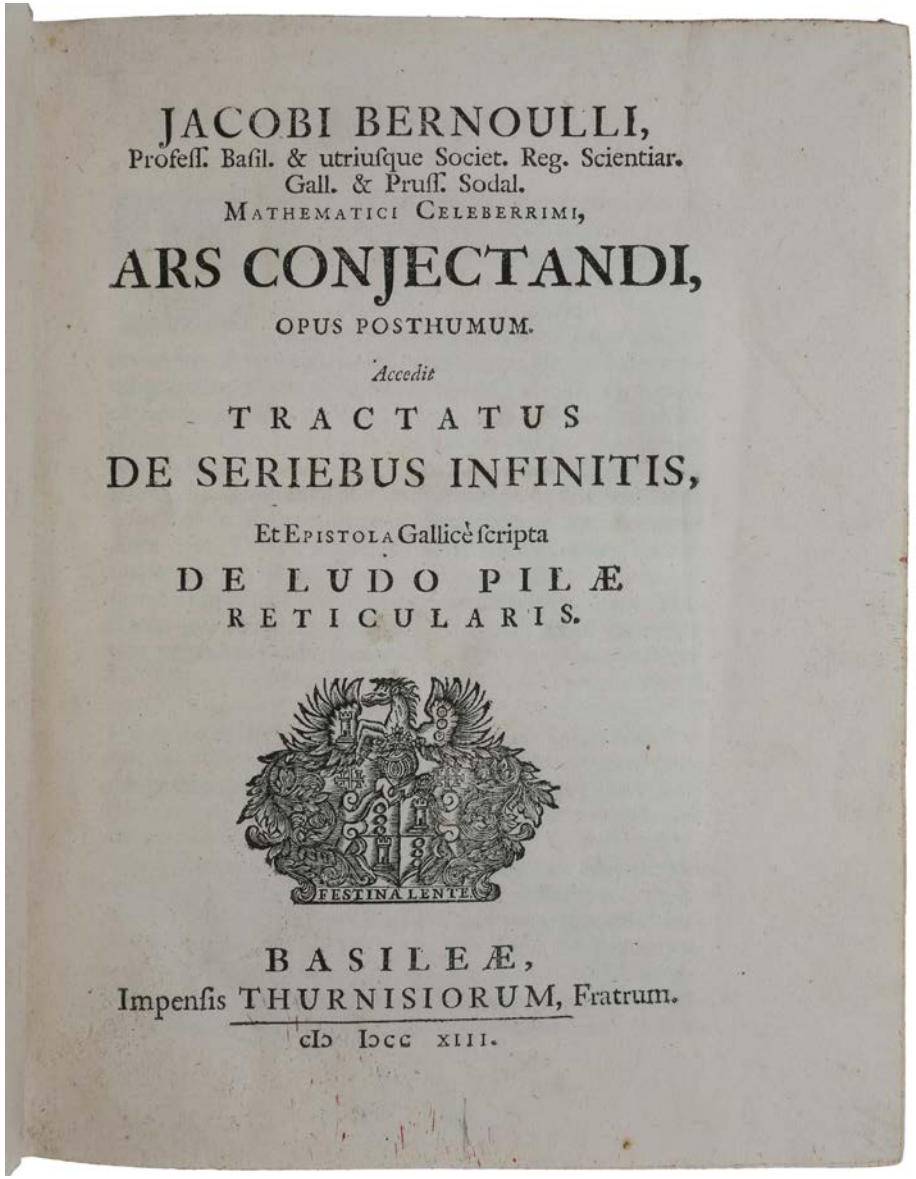
$9,500

Precious unpublished manuscript very likely corresponding to the course on general physiology that Claude Bernard delivered at the Collège de France, or possibly the Muséum national d'Histoire naturelle. It is illustrated with 44 sketches in pencil and ink, including a watercolor, representing tissues and cells. Although several of Bernard's courses at the Sorbonne and at the National Museum of Natural History were published in the *Revue de Cours Scientifiques* and elsewhere, that offered here appears to be unpublished.

Manuscript, 145 pages (285 x 195 mm), written on recto and verso (marginal tears with some minor losses, last leaf with larger tear cauisng more significant loss, repaired with adhesive tape).

http://sophiararebooks.com/4473





JACOBI BERNOULLI,
Profeſſ. Baſil. & utriuſque Societ. Reg. Scientiar.
Gall. & Pruſſ. Sodal.
MATHEMATICI CELEBERRIMI,

ARS CONJECTANDI,

OPUS POSTHUMUM.

Accedit

TRACTATUS
DE SERIEBUS INFINITIS,

Et EPISTOLA Gallicè ſcripta
DE LUDO PILÆ
RETICULARIS.

FESTINA LENTE

BASILEÆ,
Impenſis THURNISIORUM, Fratrum.
cIↃ IↃcc XIII.

A landmark in probabilty theory

BERNOULLI, Jacob. *Ars conjectandi.* Basel: Thurnisiorum, 1713.

$40,000

First edition, an exceptionally fine copy, rare in this condition. "This book marks the unification of the calculus of games of chance and the realm of the probable by introducing the classical measure of probability. Justified by Bernoulli's law of large numbers, it contains a program to mathematize the realm of the probable, including what now is called the social domain." (*Landmark Writtings in Western Mathematics* 6).

PMM 179; Dibner 110; Evans 8; Grolier/Horblit 12; Sparrow 21.

4to, contemporary vellum, pp [4] 1-306, 1-35 [1], printed folding tables between pp. 24-25 and 172-173, folding woodcut diagram after p. 306. An outstanding copy, entirely unrestored.

http://sophiararebooks.com/4063

The first comprehensive comparative anatomy

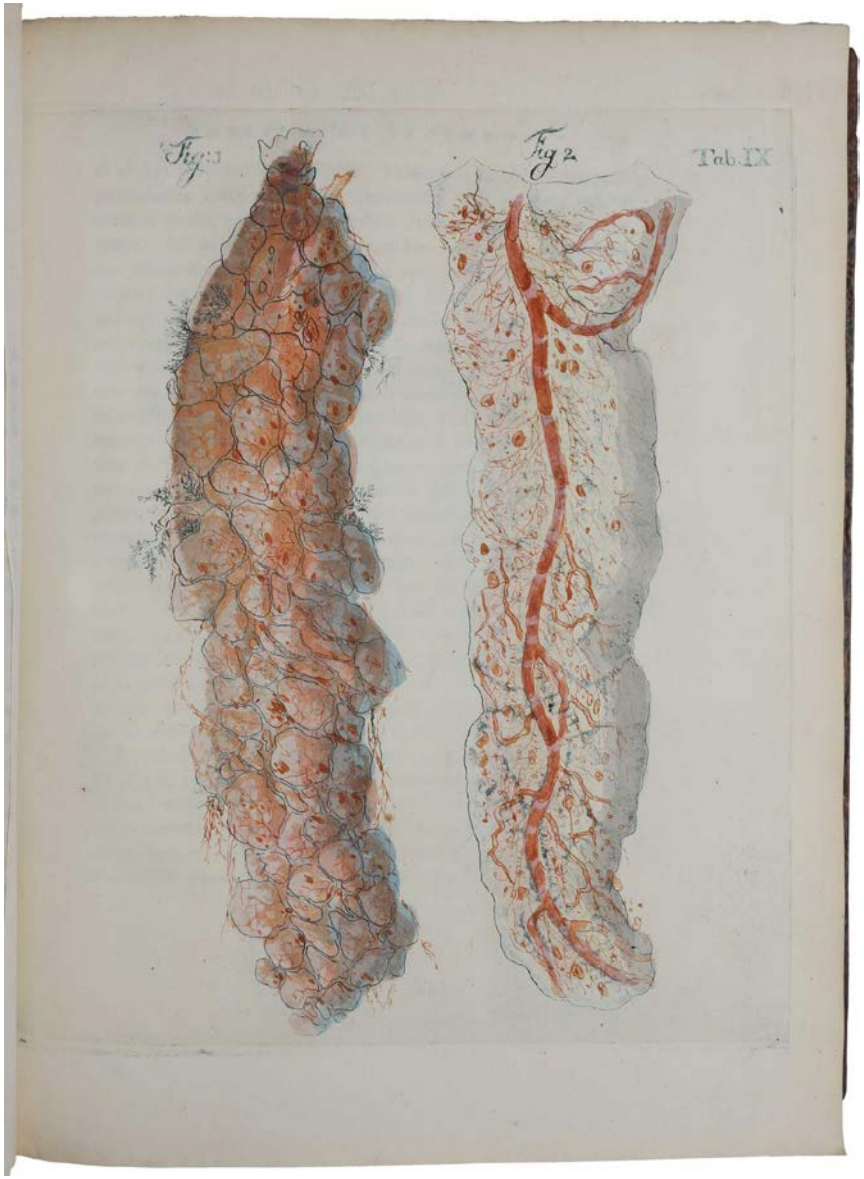
BLASIUS, Gerard. *Miscellanea anatomica, hominis, brutorumque variorum, ...* Amsterdam: Caspar Commelin, 1673.

$9,500

An exceptionally fine copy, in contemporary red morocco, of the first comprehensive manual of comparative anatomy based on the original and literary researches of a working anatomist... Blasius's observation on human anatomy are followed by eighty-five pages devoted to the anatomy of the dog (*Anatome Canis*, pages 168 to 252), which "is the first comprehensive and original treatise on a verterbrate since the publication of Ruini's volume on the horse in 1598" (Cole)."

8vo (153 x 94 mm), contemporary red morroco with richly gilt spine (completley unrestored), pp 16 [including frontispiece], 309, 11 and 18 engraved plates. A very fine copy.

http://sophiararebooks.com/4468



The Bleuland Cabinet

BLEULAND, Jan. *Otium academicum, continens descriptionem speciminum nonnullarum partium corporis humani et animalium subtilioris anatomiae...* Utrecht: Altheer, 1828.

$14,500

First edition, extremely rare, of Bleuland's last work, the beautiful catalogue of the author's collection of more than 2000 anatomical and pathological preparations, on display at the Anatomical Museum in Utrecht. ABPC/RBH record only a single copy (1984); COPAC records copies at Royal College of Surgeons and Wellcome only.

Three parts. 4to (280 x 213 mm), pp. [iv], viii, [vi], 93 and 24 coloured plates; pp. 51 and 12 coloured plates; pp. 160 and 36 plates of which one is coloured. Contemporary calf. A fine copy.

http://sophiararebooks.com/3917

'God does not play dice'

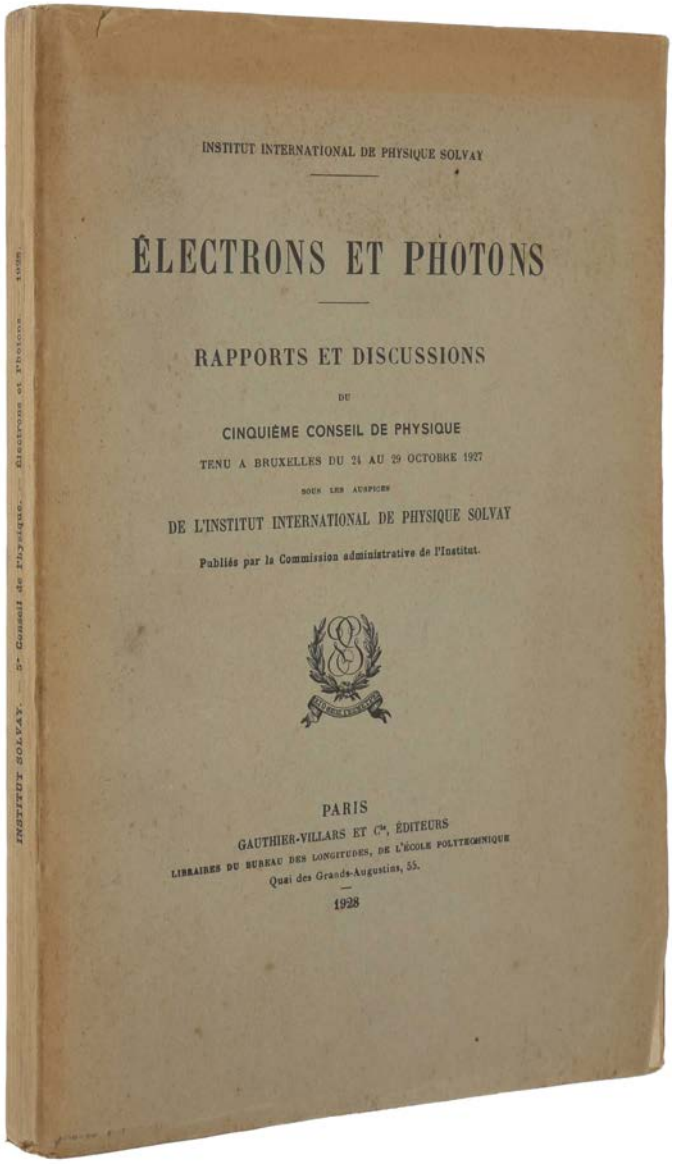
BOHR, Niels; EINSTEIN, Albert; et al. *Électrons et Photons.* Paris: Gauthier Villars, 1928.

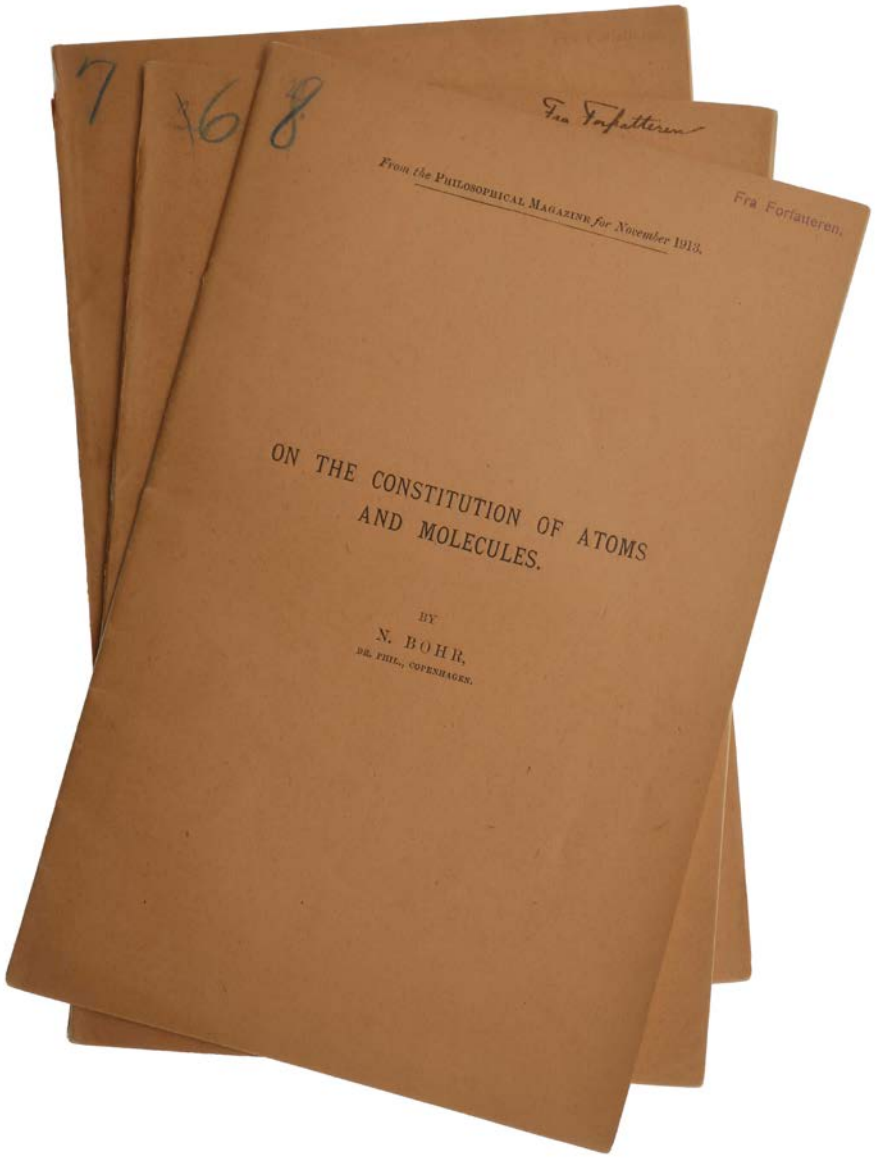
$5,000

First edition of the proceedings of the 5th Solvay Congress, where the debate between Bohr and Einstein on the consistency and completeness of quantum mechanics began. It was at this, the most famous of the Solvay conferences, that Einstein, disenchanted with Heisenberg's uncertainly principle, made his famous remark that "God does not play dice," to which Niels Bohr replied, "Einstein, stop telling God what to do!" Seventeen of the twenty-nine attendees were or became Nobel Prize winners.

8vo, pp. viii, 289, with frontispiece portrait of Lorentz. Uncut and unopened in the original printed wrappers.

http://sophiararebooks.com/4333





The birth of modern atomic physics

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

$55,000

Extremely rare author's presentation offprints of his great trilogy, "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).

8vo, original wrappers, first part inscribed in Bohr's hand, second and third part with his rubberstamp 'Fra Forfatteren' (i.e, 'From the author').

http://sophiararebooks.com/3293

Boolean algebra

BOOLE, George. *The mathematical analysis of logic, being an essay towards a calculus of deductive reasoning.* Cambridge: Macmillan, Barclay & Macmillan, 1847.

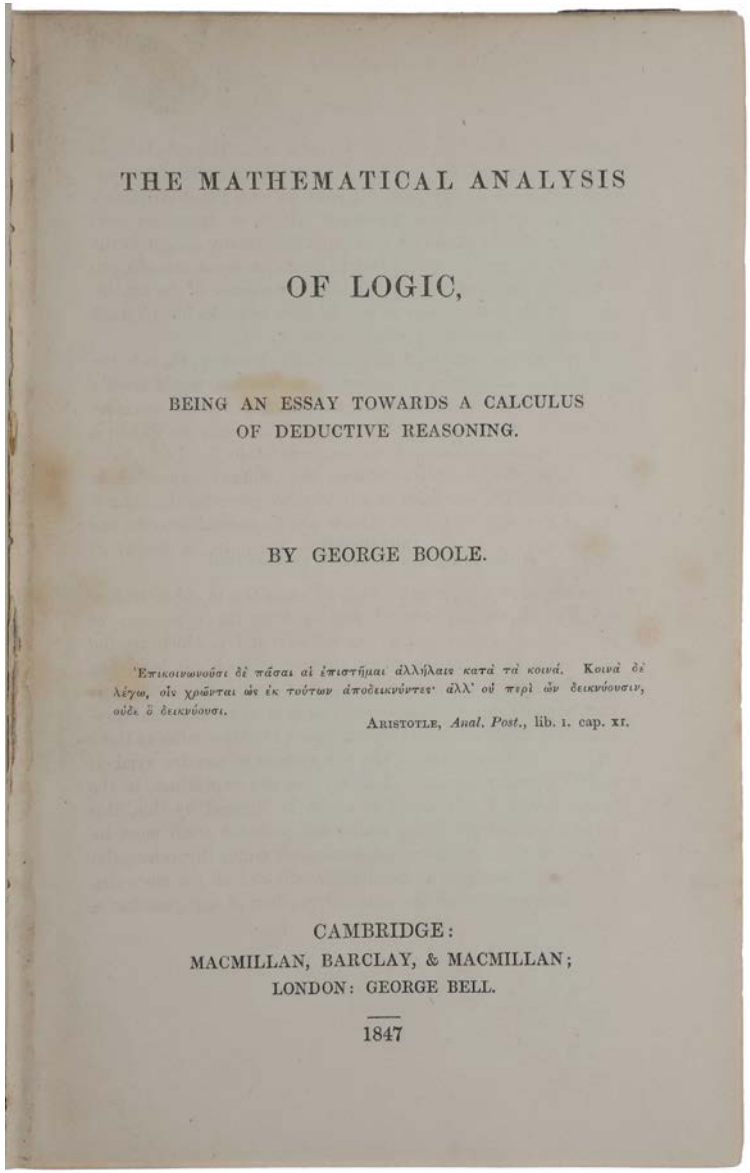
$38,000

First edition, very rare in commerce, of Boole's first book, the birth of modern symbolic logic and the first presentation of 'Boolean algebra' – this is the copy of the great economist John Maynard Keynes (1883-1946).

Landmark Writings in Western Mathematics 36.

8vo, pp. [ii], [1-2], 3-82, errata slip tipped onto title verso, interleaved with blanks throughout. 19th-century half-calf.

http://sophiararebooks.com/4294



THE MATHEMATICAL ANALYSIS

OF LOGIC,

BEING AN ESSAY TOWARDS A CALCULUS
OF DEDUCTIVE REASONING.

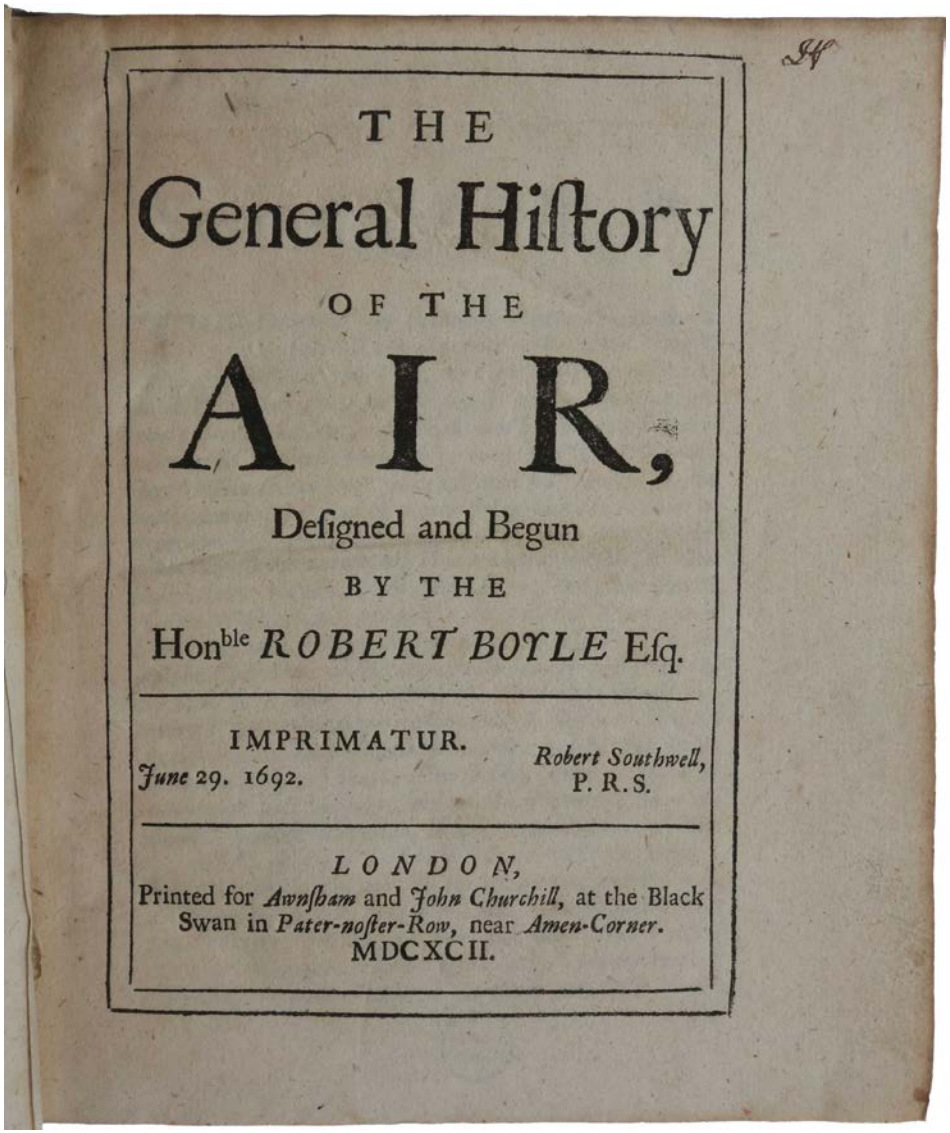
BY GEORGE BOOLE.

Ἐπικοινωνοῦσι δὲ πᾶσαι αἱ ἐπιστῆμαι ἀλλήλαις κατὰ τὰ κοινά. Κοινὰ δὲ λέγω, οἷς χρῶνται ὡς ἐκ τούτων ἀποδεικνύντες· ἀλλ' οὐ περὶ ὧν δεικνύουσιν, οὐδὲ ὃ δεικνύουσι.

ARISTOTLE, *Anal. Post.*, lib. I. cap. XI.

CAMBRIDGE:
MACMILLAN, BARCLAY, & MACMILLAN;
LONDON: GEORGE BELL.

1847



THE

General Hiſtory

OF THE

AIR,

Deſigned and Begun

BY THE

Hon^ble *ROBERT BOYLE* Eſq.

IMPRIMATUR.

June 29. 1692. *Robert Southwell*, P. R. S.

LONDON,

Printed for *Awnſham* and *John Churchill*, at the Black Swan in *Pater-noſter-Row*, near *Amen-Corner*.

MDCXCII.

First clear statement of the kinetic theory of gases

BOYLE, Robert; [LOCKE, John]. *The General History of the Air.* London: Awnsham and Churchill, 1692.

$12,000

First edition of this rare work on the nature of gases, seen through the press by Boyle's friend John Locke and containing some of Locke's own early meteorological observations. The product of Boyle's life's work on gases, the *General History* "is of special interest in that it sums up his ultimate conclusions" (Fulton). The work is of considerable importance in the history of science – not only did the views Boyle expressed here become the basis for the phlogiston theory of combustion, it also contained the first clear statement of the kinetic theory of gases.

4to, pp. xii, 259, [1], woodcut diagrams, contemporary English calf. A fine copy.

http://sophiararebooks.com/4046

Circulation of the blood

CESALPINO, Andrea. *Peripateticarum Quaestionum Libri Quinque.* Venice: Giunta, 1571.

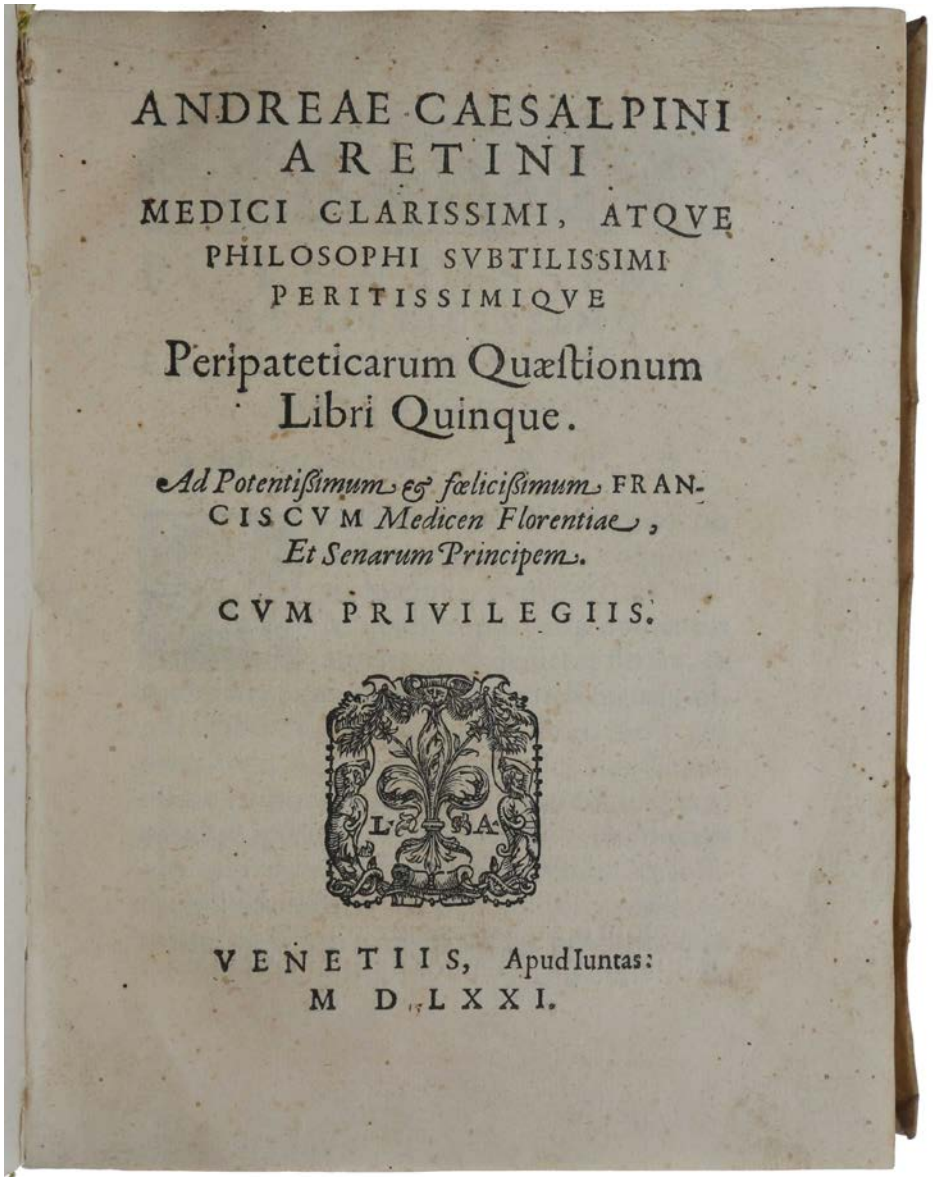
$120,000

First edition, of the highest rarity, one of the great precursors to Harvey's exposition on blood circulation. In this, his first published work, Cesalpino coined the phrase 'circulation of the blood' (folio 111) and provided the theoretical basis for Harvey's experimental and quantitative treatment in *De motu cordis* (1628). "Cesalpino preceded Harvey in the discovery of the concept of the circulation, and Harvey must have known of his ideas" (G&M).

Lilly, *Notable Medical Books* 34; Norman 430; Friedman 29.

4to, ff. [xiv], 128. Contemporary limp vellum. An exceptionally fine and crip copy, entirely unrestored.

http://sophiararebooks.com/4031

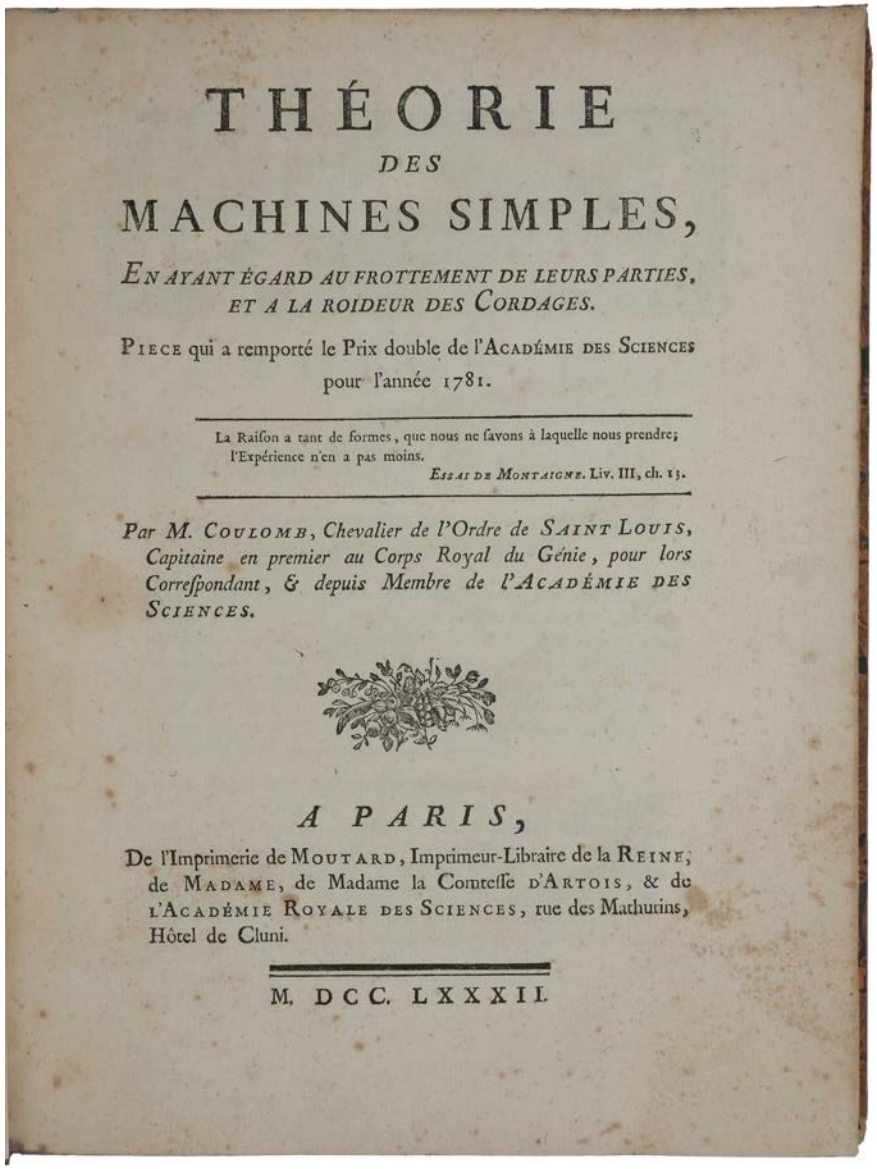

ANDREAE CAESALPINI
ARETINI
MEDICI CLARISSIMI, ATQVE
PHILOSOPHI SVBTILISSIMI
PERITISSIMIQVE

Peripateticarum Quæstionum
Libri Quinque.

Ad Potentißimum & fœliciſsimum FRANCISCVM *Medicen Florentiæ, Et Senarum Principem.*

CVM PRIVILEGIIS.

VENETIIS, Apud Iuntas:
M D LXXI.



THÉORIE
DES
MACHINES SIMPLES,
EN AYANT ÉGARD AU FROTTEMENT DE LEURS PARTIES, ET A LA ROIDEUR DES CORDAGES.
PIECE qui a remporté le Prix double de l'ACADÉMIE DES SCIENCES pour l'année 1781.

La Raiſon a tant de formes, que nous ne ſavons à laquelle nous prendre; l'Expérience n'en a pas moins.
ESSAI DE MONTAIGNE. Liv. III, ch. 13.

Par M. COULOMB, Chevalier de l'Ordre de SAINT LOUIS, Capitaine en premier au Corps Royal du Génie, pour lors Correſpondant, & depuis Membre de l'ACADÉMIE DES SCIENCES.

A PARIS,
De l'Imprimerie de MOUTARD, Imprimeur-Libraire de la REINE, de MADAME, de Madame la Comteſſe D'ARTOIS, & de l'ACADÉMIE ROYALE DES SCIENCES, rue des Mathurins, Hôtel de Cluni.

M. DCC. LXXXII.

Created the science of friction

COULOMB, Charles Augustin. *Théorie des Machines simples, en ayant égard au frottement de leurs parties et a la roideur des Corages.* Paris: Moutard, 1782.

$13,500

Extremely rare offprint, with imprint three years before publication in journal form, of this important memoir in which Coulomb created the science of friction. "Coulomb's most celebrated study, one that brought him immediate acclaim, was Théorie des machines simples, his prize-winning friction study.

Norman 526 (journal issue from 1785); Roberts & Trent, 82 (1821 book edition).

4to, pp [1-3] 4-172, 5 plates, contemporary half calf over marbled boards. A very nice and completely unrestored copy.

http://sophiararebooks.com/4273

PMM 261 - The Atomic Theory

DALTON, John. *A New System of Chemical Philosophy.* Manchester: Russell for Bickerstaff, 1808-1810-1827.

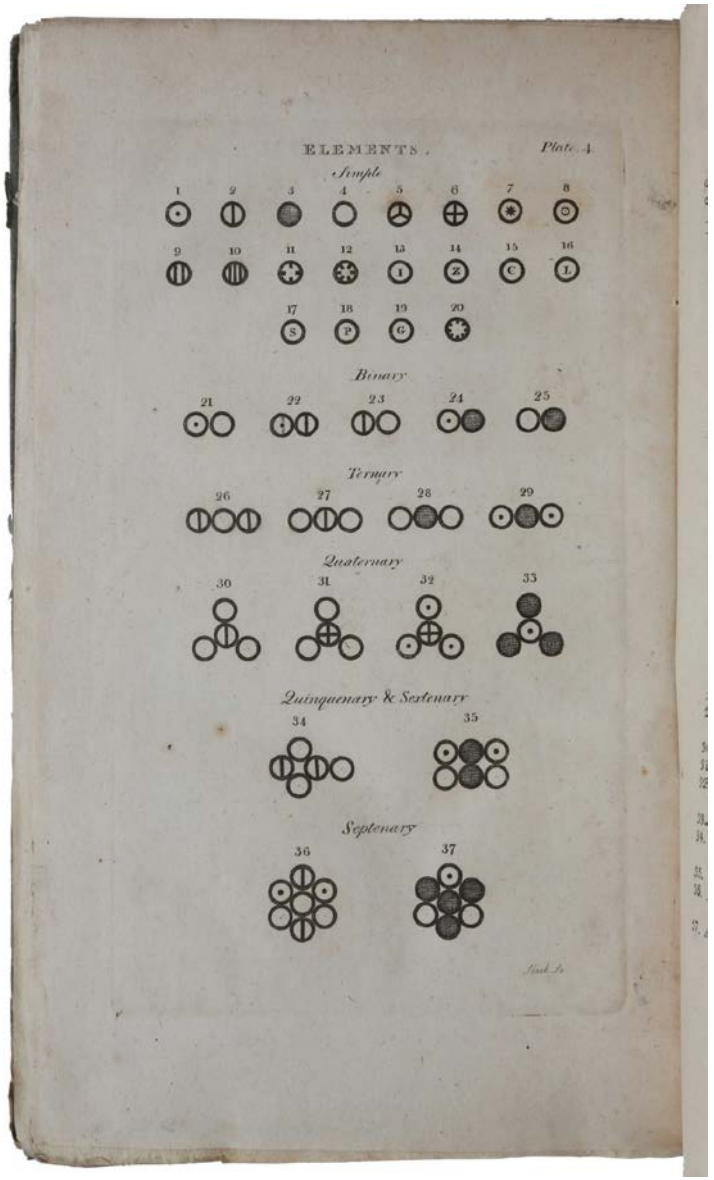
$42,000

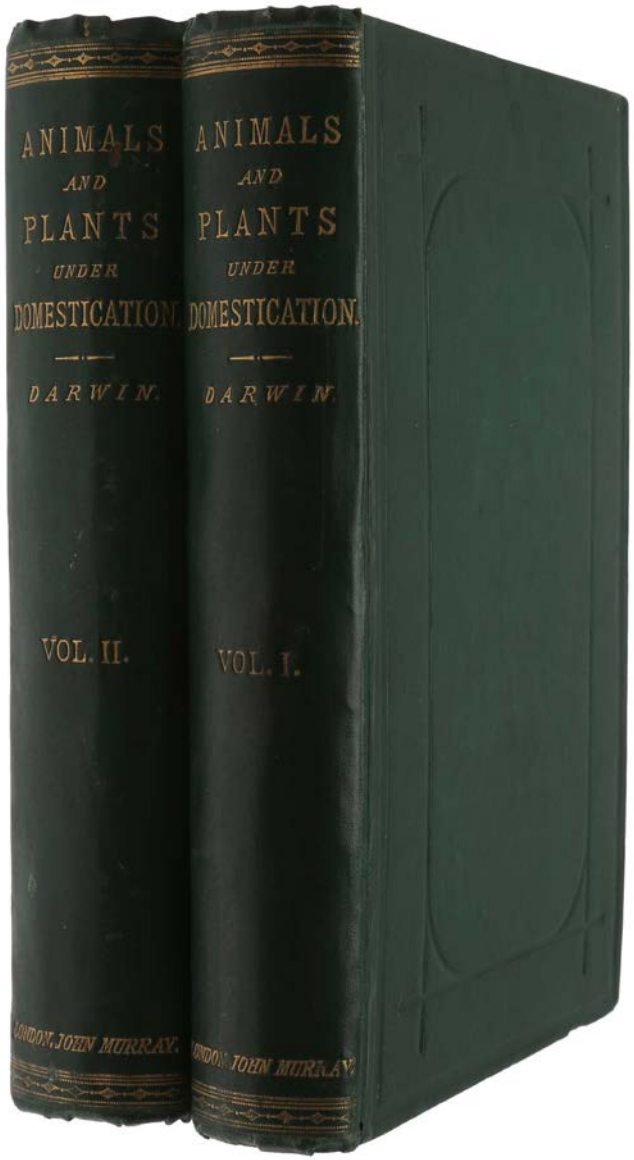
First edition of Dalton's classic work on the atomic theory of matter, very rare when complete with all three parts in the original boards with the original printed spine labels. "Dalton reconstructed Newton's speculations on the structure of matter, and, applying them in a new form to chemistry, gave Lavoisier's reformation of that science a deeper significance" (PMM).

PMM 261; Horblit 22; Dibner 44; Evans 54; Sparrow 47.

Two vols. in three, 8vo, pp. vi, [2]. 220; [8], 221-560; xii, 357, [3], with 8 plates. uncut and partially unopened. Original publisher's boards with printed paper spine labels.

http://sophiararebooks.com/3950





Presentation copy - 'survival of the fittest'

DARWIN, Charles. *The Variation of Animals and Plants under Domestication.* London: John Murray, 1868.

$35,000

First edition, first issue, presentation copy, trimmed for presentation and with a slip of paper with inscription "From the Author" **in Darwin's hand** pasted to the front free endpaper. The term "survival of the fittest" first appeared in the *Variation* (vol. 2, p. 89), preceding its first use in the fifth edition of the *Origin of Species* (1869). "This represents the only section of Darwin's big book on the origin of species which was printed in his lifetime and corresponds to its first two intended chapters" (Freeman).

Two volumes, demy octavo. Special presentation binding of original publisher's green cloth

http://sophiararebooks.com/4100

PMM 129 - 'Cogito, ergo, sum'

DESCARTES, René. *Discours de la methode pour bien conduire sa raison, & chercher la verité dans les sciences.* Leiden: Maire, 1637.

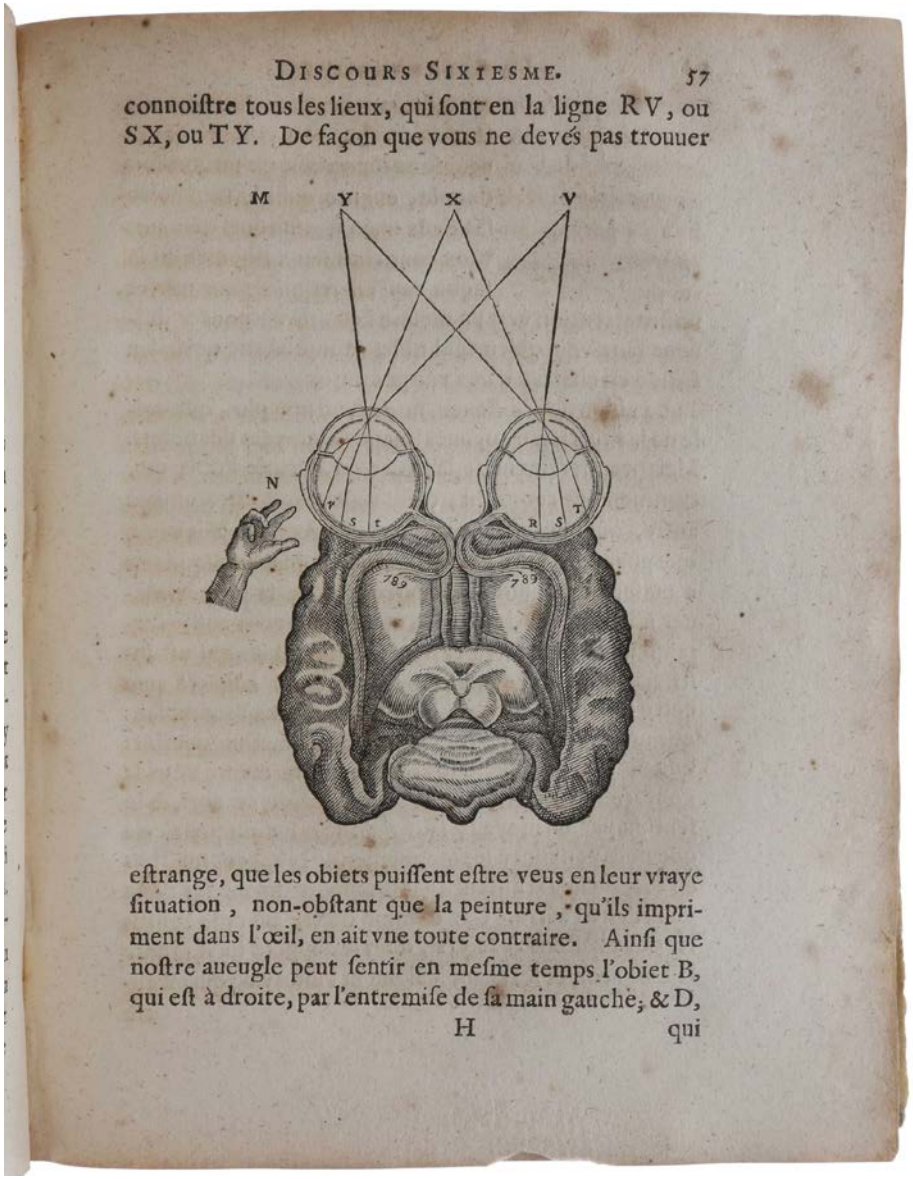
$125,000

First edition, a fine copy, of Descartes' first and most famous work. Following the *Discours*, now celebrated as one of the canonical texts of Western philosophy, are three 'Essais', the last of which, *La Géométrie*, contains the birth of analytical or co-ordinate geometry, "of epoch-making importance" (Cajori), designated by John Stuart Mill as "the greatest single step ever made in the progress of the exact sciences".

PMM 129; Grolier/Horblit 24; Dibner 81; Evans 5; Sparrow 54.

4to (201 x 155 mm), contemporary vellum, 264 leaves, some gatherings a little browned, but otherwise a fine unrestored copy.

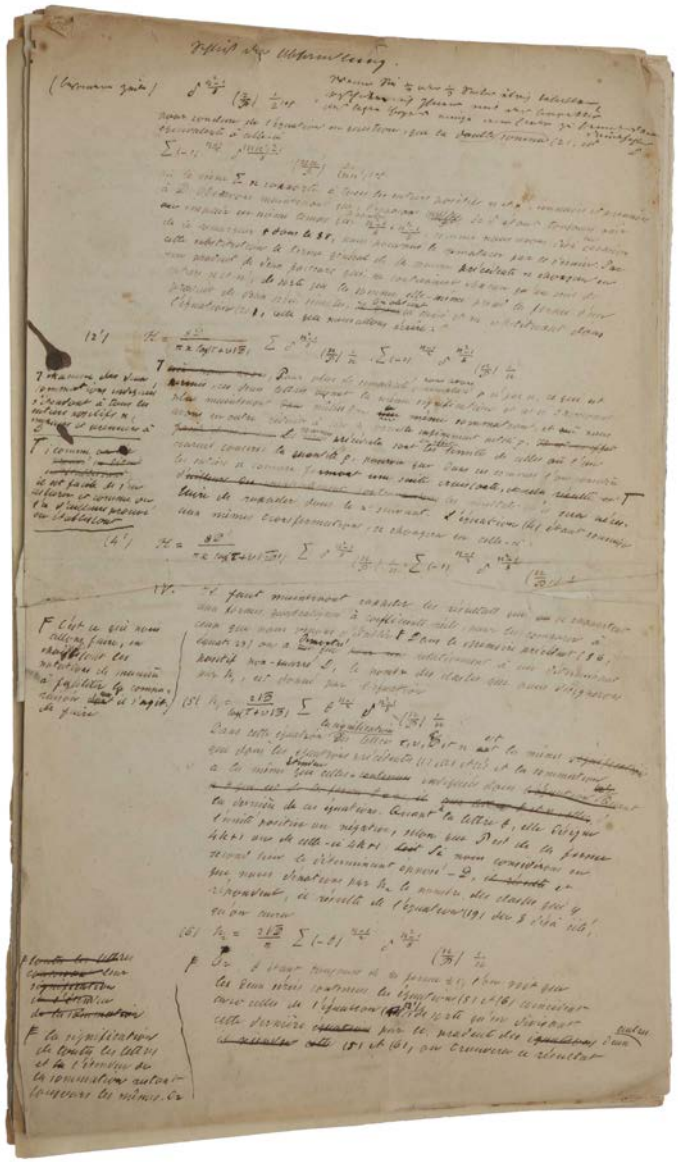
http://sophiararebooks.com/3990


DISCOURS SIXIESME. 57

connoiſtre tous les lieux, qui ſont en la ligne RV, ou SX, ou TY. De façon que vous ne devés pas trouuer

eſtrange, que les obiets puiſſent eſtre veus en leur vraye ſituation, non-obſtant que la peinture, qu'ils impriment dans l'œil, en ait vne toute contraire. Ainſi que noſtre aueugle peut ſentir en meſme temps l'obiet B, qui eſt à droite, par l'entremiſe de ſa main gauche, & D,

H qui



The original manuscript for a major paper by the creator of analytic number theory

DIRICHLET, Peter Gustav. *Recherches sur les formes quadratiques à coefficients et à indetérminées complexes. Signed autograph working manuscript (in the author's hand).*

$37,500

A remarkable survival, this is the autograph working manuscript of one of Dirichlet's most important papers. It was published in *Crelle's Journal* in 1842. The great advances of mathematics in Germany during the first half of the nineteenth century are to a predominantly large extent associated with the pioneering work of Gauss, Jacobi, and Dirichlet. It is exceptionally rare for a working manuscript by a mathematician of Dirichlet's importance to appear on the market.

37 leaves, numerous additions, deletions and corrections, all of which were incorporated into the published article.

http://sophiararebooks.com/4484

The light quantum hypothesis

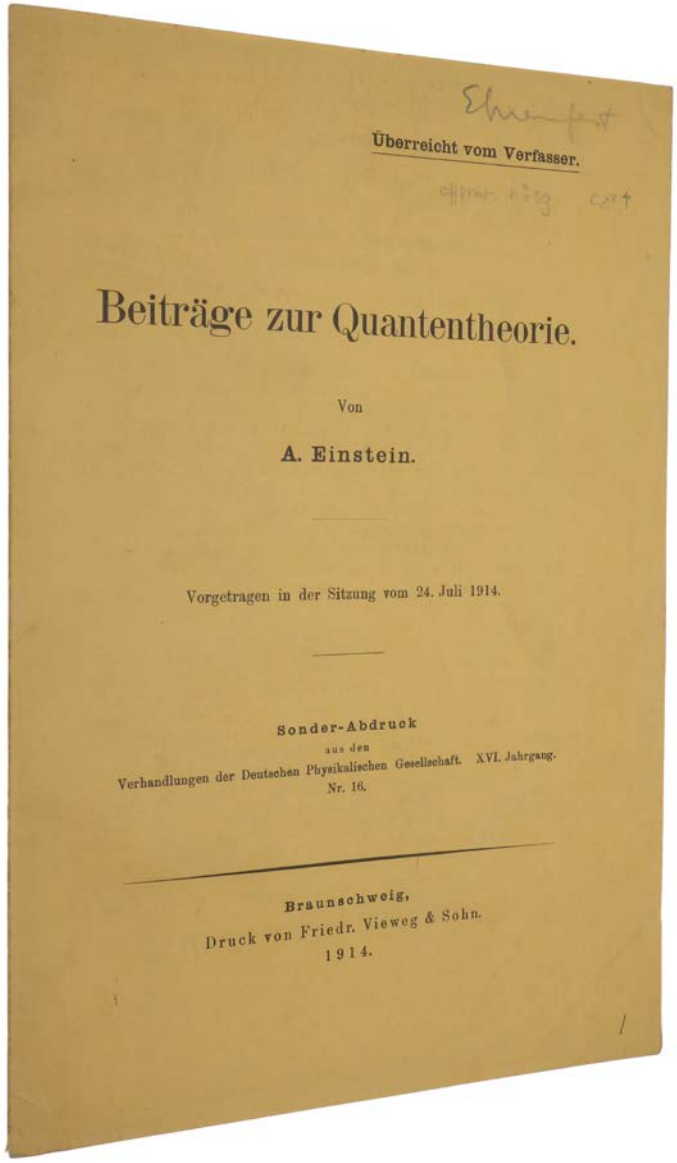
EINSTEIN, Albert. *Beiträge zur Quantentheorie. Braunschweig: Vieweg & Sohn, 1914.*

$18,500

First edition, author's presentation offprint, signed and annotated by one of Einstein's closest friends the physicist Paul Ehrenfest, of this crucial paper in which Einstein uses the light quantum hypothesis to give new derivations of Planck's radiation law and Nernst's third law of thermodynamics. His success in this paper in deriving two of the most important achievements of quantum theory using the light quantum hypothesis re-established his confidence in that hypothesis, and he began to think again about the interaction between radiation and matter, resulting two years later in his great papers on the quantum theory of radiation.

8vo, pp. [1:blank] 820-828. Original printed wrappers. Annotations by Ehrenfest on final leaf. A very fine copy.

http://sophiararebooks.com/4295


Ehrenfest

Überreicht vom Verfasser.

Beiträge zur Quantentheorie.

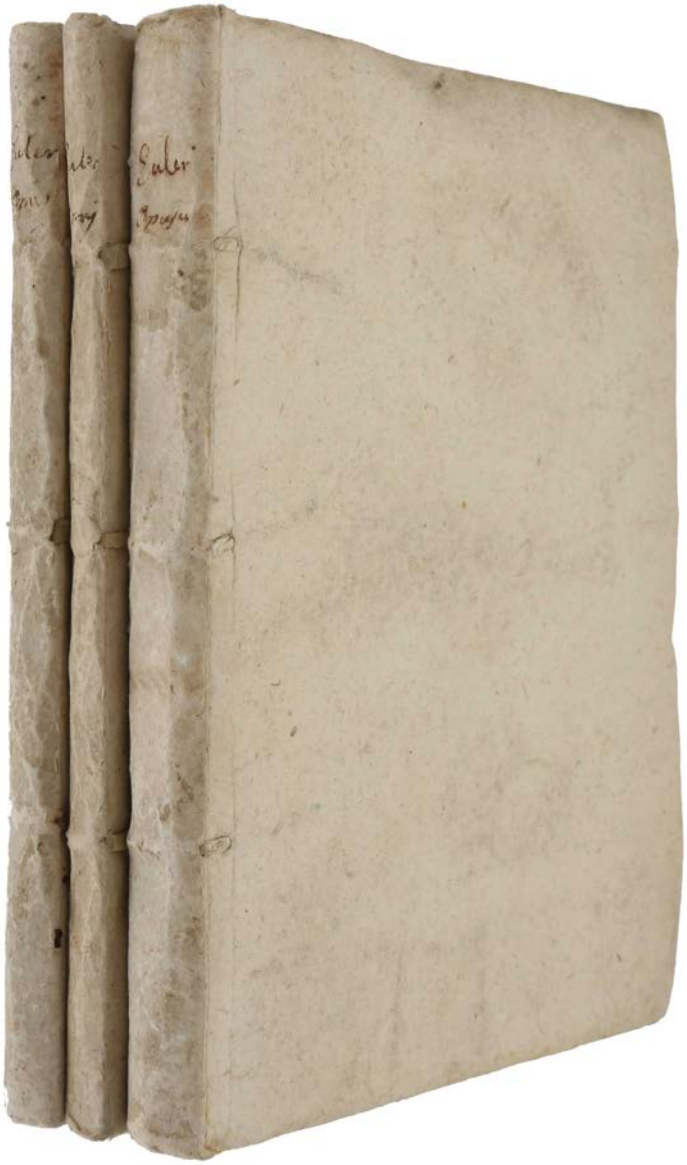
Von

A. Einstein.

Vorgetragen in der Sitzung vom 24. Juli 1914.

Sonder-Abdruck
aus den
Verhandlungen der Deutschen Physikalischen Gesellschaft. XVI. Jahrgang.
Nr. 16.

Braunschweig,
Druck von Friedr. Vieweg & Sohn.
1914.



The wave-particle duality

EULER, Leonhard. *Opuscula Varii Argumenti; Conjectura Physica circa Propagationem soni ac luminis; Opusculorum continens Novam theoriam magnetis.* Berlin: Spener, 1746; 1750; 1751.

$6,500

First edition, an outstanding copy uncut in the original boards, of Euler's three-volume *Opuscula varii argumenti* (although only the first volume bears this title), a collection of thirteen tracts, all except one published here for the first time. The most important is the first printing of Euler's major treatise on light, *Nova theoria lucis et colorum* (pp. 169-244 of Tom. 1). According to Casper Hakfoort the wave-particle duality debate in optics really began with Euler's publication of this work.

Three vols., 4to, pp. [ii], 300; [ii], 166, with one plate; [ii], 165, with 5 plates. Original boards, uncut.

http://sophiararebooks.com/4420

Four extremely rare first editions by the father of embryology

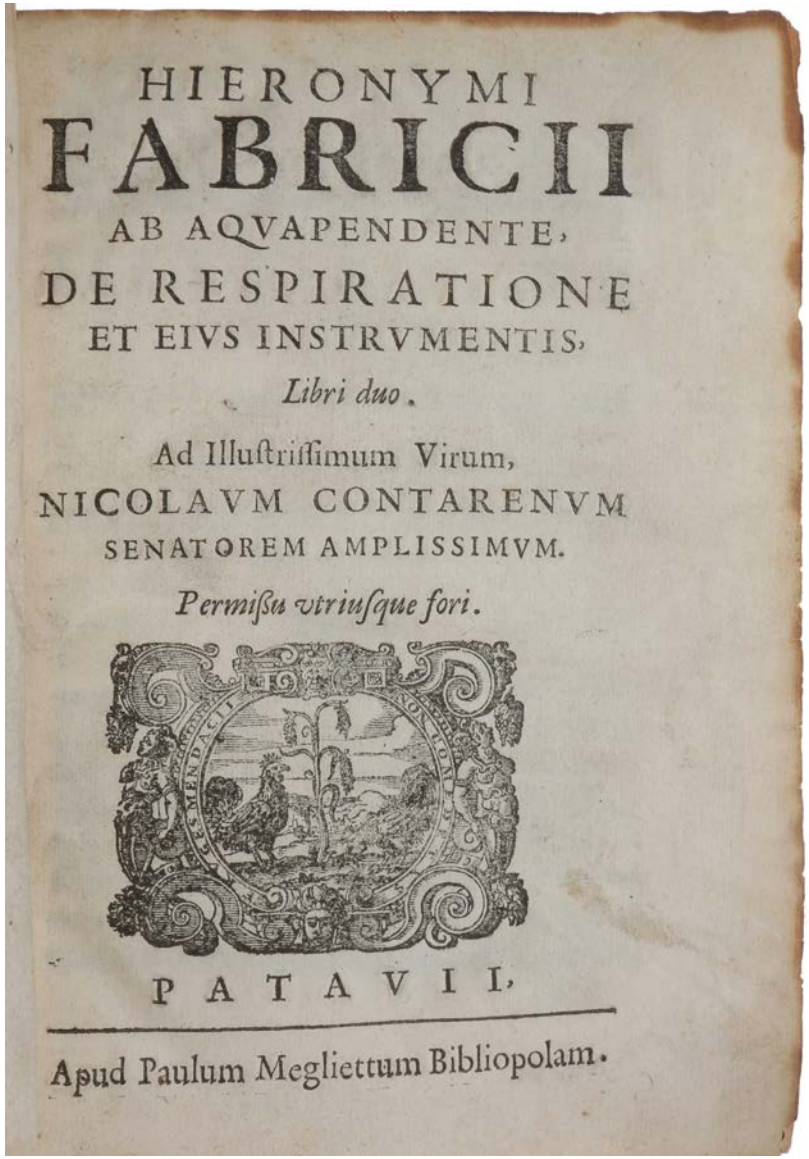
FABRICI, Girolamo. *De respirationes & eius Instrumentis; De gula, ventriculo, intestinis tractatus; De motu locali animalium; De musculi artificio, & ossium. De articulationibus.* Padua: Meglietti, Pasquati, Martinis, Bertellio, 1615-18-18-14.

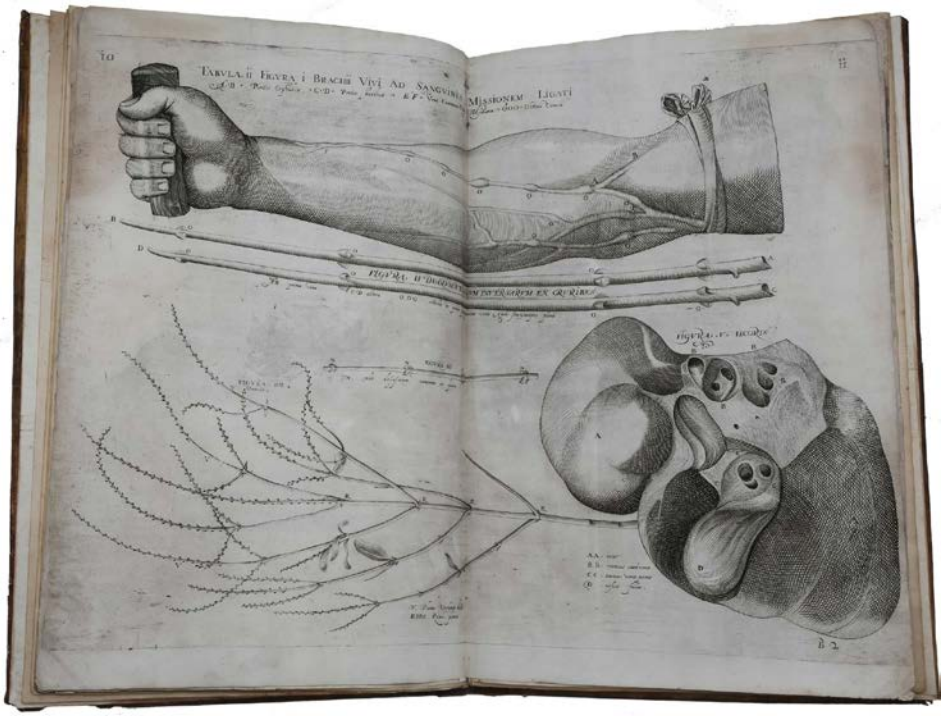
$12,000

First editions, all very rare, of four early works on animal motion and physiology by the outstanding Renaissance anatomist and surgeon and founder of embryology. They were issued separately from 1614 to 1618; after Fabrici's death in 1619, the treatises were reissued together by Meglietti with a general title page dated 1625. The present volume appears to be a collection of the original works, issued before the addition of a general title.

4to. Contemporary blind-ruled calf (rather worn).

http://sophiararebooks.com/4467


HIERONYMI
FABRICII
AB AQVAPENDENTE,
DE RESPIRATIONE
ET EIVS INSTRVMENTIS,
Libri duo.
Ad Illuſtriſſimum Virum,
NICOLAVM CONTARENVM
SENATOREM AMPLISSIMVM.
Permiſſu vtriuſque fori.
PATAVII,
Apud Paulum Megliettum Bibliopolam.



The first systematic study of the venous valves

FABRICI, Girolamo. *De venarum ostiolis.* Padua: Lorenzo Pasquati, 1603.

$85,000

First edition, very rare first separate issue, "of the first systematic study of the structure, distribution and position of the venous valves... Although Fabrici's analysis was in part erroneous, *De venarum ostiolis* became his most influential work, in that it inspired his student, William Harvey, to conceptualize the circulation of the blood " (Norman).

Grolier, *One Hundred Books Famous in Medicine* 27b (27a being Harvey's *De motu cordis* 1628); G&M 757; Norman 750.

Folio (415 x 274 mm), pp. [ii], 23, [1], with one double-page and 7 full-page illustrations, contemporary vellum.

http://sophiararebooks.com/3909

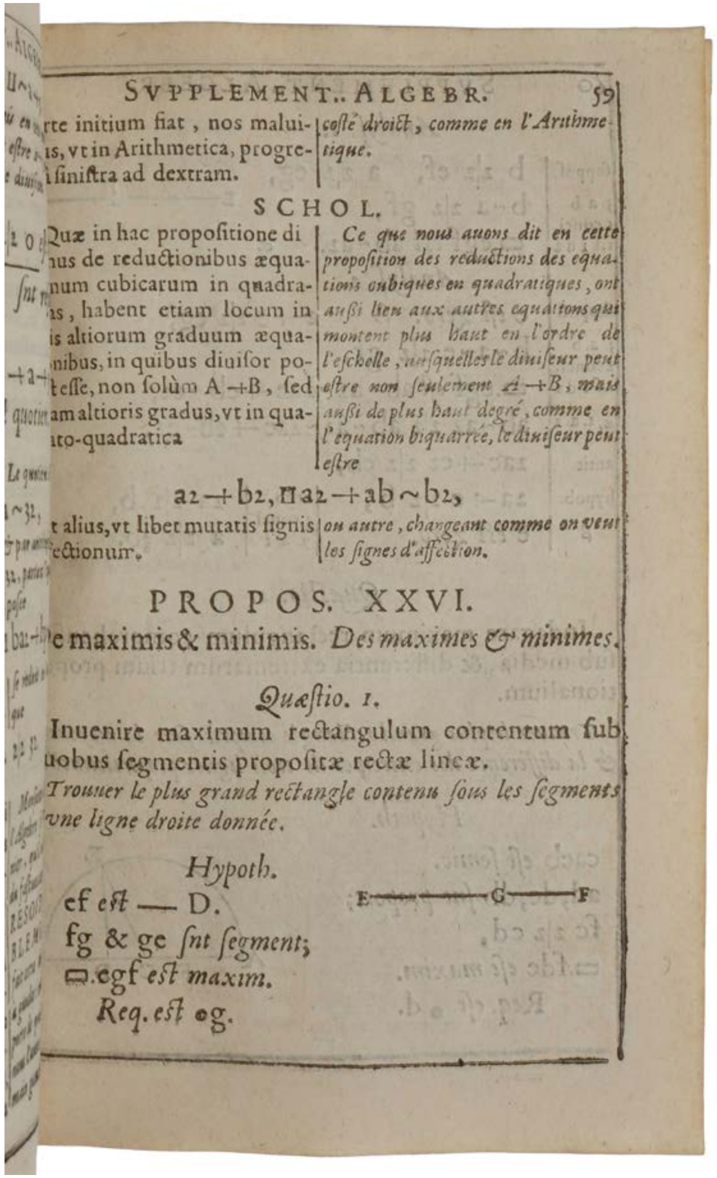
Fermat's method of maxima and minima

[FERMAT, Pierre de]. HÉRIGONE, Pierre. *Supplementum Cursus mathematici, continens...* Paris: chez l'autheur, 1642.

$25,000

First edition, extremely rare, containing the first printing of Fermat's method of maxima and minima and method of tangents, which he developed in the 1630s. "It is primarily on the strength of this method and the applications which he developed for it that Fermat has been declared the inventor of the calculus by Lagrange, Laplace and Tannery among others" (Baron). It was from this work of Hérigone that many of the leading scientists of the time, including Huygens, Leibniz, Newton, and Wallis, learned Fermat's important methods, long before their appearance in Fermat's *Varia Opera Mathematica* (1679).

8vo, pp. [iv], 286, [2], pp. Contemporary vellum, very fine.


SVPPLEMENT.. ALGEBR. 59

...rte initium fiat, nos malui...is, vt in Arithmetica, progre...à ſiniſtra ad dextram. | ...coſté droict, comme en l'Arithmetique.

SCHOL.

Quæ in hac propoſitione di...ius de reductionibus æquationum cubicarum in quadra...is, habent etiam locum in ...is altiorum graduum æquationibus, in quibus diuiſor po...teſſe, non ſolùm A+B, ſed ...am altioris gradus, vt in qua...ito-quadratica | Ce que nous auons dit en cette propoſition des reductions des equations cubiques en quadratiques, ont auſſi lieu aux autres equations qui montent plus haut en l'ordre de l'eſchelle, auſquelles le diuiſeur peut eſtre non ſeulement A+B, mais auſſi de plus haut degré, comme en l'equation biquarrée, le diuiſeur peut eſtre

a2+b2, ꝺ a2+ab~b2,

...t alius, vt libet mutatis ſignis ...ectionum. | ou autre, changeant comme on veut les ſignes d'affection.

PROPOS. XXVI.

...e maximis & minimis. *Des maximes & minimes.*

Quæſtio. 1.

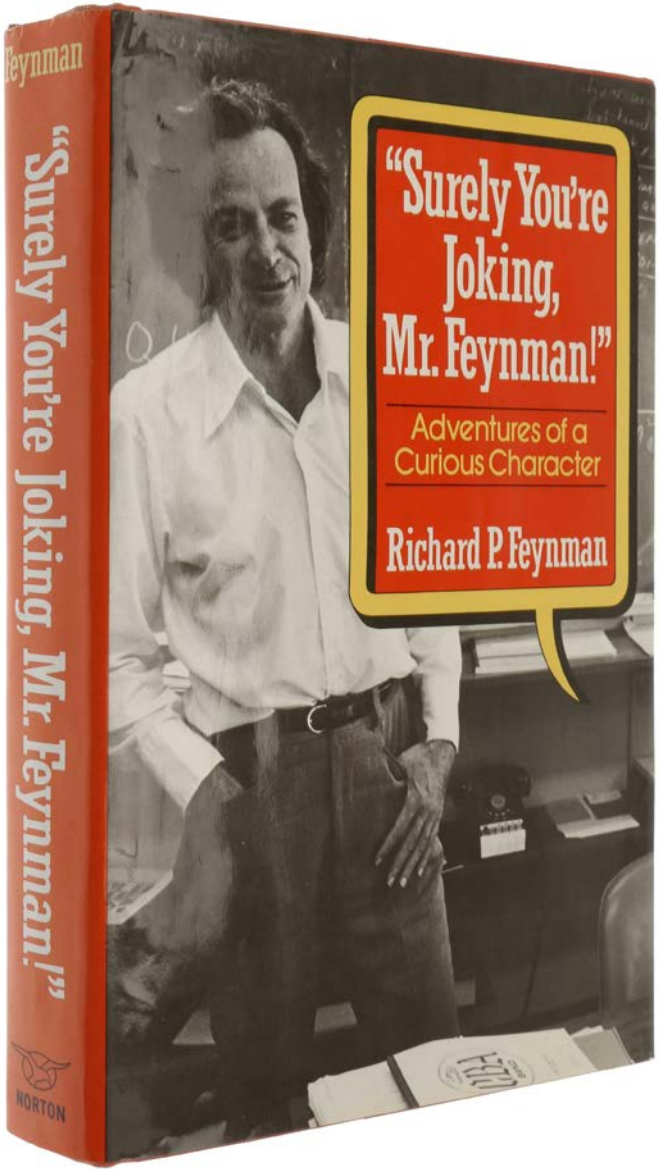
Inuenire maximum rectangulum contentum ſub ...uobus ſegmentis propoſitæ rectæ lineæ.

Trouuer le plus grand rectangle contenu ſous les ſegments ...vne ligne droite donnée.

Hypoth.
ef eſt — D.
fg & ge ſnt ſegment;
▭.egf eſt maxim.
Req. eſt eg.

E——G——F

http://sophiararebooks.com/4466



Inscribed by Feynman

FEYNMAN, Richard Phillips. *Surely You're Joking Mr. Feynman!* New York: W. W. Norton & Company, 1985.

$45,000

First edition, first printing, and a fine copy in a bright dust jacket, signed by Feynman and from the library of a second Nobel Prize winner, Edwin P. McMillan. Signed copies of this first printing are rare: Feynman was notorious for refusing to sign copies of his book, reportedly telling his editor "I'm not going to go on TV and I'm not going to sign any books!"

8vo, publisher's red cloth with dust jacket. Spine strip of dust jacket lightly sunned, top 1 mm of cloth spine slightly sunned, otherwise both very fine and fresh.

http://sophiararebooks.com/4459

The foundation of modern observational astronomy

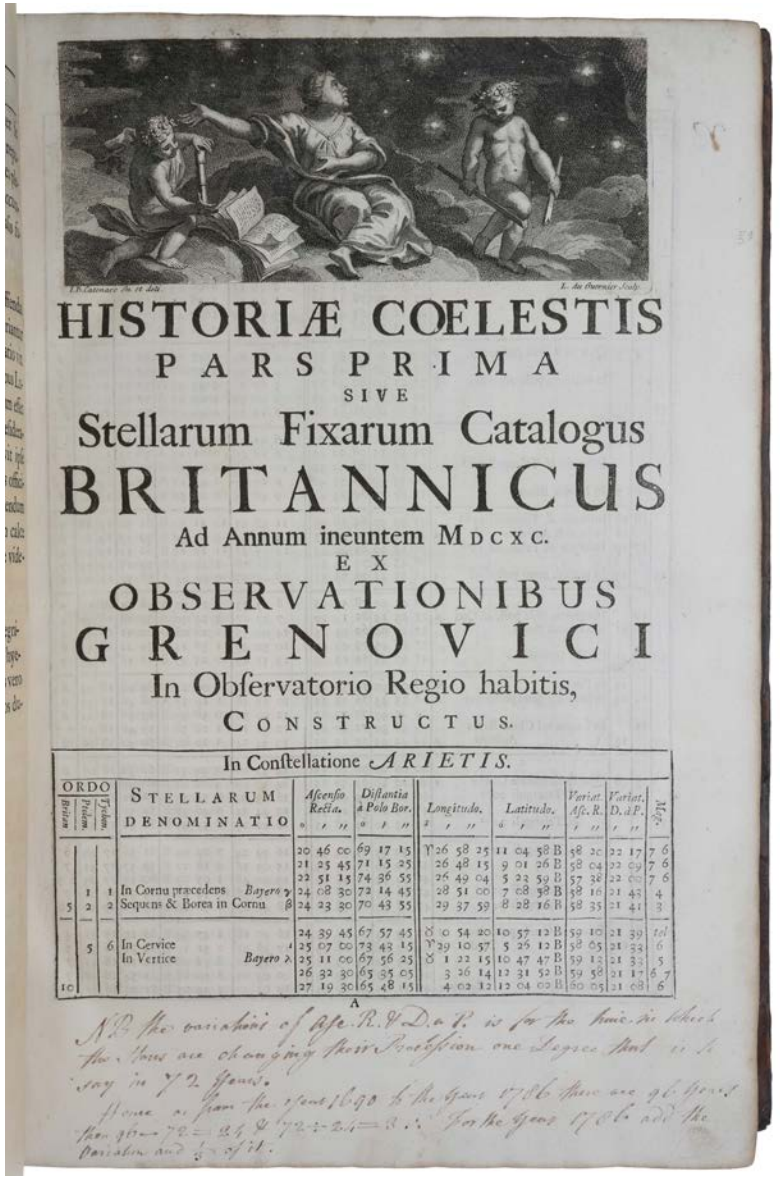
FLAMSTEED, John. *Historiae coelestis.* London: John Matthews, 1712.

$185,000

First edition, extremely rare, of Flamsteed's catalogue of fixed stars and sextant observations, the foundation of modern observational astronomy. Flamsteed's catalogue was far more extensive and accurate than anything that had gone before. It was the first constructed with instruments using telescopic sights and micrometer eyepieces; Flamsteed was the first to study systematic errors in his instruments; he was the first to urge the fundamental importance of using clocks and taking meridian altitudes; and he insisted on having assistants to repeat the observations and the calculations.

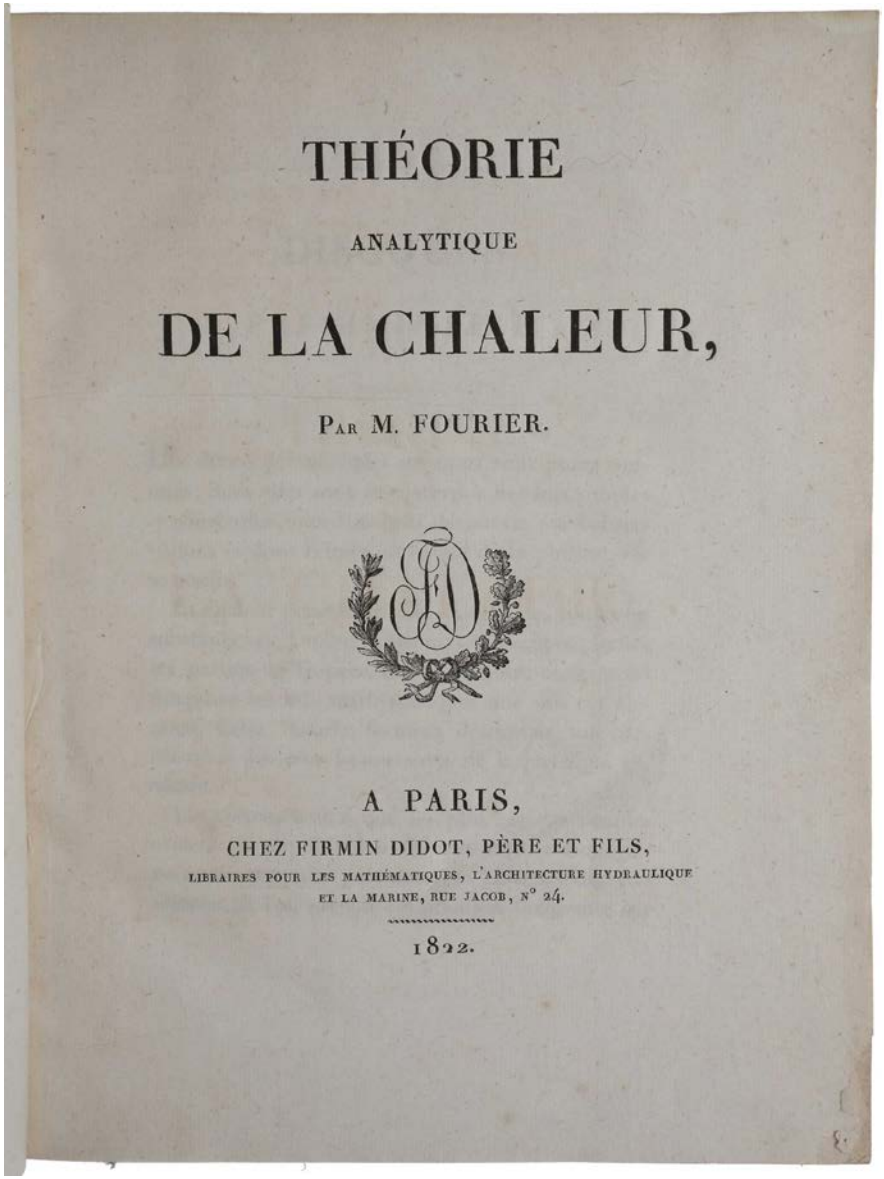
Large folio, contemporary calf with gilt arms of Queen Anne in centre of each cover.

http://sophiararebooks.com/4352



HISTORIÆ COELESTIS
PARS PRIMA
SIVE
Stellarum Fixarum Catalogus
BRITANNICUS
Ad Annum ineuntem MDCXC.
E X
OBSERVATIONIBUS
GRENOVICI
In Obſervatorio Regio habitis,
CONSTRUCTUS.

In Conſtellatione ARIETIS.



THÉORIE

ANALYTIQUE

DE LA CHALEUR,

PAR M. FOURIER.

A PARIS,

CHEZ FIRMIN DIDOT, PÈRE ET FILS,

LIBRAIRES POUR LES MATHÉMATIQUES, L'ARCHITECTURE HYDRAULIQUE ET LA MARINE, RUE JACOB, N° 24.

1822.

The source of all modern methods in mathematical physics

FOURIER, Jean-Baptiste-Joseph. *Théorie Analytique de la Chaleur.* Paris: Firmin Didot, 1822.

$32,000

First edition of the first mathematical study of heat diffusion, the first major mathematization of a branch of physics outside mechanics. "This work marks an epoch in the history of both pure and applied mathematics. It is the source of all modern methods in mathematical physics... The gem of Fourier's great book is 'Fourier series'" (Cajori).

Dibner 154; Evans 37; Sparrow 68; *Landmark Writings in Western Mathematics* 26; Norman 824; *En Français dans le Texte* 232.

4to, contemporary half calf over marbled boards, a fine copy.

http://sophiararebooks.com/3841

PMM 127 - circulation of the blood

HARVEY, William. *De motu cordis & sanguinis in animalibus, anatomica exercitation*. Leyden: Johann Maire, 1639.

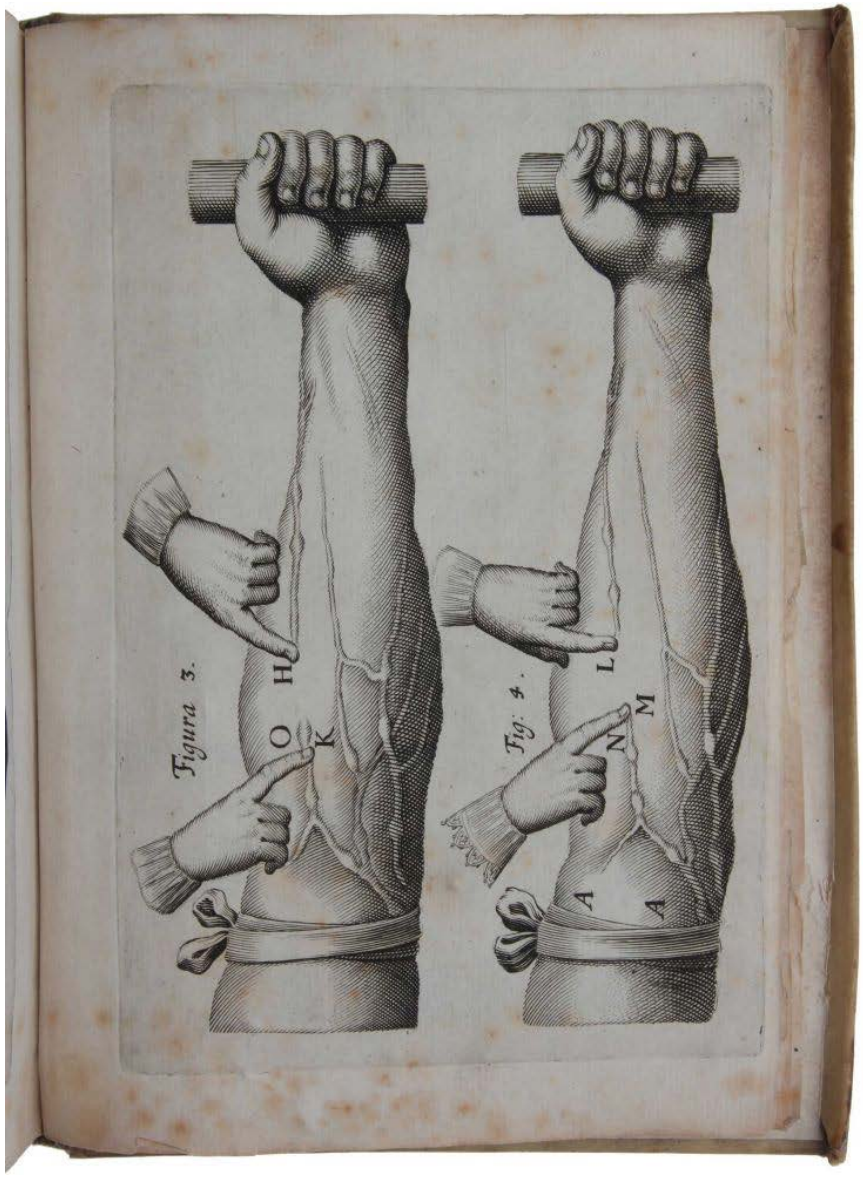
$45,000

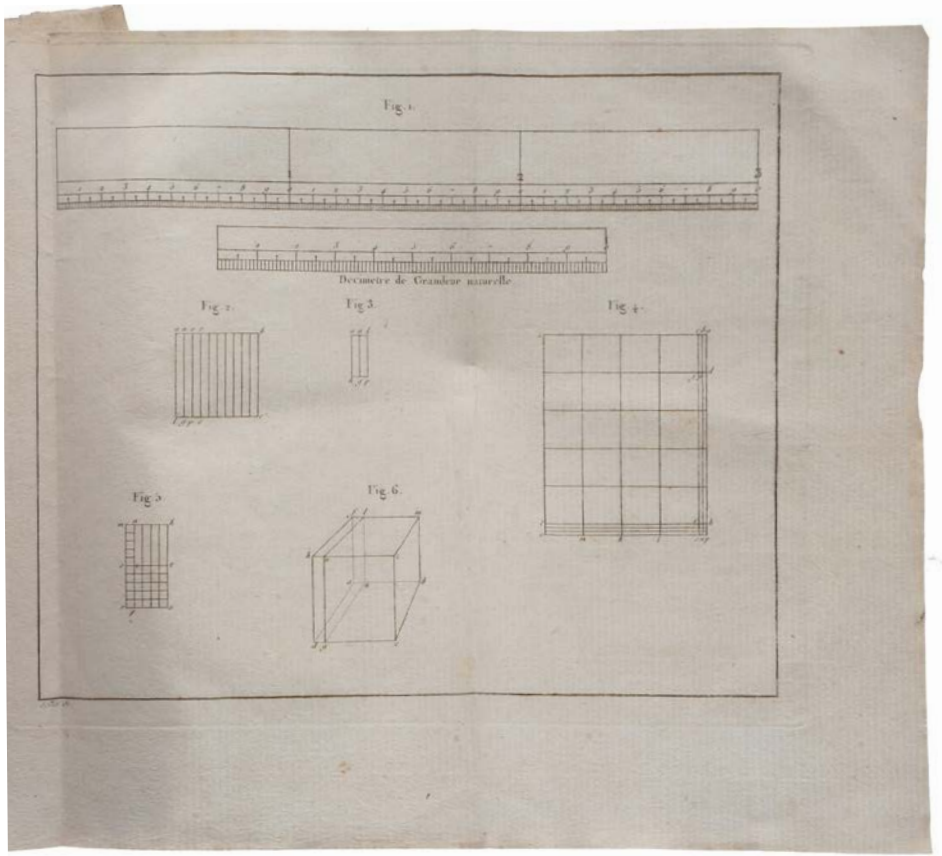
Third, but second complete, edition of the single most important and famous medical book ever published, containing Harvey's discovery and experimental proof of the circulation of the blood, which created a revolution in physiology comparable to the Copernican revolution in astronomy. This is the earliest edition that most collectors can reasonably expect to obtain: the first edition (Frankfurt, 1628) being of the greatest rarity and cost. The second edition (Venice, 1635) was fragmentary, lacking the plates.

Heirs of Hippocrates 417; Grolier/Medicine 27a (first edition).

4to, pp. [4], 267 [1], [1-2] 3-84, with two engraved plates, Contemporary vellum.

http://sophiararebooks.com/3607





Dibner 113 - the metric system

HAÜY, René-Just. *Instruction sur les mesures déduites de la grandeur de la terre, ...* Paris: Nationale Exécutive, 1794.

$3,800

First edition, and a very fine copy in original wrappers, of the work that introduced the decimal system. In 1788 the French Academy of Sciences proposed the establishment of a new universal decimal system of measurement founded upon some 'natural and invariable base' to replace Europe's diverse regional systems. This project was approved by the National Assembly in 1790 and a basic unit or 'meter' of measurement proposed, which was to be a decimal unit one ten-millionth of the distance between the terrestrial pole and the Equator.

Norman 1499 (lacking plate). Dibner, *Heralds of Science*, 113.

8vo, pp. xxviii, 224, [27], vi, [1], with one folding plate, uncut.

http://sophiararebooks.com/4469

Three landmark works in photography

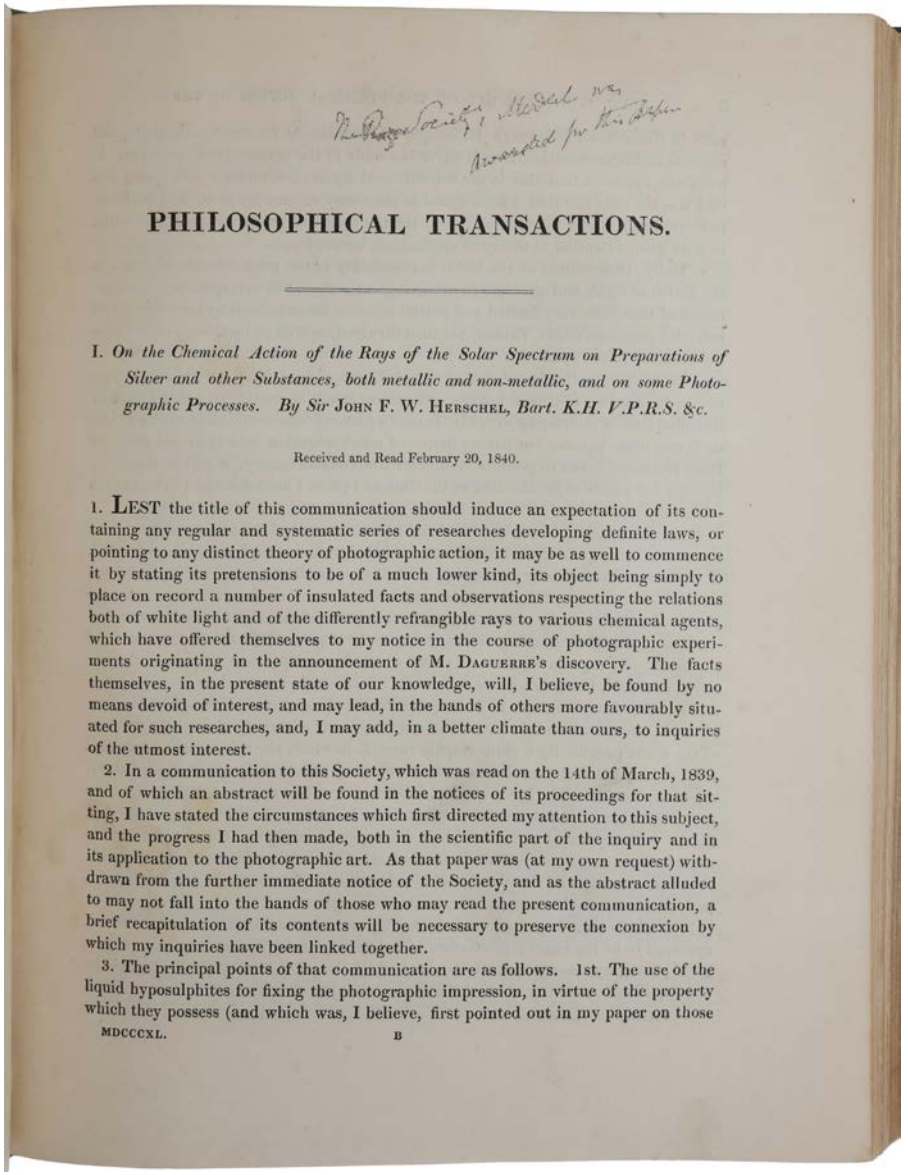
HERSCHEL, John, Sir. *On the chemical action of the rays of the solar spectrum...* 1840; *On the action of the rays of the solar spectrum...* 1842; *On certain improvements on photographic processes...* 1843. [Offprints from *Philosophical Transactions*].

$85,000

An extraordinary collection of 69 works by Sir John Herschel, assembled for presentation to his son William James Herschel. The collection includes offprints of Herschel's three most important publications on photography, the first two of which have corrections and annotations in his hand. These offprints are of extreme rarity – ABPC/RBH list no other copy of any of them in the past 75 years.

Three volumes, thick 4to, contemporary dark green half-morocco.

http://sophiararebooks.com/4321



PHILOSOPHICAL TRANSACTIONS.

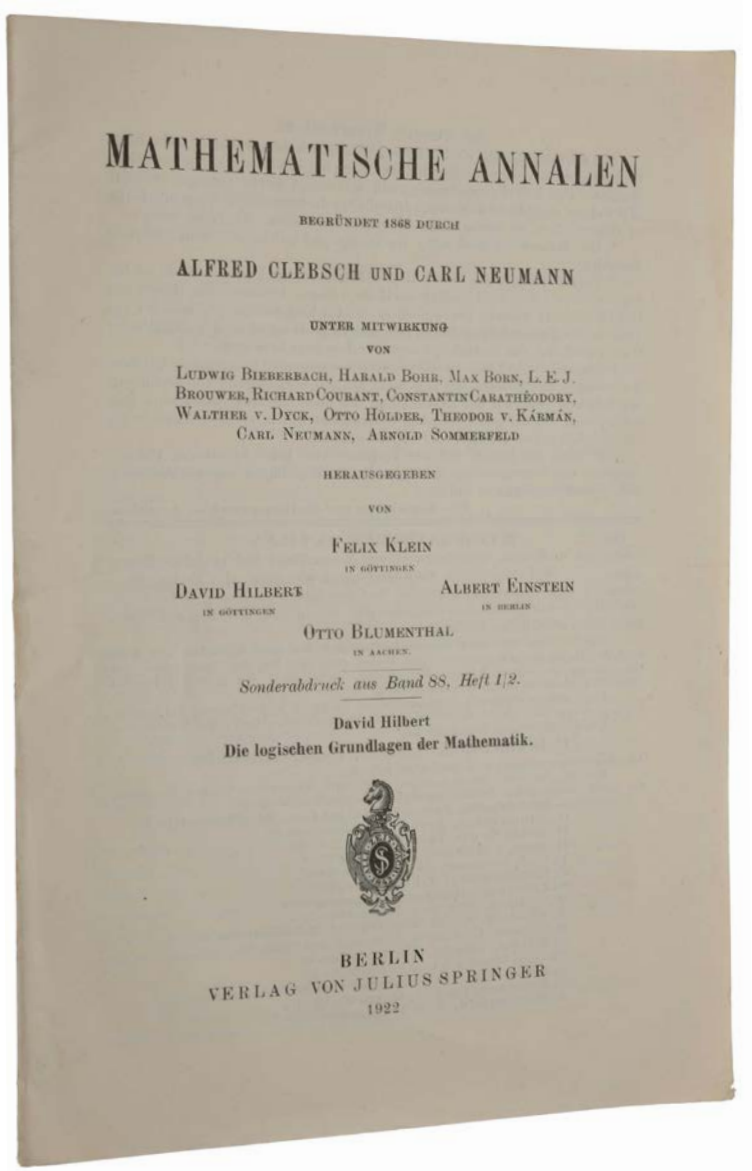
I. *On the Chemical Action of the Rays of the Solar Spectrum on Preparations of Silver and other Substances, both metallic and non-metallic, and on some Photographic Processes. By Sir* JOHN F. W. HERSCHEL, *Bart. K.H. V.P.R.S. &c.*

Received and Read February 20, 1840.

1. LEST the title of this communication should induce an expectation of its containing any regular and systematic series of researches developing definite laws, or pointing to any distinct theory of photographic action, it may be as well to commence it by stating its pretensions to be of a much lower kind, its object being simply to place on record a number of insulated facts and observations respecting the relations both of white light and of the differently refrangible rays to various chemical agents, which have offered themselves to my notice in the course of photographic experiments originating in the announcement of M. DAGUERRE's discovery. The facts themselves, in the present state of our knowledge, will, I believe, be found by no means devoid of interest, and may lead, in the hands of others more favourably situated for such researches, and, I may add, in a better climate than ours, to inquiries of the utmost interest.

2. In a communication to this Society, which was read on the 14th of March, 1839, and of which an abstract will be found in the notices of its proceedings for that sitting, I have stated the circumstances which first directed my attention to this subject, and the progress I had then made, both in the scientific part of the inquiry and in its application to the photographic art. As that paper was (at my own request) withdrawn from the further immediate notice of the Society, and as the abstract alluded to may not fall into the hands of those who may read the present communication, a brief recapitulation of its contents will be necessary to preserve the connexion by which my inquiries have been linked together.

3. The principal points of that communication are as follows. 1st. The use of the liquid hyposulphites for fixing the photographic impression, in virtue of the property which they possess (and which was, I believe, first pointed out in my paper on those



MATHEMATISCHE ANNALEN

BEGRÜNDET 1868 DURCH

ALFRED CLEBSCH UND CARL NEUMANN

UNTER MITWIRKUNG

VON

LUDWIG BIEBERBACH, HARALD BOHR, MAX BORN, L. E. J. BROUWER, RICHARD COURANT, CONSTANTIN CARATHÉODORY, WALTHER v. DYCK, OTTO HÖLDER, THEODOR v. KÁRMÁN, CARL NEUMANN, ARNOLD SOMMERFELD

HERAUSGEGEBEN

VON

FELIX KLEIN

IN GÖTTINGEN

DAVID HILBERT

IN GÖTTINGEN

ALBERT EINSTEIN

IN BERLIN

OTTO BLUMENTHAL

IN AACHEN

Sonderabdruck aus Band 88, Heft 1/2.

David Hilbert

Die logischen Grundlagen der Mathematik.

BERLIN

VERLAG VON JULIUS SPRINGER

1922

Hilbert's programme

HILBERT, David. *Die logischen Grundlagen der Mathematik.* Berlin: Springer, 1923.

$3,200

First edition, the extremely rare author's presentation offprint issue, of the second major paper in the development of the 'Hilbert programme.' Based upon a lecture given at Leipzig in September 1923, it is the sequel to Hilbert's *Neubegründung der Mathematik* (1922), in which Hilbert had put forward his proposal for a foundation for all of mathematics based on axiomatics and logic.

Offprint from Mathematische Annalen, Bd. 88. 8vo, pp. 151-165. Original printed wrappers.

http://sophiararebooks.com/4475

First statement of the Entscheidungsproblem

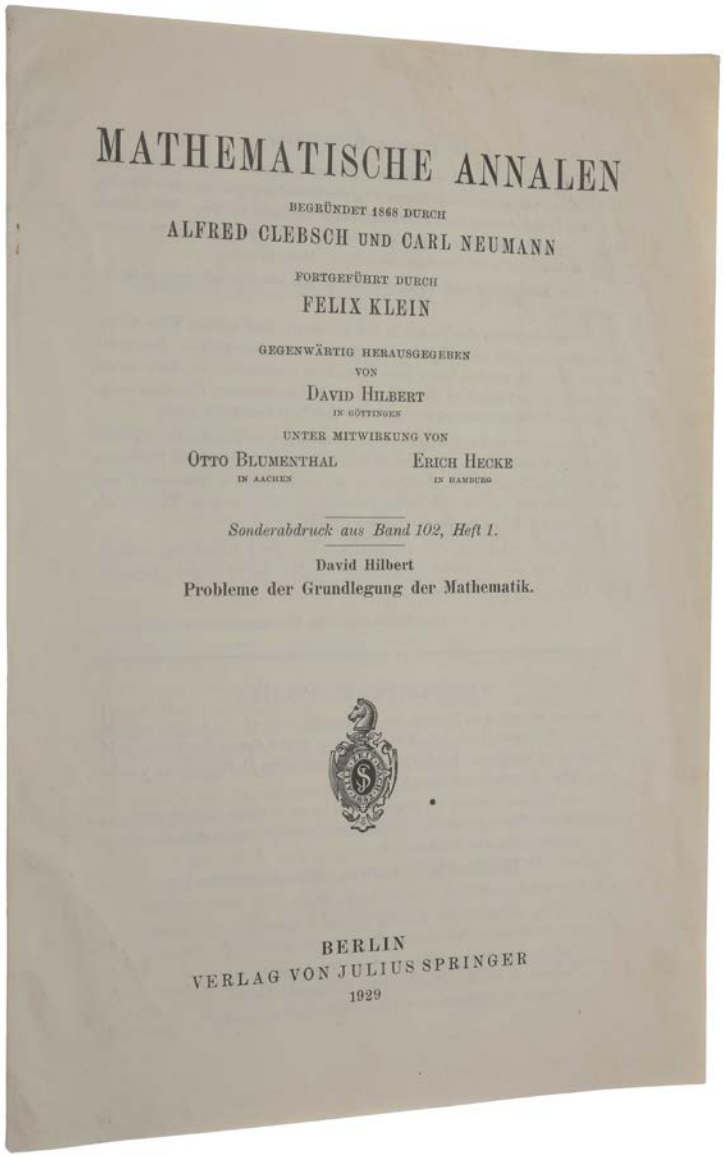
HILBERT, David. *Probleme der Grundlegung der Mathematik.* Berlin: Springer, 1929.

$3,800

First edition, very rare author's presentation offprint, containing the first statement of the *Entscheidungsproblem*, the question as to whether there exists a definite method, which, applied to any given assertion, will decide whether the assertion is true or false. The Entscheidungsproblem was addressed independently in 1936 by Alonzo Church, Emil Post, and Alan Turing, each of whom presented proofs that mathematics was not decidable.

Offprint from: Mathematische Annalen, Bd. 102, 25 March, 1929. 8vo (232 x 157 mm), pp. 1-9. Original printed wrappers.

http://sophiararebooks.com/4477


MATHEMATISCHE ANNALEN

BEGRÜNDET 1868 DURCH
ALFRED CLEBSCH UND CARL NEUMANN

FORTGEFÜHRT DURCH
FELIX KLEIN

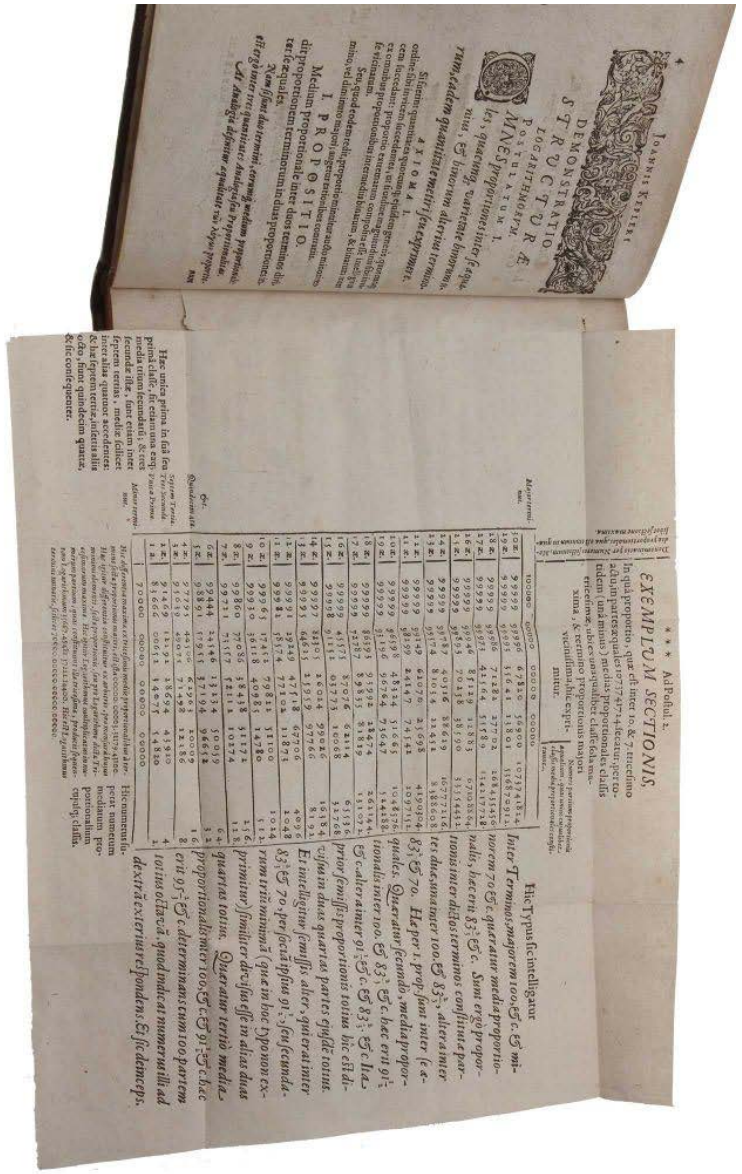
GEGENWÄRTIG HERAUSGEGEBEN
VON
DAVID HILBERT
IN GÖTTINGEN

UNTER MITWIRKUNG VON
OTTO BLUMENTHAL
IN AACHEN
ERICH HECKE
IN HAMBURG

Sonderabdruck aus Band 102, Heft 1.

David Hilbert
Probleme der Grundlegung der Mathematik.

BERLIN
VERLAG VON JULIUS SPRINGER
1929



The mathematical basis of Kepler's third law

KEPLER, Johannes. Chilias logarithmorum ... [with:] Supplementum chiliadis logarithmorum Marburg: Chemlin, 1624-25.

$58,500

First edition of Kepler's logarithmic tables. "In a sense, logarithms played a role in Kepler's formulation of the Third Law analogous to the role of Apollonius' conics in his discovery of the First Law, and with the role that tensor analysis and Riemannian geometry played in Einstein's development of the field equations of general relativity" (Brown). Of the greatest rarity, only one other copy of this work has appeared at auction in the past fifty years.

4to, pp. [1-2] 3-55, [56-108]; [2], 113-116, [2], 121-216, with one folding table, contemporary calf, Earls of Macclesfield copy.

http://sophiararebooks.com/3609

First tables based on his new astronomy

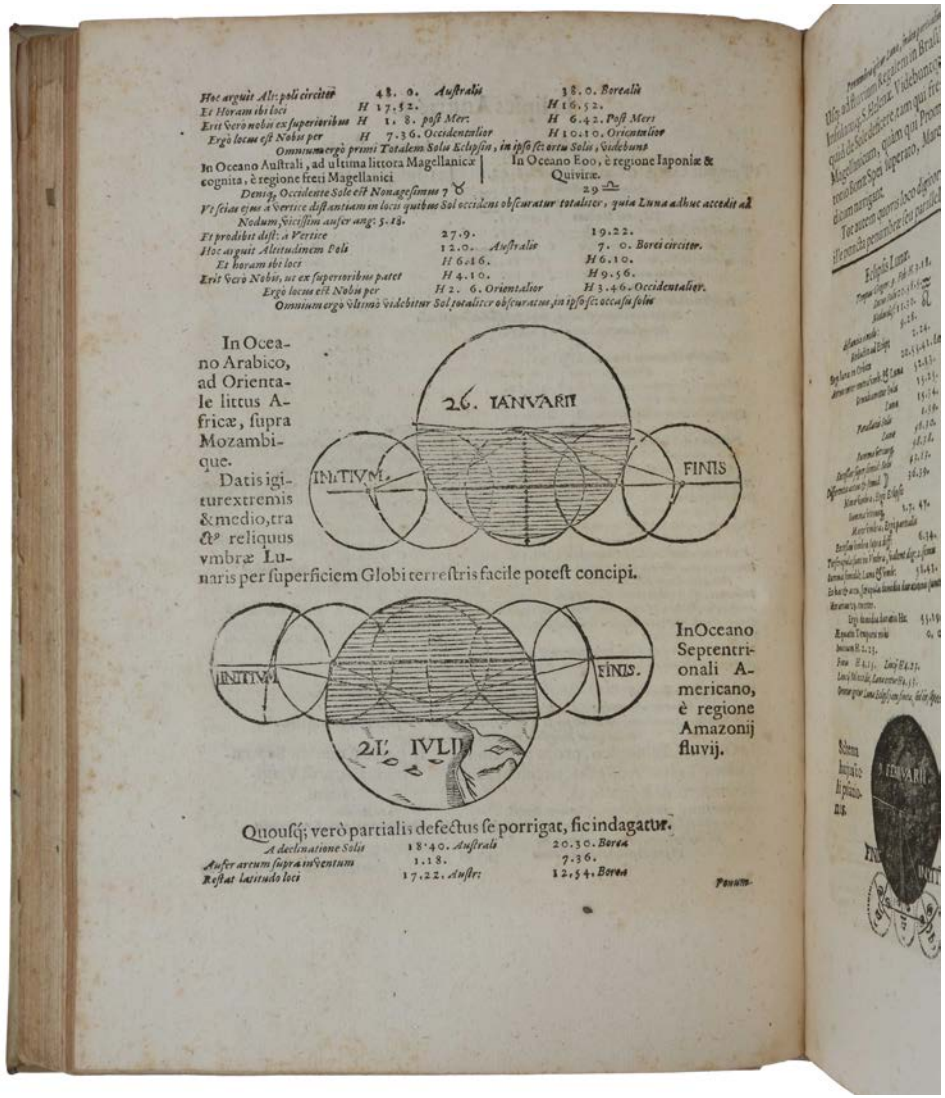
KEPLER, Johannes. *Ephemerides novae motuum coelestium.* Linz: Johannes Plank, [1617-1619].

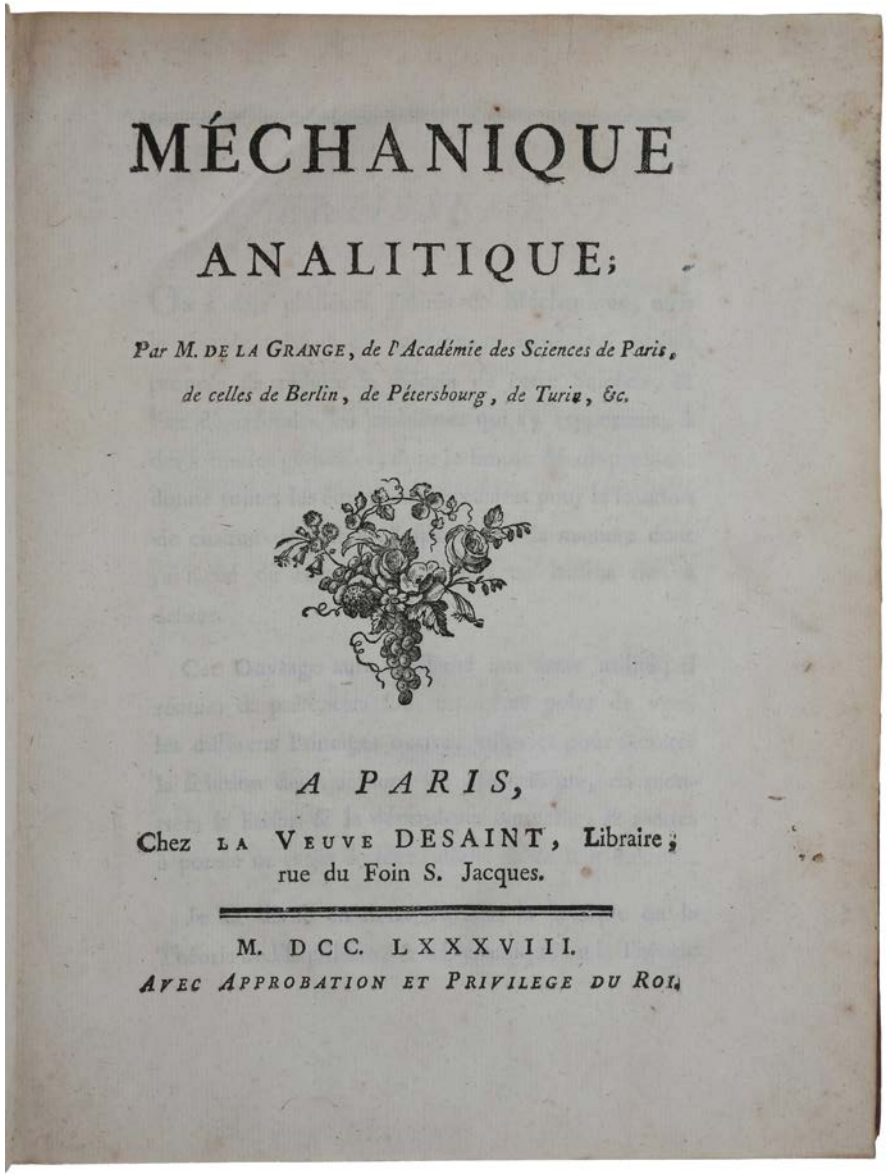
$35,000

First edition, very rare and with an exceptional royal provenance, of Kepler's *Ephemerides* for the years 1617-1620. These were the first tables of astronomical data calculated by Kepler on the basis of the new celestial mechanics he had published in *Astronomia nova* (1609), and also the first calculated using logarithms, preceding by a decade the *Tabulae Rudolphinae* (1627). *Provenance*: Queen Sophia of Württemberg, full-page hand-written dedication.

4to, 19th century vellum. A very fine copy.

http://sophiararebooks.com/4299





MÉCHANIQUE

ANALITIQUE;

Par M. DE LA GRANGE, de l'Académie des Sciences de Paris, de celles de Berlin, de Pétersbourg, de Turin, &c.

A PARIS,

Chez LA VEUVE DESAINT, Libraire, rue du Foin S. Jacques.

M. DCC. LXXXVIII.

AVEC APPROBATION ET PRIVILEGE DU ROI.

Second only to Newton's Principia

LAGRANGE, Joseph Louis de. *Méchanique analitique*. Paris: Veuve Desaint, 1788.

$12,500

First edition of "perhaps the most beautiful mathematical treatise in existence. It contains the discovery of the general equations of motion, the first epochal contribution to theoretical dynamics after Newton's *Principia*" (Evans). "Lagrange's masterpiece, the Méchanique Analitique, laid the foundations of modern mechanics, and occupies a place in the history of the subject second only to that of Newton's *Principia*" (Wolf).

Grolier/Horblit 61; Evans 10; Dibner 112; Sparrow 120.

4to, pp [i-v] vi-xii, [1-] 2-512, contemporary half calf.

http://sophiararebooks.com/4069

The first book dedicated to number theory

LEGENDRE, Adrien Marie. *Essai sur la théorie des nombres.* Paris: Duprat, 1797-98.

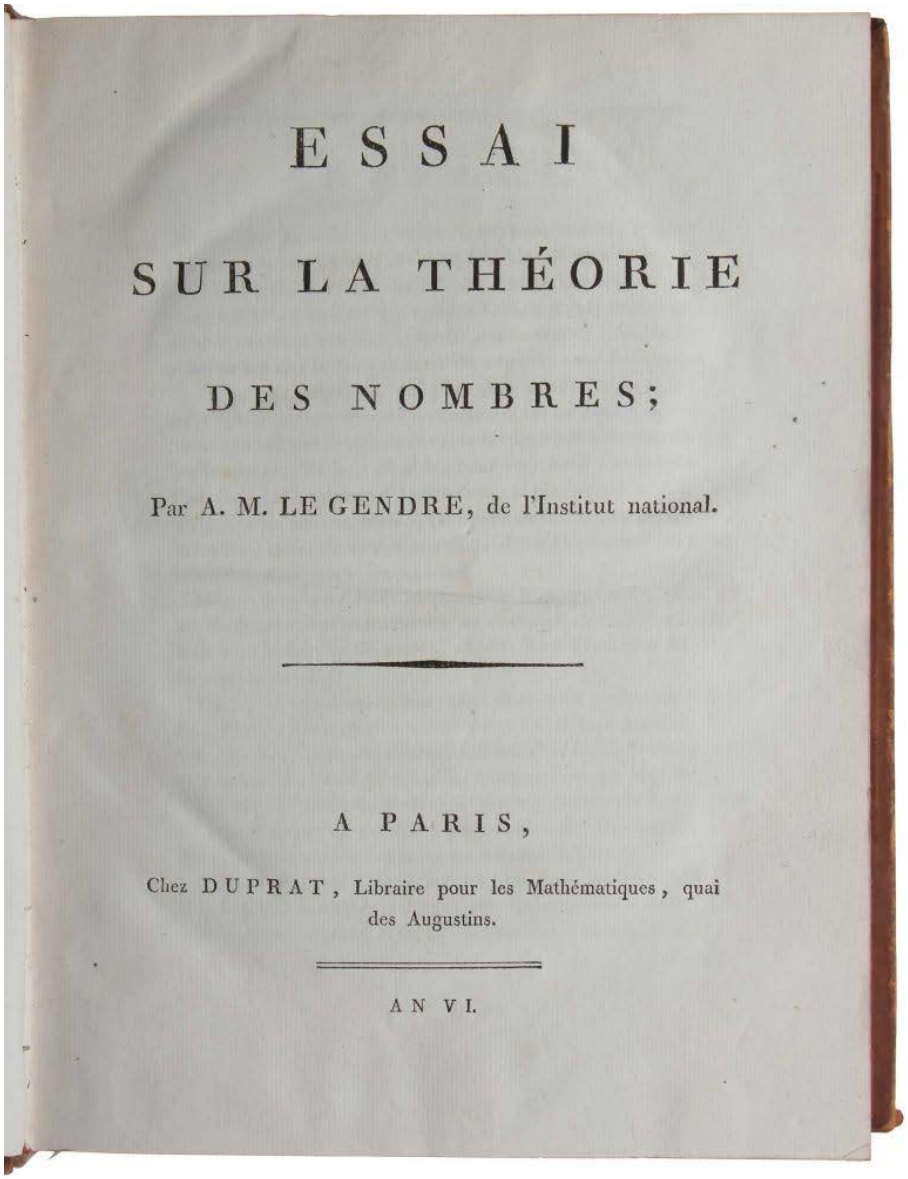
$4,000

First edition and 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 in his *Disquisitiones arithmeticae* (1801).

Norman 1325; Parkinson, *Breakthroughs* 231.

4to, pp [i-v] vixxii [2] 472, [56], [2], contemporary and unrestored French gilt-ruled calf.

http://sophiararebooks.com/3414



ESSAI

SUR LA THÉORIE

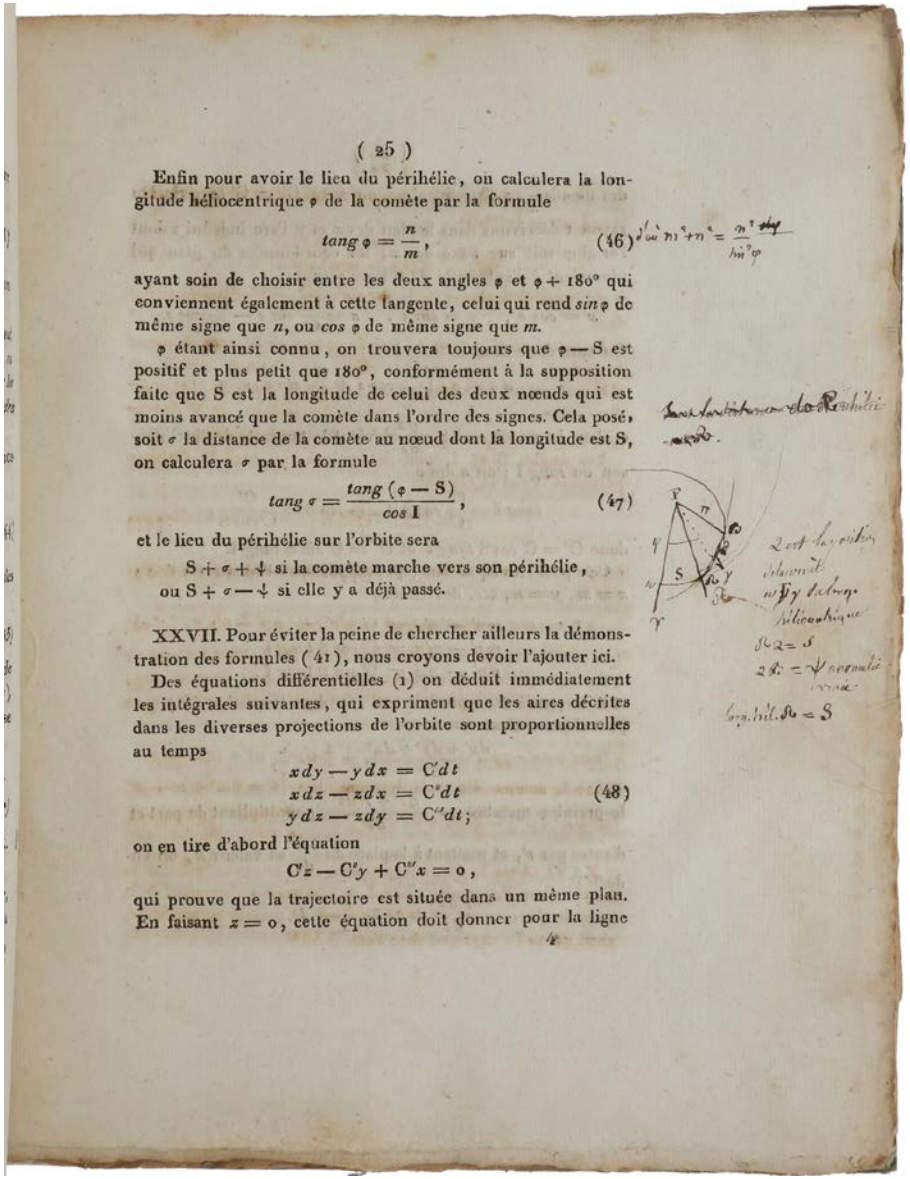
DES NOMBRES;

Par A. M. LE GENDRE, de l'Institut national.

A PARIS,

Chez DUPRAT, Libraire pour les Mathématiques, quai des Augustins.

AN VI.



(25)

Enfin pour avoir le lieu du périhélie, on calculera la longitude héliocentrique φ de la comète par la formule

$$tang\,\varphi = \frac{n}{m}, \qquad (46)$$

ayant soin de choisir entre les deux angles φ et $\varphi + 180°$ qui conviennent également à cette tangente, celui qui rend $sin\,\varphi$ de même signe que n, ou $cos\,\varphi$ de même signe que m.

φ étant ainsi connu, on trouvera toujours que $\varphi - S$ est positif et plus petit que 180°, conformément à la supposition faite que S est la longitude de celui des deux nœuds qui est moins avancé que la comète dans l'ordre des signes. Cela posé, soit σ la distance de la comète au nœud dont la longitude est S, on calculera σ par la formule

$$tang\,\sigma = \frac{tang\,(\varphi - S)}{cos\,I}, \qquad (47)$$

et le lieu du périhélie sur l'orbite sera

$S + \sigma + \frac{1}{2}$ si la comète marche vers son périhélie,
ou $S + \sigma - \frac{1}{2}$ si elle y a déjà passé.

XXVII. Pour éviter la peine de chercher ailleurs la démonstration des formules (41), nous croyons devoir l'ajouter ici.

Des équations différentielles (1) on déduit immédiatement les intégrales suivantes, qui expriment que les aires décrites dans les diverses projections de l'orbite sont proportionnelles au temps

$$\begin{aligned} x\,dy - y\,dx &= C'dt \\ x\,dz - z\,dx &= C''dt \\ y\,dz - z\,dy &= C'''dt; \end{aligned} \qquad (48)$$

on en tire d'abord l'équation

$$C'z - C''y + C'''x = 0,$$

qui prouve que la trajectoire est située dans un même plan. En faisant $z = 0$, cette équation doit donner pour la ligne

Invention of the method of least squares

LEGENDRE, Adrien Marie. *Nouvelles méthodes pour la détermination des orbites des comètes.* Paris: Didot, 1805.

$6,750

First edition, first issue of the invention of the method of least squares, "the automobile of modern statistical analysis" and the origin of "the most famous priority dispute in the history of statistics" (Stigler). The great advances in mathematical astronomy made during the early years of the nineteenth century were due in no small part to the development of the method of least squares. The same method is the foundation for the calculus of errors of observation now occupying a place of great importance in the scientific study of social, economic, biological, and psychological problems.

4to, pp [i-iii] iv-viii [1] 2-80, with one engraved plate; some slight marginal spotting, contemporary marginal annotations, a very good, uncut copy in original boards, spine expertly restored.

http://sophiararebooks.com/4038

Leibniz' digital calculating machine

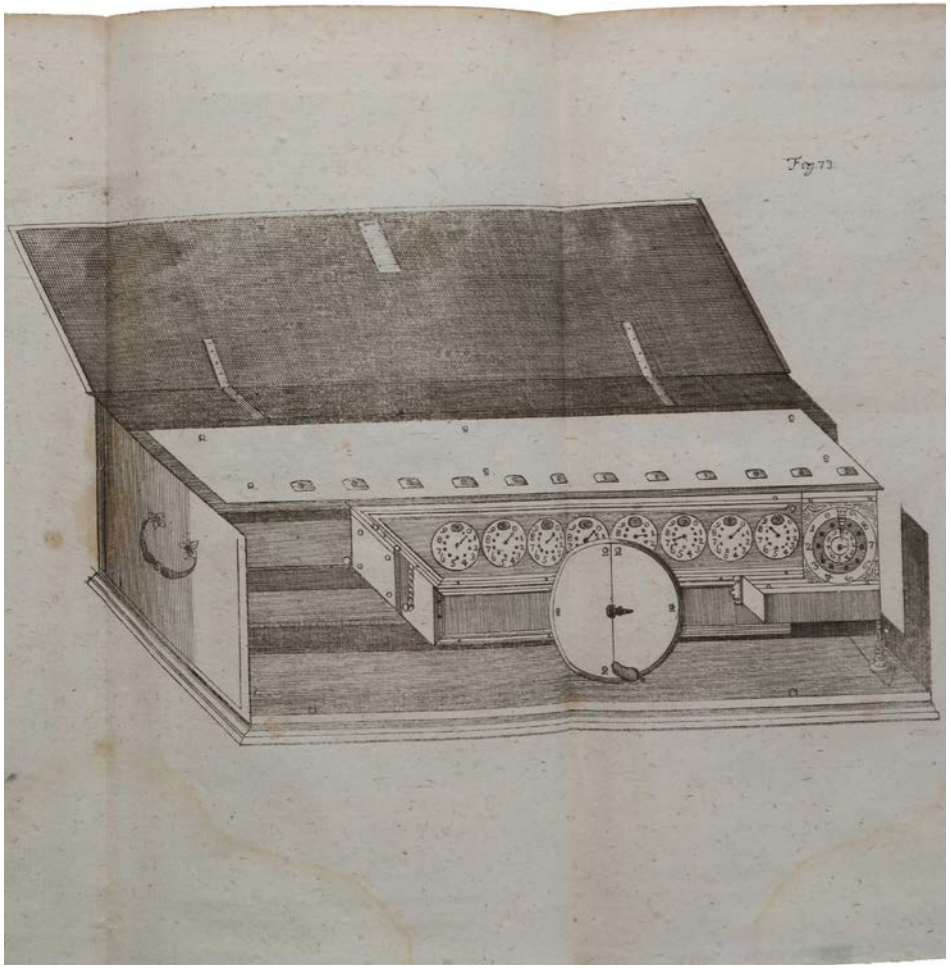
LEIBNIZ, Gottfried Wilhelm. *Brevis descriptio machinae arithmeticae, cum figura.* Berlin: Papen, 1710.

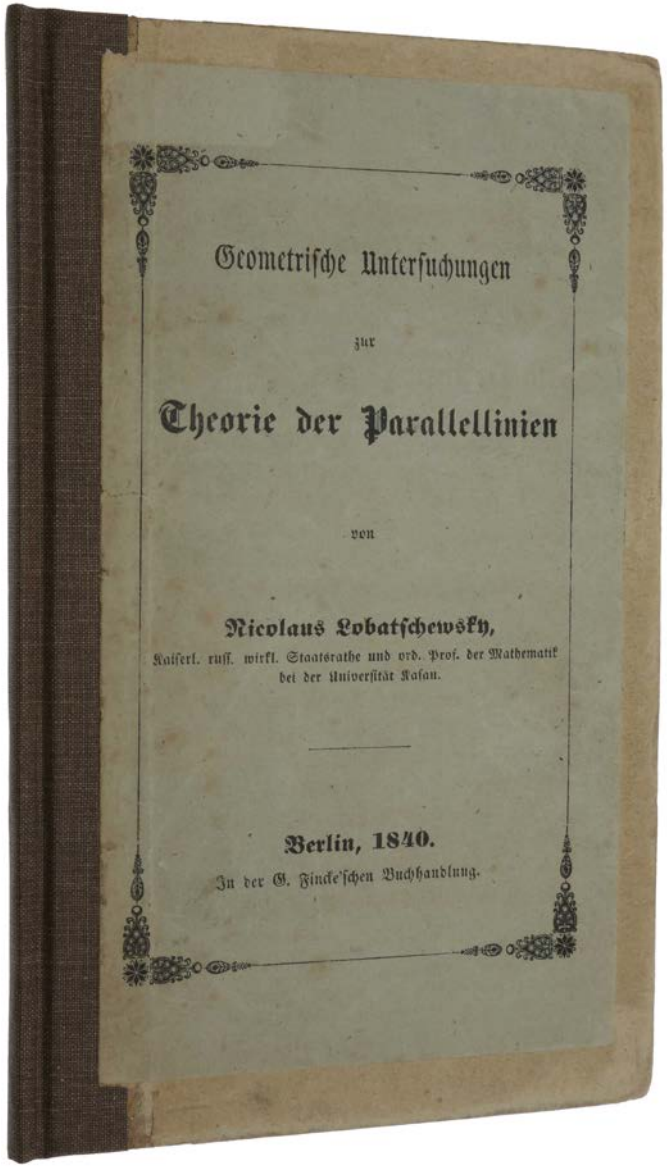
$32,000

First edition, rare, of this milestone in computer history, Leibniz's description of his famous digital calculating machine, the first calculator that could perform all four arithmetic operations. The stepped reckoner, as it was called, was based on a gear mechanism that Leibniz invented and that is now called a Leibniz wheel. This mechanism was used for three centuries until the advent of the electronic calculator in the mid-1970s. Although Leibniz demonstrated his machine before the Royal Society and elsewhere, no description of it appeared in print until in the present form. It is contained in the first volume of the journal of the Berlin Academy of Science, which Leibniz founded.

Pp. 317-319 and one folding plate in Miscellanea Berolinensia. Complete volume, 4to. [xxiv, including frontispiece], 394, Contemporary half calf.

http://sophiararebooks.com/4399





Non-Euclidean Geometry

LOBACHEVSKY, Nikolai Ivanovich. *Geometrische Untersuchungen zur Theorie der Parallellinien.* Berlin: Fincke, 1840.

$40,000

First edition, very rare, of the first complete account of Lobachevsky's revolutionary discovery of non-Euclidean geometry to be published in a Western European language. It was through this book that the mathematical world outside Russia became aware of Lobachevsky's work. The present work, like all of Lobachevsky's publications, is very rare. OCLC lists just seven copies in the US. No copies on ABPC/RBH.

8vo, pp. [ii], 61, [1], with two folding lithographed plates. Old boards with cloth spine, original front printed wrapper mounted on front cover.

http://sophiararebooks.com/4361

Light as a form of electricity

MAXWELL, James Clerk. *A Treatise on Electricity and Magnetism.* Oxford: Clarendon Press, 1873.

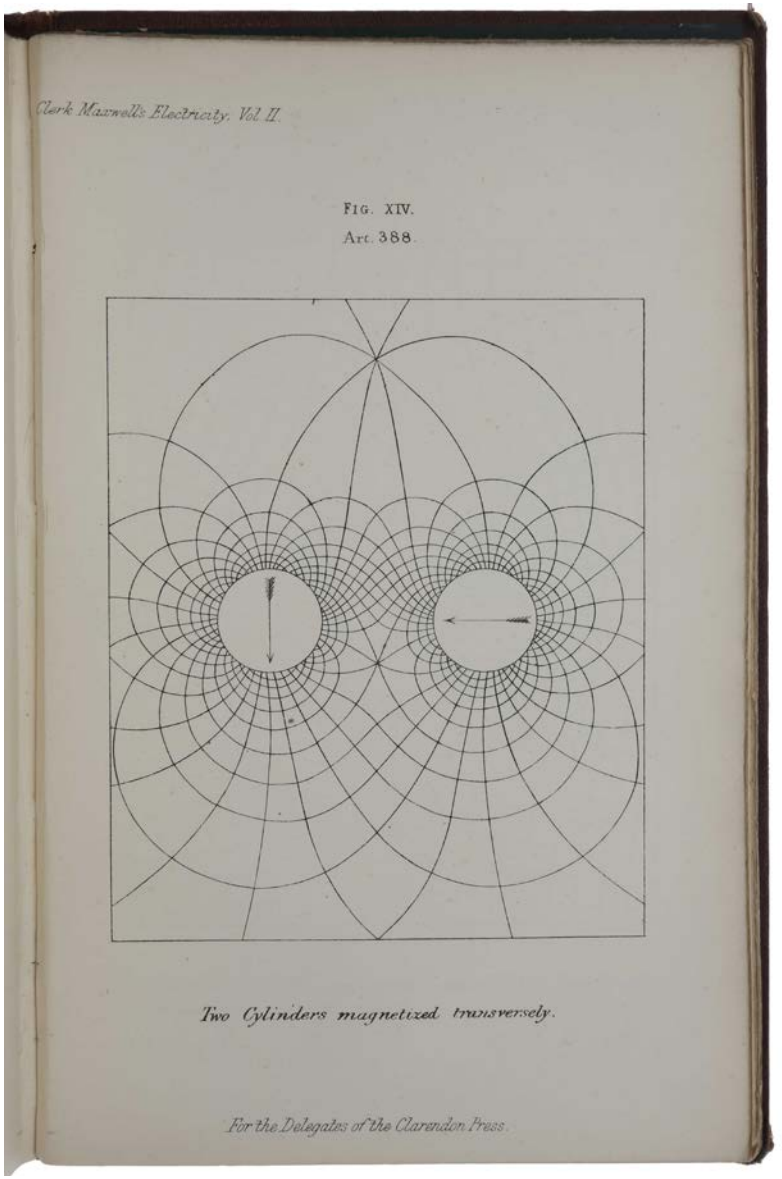
$18,500

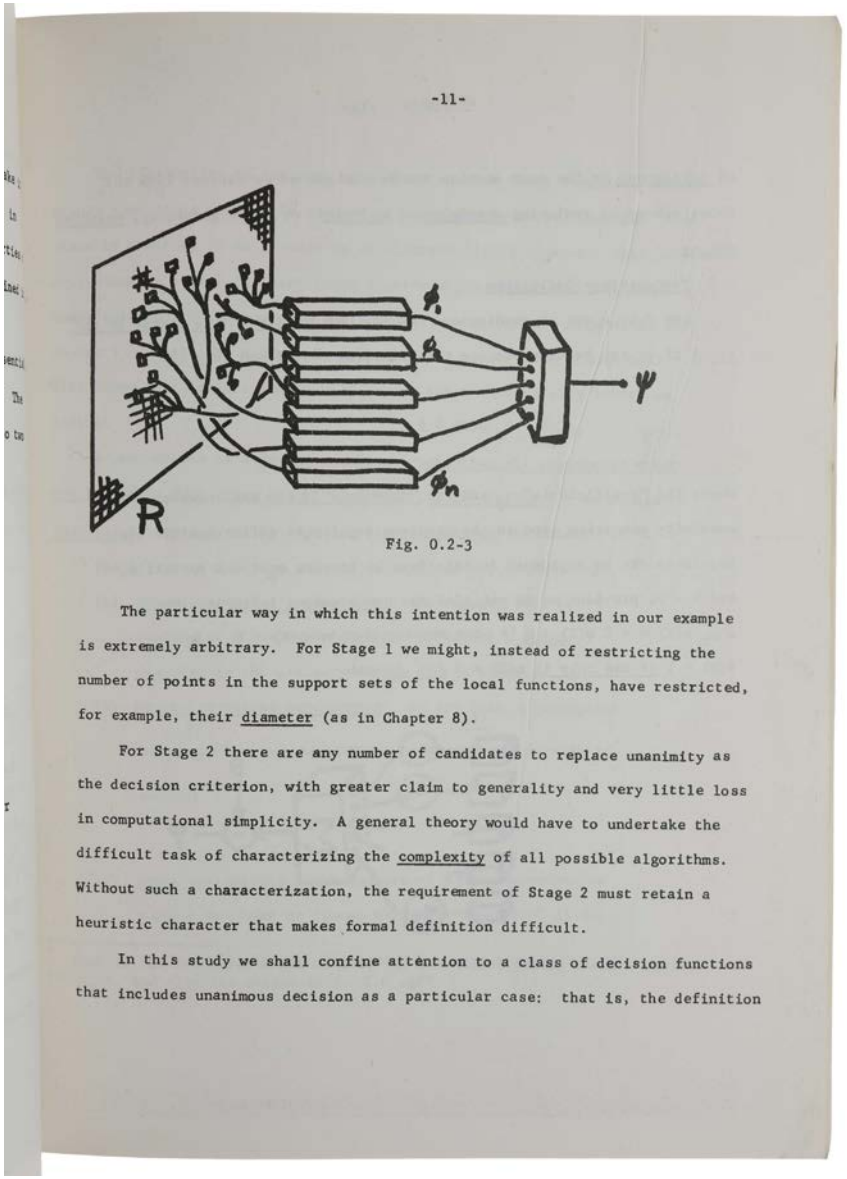
First edition, first issue, and a wonderful association copy, of Maxwell's presentation of his theory of electromagnetism, advancing ideas that would become essential for modern physics, including the landmark "hypothesis that light and electricity are the same in their ultimate nature" (Grolier/Horblit). "This treatise did for electromagnetism what Newton's *Principia* had done from classical mechanics. Provenance: The Wheatstone Collection, King's College, London. Maxwell was Professor of Natural Philosophy at King's from 1860 to 1865.

Grolier/Horblit 72; Norman 1666; *Landmark Writings in Western Mathematics* 44.

8vo, original publisher's blind-stamped plum cloth.

http://sophiararebooks.com/4308





-11-

Fig. 0.2-3

The particular way in which this intention was realized in our example is extremely arbitrary. For Stage 1 we might, instead of restricting the number of points in the support sets of the local functions, have restricted, for example, their diameter (as in Chapter 8).

For Stage 2 there are any number of candidates to replace unanimity as the decision criterion, with greater claim to generality and very little loss in computational simplicity. A general theory would have to undertake the difficult task of characterizing the complexity of all possible algorithms. Without such a characterization, the requirement of Stage 2 must retain a heuristic character that makes formal definition difficult.

In this study we shall confine attention to a class of decision functions that includes unanimous decision as a particular case: that is, the definition

Artificial Intelligence

MINSKY, Marvin & PAPERT, Seymour. *Perceptrons and Pattern Recognition. Artificial Intelligence Memo no. 140. MAC-M-358. Project MAC.* Cambridge, MA: September 1967.

$17,500

First edition, extremely rare pre-publication issue, of this important early work in Artificial Intelligence (AI), containing the first systematic study of parallelism in computation. It was first published in book form in 1969 as *Perceptrons. An Introduction to Computational Geometry*. It has remained a classical work on threshold automata networks for nearly two decades and marked a historical turn in artificial intelligence. OCLC lists only two copies (Stanford and National Research Council Canada). There appears to be no copy at MIT, where the research was carried out and where this work was published.

4to, pp. [viii], 26; 15; 11; 8; 10; 3; 26; 24;19; 9; 14; 12; 8 (each of the 11 lectures is separately-paginated). Stapled as issued into clear plastic covers (front cover loose at two of the staples), holes for ring binder.

http://sophiararebooks.com/4332

The first book on probabilty

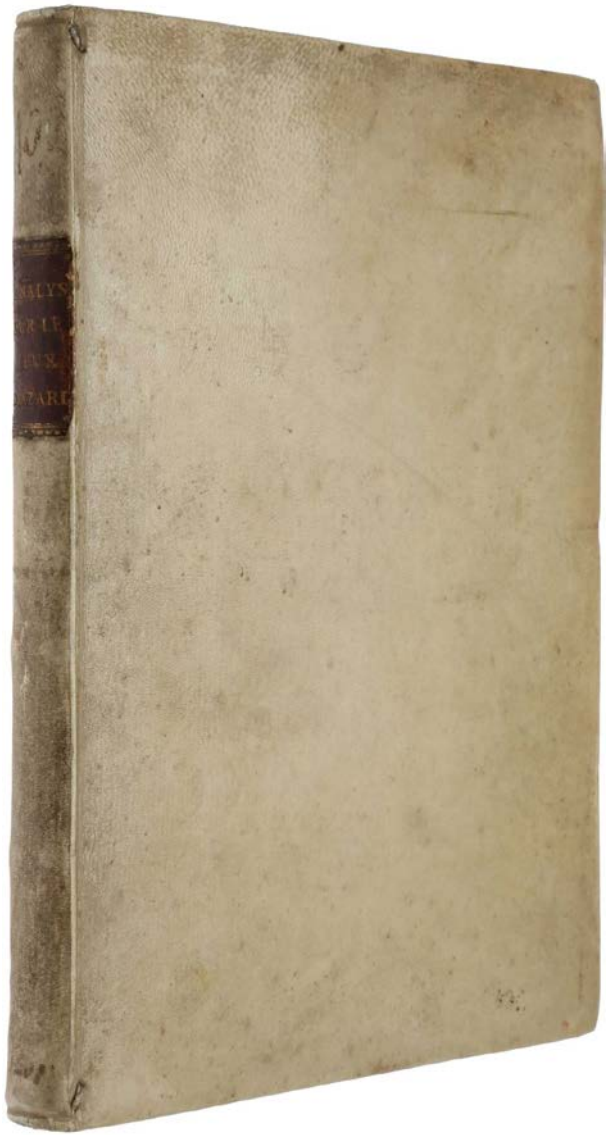
MONTMORT, Pierre Rémond de. *Essay d'Analyse sur les Jeux de Hazard.* Paris: J. Quilau, 1708.

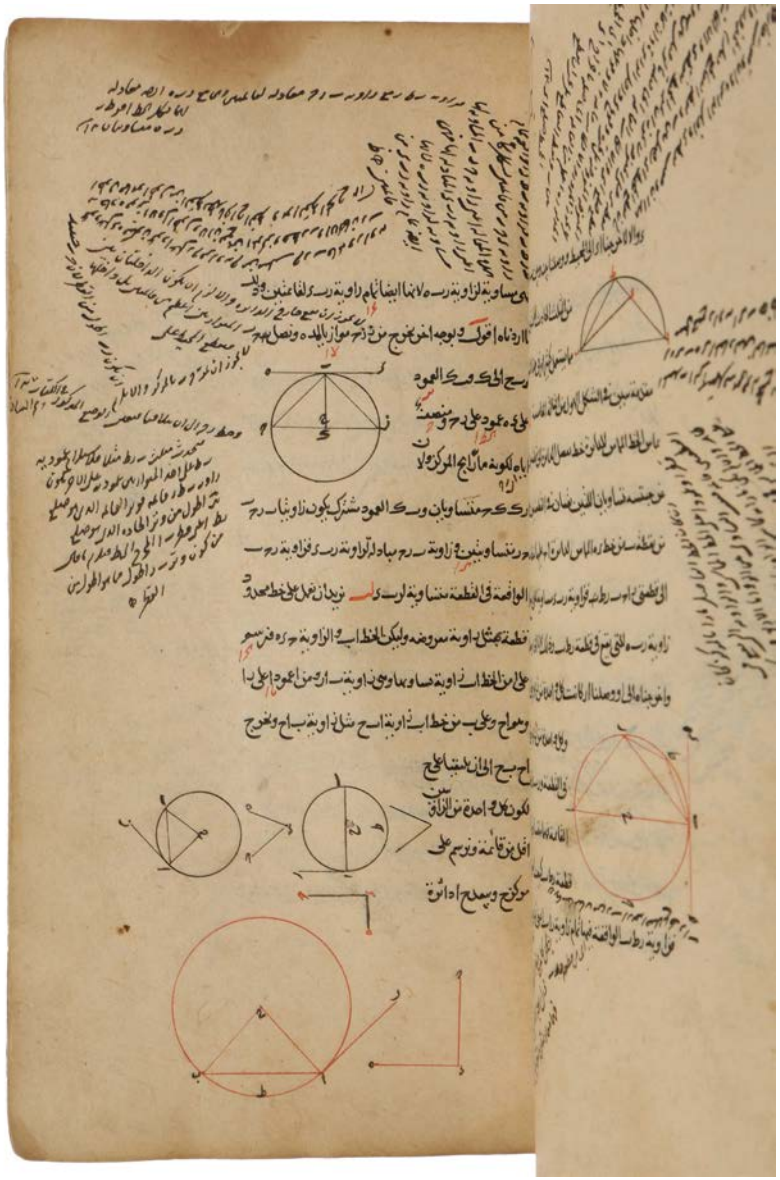
$12,000

Rare first edition, and a fine copy, of the first separately published textbook of probability. "In 1708 [Montmort] published his work on Chances, where with the courage of Columbus he revealed a new world to mathematicians" (Todhunter). "The *Essay* (1708) is the first published comprehensive text on probability theory, and it represents a considerable advance compared with the treatises of Huygens (1657) and Pascal (1665).

4to, pp [i-iii] iv-xxiv, 189, [3], with three folding plates. Contemporary vellum, red morocco title label to spine, engraved book plate of Sir Francis Hopkins to front paste-down. Uniform very light browning throughout. Rare in such good condition.

http://sophiararebooks.com/3894





Arabic Euclid preceeding the first printed edition

NAṢĪR AL-DĪN AL-TŪSĪ. *Kitāb tahrīr ʻuṣūl al-handasa li-ʻŪqlīdus, an exposition of Euclid's 'Elements of Geometry,' signed by ʻIzz al-Din Ahmad.* Persia, Safavid: dated 929 AH/1522-23 AD.

$38,500

A fine early sixteenth-century manuscript of al-Tūsī's recension of Euclid's *Elements*. The first printed edition of Euclid (Venice, 1482) was a Latin translation by Campanus of Novara (1220-96) based upon al-Tūsī's version. Probably written in 1248, the first printed edition of the Arabic text did not appear until seven decades after the present manuscript (Rome, 1594).

Arabic manuscript on paper (199 x 103mm), 217 leaves, 15 lines to the page, written in naskh script in black ink, numerous geometrical diagrams throughout, a later, probably Qajar, hand in the first maqalah, in brown leather binding.

http://sophiararebooks.com/4447

One of his most popular works

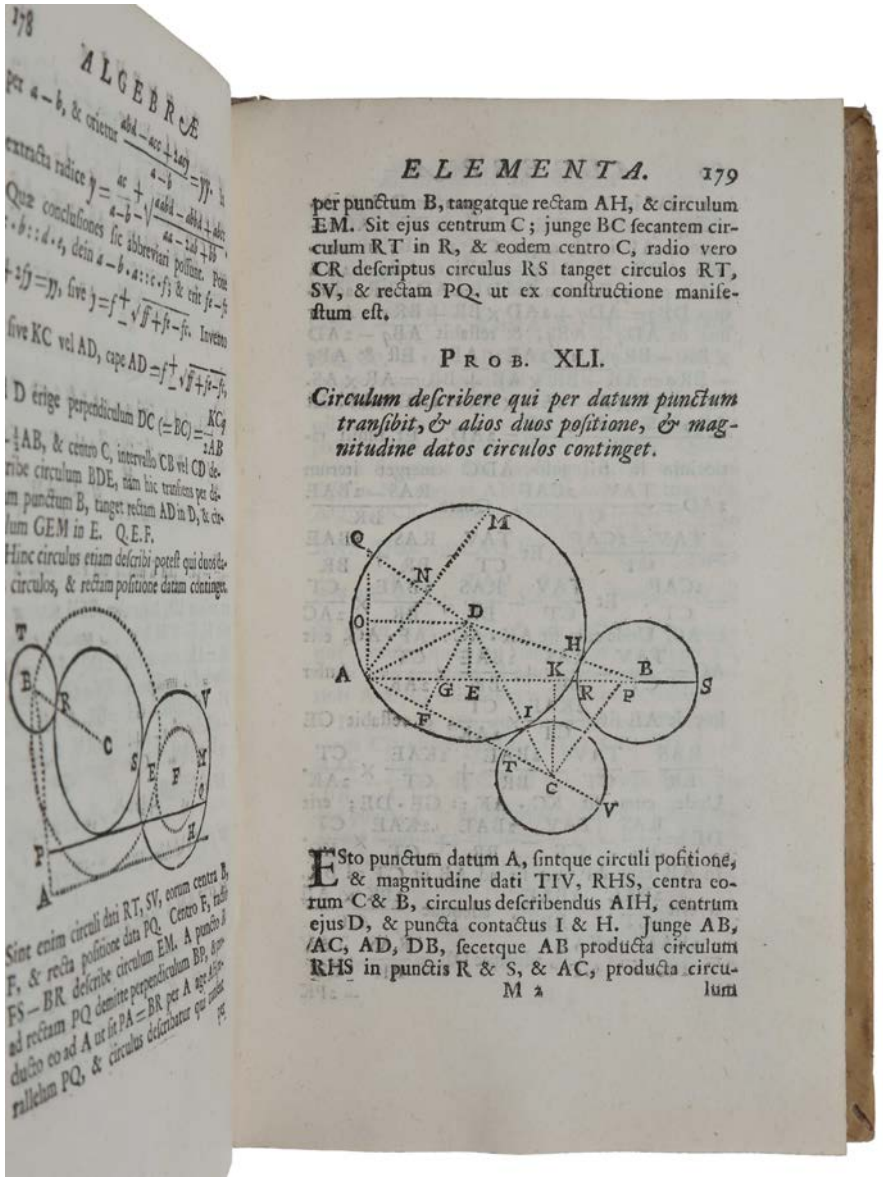
NEWTON, Isaac. *Arithmetica Universalis*. Cambridge/London: Typis Academicus, 1707.

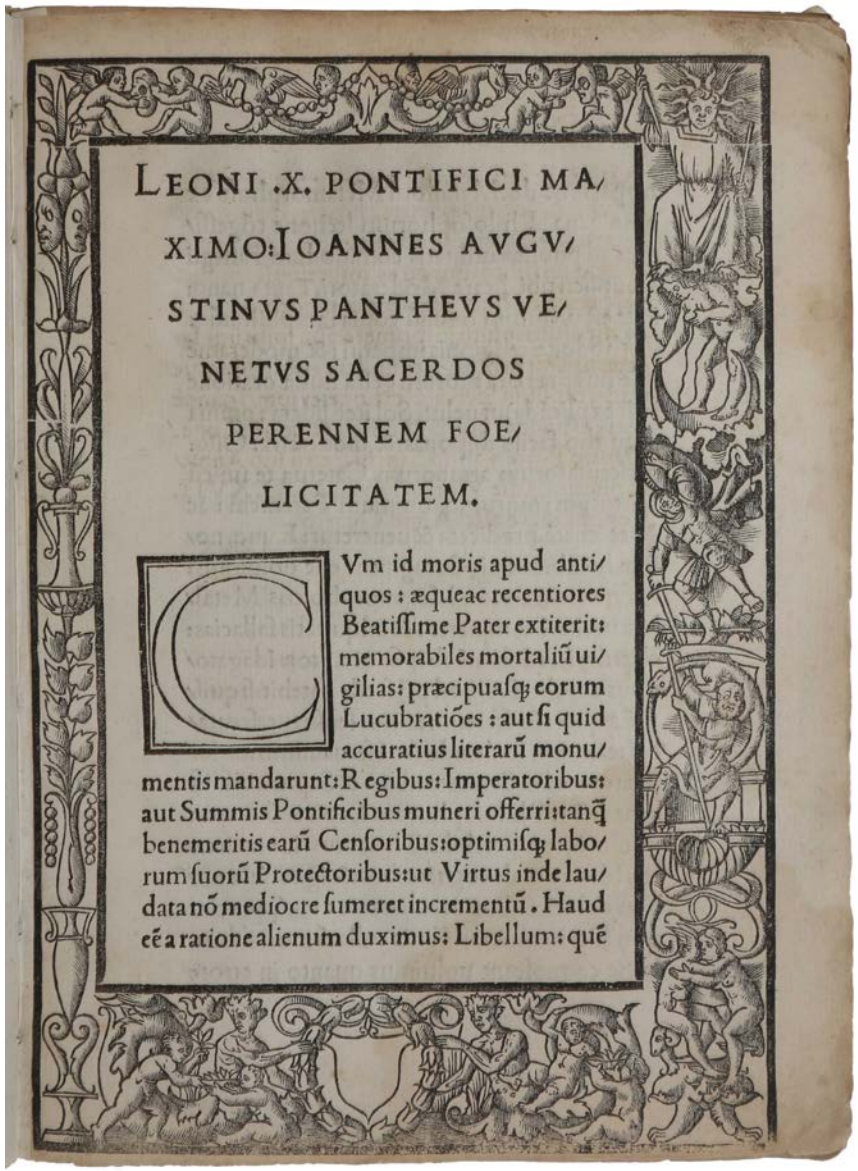
$22,000

First edition of Newton's treatise on algebra, or 'universal arithmetic,' his "most often read and republished mathematical work" (Whiteside). "Included are 'Newton's identities' providing expressions for the sums of the *i*th powers of the roots of any polynomial equation, for any integer *i*, plus a role of providing an upper bound for the positive roots of a polynomial, and a generalization, to imaginary roots, of Rene Descartes' Rule of Signs" (Parkinson). The final chapter, on the extraction of roots, is by Edmund Halley.

8vo, pp. [8] 343 [1:blank], contemporary vellum.

http://sophiararebooks.com/4064





LEONI .X. PONTIFICI MA/
XIMO:IOANNES AVGV/
STINVS PANTHEVS VE/
NETVS SACERDOS
PERENNEM FOE/
LICITATEM.

CVm id moris apud anti/
quos : æqueac recentiores
Beatiſſime Pater extiterit:
memorabiles mortaliũ ui/
gilias: præcipuaſq; eorum
Lucubratiões : aut ſi quid
accuratius literarũ monu/
mentis mandarunt: Regibus: Imperatoribus:
aut Summis Pontificibus muneri offerri:tanq̃
benemeritis earũ Cenſoribus:optimiſq; labo/
rum ſuorũ Protectoribus:ut Virtus inde lau/
data nõ mediocre ſumeret incrementũ. Haud
eẽ a ratione alienum duximus: Libellum: quẽ

The black tulip of alchemical literature

PANTHEUS, Giovanni Agostino. *Ars Transmutationis Metallicae...* [with, as issued] *Commentarium theoricae Artis Mettalicae Transmutationis.* Venice: Tacuino, 1518-1519.

$48,000

First edition of one of the greatest rarities in the alchemical and chemical literature; this is an exceptionally interesting copy, bound with twelve leaves of contemporary script. The greatest collector of early chemistry books of the past century, Roy G. Neville, never found a copy. ABPC/RBH list just one copy in the last 80 years (and that in a modern binding). OCLC lists three copies in US (Claremont Colleges, Delaware, Madison (Wisconsin)).

4to, ff. 38, [1]-26; [27]-38, with several contemporary marginal annotations and 12 added blank leaves densely annotated in a contemporary hand, eighteenth-century vellum.

http://sophiararebooks.com/4395

One of his most brilliant works

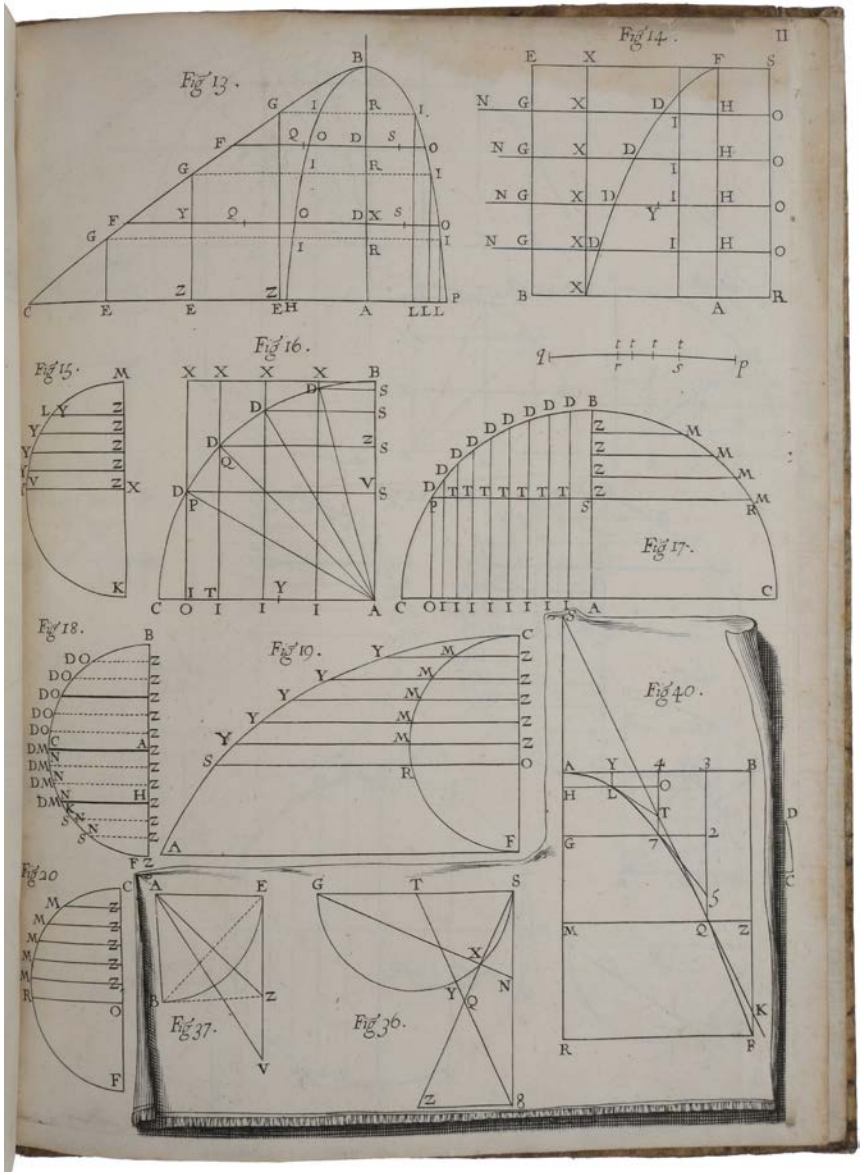
PASCAL, Blaise. *Lettres de A. Dettonville.* Paris: Guillaume Desprez, 1659.

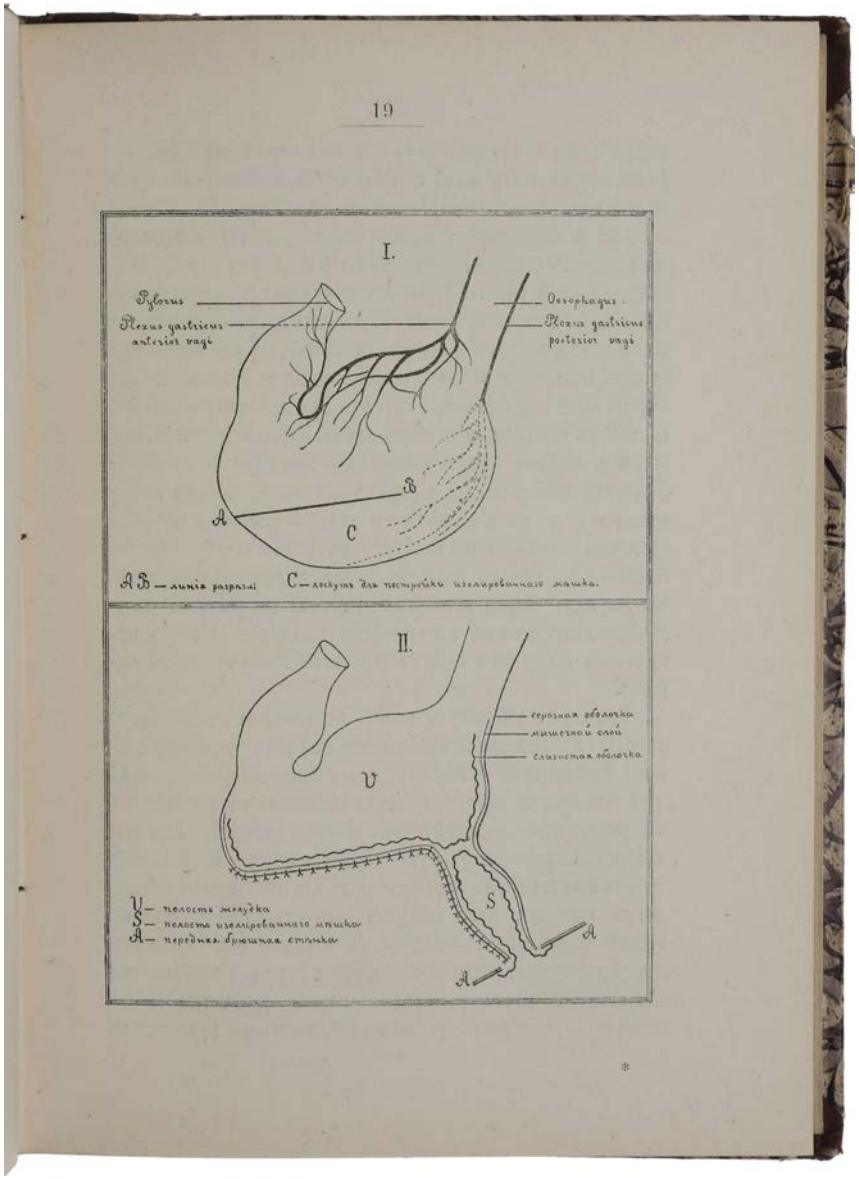
$75,000

First edition, extremely rare (one of about 120 copies printed), of one of Pascal's most brilliant works, a forerunner of integral calculus. Having perfected his theory of indivisibles to solve infinitesmal problems concerning the cycloid, he challenged other mathematicians to a contest to solve these problems. At the end of the contest he published 4 pamphlets under the pseudonym A. Dettonville setting out his method and its applications. They were collected and published together as the present work.

4to, complete with all four part-titles and the two-page 'Lettre de Monsieur de Carcavy à Monsieur Dettonville', some of which are often lacking, 18th century vellum.

http://sophiararebooks.com/4403





PMM 385 - Conditioned reflexes

PAVLOV, Ivan Petrovitch. *Lektsii o rabotie glavnikh pisht-shevaritelnikh zhelyos.* St. Petersburg: Kushnereff, 1897.

$20,000

A fine copy, in contemporary Russian binding, of this famous work on digestive juices by the demonstrator of the 'conditioned reflex'. "Using live dogs in his experiments, Pavlov determined the effect of stimuli on the generation of body secretions, digestive juices and saliva thru brilliant operative techniques." (Dibner).

PMM 385; Grolier/Horblit 83; Dibner 135; Grolier/Medicine 85; Lilly, *Notable Medical Books* 24.

8vo, contemporary Russian brown half calf with gilt spine lettering in cyrillic, initials B.C. of previous owner gilt at bottom of spine.

http://sophiararebooks.com/4196

PMM 391 - The birth of quantum theory

PLANCK, Max. *Zur Theorie des Gesetzes der Energieverteilung im Normalspectrum.* Leipzig: Johann Ambrosius Barth, 1900.

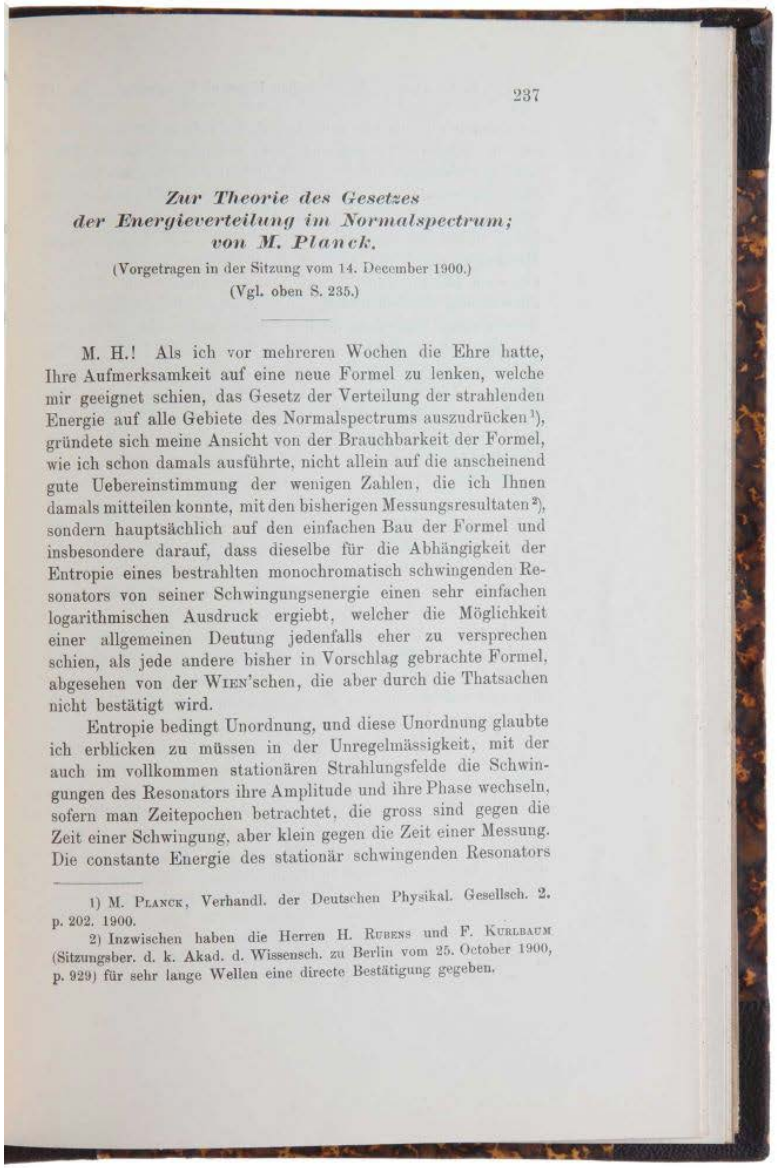
$25,000

First edition of the first appearance of Planck's revolutionary quantum theory, arguably the most important development in twentieth-century physics. "In this important paper [Planck] stated that energy flowed not in continuous, indefinitely divisible currents, but in pulses or bursts of action [or quanta]" (Dibner).

Dibner 166; Evans 47; Grolier/Horblit 26a; Norman 1713; PMM 391a; Sparrow 162.

In: Verhandlungen der Deutschen Physikalischen Gesselschaft. The entire volume offered here in fine contemporary half. A fine copy.

http://sophiararebooks.com/4317



237

Zur Theorie des Gesetzes der Energieverteilung im Normalspectrum;
von M. Planck.

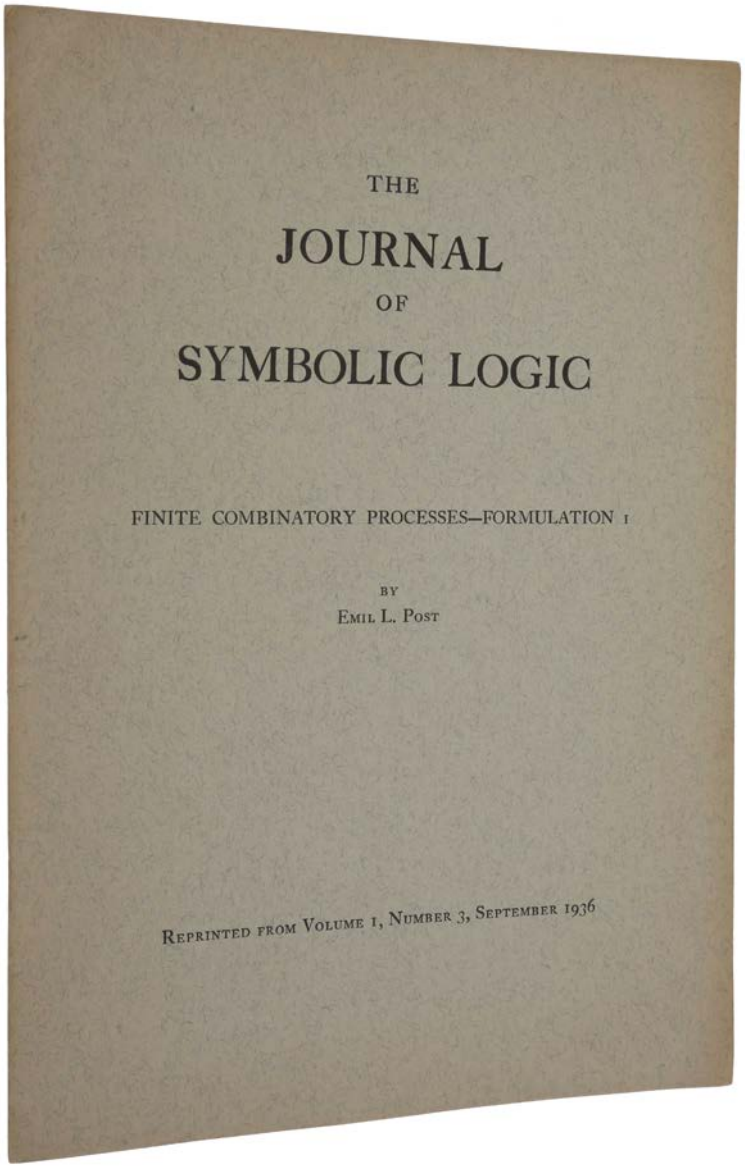
(Vorgetragen in der Sitzung vom 14. December 1900.)
(Vgl. oben S. 235.)

M. H.! Als ich vor mehreren Wochen die Ehre hatte, Ihre Aufmerksamkeit auf eine neue Formel zu lenken, welche mir geeignet schien, das Gesetz der Verteilung der strahlenden Energie auf alle Gebiete des Normalspectrums auszudrücken[1]), gründete sich meine Ansicht von der Brauchbarkeit der Formel, wie ich schon damals ausführte, nicht allein auf die anscheinend gute Uebereinstimmung der wenigen Zahlen, die ich Ihnen damals mitteilen konnte, mit den bisherigen Messungsresultaten[2]), sondern hauptsächlich auf den einfachen Bau der Formel und insbesondere darauf, dass dieselbe für die Abhängigkeit der Entropie eines bestrahlten monochromatisch schwingenden Resonators von seiner Schwingungsenergie einen sehr einfachen logarithmischen Ausdruck ergiebt, welcher die Möglichkeit einer allgemeinen Deutung jedenfalls eher zu versprechen schien, als jede andere bisher in Vorschlag gebrachte Formel, abgesehen von der Wien'schen, die aber durch die Thatsachen nicht bestätigt wird.

Entropie bedingt Unordnung, und diese Unordnung glaubte ich erblicken zu müssen in der Unregelmässigkeit, mit der auch im vollkommen stationären Strahlungsfelde die Schwingungen des Resonators ihre Amplitude und ihre Phase wechseln, sofern man Zeitepochen betrachtet, die gross sind gegen die Zeit einer Schwingung, aber klein gegen die Zeit einer Messung. Die constante Energie des stationär schwingenden Resonators

1) M. Planck, Verhandl. der Deutschen Physikal. Gesellsch. 2. p. 202. 1900.

2) Inzwischen haben die Herren H. Rubens und F. Kurlbaum (Sitzungsber. d. k. Akad. d. Wissensch. zu Berlin vom 25. October 1900, p. 929) für sehr lange Wellen eine directe Bestätigung gegeben.



Post–Turing machine

POST, Emil Leon. *Finite Combinatory Processes.* [New York: ASL], 1936.

$7,500

First edition, very rare offprint, of Post's formulation of the notions of computation and solvability by means of a theoretical machine very similar to the concept of a Turing machine proposed by Alan Turing in his famous paper *On Computable Numbers*. The formulations of Alonzo Church, Post and Turing were later shown to be equivalent, but while Church's and Turing's identifications are now famous under the heading 'the Church-Turing thesis', Post's formulation is less well known.

Offprint from The Journal of Symbolic Logic, original printed wrappers, a virtually mint copy.

http://sophiararebooks.com/4062

The Rose Garden

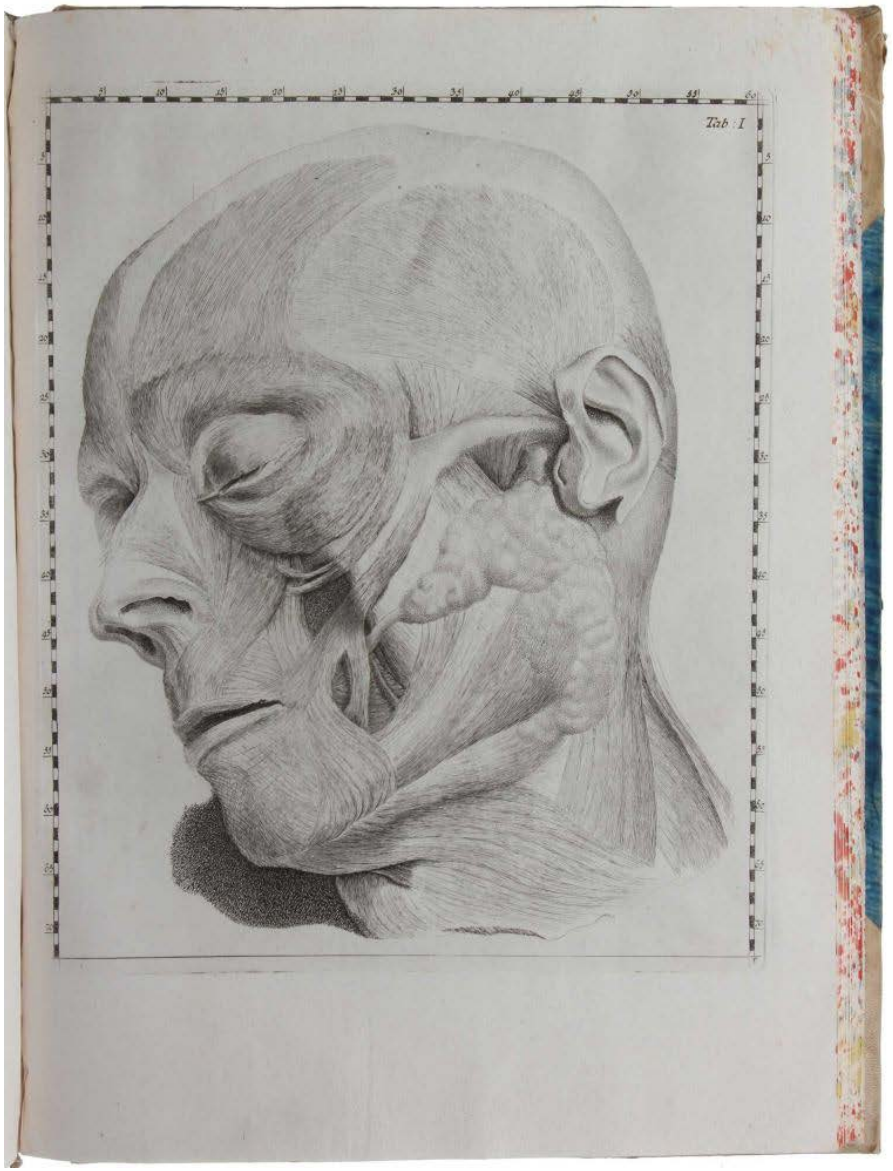
RÖSSLIN, Eucharius. *Der swangern Frawen und hebammen roszgarten.* Cologne: Arnt von Aich, 1513.

$68,000

An exceptionally fine copy, in an untouched contemporary binding, of the earliest printed textbook for midwives and one of the first printed books devoted to obstetrics, including engravings attributed to the Frankfurt artist Martin Kaldenbach, a pupil of Albrecht Dürer. Although copies occasionally appear on the market, they are almost always in poor condition, and usually rebound, as a result of extensive use over the centuries.

4to, 56 leaves, two full-page woodcuts of the Rose Garden, woodcut of the birth chair on D2v. and 19 woodcuts showing the different positions of the foetus in utero. Contemporary blind-stamped calf-backed wooden boards, entirely unrestored.

http://sophiararebooks.com/4006



One of the finest anatomies of the 18th century

SANTORINI, Giovanni. *Anatomici summi septemdecim tabulae...* Parma: [Bodoni for] Regia typographia, 1775.

$7,500

First edition. "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.

Norman 1888; G&M 399.1; *Heirs of Hippocrates 788*; Pincus 248.

Folio, pp. [10], i-xxxv [1], 1-217 [3] and 42 beautifully engraved plates, contemporary half vellum, marbled baords, a very fine and fresh copy, entirely unrestored. Rare in such good condition.

http://sophiararebooks.com/3623

The first detailed map of the moon

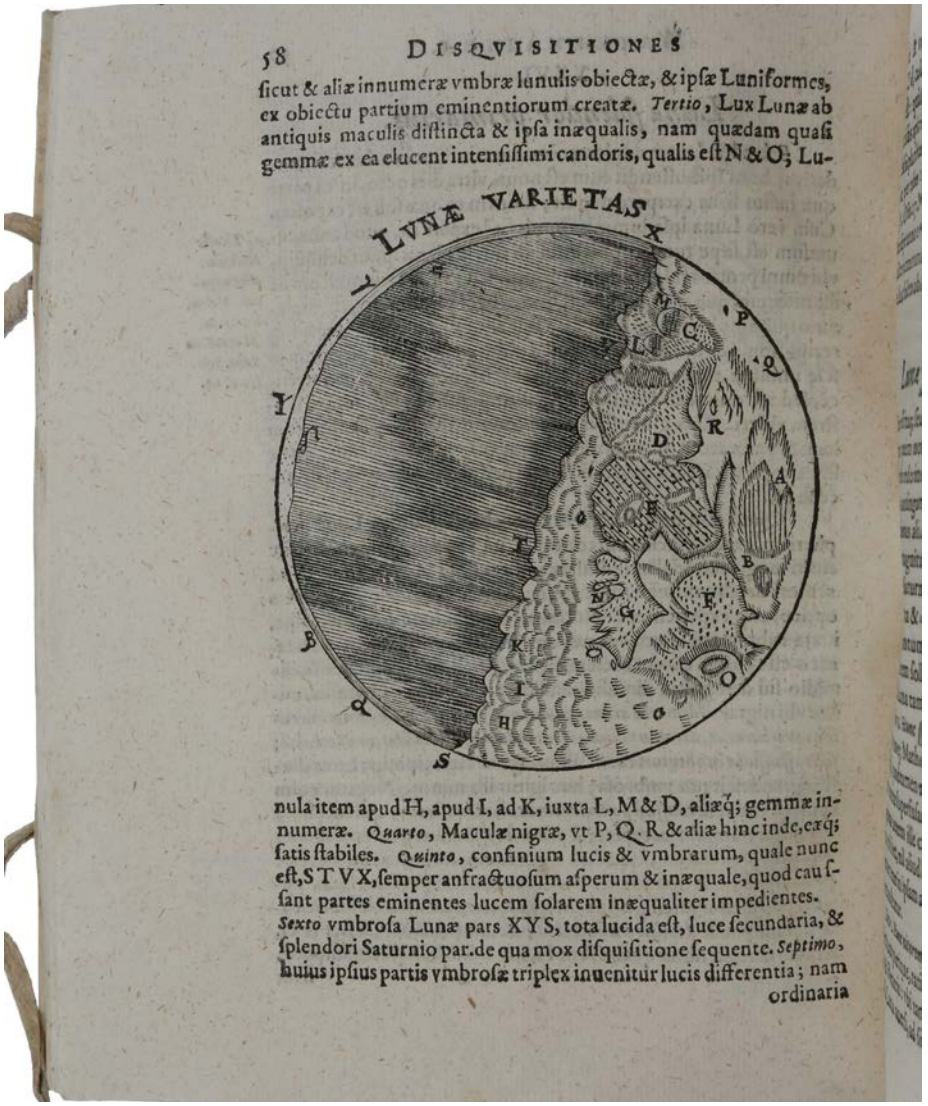
SCHEINER, Christoph. Disquisitiones mathematicae, ... Ingolstadt: Eder for Elisabeth Angermaria, 1614.

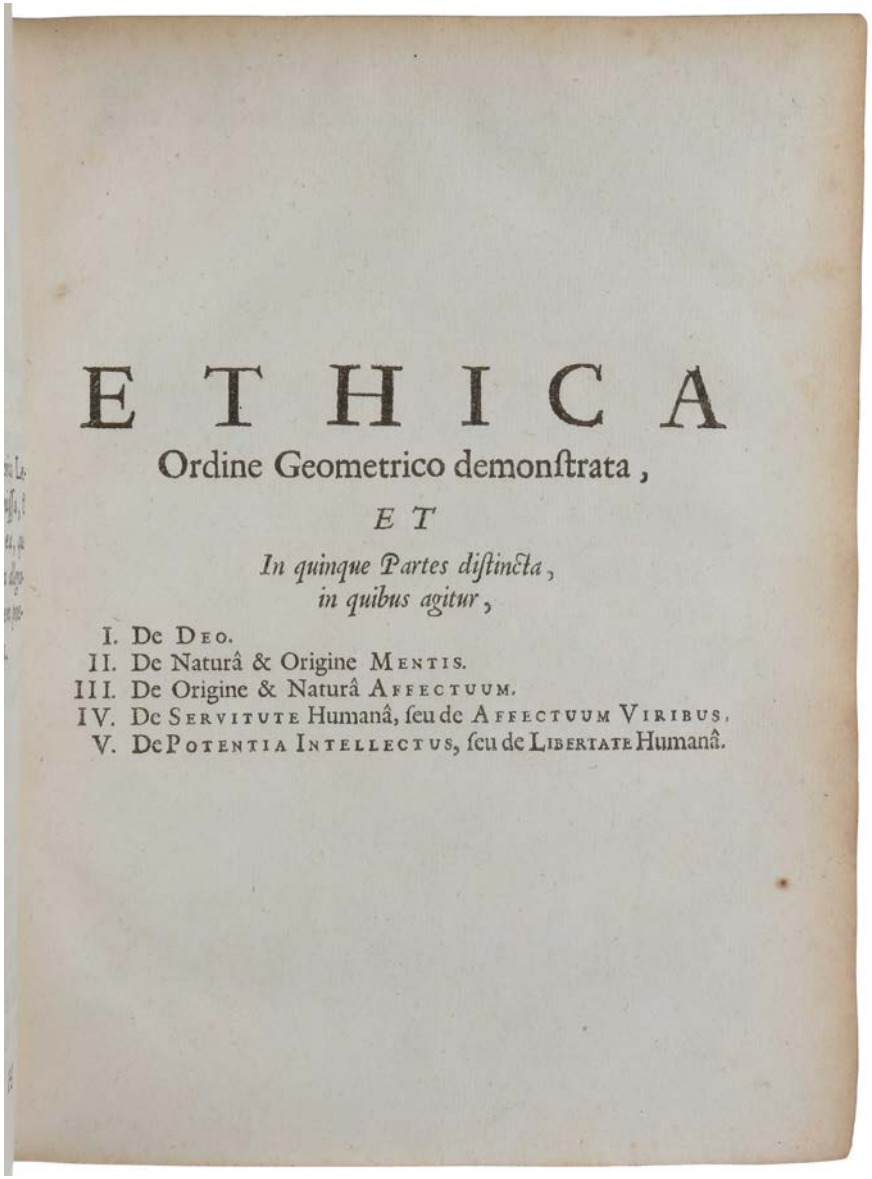
$38,500

First edition of this very rare work containing the second earliest map of the moon – but the first to give topographical details – as well as the first illustrations of a telescope. It builds upon Scheiner's 1612 discovery of sunspots, made using a telescope he built himself, which led to his famous controversy with Galileo. This work discusses almost all the astronomical issues then current, especially those brought about by the newly invented telescope.

4to, pp. [2], 90, [4, last blank], contemporary vellum using an earlier manuscript sheet (musical notations); two ties, ms paper label.

http://sophiararebooks.com/4126





E T H I C A

Ordine Geometrico demonſtrata,

E T

In quinque Partes diſtincta,
in quibus agitur,

I. De Deo.
II. De Naturâ & Origine Mentis.
III. De Origine & Naturâ Affectuum.
IV. De Servitute Humanâ, ſeu de Affectuum Viribus.
V. De Potentia Intellectus, ſeu de Libertate Humanâ.

'Ethics, Demonstrated in Geometrical Order'

B. d. S. [SPINOZA, Benedictus de]. *Opera Posthuma.* Amsterdam: Jan Rieuwertsz, 1677.

$17,500

First edition, and a very fine copy, of Spinoza's *Opera* which "has served, then and since, with the *Tractatus Theologico-Politicus*, to immortalize his name" (PMM 153). The first work in the volume is Spinoza's one indisputable masterpiece: *Ethica, ordine geometrico demonstrata* - perhaps the most ambitious attempt to apply the method of Euclid in philosophy.

Norman 1988; See PMM 153.

4to, pp. [40], 614, [34], 112, [8]. Contemporary vellum, handwritten title to spine. A very fine and fresh copy with no restoration at all. Rare in such good condition.

http://sophiararebooks.com/4364

Extremely rare ALS by one of the founders of modern geology

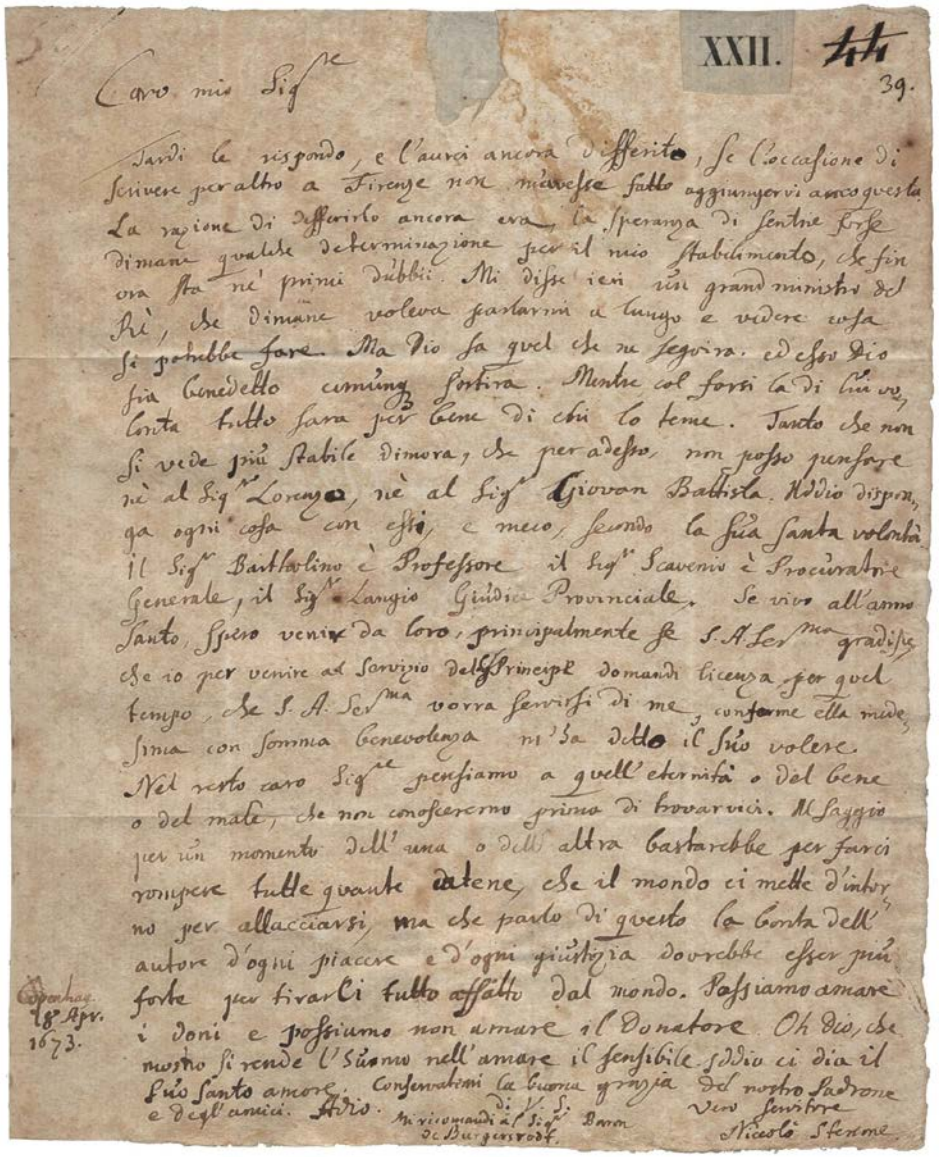
STENO, Nicolas. *[Unpublished ALS, sent from Copenhagen on April 28, 1673 to the Florentine scientist Vincenzo Viviani].*

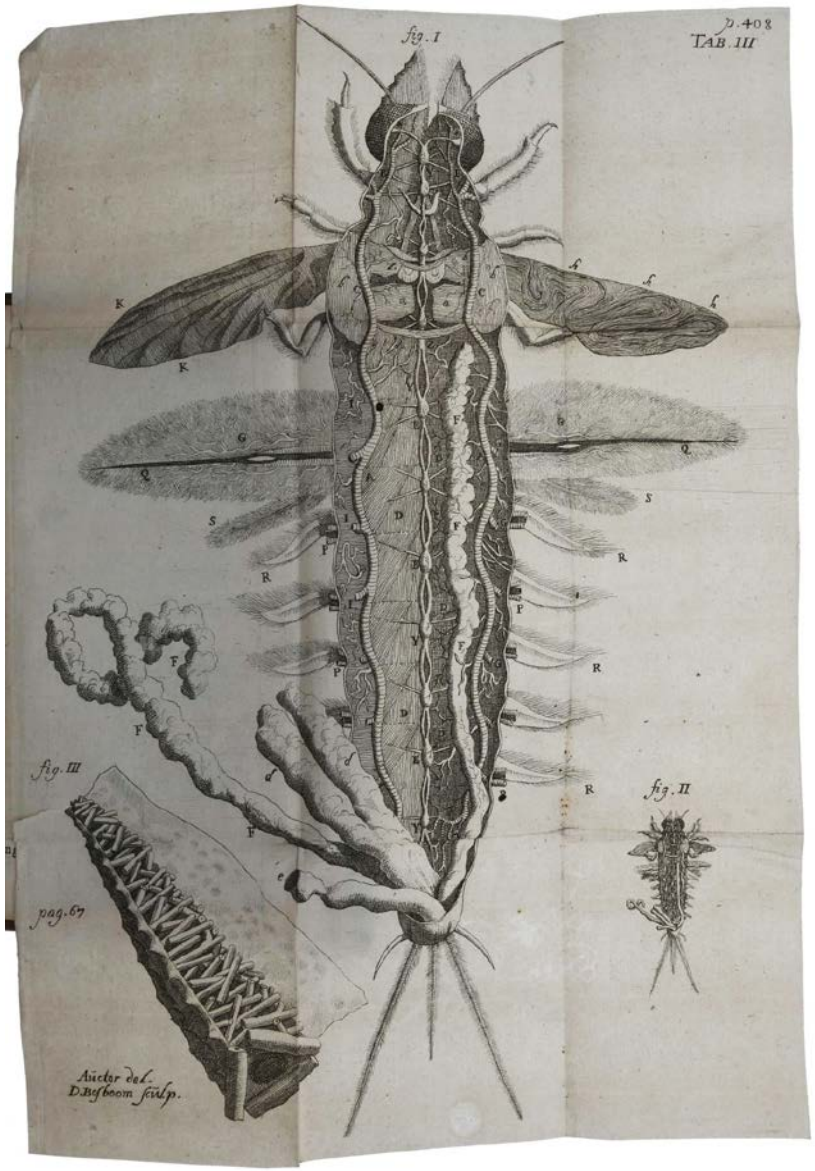
$8,500

Exceptionally rare autograph letter signed by Steno, to his closest friend in the Accademia del Cimento, of which Steno himself was a member, and where he carried out his most important research, leading to the publication of his great works *Elementorum myologiae specimen* (1667) and *De solido intra solidum naturaliter contento* (1669).

One leaf (207 x 167 mm), untrimmed on three sides, written on recto, recipient's name and address ('Vincenzo Viviani, Firenze') and traces of wax seal on verso, lightly browned.

http://sophiararebooks.com/3987





The best early illustrations of dissections of insects

SWAMMERDAM, Jan. *Ephemeri Vita.* Amsterdam: Abraham Wolfgang, 1675.

$9,500

First edition, very rare and a fine copy, of Swammerdam's treatise on the life-cycle and anatomy of the mayfly, containing his first published descriptions and illustrations of the internal anatomy of an insect. "*His Ephemeri Vita* contains some very remarkable pieces of minute anatomy. The figures, drawn by himself, are the best early representations of the dissection of an insect" (Hagströmer). "In his last work, on the may-fly, Swammerdam gave the first complete account of metamorphosis... much in his descriptions was not superseded before the nineteenth century" (Hall).

8vo, pp. [xxxii], 422, [8], with eight engraved plates, contemporary vellum.

http://sophiararebooks.com/4049

The second printed work on magnetism

TAISNIER, Jean [PEREGRINUS, Peter; BENEDETTI, Giovanni Battista]. *Opusculum perpetua memoria dignissimum, De natura magnetis, ...* Cologne: Birkmann, 1562.

$15,000

First edition, extremely rare, of the second printed work on magnetism, preceded only by the *Epistola de magnete* of Peregrinus (1558), which is virtually unobtainable. Taisnier's work is, in fact, a plagiarism of Peregrinus, which it reprints verbatim, and of the equally rare *Demonstratio proportionum* (1554) of Benedetti, which anticipates Galileo's theory of falling bodies. Not only did Peregrinus bring together virtually all the relevant, contemporary knowledge on magnetism, he added to it and, of the greatest importance, organized the whole into a science of magnetism.

4to, pp. [iv], 84, [1], Modern blue panelled calf gilt.

http://sophiararebooks.com/4307

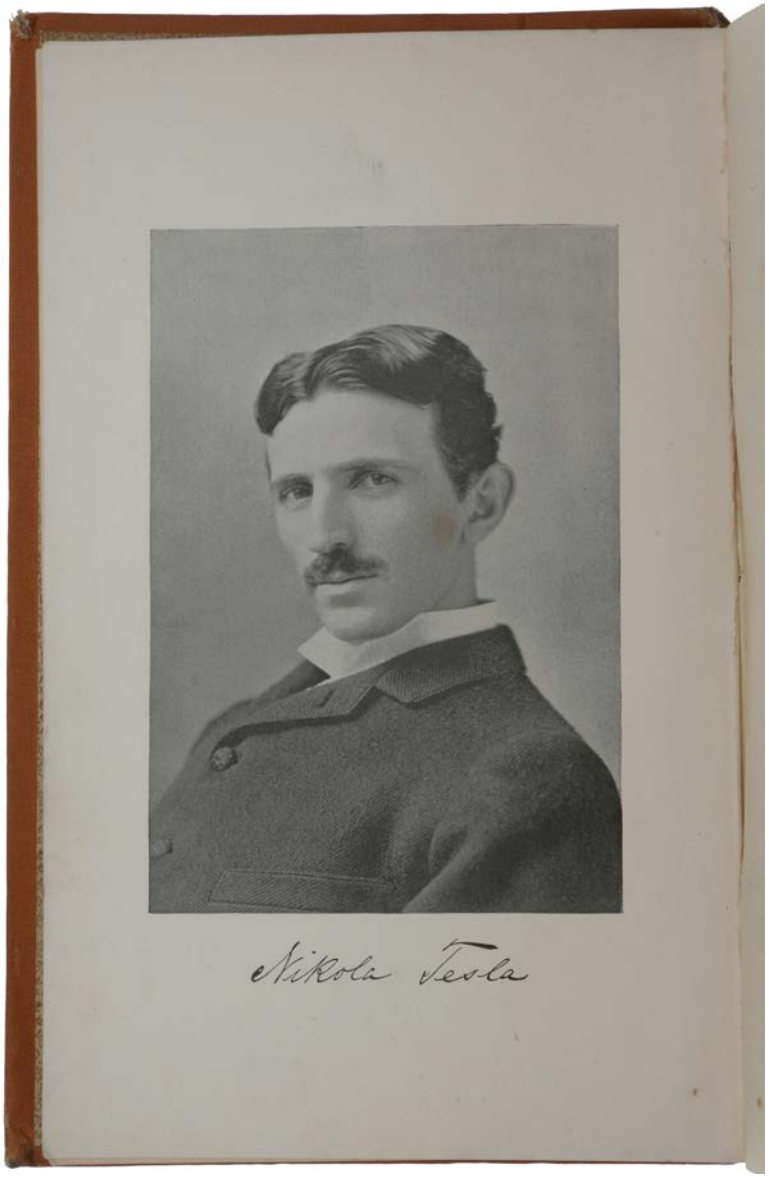

IOANNES TAISNIER HANNO. 5

lapide insistat: ibi enim alter Polorum in opposita parte simili modo inuenietur. A punctum verum. B falsum erit.

Modus distinguendi alterum Polum ab altero.

Vtrum punctorum iam dictorum respondeat Polo Arctico, siue Septentrionali, ita distinguitur: Accipiatur vas plenũ aqua, satis amplum, in quo Magnes super assere leui ponatur, vel in pyxide nõ admodum profunda, ita tamen vt duo puncta in lapide inuenta, æqualiter eleuata iaceant in dicta pyxide, sic virtute lapidis eousq; mouebitur pyxis, quo Polus Meridionalis, meridiem, alter verò oppo-

B



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TESLA, Nikola. *The Inventions, Researches and Writings of Nikola Tesla, with special reference to his work in polyphase currents and high potential lighting.* NY: The Electrical Engineer, 1894.

$8,500

First edition, very rare, especially in the original cloth, of Tesla's most influential book, containing an account of his early researches and inventions, notably his invention of the polyphase alternating current (AC) system, which served as the principal method of power transmission in the twentieth century, and of the 'Tesla coil' which he used to produce a 'wireless' lighting system and which is widely used in radio technology.

8vo, pp. xi, 496, with frontispiece photographic portrait of Tesla. Original publisher's cloth.

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TURING, Alan. *On computable numbers, with an application to the Entscheidungsproblem. [With.] A correction.* London: Hodgson, 1936-37.

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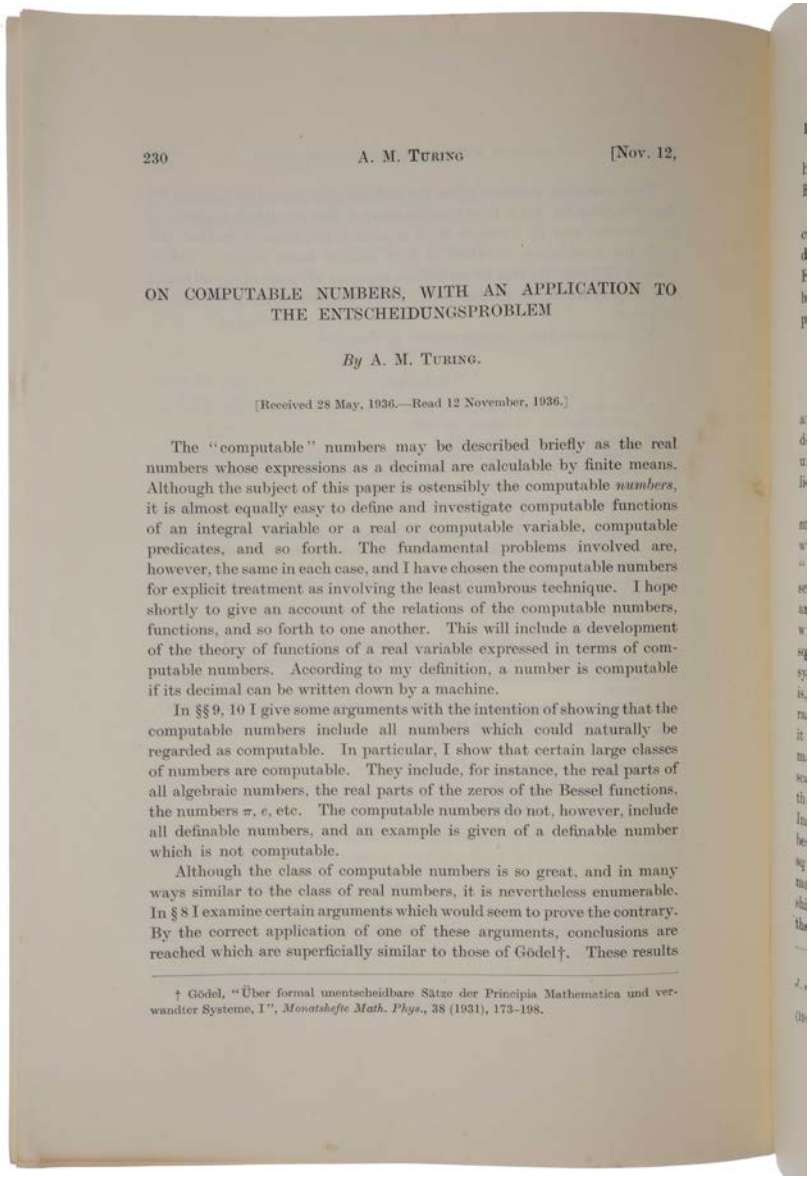

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ON COMPUTABLE NUMBERS, WITH AN APPLICATION TO THE ENTSCHEIDUNGSPROBLEM

By A. M. TURING.

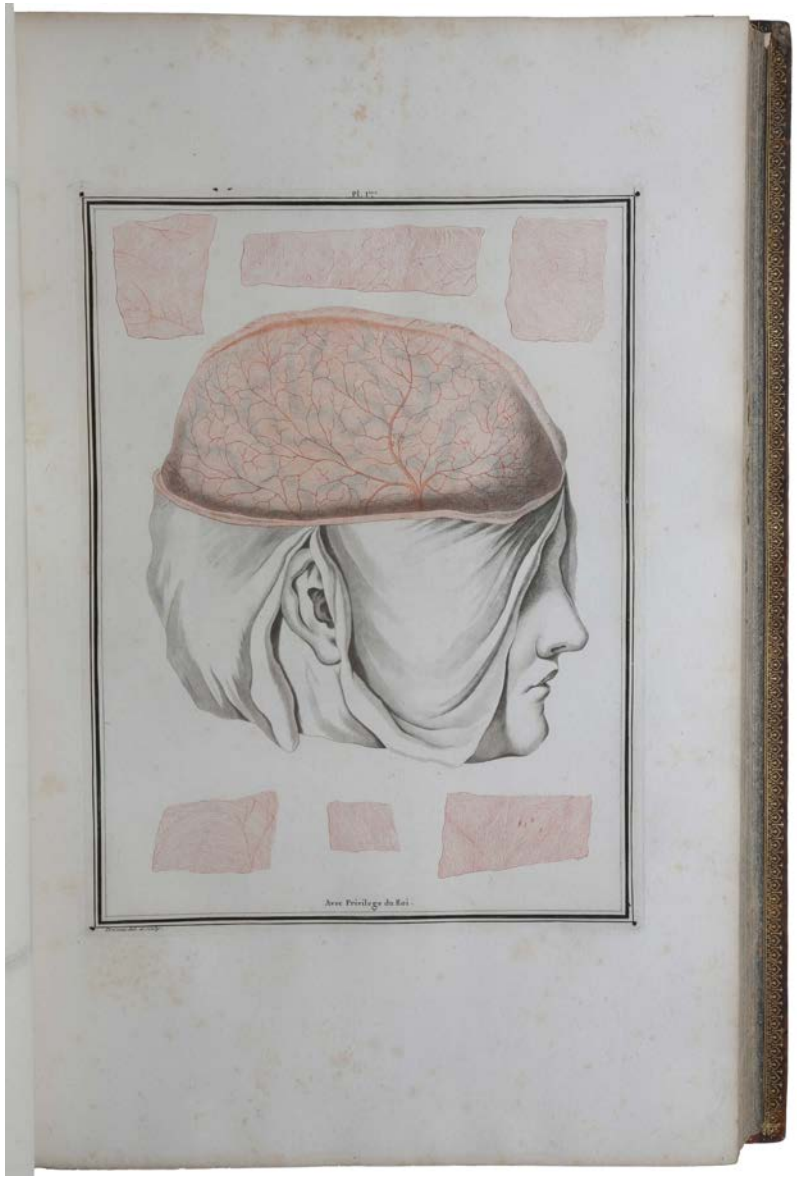
[Received 28 May, 1936.—Read 12 November, 1936.]

The "computable" numbers may be described briefly as the real numbers whose expressions as a decimal are calculable by finite means. Although the subject of this paper is ostensibly the computable *numbers*, it is almost equally easy to define and investigate computable functions of an integral variable or a real or computable variable, computable predicates, and so forth. The fundamental problems involved are, however, the same in each case, and I have chosen the computable numbers for explicit treatment as involving the least cumbrous technique. I hope shortly to give an account of the relations of the computable numbers, functions, and so forth to one another. This will include a development of the theory of functions of a real variable expressed in terms of computable numbers. According to my definition, a number is computable if its decimal can be written down by a machine.

In §§ 9, 10 I give some arguments with the intention of showing that the computable numbers include all numbers which could naturally be regarded as computable. In particular, I show that certain large classes of numbers are computable. They include, for instance, the real parts of all algebraic numbers, the real parts of the zeros of the Bessel functions, the numbers π, e, etc. The computable numbers do not, however, include all definable numbers, and an example is given of a definable number which is not computable.

Although the class of computable numbers is so great, and in many ways similar to the class of real numbers, it is nevertheless enumerable. In § 8 I examine certain arguments which would seem to prove the contrary. By the correct application of one of these arguments, conclusions are reached which are superficially similar to those of Gödel†. These results

† Gödel, "Über formal unentscheidbare Sätze der Principia Mathematica und verwandter Systeme, I", *Monatshefte Math. Phys.*, 38 (1931), 173–198.



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