

Catalogue 08-2021

PMM - Printing and the Mind of Man

50 selected items including several new arrivals

This catalogue comprises copies of first editions only as listed in the PMM*, except for two cases where the first edition is practically unobtainable (Carroll's *Alice in Wonderland*, 1865 and Avicenna's *Canon medicinae*, 1472)

To access our website for more images, click on the author's name!

*John Carter & Pery Muir, *Printing and the Mind of Man*. London: Cassell & Co., 1967.

Milestones of Science Books

phone +49 (0) 421 1754235

www.milestone-books.de . info@milestone-books.de

Member of ILAB and VDA

other Islamic thinker. He lived mainly in Persia but wrote mostly in Arabic, though a few of his works were written in Persian. He is reputed to have produced more than one hundred and sixty books, most of which are now lost. At the age of sixteen he read medicine - 'not one of the difficult sciences', he said - and became physician to the Emir of Bokhara, where he had access to a great library and continued his studies in philosophy and other branches of learning. The *Canon*, written in Arabic and here translated into Latin by Gerardus of Cremona, is a compendium of Greek and Muslim medical knowledge of Avicenna's time, coordinating the teachings of Galen, Hippocrates and Aristotle. It superseded all previous works - even the great medical encyclopaedia of Rhazes - and in its Latin translation became the authoritative book in all universities. It was still being printed in the seventeenth century, though by that time its influence had been superseded by Galen and then by the new medical school represented by Sydenham and others. It is, however, still in use in parts of the Arab world today. The last book, containing his own records of cases, is lost, but the *Canon* still contains many original observations. Avicenna recognized the distribution of diseases by water and soil. He describes many nervous ailments, skin diseases, etc. In the section *Materia Medica* he records seven hundred and sixty drugs and, for the first time, the preparation and properties of alcohol. By treating surgery as a separate and inferior part of medicine, he was unfortunately responsible for a setback in the development of this department of medical science. Avicenna's philosophical works, attempting a reconciliation of Plato, Aristotle and oriental thought and religion, became one of the fundamental sources for scholasticism and probably influenced such thinkers as Aquinas, Duns Scotus and Roger Bacon. His work on psychiatry and psychology derived from Aristotle and acquired a wide following. Body and soul were conceived as separate entities; the soul emanates from God, enters the body after generation and is immortal. This conception is similar to that of St Augustine and leads directly to the *cogito, ergo sum* of Descartes. Avicenna wrote on mathematics (translating Euclid), optics and physics. His work on the 'origin of mountains' is a remarkable early survey of geology and the main source for the thirteenth-century encyclopaedists. His opposition to alchemy was a unique phenomenon for his time. The *Canon* was translated into Hebrew (1491), the first Arabic printing appeared in 1593, and there were many editions of, and commentaries on, the Latin translation by Gerardus of Cremona (1114-87). Through these printings Avicenna's work transmitted to the West the ideas of the great Greek writers and also introduced ideas of his own which in some respects superseded them." (PMM 11).

References: Dibner 120 (this edition), PMM 11 and Horblit 7 (for 1st edition); Klebs 131.11; ISTC ia01424000; BMC V 438; Heirs of Hippocrates 67 (for 1498 edition); William Osler, *The Evolution of Modern Medicine*, Kessinger Publ. 2004; Max Neuburger, *History of medicine*, translated by Ernest Playfair. London, 1910. Vol. I).

PMM 13 - The Imitation of Christ
Sammelband with 8 early Zainer printings including the editio princeps of *Imitatio Christi*

2 THOMAS A KEMPIS. *Imitatio Christi*. Augsburg: Günther Zainer, [1472], but not after 5 June 1473. 76 unnumbered leaves. Collation: [a-g¹⁰ h⁶]. Bound with 8 other theological tracts printed by Zainer, 1472-1473, in identical format and layout. Foliation added in contemporary manuscript. 35 lines, gothic type, large, 3 to 6 line, opening initial to each work painted in red, light- and dark-brown (including 3 depicting anthropomorphic faces); 2 to 5 line red and light-brown painted paragraph initials, sheet 30 (corresponding to [c10]) shorter at fore-margin due to a typographical error and editorially integrated. All leaves uncut preserving the deckle edges. Folio (306 x 214 mm). Bound in its first, unrestored, German contemporary (gothic) blind-stamped pigskin over wooden boards from the Augsburg workshop of the so-called Wundervogel (or Fuchsvogel Meister I)*, with traces of a clasp on the upper board, probably in brass (small loss of leather at the lower edge of the upper board, minor rubbing and wear of extremities, corners scuffed with the wood showing, scattered small wormholes). The printed paper is generally bright and crisp, with minor occasional yellowish toning, marginal dust- and finger soling, and a few sporadic and light stains. Larger wormtracks are present at inner blank margin of about 20 leaves, small wormholes elsewhere affecting some letters mainly at the beginning and end. Leaf a1 is somewhat browned, soiled and spotted and has some edge chipping and a longer closed tear without loss. There are sparse text corrections in a contemporary hand. Provenance: two ownership inscription in the upper margin of the first text leaf, one of which is deleted, the legible one reads "hoc libros est mei"; the second note probably contains the Latin abbreviation for presbyter "pbr" - another note in Latin is found at the lower margin of the first leaf, the endpapers at the beginning and end of the volume are profoundly annotated by a contemporary (female) hand. (#003574) € 220,000

EDITIO PRINCEPS of the world's most often printed religious text after the Bible, regarded as the most influential devotional work of the later Middle Ages, from the press of the first printer at Augsburg.

AN OUTSTANDING AND FASCINATING COPY IN UNTOUCHED AUGSBURG BINDING, ACCOMPANIED BY 7 OTHER CONTEMPORARY THEOLOGICAL TRACTS PRINTED BY ZAINER. ALL TRACT IN THIS VOLUME ARE INTEGRAL FROM THE TIME OF BINDING (NOT AFTER 1476).

Tracts present in this volume:

(1) **THOMAS A KEMPIS.** *Imitatio Christi* - [Günther Zainer, not after 1473]. Collation: [a-g¹⁰ h⁶]: 76 leaves, c10 a cancel. Ref.: Goff I4; IGI 5106.

(2a and 2b) **AUGUSTINUS, Aurelius.** *Soliloquia*. [Günther Zainer, not after 1473] Linked with: **[ANONYMOUS]**. *Speculum peccatoris*, printed on ff. 24-28. Collation: [a-b¹⁰ c⁸]: 28 leaves. Ref.: Goff A1333, A1337; IGI VI 1043-A.

(3) **AUGUSTINUS, Aurelius.** *De quantitate animae*. [Günther Zainer, not after 1473]. Collation: [a-b¹⁰ c⁸⁽⁶⁺¹⁾]: 29 leaves. Ref.: Goff A1225; IGI VI 1024-A.

(4) **SUETONIUS, Tranquillus, Gaius.** *De viris illustribus*. [Günther Zainer, not after 1472]. Collation: [a-c¹⁰ d⁶ (+d* et frequenter)]: 37 leaves. Ref.: Goff H192; IGI 4196.

(5a and 5b) **PSEUDO JEROME [Eucherius, of Lyon, Saint].** *De essentia divinitatis*. Linked with: **AQUINAS, St. Thomas.** *Summa de articulis fidei*. [Günther Zainer, not after 1472]. Collation: [a-b⁸]: 16 leaves. Ref.: Goff H179; IGI 4747.

(6) **ANONYMOUS.** *Processus Iudiciarius (alias: Litigacio mascarón contra genus humanum)*. [Günther Zainer, not after 1472]. Collation: [a¹⁰] (-[a1]): 9 (of 10) leaves, lacking first blank. Ref.: Goff P1001; IGI 8076.

(7) **[NIDER, Johannes].** *Dispositorium moriendi*. [Günther Zainer, not after 1472]. Collation: [a-b¹⁰] (+6* Dubitatur): 21 leaves. Ref.: Goff A1089; IGI VI 880-A.

(8) **[GERSON, Jean].** *Donatus for allegoriam moralisatus*. [Günther Zainer, not after 1472]. Collation: [a⁸]: 8 leaves, last a blank. Ref.: Goff G221.

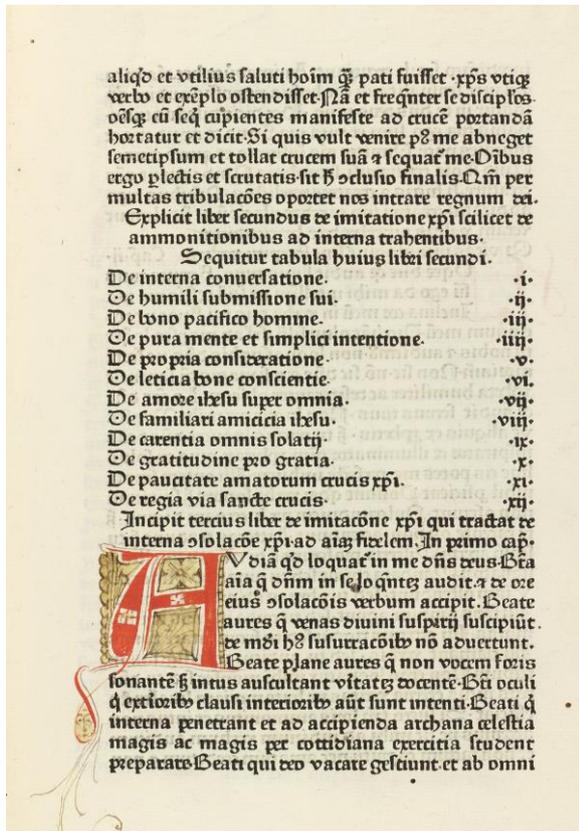
The "Imitation of Christ" is, next to the Bible, the most universally translated book in the world. Before 1829 more than 2,000 distinct editions of this work were recorded. A cornerstone of the *devotio moderna*, a lay

movement advocating the pursuit of a religious life in imitation of Christ through meditation and instruction, the *Imitatio Christi* circulated widely in manuscript from its completion in 1418 and in print. Thomas' autograph manuscript survives at the Bibliothèque Royale at Brussels. Zainer, first printer at Augsburg, may have printed this first edition with a monastic audience in mind; he regularly gifted books to the Carthusian monastery at Buxheim, and a manuscript closely related to Zainer's edition, which was written in 1471 and formerly belonging to that monastery, survives at Harvard (MS. lat. 264).



"'The Imitation of Christ' is a book of mystical thought which throughout history has appealed to Roman Catholics and Protestants alike. It has been the most widely read devotional manual apart from the Bible, perhaps even surpassing the influence of such books as Pilgrim's Progress ([PMM] 156) and St Augustine's Confessiones ([PMM] 7). This is the more surprising as in the first place it was addressed to monks and recluses. An expression of the German-Dutch mystical school of the fifteenth century, its message stressed the humble Christian virtues as they were preached in the Sermon on the Mount. Self-renunciation and the study of the life of Christ are the central points of its instruction. The criticism has in fact been made that its piety is hostile to learning, stresses the passive qualities, and takes little account of human activity as a whole in relation to the struggle for existence. Its universal appeal remains undeniable, however, and this is at least partly due to the great simplicity of its style and its freedom from intellectualism or theological dogmatism. The book is written partly in verse. Its title is derived from that of the first of its four books 'De imitatione Christe et contemptu vanitatum mundi' (of the imitation of Christ and the contempt of all worldly vanities). Its authorship has been the subject of dispute -- sometimes violent: the rival to the accepted author being Johannes Gerson, though claims have been made for others -- among them Walter Hilton, the English divine. However, Thomas a Kempis is now definitely recognized as its author. Born at Kempen in the Diocese of Cologne, he was educated by the Congregation of the Brothers of the Common Life, lately founded at Deventer by Gerard Groot and Florentius Radewyn. Their aim was to revive the zeal and fervour of the early Christians of Jerusalem and Antioch. The community took no vows, but lived according to the monastic principles of poverty, obedience and chastity; all earnings were put into a common fund and the devotees spent their fives in teaching and transcribing books -- about 1475 they established the

first printing press in Brussels. In 1399, having completed his studies at Deventer, Thomas sought out his brother John, who was the Prior at the reformed monastery of the Augustinian Canons Regular at Mount Saint Agnes, near Zwolle. Some time elapsed before the question of his vocation was decided, for it was not until 1408 that he took his vows and became a full member of the Congregation. He was ordained priest in 1413 and became Sub-Prior in 1429. He lived there all his life. He wrote a history of Agnetenberg and the fives of Groot and Radewyn, and transcribed a number of manuscripts, among them the works of St Bernard and a large Bible which is still extant at Darmstadt. The masterly edition of Thomas's holograph manuscript produced by L. M. J. Delaisse (Brussels, 1956) shows conclusively that the 'Imitation', as we are accustomed to read it, consists of four disparate mystical writings, of which manuscripts exist dated 1427. These began to circulate from about 1431, and a codex signed by Thomas himself and dated 1441 survives in the Royal Library at Brussels. The title *Liber de Imitatione Christi* began to be used for the collection in the second half of the fifteenth century. The 'Imitation' was first printed in 1473. Since then there have been thousands of editions and translations into fifty languages, a record rivalled only by the Bible itself. The first English translation by William Atkinson and Margaret, Duchess of Beaufort, mother of Henry VII, was published in 1503. It influenced the most diverse personalities such as Wesley, de Quincey, Milman, George Eliot and General Gordon, who carried a copy with him on the battlefield." (PMM 13)



The work was printed by the first publisher of Augsburg, Günther Zainer, probably in large numbers hoping that the convents and monasteries would have bought it; for this purpose, Zainer published the text together with other religious works. This is the reason why in some copies the Imitatio is linked to the other tracts, up to a maximum of eight or nine depending on whether the two works by Sanct Augustinus (*Soliloquia* and *Speculum peccatoris*) are counted separately.

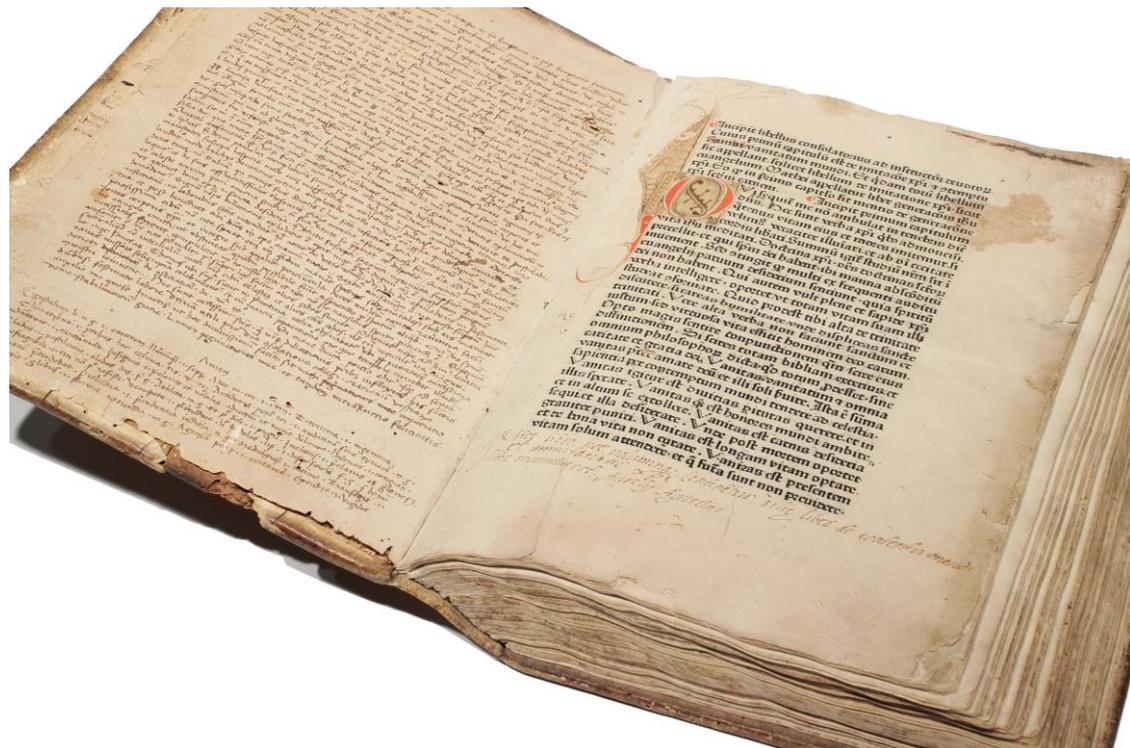
Because of the absence of a colophon, the date of publication is unsure. However, thanks to an ownership note present in the copy at BSB library Munich, the collection was thought to have been printed before 1473. More recent studies have found an ownership note from 1472 present in a copy in a private collection (Roland Folter, USA).

When the entire group was sold together, perhaps ready bound, it was provided with an inserted title-slip listing the contents, which is not present in this copy. The 12 leaves of *Errores Judaeorum ex Talmud extracti (Probationes novi testamenti)*, a single tract, part of the group and formerly inserted as ff. 197-209, has been removed by a censor probably in a later period since the manuscript numbering skips those leaves. Complete

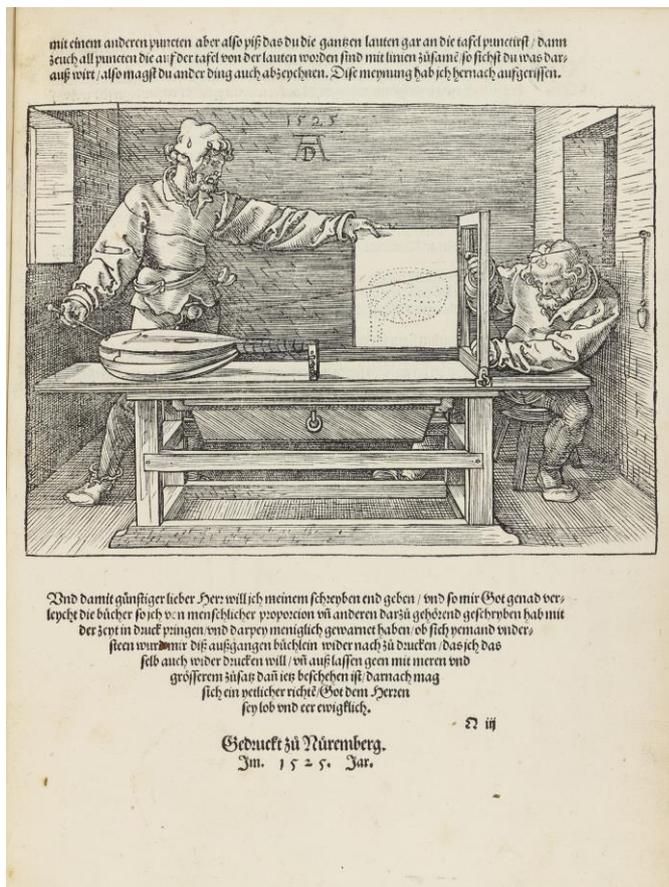
copies of all treatises are very rare (Morgan, Bayerische Staatsbibliothek and a few others have them). In most cases, several treatises are missing and can be from time to time found loose and in modern bindings. Complete copies in contemporary binding are not recorded as having sold at auction after 1978 (RBH).

*Wundervogel (or Fuchsvogel Meister I) of Augsburg (active 1468 to 1476) whose tools have been identified: the heart-shaped palmette (Motifs: m002386, ID: 108648s - Kyriss 090.01) and the invocation to Mary (Motifs: m002597, ID: 2597 - Kyriss K150.33).

Analysis of the manuscript text found on front and rear endpapers of our copy: The text apparently belong to a single hand and was penned shortly after the book was bound (e.g., between 1472 and 1476). The text consists of extracts and quotations - mainly in Latin - from the Bible and other works, but there is also no lack of notes in the scientific and medical fields. Notable is the weekly prayer in the vernacular on the front flyleaf recto which was written in the first person singular feminine. This suggests that a female owner ("hoc libro est mei" written in the same hand at the opening of the printed text) was certainly an educated individual with medical and scientific knowledge. References to the Benedictine rule (on the back of the cover sheet of the colophon) suggests a belonging to a monastic order. An interesting side note tells us that the owner paid 48 silver groschen ("Theutonico pretio grosso quadraginta octo") for this volume.



3 DÜRER, Albrecht. *Underweysung der messung, mit dem Zirckel un richtscheyt in Linien ebenen unnd gantzen corporen.* Nuremberg: [Hieronymus Andreas Formschneider], 1525. Folio (281 x 203 mm). 89 (of 90) unnumbered leaves, lacking final blank Q4 only. Signatures: (A-N)⁶ (O-Q)⁴ (-Q4). Numerous woodcuts of geometrical diagrams and architectural renderings, two woodcuts on P4 verso and Q1 recto extended with pasted-in folding slips to demonstrate a point in perspective, two figures on C5 verso and K1 recto printed on pasted-in cancel slips correcting the original figures; two half-page woodcuts showing artists using Dürer's drafting apparatus for drawing in perspective, the second with Dürer's monogram and dated 1525 (as are 2 of the triumphal column cuts). Roman and gothic alphabets. Bound in 20th-century crushed black morocco, gilt-lettered spine with 2 raised bands, upper edge gilt, housed in custom-made slip-case. Pages generally crisp and clean with only very little age-toning, occasional minor brown spotting, oversized woodcut diagrams on H2v, H3r, O4v, P2v and P3r shaved a few mm at head as often. Provenance: Mark Lansburgh; Robin Satinsky (bookplate "The Robin Collection" to front pastedown). In all a very good copy. (#003591) € 28,000



PMM 54; Norman 665; Adams D-1057; Bohatta 1; Meder XXVI 1; DSB IV, 259; Brunet II, 912; Stillwell Science 161. - FIRST EDITION of the first of Dürer's theoretical writings to be published, and one of the first mathematical works published in German. Bohatta variant 1b with the title-page including additional 3 lines of smaller text and with imprint "Gedruckt zu Nürnberg,/ Im. 1525. Jar" on last text leaf Q3 recto.

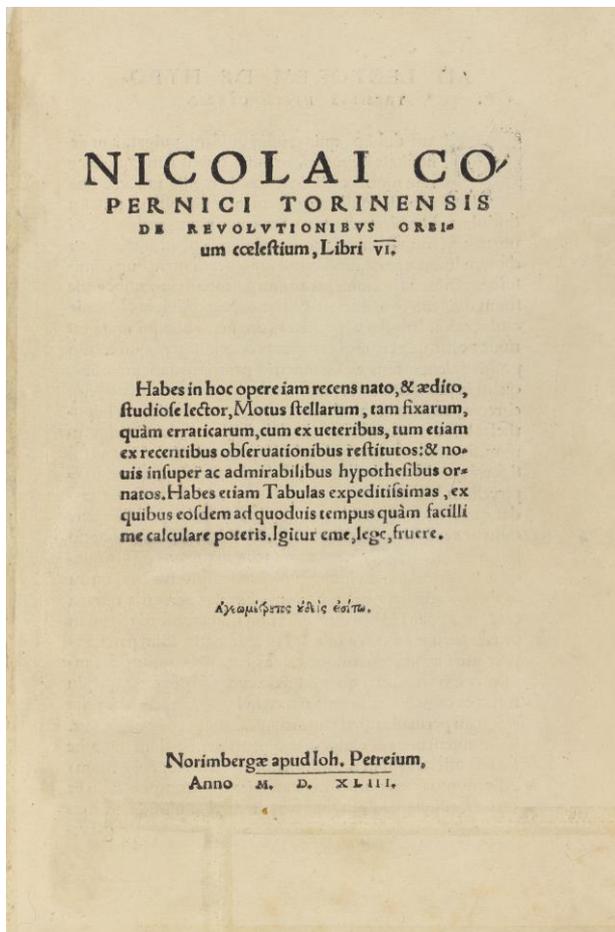
The *Underweysung der Messung* was the first of Dürer's three theoretical works on art to be published. Conceived as a practical guide to the rules of geometry and principles of perspective for artists, architects, sculptors, stonemasons and other craftsmen, the work introduced to northern Europe a system of projection that had been refined by the artists of the Italian Renaissance. In it Dürer formulated a comprehensive and mathematically sound basis for the realistic depiction of natural objects in space. 'The connexion of the beautiful with the natural, of the work of art with what is correct (i.e. mathematical) was a typical concept of the Renaissance. In the illustration of these principles lies the great historical importance of Dürer's theoretical writings.., they were the

foundation of accepted aesthetic dogma until the nineteenth century' (PMM).

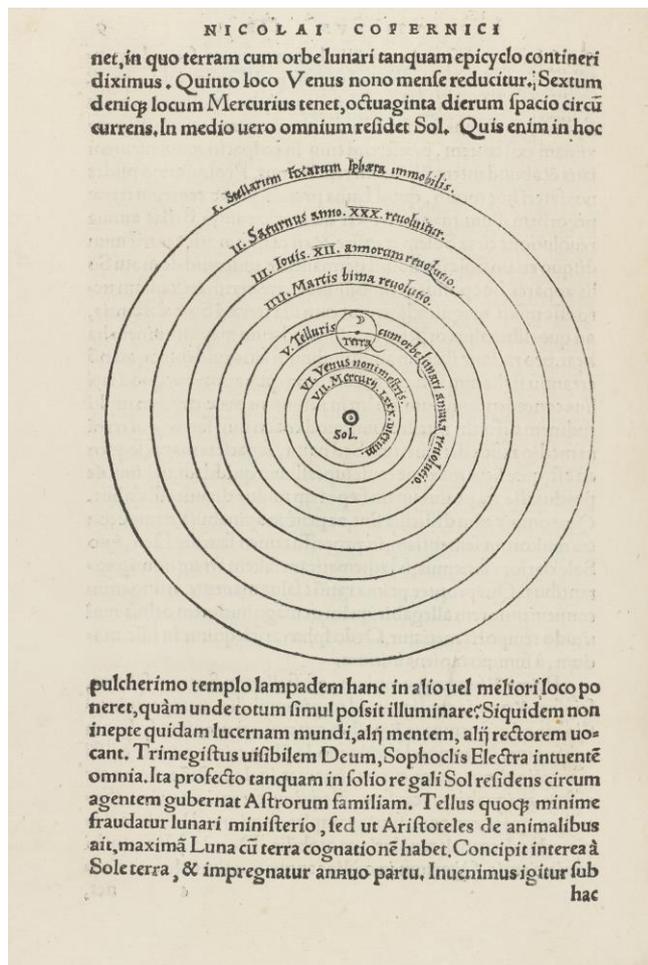
"Except for the *Geometria Deutsch* (ca. 1486-1487), a book of arithmetical rules for builders which Dürer knew and used, the *Underweysung der Messung* is the first mathematics book in German. With its publication Dürer could claim a place in the front ranks of Renaissance mathematicians" (DSB).

4 COPERNICUS, Nicolaus. *De revolutionibus orbium coelestium, libri VI.* Nürnberg: J. Petreius, 1543. 4to (248 x 174 mm). [6], 196 leaves. 148 woodcut text diagrams, including 6 repeats (Gingerich count), tables of calculations and ornamental woodcut initials. Bound without errata leaf which is found in only a few copies*. Signatures: π⁶ a-z⁴ A-Z⁴ Aa-Cc⁴. Leaf 52 misfoliated 49. Mid-19th century straight-grained black morocco, boards and spine with rich gilt decoration, spine with additional gilt lettering, all edges gilt (minor rubbing of extremities, corners a trifle scuffed, gilt decoration partially rubbed), endpapers of the time of binding. Title repaired at foot and gutter not affecting any letters. The entire copy has been carefully washed at the time of binding. Seven individual and conjoint leaves in the first half of the book (i.e., f.11, 21/24, 45, 61/64, and 77) show stronger signs of cleaning and pressing and we must suspect that they have been supplied at the time of binding. These leaves are slightly thinner and some faded letters retraced in ink. For the most part however, the paper is sound and strong and displays the usual age-toning of comparable (unwashed) copies. A few leaves have paper repairs of tears (f.11, 94, 121, 151) and f.157 a clean tear at the upper inner margin. It is certain that all leaves are original, showing the typical watermark pattern. Moreover, the copy was examined leaf by leaf at the Bavarian State Library (BSB) and compared against the two BSB library copies known to be original. Optical inspection of the paper watermarking as well as x-ray fluorescence spectroscopic analysis of printer's ink and paper stock confirms the originality of all text leaves. The book is accompanied by an independent expertise accordingly. Our copy is not listed in Owen Gingerich's census and it is not one of the six copies known to be stolen or missing. Provenance: Marchionis de Monteynard (bookplate to first flyleaf and another unidentified armorial bookplate to front-pastedown). Despite the cleaning and restoration work still a very good copy with ample margins. (#003298) € 450,000

FIRST EDITION of the most important scientific publication of the sixteenth century and a landmark in human thought. *De revolutionibus* was the first work to propose a comprehensive heliocentric theory of the cosmos, according to which the sun stood still and the earth revolved around it. It thereby inaugurated one of the greatest ever paradigm shifts in the history of human thought.



"It challenged the authority of antiquity and set the course for the modern world by its effective destruction of the anthropocentric view of the universe. We owe this book, which was more or less completed as early as 1530, to Georg Joachim Rheticus of Wittenberg, who persuaded Copernicus to allow him to publish it; for until 1540 the author himself had permitted only preliminary statements to circulate in manuscript. He died on the eve of its publication. Nicolaus Copernicus studied at Cracow, Bologna and Padua. Returning to his native Poland he eventually became Canon of the cathedral at Frauenberg, where he lived quietly until his death. He was a physician -- having studied medicine at Padua -- diplomat, economist, Doctor of Canon Law, and artist -- a self-portrait survives. Renaissance mathematicians, following Ptolemy ([PMM]18*), believed that the moon, sun and five planets were carried by complex systems of epicycles and deferents about the central earth, the fixed pivot of the whole system. In Copernicus's day it was well known that conventional astronomy did not work accurately, nor did further study of Ptolemy seem to put the matter right. Copernicus, stimulated by the free entertainment of various new ideas among the ancients, determined to abandon the fixity of the earth, and all the complexities in the treatment of the motions of the celestial bodies that follow from such a conception. With the sun placed at the centre, and



the earth daily spinning on its axis and circling the sun in common with other planets, the whole system of the heavens became clear, simple, and harmonious. The revolutionary nature of his theory is evident in his famous diagram illustrating the concentric orbits of the planets. Moreover, the new system worked mathematically as well as the Ptolemaic though not, indeed, much better. Like Ptolemy, Copernicus believed that the heavenly motions must be perfect, uniform and circular; he still employed epicycles. It was Tycho Brahe who finally destroyed the heavenly spheres, and Kepler ([PMM]112) who destroyed the myth of the circle. In the first book of the *De Revolutionibus* Copernicus explains how the daily rising and setting of the heavenly bodies is a consequence of the daily diurnal rotation of the earth on its polar axis. The course taken by the sun through the zodiacal constellations and the phenomena of the seasons are shown to be due to the annual revolution of the earth about the sun. Book 2 contains the mathematics of astronomy and a star catalogue based on Ptolemy; Books 3-6 treat of the particular motions of the earth, moon and planets. The relative distances between the earth and the planets are now determined. Copernicus (who dedicated his book to Pope Paul III) expected to be ridiculed by the unthinking for supposing that the earth moved; but he did not anticipate that it would attract religious prejudice. The early neglect of *De Revolutionibus* was due to its

difficulty and strangeness; later the fundamentalist issue became critical and it was condemned by the Church in 1616. The Church had no objection to the Copernican system as a mere calculating device, in the manner disarmingly proposed in the anonymous preface inserted in the first edition, without Copernicus's knowledge, by the Lutheran minister Andreas Osiander; it was the reality of the earth's motion that was at stake. Within a century the Copernican view was generally accepted by the leaders of science; Galileo ([PMM]128) and Gilbert ([PMM]107) were strong supporters as well as Mästlin and Kepler. Newton ([PMM]161) finally established its truth and his views were further developed by the eighteenth-century mathematicians to find their final summing up in the *Traite de Mecanique Celeste* of Laplace ([PMM]252). When it was stated in modern times that the planets were originally ejected from the sun by centrifugal forces a new significance was given to the heliocentric theory, but it must be said that with the arrival of Einstein's theory of relativity ([PMM]408) any statement about the absolute motion or rest of bodies has become somewhat irrelevant. But beyond these influences on astronomical science, it is obvious that the publication of this book at that particular moment in history powerfully helped to re-direct the whole outlook and thinking of mankind." (PMM 70).

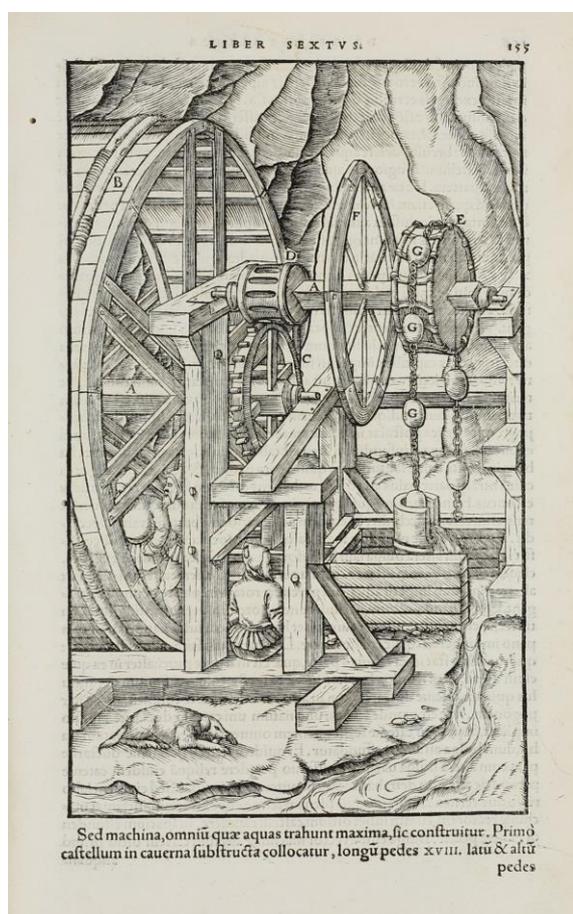
*Most surviving copies do not have the errata. They can appear on a separate leaf, or on the verso of the main or additional title. More often, though, they are absent, as here; of the 279 copies of the work in Gingerich's census all but 86 are without the errata.

Literature: PMM, *Printing and the Mind of Man* 70; Norman, *Library of Science & Medicine* 516; Dibner, *Heralds of Science* 3; Horblit, *One Hundred Books Famous in Science* 18b; Sparrow, *Milestones of Science* 40; Zinner 1819 & p. 42; Evans, *Epochal Achievements in the History of Science* 15; Gingerich, *An Annotated Census of Copernicus' De Revolutionibus*, 2002; Gingerich, *Rara Astronomica*, 16; Swerdlow & Neugebauer, *Mathematical Astronomy in Copernicus's De Revolutionibus*, 1984; Baranowski, *Bibliografia Kopernikowska, 1509-1955*, Warsaw, 1958; VD 16 K 2099; IA 144.356; STC 221; Adams C 2602; Houzeau/Lancaster I, 2503.

PMM 79 - Technology and Modern Geology

5 **AGRICOLA, Georgius.** *De re metallica libri XII. - De animantibus subterraneis liber.* Basel: Hieronymus Froben and Nicholas Episcopius, March 1556. Folio (320 x 195 mm). [10], [2: blank], 538 [i.e. 502], [74] pp. With woodcut printer's marks on title and bb6v, 2 folding woodcut plates inserted after i2 (the first plate shaved at fore-edge just into image, the second trimmed at head with a few mm loss), about 270 woodcut illustrations and diagrams in text (many full page). Mainly marginal wormholes (heavier in final 17 leaves of index affecting just a few letters of text), old canceled inscription on title-page, occasional very light marginal spotting, tear reinforced on p.453. Bound in contemporary calf, boards tooled with blind fillets, roll-stamps and fleurons, spine with 5 raised bands richly gilt in compartments, blue edges (old, probably 17th-century rebacking, slightly rubbed, some worming to spine and boards). An exceptional copy in fine contemporary binding, interior bright and clean. (#001847) € 30,000

Dibner 88, Horblit 2b, PMM 79, Norman 20, Adams A-349; Brunet I, 113; Duveen pp.4-5; Hoover 17. - FIRST EDITION OF 'THE FIRST SYSTEMATIC TREATISE ON MINING AND METALLURGY AND ONE OF THE FIRST TECHNOLOGICAL BOOKS OF MODERN TIMES' (PMM).



"Agricola -- he latinized his name from Georg Bauer -- studied at Leipzig, Bologna and Padua, became town physician of the mining centre of Joachimsthal in Bohemia and physician at Chemnitz in Saxony from 1534 until his death. Living in mining regions all his life made it possible for him to study mining practices at first hand and these direct observations made his books particularly valuable and effective. Mining has been practised from primitive times; gold and silver, copper and lead have been used for thousands of years, and even iron, a late-comer, is prehistoric. Though the actual consumption of metals was slight in the Middle Ages as in preceding epochs, craftsmen then wrote the first coherent treatises on the treatment and fabrication of metals . . . In the late Middle Ages there were very important advances in mining and metallurgy, reflected first in the *Proberbüchlein* of c. 1510 (the first printed book on the subject), then in Biringuccio's fine *Pirrotechnia* (1540) and finally in this great work of Agricola's, by far the most authoritative account of south German technology. The *De Re Metallica* embraces everything connected with the mining industry and metallurgical processes, including administration, prospecting, the duties of officials and companies and the manufacture of glass, sulphur and alum. The magnificent series of two hundred and seventy-three large woodcut illustrations by Hans Rudolf Manuel Deutsch add to its value. Some of the most important sections are those on mechanical engineering and the use of water-power, hauling, pumps, ventilation, blowing of furnaces,

transport of ores, etc., showing a very elaborate technique. In Book V, and also in the *De Ortu et Causis Subterraneorum*, Basle, 1546, Agricola made an important contribution to physical geology. He recognized the influence of water and wind on the shaping of the landscape and gave a clear account of the order of the strata he saw in the mines. Writing on the origin of mountains, he describes the eroding action of water as their cause with a perspicacity much in advance of his time. The most important of Agricola's many other treatises was the *De Natura Fossilium* (also Basle, 1546), which has earned him the title of 'Father of Mineralogy'. After the classical writings of Pliny ([PMM]5) and Theophrastus on the subject, mineralogy during the Middle Ages was chiefly concerned with the medicinal and magical properties of stones. Agricola supplied a new scientific classification of minerals based on their physical properties. He described eighty different minerals and metallic ores (including twenty new ones), their mode of occurrence and mutual relation. The *De Re Metallica* was frequently reprinted and is said to have reached China in the seventeenth century. Interest in it was revived in the eighteenth century by Abraham Gottlieb Werner; and in 1912 it was translated into English by Herbert Hoover, afterwards President of the United States." (PMM 79).

PMM 81 - The Theory of Modern Music

6 ZARLINO, Gioseffo. *Le Istitutioni Harmoniche*. Venice: Francesco Senese, 1558. 4to (306 x 207 mm), [12], 347 [1] pp., including numerous woodcut diagrams (many full page), including a keyboard instrument, extensive type-set music (including pieces illustrating imitative counterpoint), and historiated 5- & 8-line initials, italic letter. Early 19th-century half vellum (soiled, spine darkened with short crack at top of front joint), red morocco lettering piece to spine. Internally only very little age-toned, a few annotation in contemporary hand, ink stain on fore edge slightly showing internally, faint marginal dampstains to a few pages only, contents otherwise bright and clean. Provenance: Thomas Mauritus(?), signature on title-page, modern ownership inscriptions on front pastedown. An excellent, wide-margined copy. (#102320) € 38,000

PMM 81; RISM *Écrits*, p.907; Censimento 16 CNCE 25277; Gregory & Bartlett, i, 296; Ricardi II, 661; Hirsch, i 623; not in Adams. - VERY RARE FIRST EDITION, FIRST ISSUE, of arguably the most important and influential book in the history of music theory. Gioseffo Zarlino (1517-1590) laid down the theoretical basis for almost all aspects of modern music, for which he was cited as the ultimate authority for the next two hundred years. He codified the



contrapuntal techniques of the great composers of his time and was the first to explain the modern tonal system of major and minor modes. In the terza parte Zarlino treats counterpoint in a conservative manner, particularly regarding the treatment of dissonances, provoking widespread attacks by Vincenzo Galilei and others. Artusi cited Zarlino in his attacks on Monteverdi and brought forth the latter's distinction between the prima prattica and his own seconda prattica. The *Istitutioni* "opened the way for the new tonality which has governed music from the seventeenth century to the present day" (PMM). This is the first issue of the *Istitutioni*, with the privilege and errata list both placed on recto of final leaf of preliminaires, and with its verso blank.

The "*Istitutioni harmoniche*" fully approved of the practise of composition, as Willaert had taught. It is explained in the third part and is the central theme of the book. However, Zarlino was too much the Philosopher and Theologian, to confine himself to the reproduction of rules of composition. The first two parts of the book are devoted to practical theories of cosmology, philosophy and acoustics, as interpreted at that time. The most important humanist sources on which Zarlino based his thoughts were those of M. Ficino's translation and commentary of Plato's *Timaios* and the *Harmonika* of Ptolomy. He borrowed his ideas

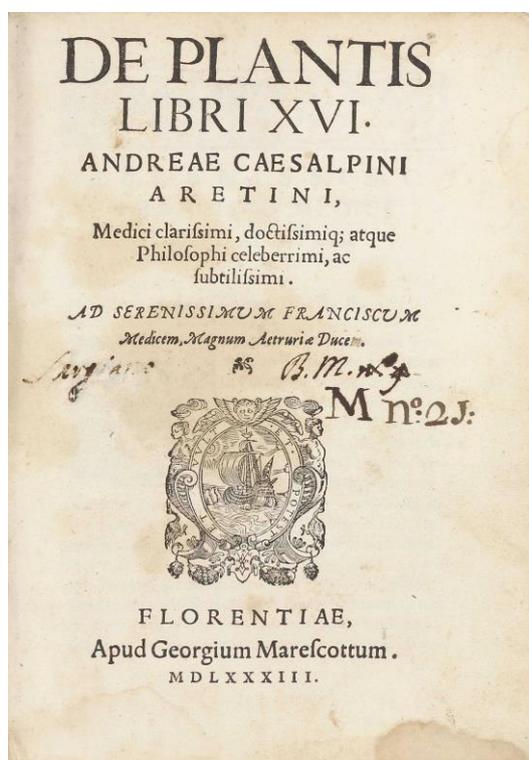
on harmony of the worlds from Plato. Zarlino's rules of composition are far more detailed and fully developed than those of his predecessors. The most prominent characteristic of his method is the idea of the *harmonia perfetta*. Zarlino objected strongly and loudly to those who did not respect modern music as much as that of the ancient Greeks or believed that it could not be as expressive without imitating the antique chromatic and enharmonic modes. He insisted, rather, on the integration of four elements: harmony, metre, text and a receptive audience.

Very rare, only 3 copies of the first edition recorded at auction in the past 50 years.

PMM 97 - Plant Classification

7 **CESALPINO, Andrea (CAESALPINUS, Andreas).** *De plantis libri XVI.* Florence: Giorgio Marescotti, 1583. 4to (220 x 154 mm). [40], 621, [11] pp. Woodcut printer's device on title and at end, woodcut initials, some historiated. Variant title page with "Duce" in 9th line. Contemporary vellum (old remboitage binding), spine hand-lettered, faded blue edges. A few leaves with faint stains or mostly marginal spotting, fore edge with small ink stain affecting a few leaves to the end, title-page with small ink corrosion hole inside signature. Provenance: Savgiano(?) (early signature in ink on title); "B.M." (manuscript note on title); "M no. 2J" (early note in ink on title); Warren H. Corning, Library of the Holden Arboretum (bookplate to front pastedown). Very good copy, collated complete. (#001852) € 19,000

Dibner 20; PMM 97; Sparrow 34; Norman 432; Pritzel 1640; Adams C-20; BM/STC Italian p. 134; Cleveland Collections 122, Holden Arboretum Copy 2 (this copy). - THE VERY RARE FIRST EDITION OF "THE FIRST TRUE TEXTBOOK OF BOTANY" (DSB). The first book of this text is of outstanding historical importance. Here, in thirty pages of admirably clear Latin, Cesalpino presented the principles of botany, grouping a wealth of careful observations under broad categories, on the model of Aristotle and Theophrastus.



"During the Middle Ages and the early Renaissance botanical literature was largely confined to herbals closely related to pharmacology and books restricted to the botanical knowledge of the ancients. With the knowledge of new fauna and flora coming into Europe from the New World and the East, and the creation of many new botanical gardens, the need was felt for a more scientific classification of plants. Illustrations and descriptions of plants followed at first a 'natural' pattern, based on their form and structure, naming as many characteristics as possible and classifying them accordingly. With Andreas Caesalpino a new era begins. He was professor of materia medica and director of the botanical garden at Pisa and later professor in Rome and physician to Pope Clement VIII. His book 'On Plants' was the first attempt to classify plants in a systematic manner based on a comparative study of forms; a similar study had been made by Gesner ([PMM]77) but was not published until the eighteenth century. The traditional division into trees, shrubs, half-shrubs and herbs is retained, but they are now subdivided into different categories according to their seed, fruit and flower. The first section contains the general system, while the other fifteen sections describe 1,520 plants in fifteen classes. Caesalpino's philosophy is Aristotelian: plants have a vegetable soul which is responsible for nutrition and

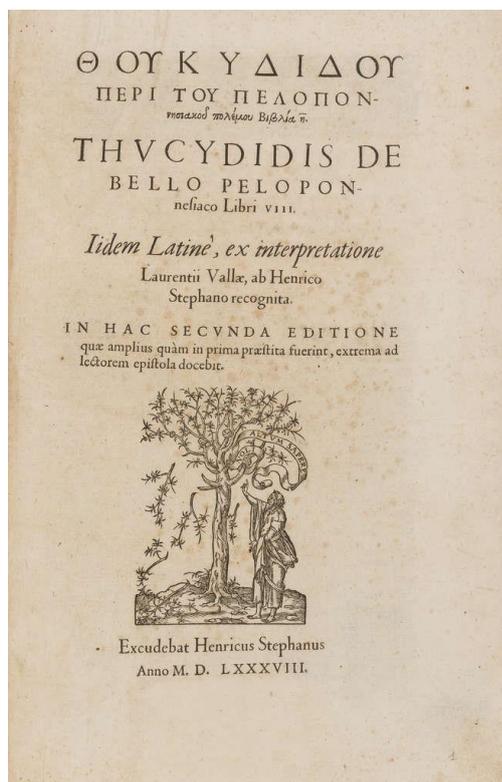
for the reproduction of organisms. Nutrition was believed to come from the roots in the soil and to be carried up the stems to produce the fruit. Hence, the roots, stems and fruit are the main characteristics selected by Caesalpino as the basis for his classification. His descriptive terminology was finally based on the fruits of plants. Lower plants such as lichens and mushrooms, having no reproductive organs, were believed to arise by spontaneous generation from decaying matter. They were placed at the lower end of the hierarchy of plants, providing the link between plants and inorganic nature. Sex in plants had not yet been discovered; and leaves were considered simply as a protection for the seed. Imperfect as it was, Caesalpino's was the first rational system of plant classification by which their ever-growing number (six thousand were known in 1600, but nearly twenty thousand by the beginning of the eighteenth century) could be described. The discovery of sex in plants by Camerarius ([PMM]165) further supported Caesalpino's method, as reproductive organs could now be used as classifying elements in greater detail. His influence on his contemporaries was not at first very great; they continued to use empirical descriptions. His chief follower was J. Jung (1587-1657). Within one hundred years, however, the need for a system based on comparative morphology was clearly recognized, culminating in the work of Linne ([PMM]192) who was greatly indebted to this book as well as to Bauhinus ([PMM]121). A modern basis for classification of plants was eventually provided by the theory of organic evolution." (PMM 97).

RARE: according to American Book Prices Current, only one other copy has sold in the last 30 years: the Norman copy, Christie's New York, 18 March 1998, lot 62. A copy brought up for auction at Zisska & Schauer in 2012 was withdrawn as being part of the Girolamini library theft.

PMM 102 - Historian of Athens

8 THUCYDIDES. *De Bello Peloponnesiaco libri VIII, iidem Latine, ex interpretatione Laurentii Vallae, ab Henrico Stephano recognita.* [Geneva]: Henri Estienne, 1588. Folio (348 x 221 mm). [20], 621, [15], 73, [7] pp. Signatures: (par)⁶ 2(par)⁴ a-3n⁶ 3o⁴. Double column Greek and Latin text, woodcut device on title. Bound in 17th century morocco, regilded and rebacked. Text little browned, occasional foxing, two leaves in signature ss misbound. Very good copy. (#002781) € 6500

PMM 102 (this edition); Adams T667; Renouard, *Estienne*, 152-153; Schreiber, *Estienne*, 216; Dibdin II, 506. - Second Estienne edition.



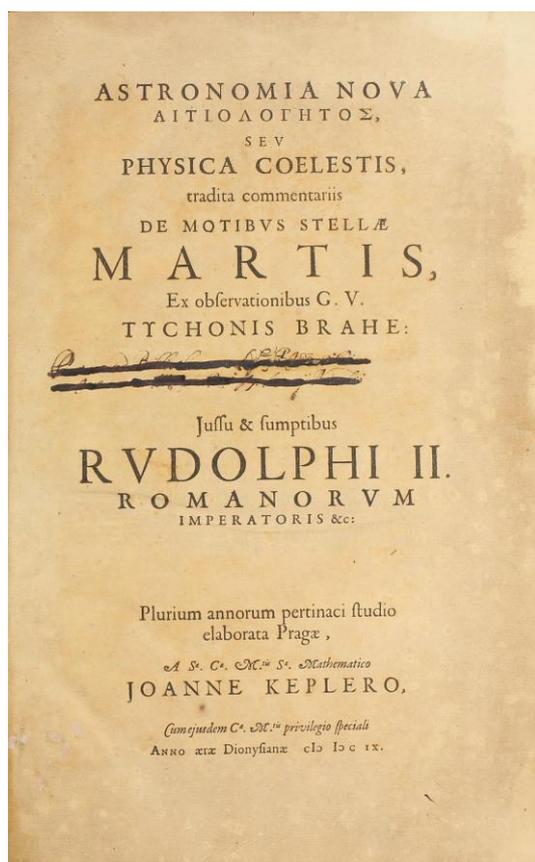
"The standards and methods of Thucydides as a contemporary historian have never been bettered. He began work at the very start of the events he records, and the penetration and concentration which he devoted to his account of the 'Peloponnesian War' (the war between Athens and Sparta from 431 to 404 b.c.) were based on the conviction that it would prove the most important event in Greek history. Thucydides set himself the highest standards of accuracy. 'As to the actions of the war', he says, 'I have not felt free to record them on hearsay evidence from the first informant or on arbitrary conjecture. My account rests either on personal knowledge or on the closest possible scrutiny of every statement made by others. The process of research was laborious, because conflicting accounts were given by those who had witnessed the several events, as partiality swayed or memory served them.' This he did not only from his belief in the importance of the actual events, but in the conviction that the facts would be found of permanent value. He saw his history as a source of profit to 'those who desire an exact knowledge of the past as a key to the future, which in all probability will resemble the past.' It was in this sense, not in any anticipation of his own enduring fame, that he called it, in a memorable phrase, 'a possession for ever'. This is exactly what it has become. Nothing, not even his own participation in the war or his disgrace in 424, was permitted to divert the historian from the standards he had laid down for himself. It might be

supposed that, by introducing the speeches which are among the principal glories of the history, Thucydides was lapsing from this standard. It is obvious that while some, especially the famous 'Funeral Oration' of Pericles, he must have heard, there are others which he could not have heard. It is probably true that Thucydides used this form in obedience to the tradition of first person speech which every Greek history from Homer onwards followed. However, he uses them to make clear, what would have seemed intolerably dry in the abstract, the personal and political motives of the protagonists on either side; the subtle effect of this can be seen in the speeches of opposing generals before a battle, where one will quite clearly answer the other as if they were debating the issues at stake. Thucydides has been valued as he hoped: statesmen as well as historians, men of affairs as well as scholars, have read and profited by him. The text was first printed by Aldus in 1502. The edition of Henri Estienne, a member of the famous French family of printers, who corresponded with scholars as an equal, first came out in 1564. The edition cited was improved by the addition of a translation into Latin by Lorenzo Valla and by the notes of another great French scholar, Isaac Casaubon." (PMM 102).

The printing place is uncertain. PMM states Geneva as place whereas Dibdin mentions the work as being printed in Paris.

PMM 112 - The Laws of Planetary Motion

9 KEPLER, Johannes. *Astronomia nova AITIOΛΟΓΗΤΟΣ, seu physica coelestis, tradita commentariis de motibus stellae Martis, ex observationibus G.V. Tychonis Brahe.* [Heidelberg]: [Gotthard Vögelin], 1609. Folio (388 x 250 mm). Work in five parts, each with separate half-title page, but continuous pagination and signatures. Text in Latin with small sections in Greek. [40], 337, [3] pp., folding letterpress table, woodcut initials, head- and tailpieces, approx. 300 woodcut diagrams in text, complete with first and final blanks. Signatures: $\pi^2 2^* \cdot 4^{*6} A \cdot 2D^6 2E^8$ ($\pi 1$ and $2E 8$ blanks). Recased in early 18th century vellum, new endpapers. Text mostly heavily browned, tiny holes in leaves O6 and P1 with loss of a few letters of text, repaired tear in leaf T1 without loss, a few wormholes at gutter (sometimes touching text), burn hole in leaf S6. Provenance: "Pertinet ad Bibliothecam [--]", obscured inscription on title-page. Although heavily browned as usual, a very good and wide-margined copy. (#003475) € 340,000



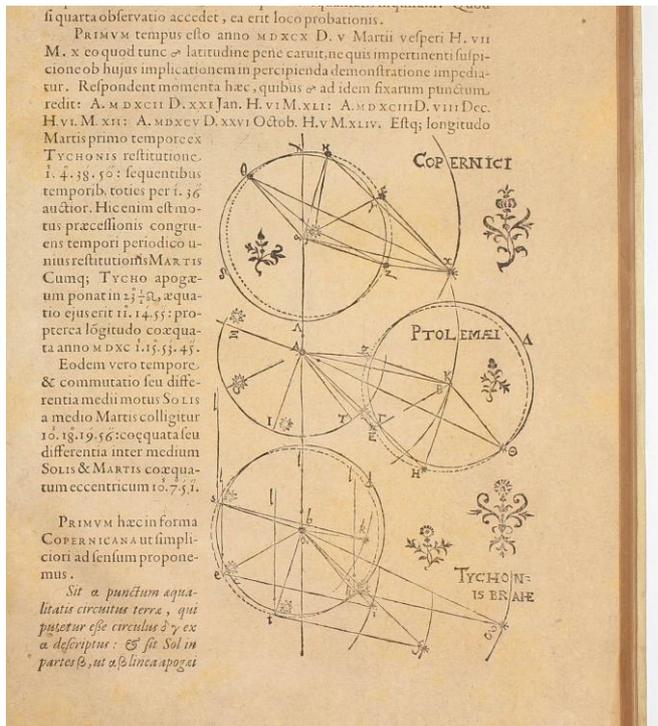
FIRST EDITION, AND EXCEPTIONALLY RARE, of Kepler's most important work and a masterpiece of modern astronomy containing the first enunciation of the first two laws of planetary motion: the law of elliptical orbits, formulating that the orbits of planets are shown to be elliptic rather than circular, demonstrated by his calculations of the orbit of Mars, and the law of equal areas, which shows that the planets move faster when they are closer to the sun.

In 1607 Kepler had the wood blocks cut in Prague, and in 1608 he sent the text to be printed by the successors of Ernst Vögelin (1529-89) in Heidelberg. The absence of an imprint was due to the fact that the edition was not intended for commerce: the Emperor held the rights to its distribution, since Kepler had written it in his post of court astronomer, and it had been printed at imperial expense. Kepler, however, thought otherwise, his salary being long in arrears, and he sold his copies to the publisher. Although the size of the press run is not recorded, Kepler later stated that only "a few copies" had been printed (Caspar, p. 55).

The influence this book had on other great astronomers, from his contemporary Galileo to the later Newton, was substantial and enabled Newton to form his own laws of motion and universal gravitation. Kepler's and Newton's laws became the basis of celestial mechanics. Kepler, a student of the "cautious Copernican" Michael Maestlin in Tübingen,

used Copernicus's theory of heliocentrism as the basis for his treatise, and combined it with the observational accuracy of Tycho Brahe, whose calculations he acquired through his post as imperial mathematician to Rudolf II, following Tycho's death in Prague in 1601. Disagreement with Tycho's heirs led to delays with the publication which only commenced in the summer of 1608, once Tycho's son-in-law, Franz Tengnagel, was able to add a note to the reader regarding Kepler's deviance from Tycho's calculations. The publication was supposed to be distributed privately by the Emperor, who held the rights to its distribution, since Kepler had written it in his post of court astronomer, but Kepler sold some copies to the printer Ernst Vögelin successors in Heidelberg in an attempt to recoup some of his salary, which was in arrears. Although the size of the press run is not recorded, Kepler later stated that only "a few copies" had been printed (see Caspar, p. 55).

"Johannes Kepler stands, with Galileo between Copernicus and Newton among the founders of modern astronomy and of a new conception of the universe. 'The New Astronomy' is perhaps his most important book [. . .] Compelled as a Protestant to give up his post as a teacher of mathematics at Graz, he joined Tycho Brahe, the famous Danish astronomer, at Prague and on his death became mathematician to the Emperor Rudolf II, a great patron of science. It was fortunate that Kepler was able to use the mass of material collected by Tycho Brahe. Brahe had greatly improved the construction of astronomical instruments and with these had made systematic and accurate observations over many years. Although he departed from the traditional picture of the universe on some critical issues, he regarded the idea of the motion of the earth as absurd: but he had lacked time to

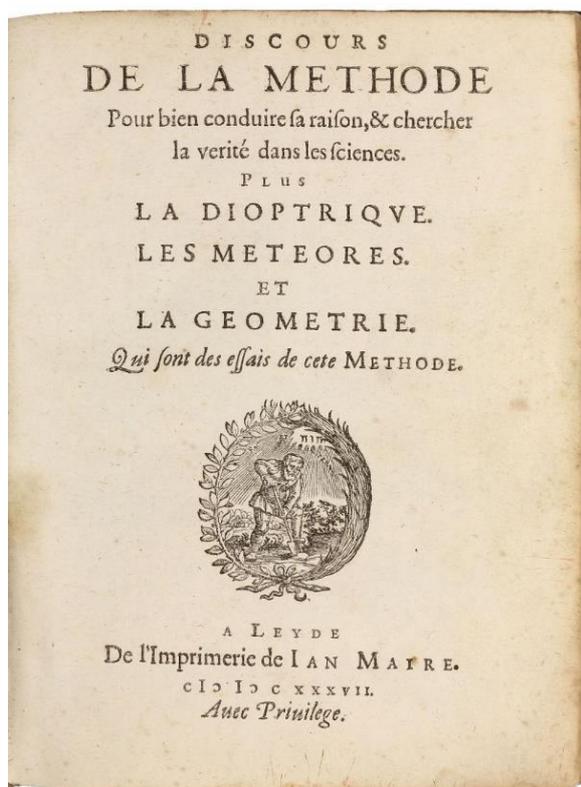


construct his own system of the universe from observation. This task he left to Kepler. Copernicus had shown the sun to be the centre of the universe round which the earth and planets revolve, but his description of their movements was still strongly influenced by ancient conceptions of order and harmony. It was Kepler's aim to determine the true movements of the planets and the mathematical and physical laws controlling them. In this task he succeeded brilliantly [. . .] Kepler attempted to construct a new physical cosmology into which his laws would fit, but he had no conception of the inertia of matter and still believed, like Aristotle, that movement was due to 'animal force or some equivalent'. He had an inkling of a universal force analogous to that of gravity but he identified it with magnetism. Thus, though Kepler sought for a physical system in the universe, he could not deduce the laws of planetary motion from the universal laws of motion. Of these Galileo was laying the foundations in Kepler's time, and Newton was to bring the whole into one great

synthesis with the aid of the concept of universal gravitation." (PMM 112).

Literature: Caspar 31; Norman 1206; PMM 112; Dibner 5; Horblit 57; Sparrow 114; Zinner 4237; Honeyman 1783.

10 **DESCARTES, René.** *Discours de la methode pour bien conduire sa raison, & chercher la verité dans les sciences. Plus la Dioptrique. Les Météores, et la Géométrie qui sont des essais de cete methode.* Leiden: Jan Maire, 1637. 4to (191 x 146 mm). 78, [2], 413, [35] pp., woodcut printer's device on title, 3 section-titles, woodcut initials, numerous woodcut text diagrams and illustrations, errata, French and Dutch privilege on Kkk3-4. Bound in contemporary French calf, gilt-decorated spine with 5 raised bands and gilt lettering in first compartment, red-sprinkled edges, marbled pastedowns (leather rubbed and scratched, wear to extremities, corners bumped and scuffed, spine ends somewhat scuffed, short split to upper hinge near head of spine). Only little even browning and minor occasional spotting of text, a few small light dampstains to blank margins, lower outer corner of gatherings L to X somewhat gnawed (up to 7 mm from corner but well away from text), upper margin of leaf 3K3 verso trimmed just touching initial headline letter. Provenance: from the library of French journalist and publisher Frédéric Decazes de Glücksbiere (1958-2018). In all a very good copy, unrestored and with the hinges quite sound and flexible. (#003348) € 75,000



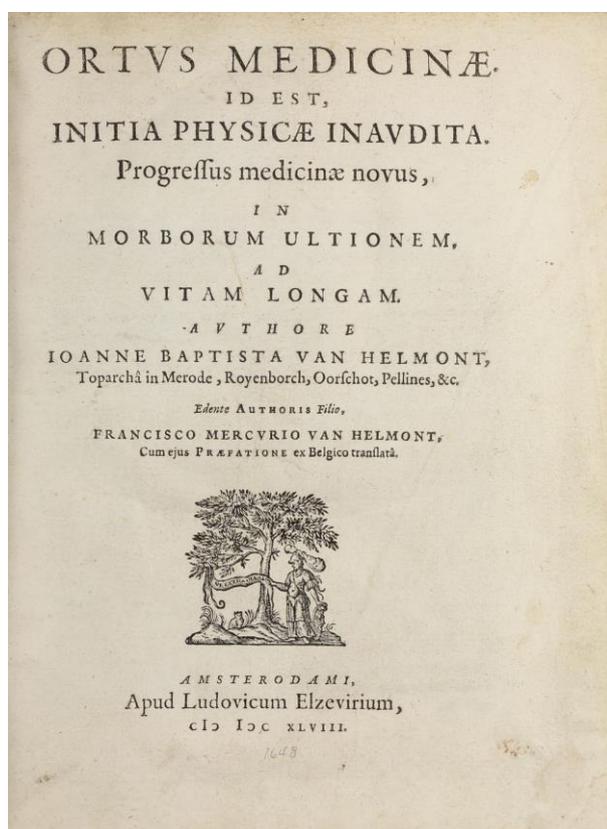
FIRST EDITION of the author's first published work, the foundation of all modern scientific and philosophic thought. In the first part, Descartes sets out his method of inquiry, and then illustrates it in three essays on optics, meteorology and geometry. "The purpose of the *Discours* of Descartes is to find the simple indestructible point which gives to the universe and thought their order and system. Three points are made: the truth of thought, when thought is true to itself (thus *cogito, ergo sum*), the inevitable elevation of its partial state in our finite consciousness to its full state in the infinite existence of God, and the ultimate reduction of the material universe to extension and local movement. From those central proposition in logic, metaphysics and physics came the subsequent inquiries of Locke, Leibniz and Newton. This great work also contains scientific material of fundamental importance - his invention of analytical geometry which is the basis of geometry as we know it, treatises on optics and meteors, and the first mention of Harvey's discovery by a prominent foreign scholar" (PMM).

"Descartes contributions to the mathematical, physical and astronomical sciences were many, but his major contribution was his anonymous, first published work - a

discourse on method. In this he discussed Harvey's circulation (the first distinguished foreigner to do so), advanced the necessity of mathematical proof and proposed accepting those things that cannot be doubted ... In the appendices he explained his method of analytic geometry (Cartesian co-ordinates) and treated on optics and meteors. The Dioptrique (Discourse II) contains the earliest statement of Willebrord Snell's law of refraction" (Dibner).

References: PMM, *Printing and the Mind of Man* 129; Dibner, *Heralds of Science* 81; Grolier/Horblit 24; Guibert, *Bib. Descartes* 1; NLM/Krivatsky 3114; Norman 621; Tchermizine IV, 286; Peyré, *En français dans le texte* 90.

11 HELMONT, Johan Baptist von. *Ortus medicinae. Id est, initia physicae inaudita. Progressus medicinae novus, in morborum ultionem, ad vitam longam. Edente authoris filio, F. M. van Helmont.* Amsterdam: Elzevir, 1648. [36], 1-88, 87-158, 161-176, 175-382, 373-452, 457-800 pp. With engraved portraits of Helmont and his son on *4v and some woodcuts in text, frequent mispagnations. [Bound with:] *Opuscula medica inaudita. Editio secunda.* Three parts in one. Amsterdam: Elzevir, 1648. [8], 110, [2]; 115 [1]; 88 pp., including general title and separate title-leaves to each part, with the final blank P4 of *De Lithiasi*. Two works in one volume. 4to (205 x 162 mm). Contemporary full vellum, spined titled in manuscript, red-dyed edges, original endpapers (vellum soiled and spotted, corners bumped). Text quite bright and crisp throughout, very minor occasional spotting, a few pages with light dampstaining to blank fore-margin, two ink spots to edge penetrating a few mm inside, sparse light ink annotations and text markings in contemporary hand; pp. 100-101 of *De Lithiasi* soiled and spotted, lower corner of general title repaired, old paper repair to upper corner of p.107/8 of first work not affecting text. Provenance: Joseph Luce (his book ticket and an early engraved armorial bookplate with no text on front pastedown). Fine, wide-margined copy in untouched original binding. (#003589) € 7500



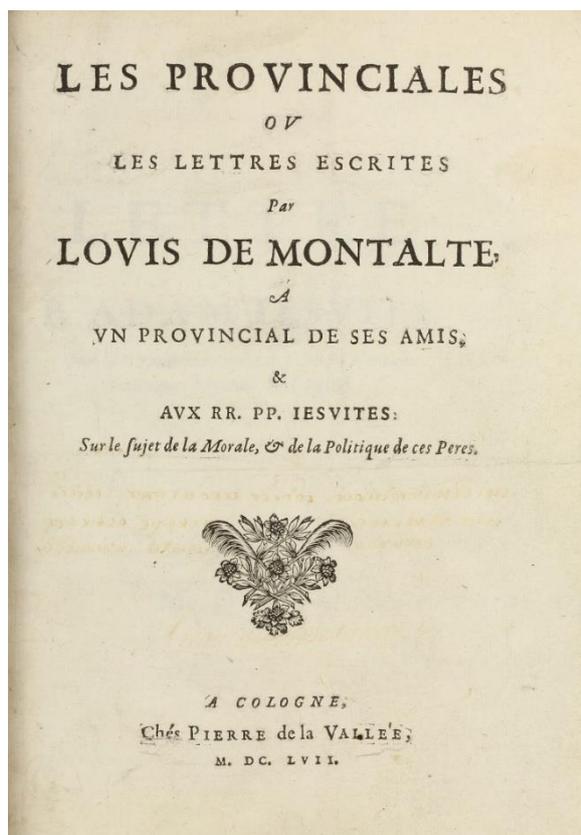
PMM 135; Norman 1048; NLM/Krivatsy 5447; Heirs of Hippocrates 254; Osler 2929, Waller 4307; Wellcome III, 241; Hirsch-H. III,153; Willems 1066; Garrison-Morton 665 - FIRST COLLECTED EDITION; second edition of *Opuscula medica inaudita*. "Helmont was one of the founders of biochemistry. He was the first to realize the physiological importance of ferments and gases, and indeed invented the word 'gas'. He introduced the gravimetric idea in the analysis of urine. The above work is a collection of his writings, issued by his son" (Garrison-Morton).

"Helmont devoted his life to exploring the first principles of nature through chemistry. He is best remembered as the discoverer of gas, a term he coined to describe the 'specific smokes' that remain after the combustion of solids and fluids; among the gases he identified were carbon dioxide, carbon monoxide, chlorine gas and sulphur dioxide. He denied that metals dissolved in acid were either destroyed or transmuted, stating that such metals were recoverable in their original quantities, and correctly identifying the process of precipitation. Like Paracelsus, he rejected traditional humoral pathology and advocated an ontological concept of disease, regarding each disease as a specific entity caused by a

specific pathogenic agent. He demonstrated that acid is the agent in animal digestion and came near to identifying it as hydrochloric acid; he also identified the causes of asthma and correctly described fever as a part of the body's natural healing process... Though separately paginated 'Opuscula medica inaudita' is considered a part of the whole volume, as indicated by the 'Index tractatum' on 5*5 - 5*6. Originally published as a separate work in 1644, 'Opuscula medica inaudita' contains reprints of Helmont's treatises on the stone, on fevers, on the errors of humoral pathology, and on the plague" (Norman 1048).

PMM 140 - Against Casuistry

12 PASCAL, Blaise. *Les Provinciales ou les lettres écrites par Louis de Montalte à un provincial de ses amis & aux RR. PP. Jésuites.* Cologne [i.e., Paris]: Pierre de la Vallée, 1657. 4to (237 x 170 mm). 18 separately published letters with a general title-page and *Avertissement* in 6 pages (first issue, spelled "Avertissement" and mentioning only 17 letters), with the 8-page *Refutation* to the 12th letter, the second letter in second state dated 29 January 1656, the 17th letter in first state with 8 pages, the 18th letter reprinted "sur la copie imprimée à Cologne le 24 Mars 1657". Added are 30 further pamphlets, some in extract form, by Pascal and other authors on the Jansenist-Jesuit feud. Bound in 19th century Jansenist style binding of brown morrocco, spine with 5 raised bands and gilt lettering in first compartment, all edges gilt, marbled endpapers and richly gilt-tooled leather turn-ins (minor rubbing of extremities. Woodcut initials, head- and tailpieces in places. Text only little browned, occasional minor spotting and dust-soiling. Provenance: Thomas Powell and P. Grandsire (bookplates to front pastedown); old inscription on general title erased. (#003471) € 14,000



PMM 140; Tchemezine, IX, 66. FIRST EDITION, and exceptionally rare with all the 18 letters by Pascal and a further suite of 30 pamphlets. In his *lettres* Pascal attacks casuistry and accuses the Jesuits of moral laxity in a prose style that would influence Voltaire and Rousseau. "The *Lettres Provinciales*, as they are called, are the first example of French prose as we know it today, perfectly finished in form, varied in style, and on a subject of universal importance ... Pascal was born at Clermont-Ferrand, the son of an official in the regional government. He was an infant prodigy, whose work in mathematics and natural science attracted considerable attention before he was sixteen ... Pascal will always be chiefly remembered as a moralist, more especially as the great apologist for Jansenism, the seventeenth-century French ascetic movement of reform inside the Roman Catholic Church ... At the end of 1655, the movement had been much under attack from the Jesuits, and Pascal was persuaded to write a rejoinder. This he did in a few days. The Jesuits' main ground of attack had been that the tenets of Jansenism came dangerously near to the Calvinist doctrine of predestination. Pascal's counter-attack took the form of a brilliant exposure of the casuistical methods of argument employed by the Jesuits ... Pascal's weapon was irony, and the freshness with which the gravity of the subject contrasts with the

lightness of the manner is an enduring triumph. The vividness and distinction of his style recalls the prose of Milton at its best." (PMM).

Content:

1ère lettre, 23 janvier 1656 : 8 pp. 2de lettre, 29 février 1656 (au lieu de 29 janvier) : 8 pp. Response du Provincial aux deux premières lettres, 2 février 1656, et 3ème lettre, 9 février : 8 pp. 4ème lettre, 25 février 1656 : 8 pp. 5ème lettre, 20 mars 1656 : 8 pp. 6ème lettre, 10 avril 1656 : 8 pp. 7ème lettre, 25 avril 1656 : 8 pp. 8ème lettre, 28 mai 1656 : 8 pp. 9ème lettre, 3 juillet 1656 : 8 pp. 10ème lettre, 2 août 1656 : 8 pp. 11ème lettre, 18 août 1656 : 8 pp. 12ème lettre, 9 septembre 1656 : 8 pp. Réfutation de la réponse à la douzième lettre : 8 pp. 13ème lettre, 30 septembre 1656 : 8 pp. 14ème lettre, 23 octobre 1656 : 8 pp. 15ème lettre, 25 novembre 1656 : 8 pp. 16ème lettre, 4 décembre 1656 : 12 pp. 17ème lettre, 23 janvier 1657 : 8 pp. 18ème lettre, 24 mars 1657 : 12 pp.

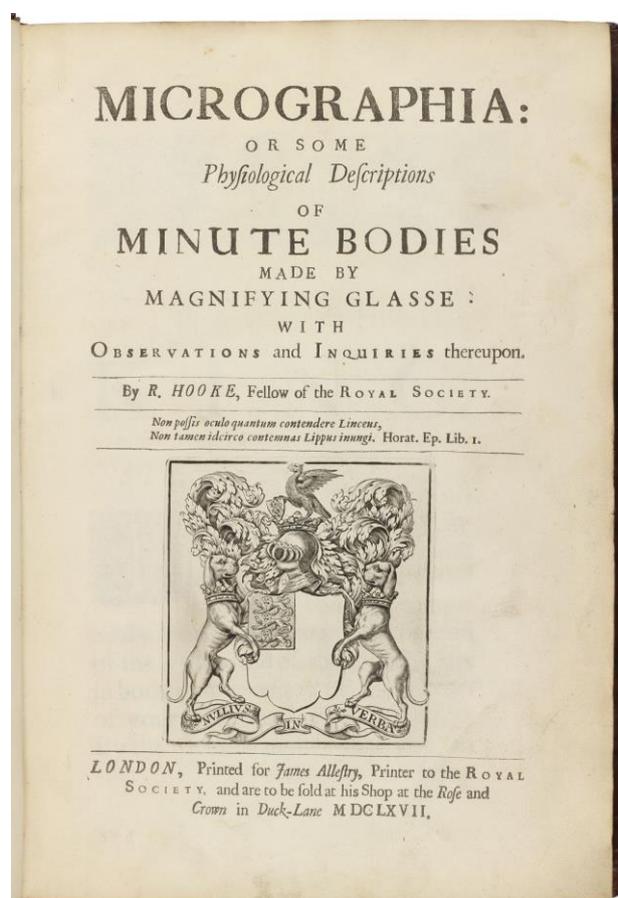
Added pamphlets:

1. *Ordonnance de M. Alphonse d'Elbene, évêque d'Orléans*, 9 septembre 1656, 3 [1] pp., no title.
2. *Ordonnance de M. Alphonse d'Elbene, évêque d'Orléans*, 10 février 1657, 3 [1] pp., no title

3. [Pierre NICOLE - Antoine ARNAULD - PASCAL]. *Advis de Messieurs les Curez de Paris, à Messieurs les Curez des autres Dioceses de France sur les mauvaises maximes de quelques nouveaux Casuistes*. Paris, 1656, 8 pp. (without separate title and 2 prelim. leaves).
4. *Table des propositions contenues dans l'Extrait de quelques-unes des plus dangereuses propositions de la Morale de plusieurs nouveaux Casuistes*. S.l.n.d., 4 pp.
5. *Extrait de quelques-unes des plus dangereuses propositions de la morale de plusieurs nouveaux Casuistes...* S.l.n.d., 20 pp.
6. *Suite de l'Extrait de plusieurs mauvaises propositions des nouveaux Casuistes...* Paris, 1656, [2], 8 pp. including separate title.
7. *Principes et suites de la probabilité expliquez par Caramouel...* Bruxelles, 1655, 18 pp.
8. *Extrait de plusieurs dangereuses propositions tirées des nouveaux Casuistes...* S.l.n.d., 14, [2, blank] pp., without errata leaf.
9. *Lettre d'un Curé de Rouen à un Curé de la campagne, sur le procédé des Curez de ladite ville*, Paris, 1656, 14, [2, blank] pp., lacking separate title, smaller in size.
10. *Lettre d'un Ecclésiastique de Rouen à un de ses amis sur ce qui s'est passé au jugement du procez d'entre M. Du Four, abbé d'Aulney, cy devant Curé de Saint Maclou de Rouën et le P. Brisacier, Jésuite, Recteur du Collège de la mesme Ville*, [March 10, 1657], 4 pp.
11. *Epistola illustrissimi ac reverendissimi D. D. Jacobi Boonen archiepiscopi Mechliniensis ad eminentissimos Cardinales Inquisitionis Romanæ præfectos, a Jesuitis adversus eumdem interpellatos*. S.l.n.d., 1654, [2], 6 pp. including separate title.
12. *Traduction d'une lettre escrite par Messire Jacques Boonen archevêque de Malines à Messeigneurs les Cardinaux de l'Inquisition de Rome, ausquels les Jésuites avoient appelé ses Ordonnances*. S.l.n.d., 8 pp.
13. *Lettre au pere Adam lesuite, sur la traduction qu'il a faite en vers de quelques hymnes de l'Eglise*. S.l.n.d., 66, [10] pp., separate title misbound after general title of Pascal's lettres.
14. *Lettre d'un abbé à un abbé sur la conformité de S. Augustin avec le concile de Trente, touchant la possibilité des commandements divins*. S.l.n.d., [6], 3-76, 46, [2, blank] pp. incl. separate title and new pagination from chap. XIV.
15. *Lettre pastorale de monseigneur l'illvstrissime evesque de Digne, contenant la condamnation d'un liure intitulé, Apologie pour les casuistes, contre les calomnies des iansenistes*, Paris: Charles Savreux, 1659, 15 [1] pp. incl. separate title page.
16. VIALART (Félix). *Lettre pastorale de Monseigneur l'illustrissime evesque et comte de Chaalons... Contenant la condamnation du Livre intitulé Apologie pour les casuistes, &c.* Paris: Charles Savreux, 1659, 12 pp. incl. separate title page.
17. HARLAY DE CHAMPVALLON (François de). *Censure d'un livre intitulé Apologie pour les casuistes, contre les calomnies des iansénistes, &c.* Rouen: Laurens Maurry, 1659, 6, [2, blank] pp. incl. separate title page.
18. *Censure de plusieurs mauvaises propositions des nouveaux casuistes, dont l'illustrissime evesque de Gand avoit demandé le jugement à la Faculté de théologie de Louvain*. S.l., 1657, 8 pp.
19. [ARNAULD, Antoine] *Defense des professeurs en theologie de l'université de Bordeaux. Contre un écrit intitulé; Lettre d'un theologien à un officier du Parlement, touchant la question si le livre intitulé Ludovici Montaltij litterae, &c. est heretique*, S.l., 1660, 64 pp. incl. separate title page.
20. *Extraict du second avertissement fait par l'Université de Paris, en l'année 1643: tiré d'un livre intitulé: Requeste, procez verbaux et avertissement, faits à la diligence de monsieur le recteur, & par l'ordre de l'université de Paris, &c. ...*, S.l., 1659, 8 pp.
21. *Memoire pour faire connoistre l'esprit & la conduite de la Compagnie establee en la ville de Caën, appellée l'Hermitage*, 1660, 40 pp. incl. separate title page.

22. *Deux histoires memorables où l'on void le procedé artificieux & violent des Iesuites d'Allmagne pour enlever aux religieux de S. Benoit, etc., des abbayes de leurs ordres...*, S.l., 1659, 16 pp.
23. *Estrenes pour le R. P. Estienne Hagard Deschamps Iesuite, premier present le secret du molinisme, la theologie de l'anse Deschamps*, S.l.n.d., 16 pp.
24. PALAFOX DE MENDOZA (Juan de). *Lettre De l'Illustrissime Iean de Palafox de Mendoza, Evesque d'Angelopolis dans l'Amerique, & Doyen du Conseil des Indes, au pape Innocent X. Contenant diverses plaintes de cet Evesque contre les entreprises & les violences des Iesuites, & leur maniere peu evangelique de prescher l'Evangile dans les Indes Occidentales. Du 8 Ianvier 1649.* S.l., (1659), 30, [2, blank] pp.
25. *Factum pour les curez de Roüen. Contre un Livre intitulé, Apologie pour les Casuites contre les calomnies des Iansénistes, à Paris 1657. Et contre ceux qui l'ayant composé, imprimé & publié, osent encore le défendre.* S.l., (1658), 12 pp.
26. *A Messieurs les Vicaires generaux de Monseigneur l'Eminentissime Cardinal de Rets Archevesque de Paris.* S.l., (1657), 2 pp.
27. *Factum pour les curez de Paris. Contre un Livre intitulé Apologie pour les Casuistes contre les calomnies des Ianséniste. A Paris 1657. Et contre ceux qui l'ont composé, imprimé & débité.* S.l., (1657), 8, [2, blank] pp.
28. *Response des curez de Paris, pour soustenir le Factum par eux presenté à Messieurs les Vicaires Generaux, pour demander la censure de l'Apologie des Casuistes. Contre un escrit intitulé, Réfutation de Calomnies nouvellement publiées par les Autheurs d'un Factum sous le nom de Messieurs les Curez de Paris, &c.* S.l., (1658), 8 pp.
29. [PASCAL - Antoine ARNAULD - Pierre NICOLE]. *Troisiesme [- Neuvième] escrit des curez de Paris. Où ils font voir que tout ce que les Iesuites ont allegué des SS. Peres & Docteurs de l'Eglise, pour autoriser leurs pernicieuses maximes, est absolument faux & contraire à la doctrine de ces Saints.* S.l., (1658)-1659, 1-44, [2], 45-66, 73-120 pp., separate title leaf after p.44.
30. *Belga percontator sive Francisci Profuturi...* Sylvae Ducis, A. Wyngardum [S'Hertogenbosch], 1657, 15 [1] pp., smaller in size.

13 **HOOKE, Robert.** *Micrographia: or some Physiological Descriptions of Minute Bodies made by Magnifying Glasses with Observations and Inquiries thereupon.* London: Printed for James Allestry, 1667. Folio (299 x 198 mm). [36], 246, [10] pp., title with engraved arms of the Royal Society, imprimatur leaf before title, 38 engraved plates (30 folding of which 2 double-page and mounted on stub), woodcut head-pieces and initials, errata on final page verso. Signatures: [pi]2 A2 a-g2 B-C2 D-2K4 2L-2M2. Contemporary mottled calf, spine with some gilt decoration and gilt-lettered label, boards with gilt double-ruled border, red sprinkled edges, original endpapers (expertly rebacked preserving original spine, edges and corners neatly restored); protected in full-calf custom clamshell box. Text and plates generally quite crisp and clean showing only very minor occasional (mostly marginal) spotting; the title page with minor dust- and finger-soiling at outer margins, occasional short clean tears to folds of plates and to lower blank margin of leaf Ff2, pencil note to p. 170, leaf Q1 with light brown staining of blank fore-margin, small damp-stain at upper blank margin of plate VII. Provenance: John Dautzenberg (red armorial bookplate to front pastedown); Charles Ernest Montchal Kellett (monogrammed armorial bookplate to front pastedown). Excellent, very wide-margined copy. (#003613) € 75,000



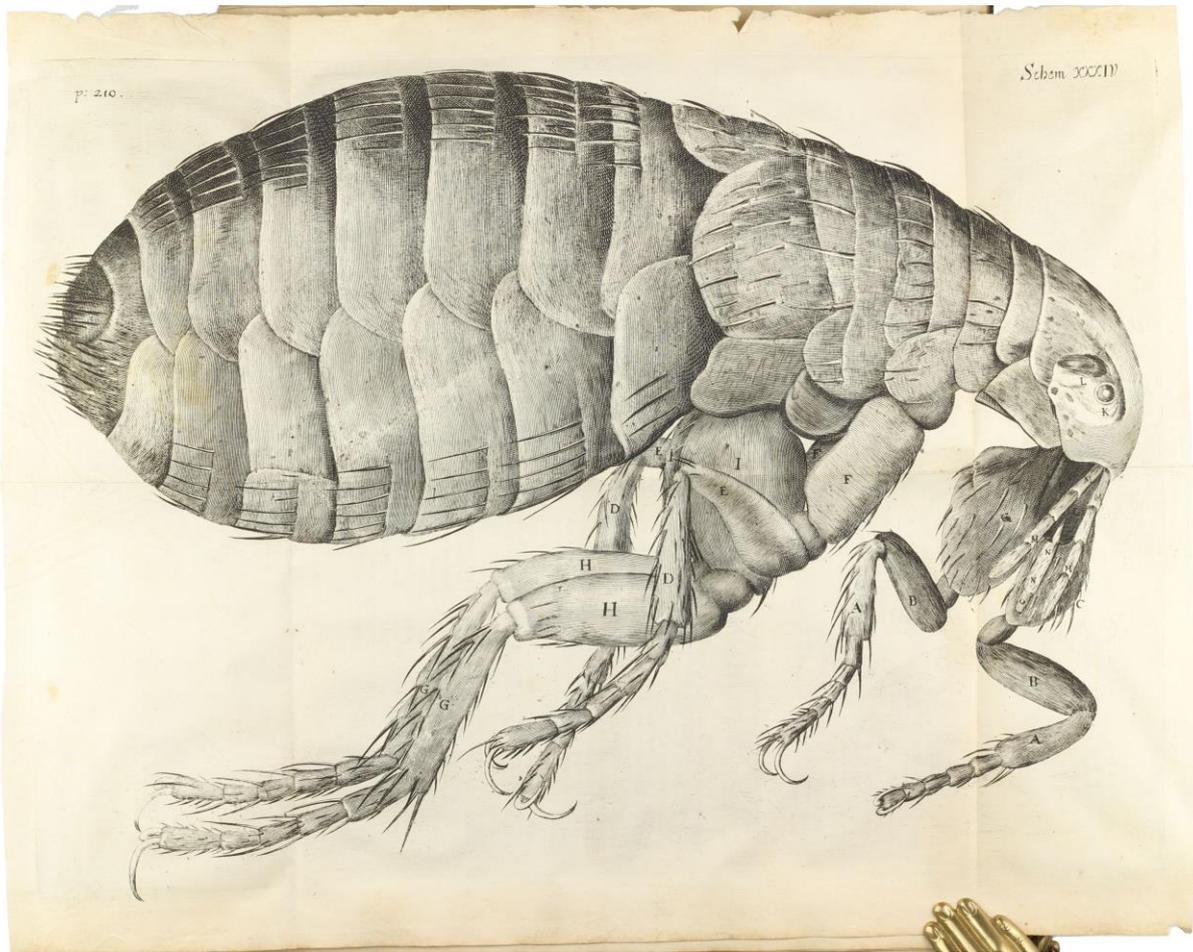
PMM 147, Horblit 50, Dibner 187, Sparrow 105, Norman 1092; Wing H2621, Keynes, A Bibliography of Robert Hooke, 7. FIRST EDITION, SECOND ISSUE. The title-page to this issue has been reset, but except for plate V, which was re-engraved in reverse, the same plates were used as in the first issue. Our copy is exceptionally tall and without a single engraving being affected by trimming, which is rarely found for this work.

"Robert Hooke was one of the most versatile and brilliant scientists of all time, and his contributions to astronomy, optics and all branches of physics, mechanics, technology and architecture are innumerable. In 1662 he was appointed curator of experiments to the newly founded Royal Society (see [PMM]148) and remained at the centre of the English scientific world until his death. He suggested and inspired scientific work in all fields and carried out an immense number of experiments himself. He left comparatively few printed works, of which the *Micrographia* is the most famous. It contains fifty-seven microscopic and three telescopic observations, beginning with an examination of inorganic matter and proceeding to the investigation of vegetable and animal bodies. Although ostensibly concerned with microscopy, the book includes scientific observations of high importance in several other fields. Hooke's

main contribution to biology was in microscopy. In Observation No. 18 he describes the structure of cork, comparing it to a honeycomb, being composed of 'cellulae' with walls bounding the 'cells'. A century and a half later the effective study of 'cells' -- the word was first used here -- led to completely new ideas about the structure of animals and plants. In Observation No. 16 on charcoal Hooke gives his views on combustion: these are very close to those of Boyle ([PMM]141), with whom he collaborated. Observation No. 58 describes the phenomenon of the diffraction of light, this discovery being independent of Grimaldi's nine years before. In Observation No. 17 Hooke writes of the properties of fossils, which he considers to be shells of certain shell-fish 'which either by some deluge, inundation or earthquake. . . come to be thrown to that place'. In Observation No. 4 he makes a reference to the possibility of spinning a kind of 'artificial silk' out of some glutinous substance that may be equivalent to natural silk. In the purely microscopic part of this handsome and copiously illustrated folio, Hooke describes for the first time a polyzoon, the minute markings offish scales, the structure of the bee's sting, the compound eye of the fly, the gnat and its larvae, the structure of feathers, the flea and the louse. He observed sponges, which he defines as animal structures, not plants, comparing their tissue with horn and hair. He saw the plant-like form of moulds. Hooke's other experiments, and in particular his work with scientific instruments,

are remarkable. He perfected the compound microscope, which he used for his observations; he invented the wheel barometer and other meteorological instruments; and with his new methods of keeping weather records he has been called the founder of modern meteorology. Hooke worked in cartography and geography (assisting Ogilby and Pitt in creating their atlases), improved watches, and made many contributions to optics, physiology, artificial respiration, geology and palaeontology. He invented an apparatus for diving and depth-sounding, and invented or improved a large number of other scientific instruments. He was also active as a surveyor and architect. . . The magnificent plates, mostly from designs by the author himself, but some probably by Sir Christopher Wren, were reprinted in 1745 and some still appear in nineteenth-century books on microscopy. Today it is recognized that Aubrey was right when he said 'He is certainly the greatest mechanick this day in the world', and some think that Hooke was perhaps the greatest mechanical genius science has ever had." (PMM 147).

"The Micrographia had an immediate, widespread, and lasting success . . . Pepys, who bought it at once and sat up reading it till two in the morning, characterized it as 'the most ingenious book that ever I read in my life.' We are not told that Newton sat up late, but he read it with care, and made copious notes." (M. Espinasse, Robert Hooke, 1956, p 58).

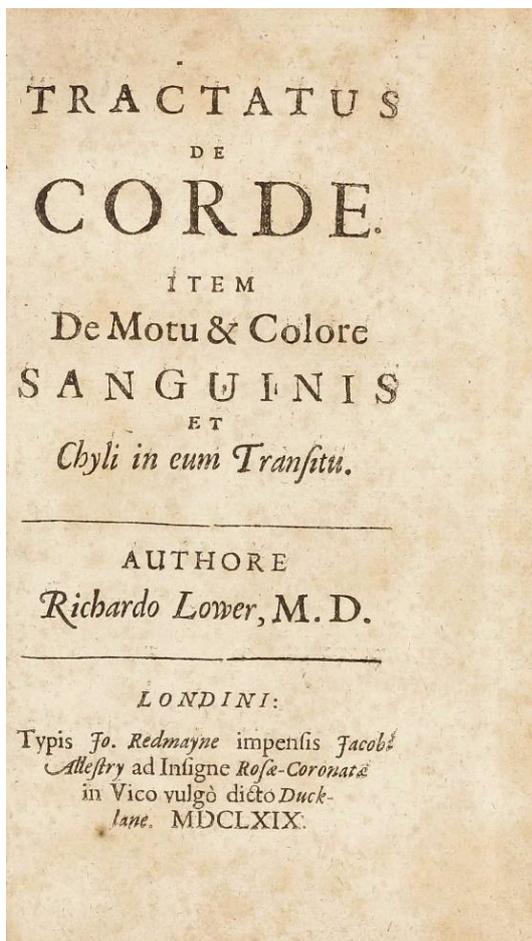


PMM 149 - Blood Transfusion

14 LOWER, Richard. *Tractatus de corde. Item de motu & colore sanguinis et chyli in eum transitu.* London: John Redmayne for James Allestry, 1669. 8vo (175 x 109 mm). [16], 220, [20] pp., including 7 engraved folding plates bound at end (plate 1 misbound after 2), preliminary leaf A6 a cancel, ornamental woodcut initials and typographical headpieces; bound without initial blank A1. Contemporary mottled calf, rebaked with blind-stamped spine and gilt-lettered morocco label, marbled edges, original endpapers present (minor rubbing to extremities). Text with light even browning, occasional minor spotting, lower edge of plates 5 to 7 shaved into platemark affecting a few mm of image, plate 1 with repaired clean tear outside platemark. Provenance: Sir Henry Mainwaring, baronet of Over Peover (armorial bookplate with motto "Devant, si je puis" to front pastedown). Generally a clean and crisp copy with ample margins. (#003160) € 6500

PMM 149; Norman 1397; Garrison-Morton 761; Grolier Medicine 34; NLM/Krivatsy 7157; Waller 6046; Wellcome III, p. 552; Wing L-3310; J.F.Fulton, *The Oxford Physiologists: Richard Lower 1631-1691*. FIRST EDITION, SECOND ISSUE of 'the most important contribution to circulatory physiology after William Harvey's *De motu cordis*'

(Grolier Medicine). Lower was a London physician who had studied at Oxford, where he knew Thomas Willis, Robert Boyle and Robert Hooke. *Tractatus de corde* reports his observations on the scroll-like structure of the cardiac muscle, the velocity of blood flow and its quantity, as well as the effects of aeration on the blood as it passes through the lungs. He also described a blood transfusion between dogs, thus demonstrating the safety of a method that was later to revolutionize surgery. "Lower's main work was on the anatomy and physiology of the blood system. He gave the most accurate description of the structure of the heart to date, and explored the structure and function of the veins and arteries. He elucidated the mechanism of respiration. It had been known since antiquity that venous and arterial blood differed in colour; Lower showed conclusively that this difference was caused purely by the admixture of air as the blood from the right side of the heart flowed through the lungs. He even showed that venous blood could be made to resemble arterial blood by shaking a sample in air. He concluded that the change in colour was caused by the blood's absorption of air, which explained why air is necessary to life. His experiments were admirably devised and conducted, and *De Corde* ('A Treatise on the Heart') is a worthy successor to Harvey's *De Motu Cordis*" (PMM).



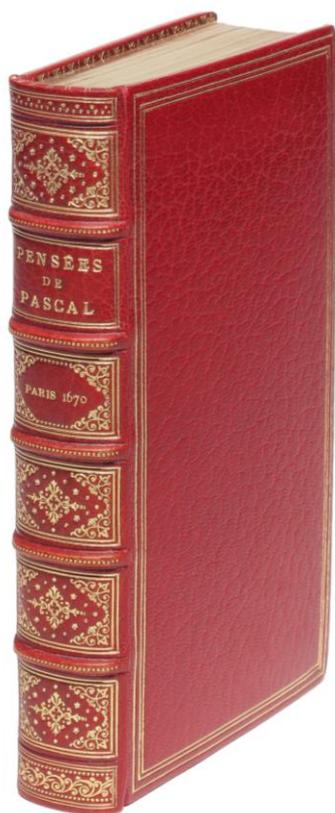
The *Tractatus de corde* exists in two issues, the first with the original leaf A6 containing the catchword 'Im-', the second (ours) with a cancel leaf containing the catchword 'quic-'. According to Fulton, the reason for the change was "to modify (very slightly) a scurrilous remark that Lower had

originally made concerning the Irishman O'Meara" (Fulton, p. 17). It is often stated that the first issue of the first edition is rarer than the second. Fulton recorded only 14 copies of the first edition, all but four were the second issue. However, of the 8 copies we could trace at auction in the past 30 years 5 are of the 1st and only 3 of the 2nd issue.

PMM 152 - Revelation v. Rationalism

15 PASCAL, Blaise. *Pensées de M. Pascal sur la religion et sur quelques autres sujets, qui ont esté trouvées après sa mort parmy ses papiers.* Paris: Guillaume Desprez, 1670. 12mo (152 x 86 mm). [82], 365 [1], [22] pp. Signatures: ã¹² ē¹² ṛ⁸ o⁸ u1 A-P¹² Q⁴ R⁸ S². With 'Approbation des Prelats' leaf, 2 leaves of privilege with errata on verso of second, and the table on content. Title with printer's monogram device, engraved headpiece on p.1, woodcut initials and type-ornament head- and tailpieces, bound with the final blank leaf S2. Leaf K9 misbound before K8. Bound by Aussourd in early 20th-century fine red morocco, spine lettered and tooled in gilt and with 5 raised bands, boards, board edges and turn-ins ruled and tooled in gilt, all edges gilt, marbled endpapers. Housed in custom-made slip-case. The text crisp and bright throughout, fore-edge of leaves G1-3 with some tilt and slightly shorter (originally bound crooked and here straightened). Provenance: Mis de Castelnau (incised on title). A tall, exceptionally well preserved copy. (#003610) € 12,000

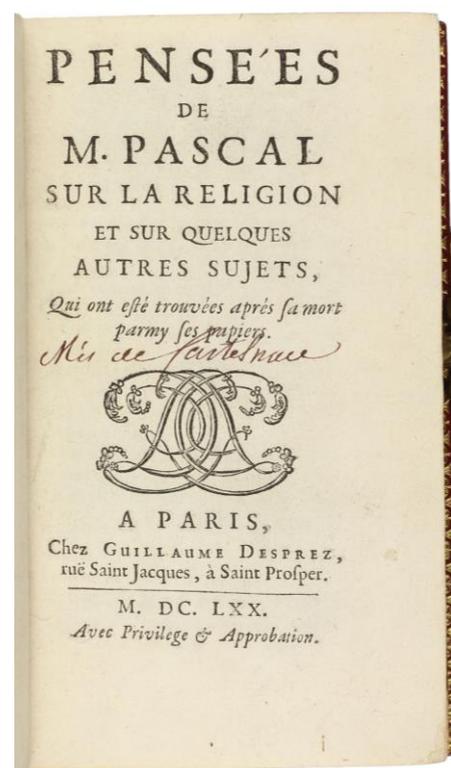
PMM 152; Tchmerzine V 70; *En français dans le texte* 96; Brunet IV, 398; Le Maire 2. - FIRST (OFFICIAL) EDITION and the earliest obtainable of Pascal's literary masterpiece. Published at the behest of his nephew, Etienne Perier, Pascal's great Christian apologetic has a privilege dated 2 January 1670. The earlier issue of 1669 is known in two



copies only (Paris and Troyes) and can be regarded as unobtainable. Appearing without approbation, privilege, table of chapters, errata, and avertissement, it was not formally published and the few copies produced were presumably a trial run. The BnF catalogue entry for the 1669 edition describes it as "edition 'préoriginale'", while their entry for the present edition reads "édition originale". (See BnF FRBNF31062667; 31062666 for the 1669 edition).

"When Pascal (see also [PMM] 140) died, he left a considerable amount of unpublished material, some of which has only recently been printed. It was however only eight years after his death that there appeared the first edition of his *Pensées*, with an introduction by his nephew Perier, from which it appeared that these 'Meditations' were fragments of a vast apology for Christianity, which Pascal had planned long since. These fragments were in themselves confused, and it is difficult to believe that they formed part of any such grand design. In fact, they were a selection made under the authority of a group of distinguished Jansenists, and the book carried the imprimatur of a number of others, all testifying to its orthodoxy. It is patently clear from these circumstances, and indeed from the still extant manuscript, that the text was considerably modified (a fact which would have caused little surprise or horror at the time) to avoid provoking any further outburst against the Jansenists -- in 1670 Port Royal was enjoying an unaccustomed lull in its troubles. From then on, the text of the

Pensées has been the subject of endless controversy, as has Pascal's purpose and standpoint in writing them. In 1776 Condorcet ([PMM]246) even published a revised selection in the interests of unorthodoxy, and it was not until 1844 that Faugère produced the first text with any pretensions to accuracy. Modern scholarship is still wrestling with the problem. "What then are the *Pensées*"? They are certainly not a mere defence of orthodoxy, nor an appeal to faith from one whose scientific attainments had brought with them a fear of scepticism; even less are they concealed free-thinking. But if they attack rationalism as seen in the works of Descartes ([PMM]129) or scepticism as typified by Montaigne ([PMM]95), it is with the methods of reasoning developed by Descartes and in a style which acknowledges its debt to Montaigne. To the rational sceptic, Pascal proposes a deeper scepticism, which he called Pyrrhonism. If the sceptic denies everything that cannot be demonstrated by reason, Pascal denies the power of reason also, whose capacity to reach conclusions exists only in the power of God; 'Cogito, ergo sum' is only true if there is a Being which can give the existence and grant it the power of thought. Thus he goes beyond the scope of 'natural theology' to



explain all the contradictions and vicissitudes of human experience entirely in terms of faith and revelation, the one justifying the other. It is impossible to elevate the disconnected reflexions of the *Pensées* into a system, or a complete answer to other systems. The reader will find questions asked and unanswered which take him far beyond the age-old controversy between faith and reason, and an equally penetrating light cast on some relatively minor problem. Pascal's work has, in fact, the marks of genius, exploring and stating all that can be said on both sides of the question it investigates. Since these are notes, and unfinished, conclusions are not always reached. This is not a book which one can measure as a totality in terms of orthodoxy or the reverse. It is, however, a book for which the enquiring mind has had solid reason to be grateful from its first imperfect publication to the present day." (PMM 152).

PMM 166 - Microbes
Thomas Molyneux's copy

16 **LEEUVENHOEK, Anton van.** [Works, in Latin]. I. *Arcana naturae detecta*. Leiden: Henrik van Kroonevelt, 1695. [8], 568, [14] pages, including engraved additional title, 27 engraved plates of which 15 are folding and several engraved illustrations in text. Paper only very little browned, very minor spotting, plate to p.548 shaved some mm into the plate mark, ownership signature to title page. II. *Arcana naturae, ope & beneficio exquisitissimorum microscopiorum. ... una cum discursu & ulteriori dilucidatione; epistolis suis ad ... philosophorum collegium ... editio altera*. Leiden: Cornelius Boutestein, 1696. [12], 3-58 (i.e. 64), 258 (i.e. 260) pp., including etched additional title by Romeyn de Hooghe, 11 engraved plates of which 5 are folding and several engraved illustrations in text. Title page soiled and with ownership inscription. [bound with] III. *Continuatio epistolarum... editio altera*. Leiden: Cornelius Boutestein, 1696. [2], 124 pp., 10 engraved plates of which 2 are folding. [bound with] IV. *Continuatio arcanorum naturae detectorum*. Leiden: Henrik van Kroonevelt, 1697. [2], 192, [8] pp., 7 engraved plates, one folding. Four works bound in two volumes. 4to (195 x 153 mm). Contemporary mottled calf with 5 raised bands richly gilt in compartments (boards rubbed, extremities worn, corners bumped, Vol. 1 front joint cracked at top), light toning of paper (IV a bit heavier), scattered very minor spotting and stains. Provenance: Signature of Thomas Molyneux in both volumes (p.1 of I, p.3 of II) and marginalia in his hand to p.564 of I, p.1 and final fly leaf verso of IV. Kenneth Rapoport, ex-libris to front paste downs of both vols. The four works constitute the complete set of Leeuwenhoek's letters 28 to 107 in Latin. The remaining letters in Latin were not published before 1719. (#001987) € 12,500

I. Dobell 25; Norman 1319; PMM 166; Sparrow 128; Evans 94; NLM/Krivatsy 6785; Waller 10877. - FIRST EDITION OF LETTERS 84-92 and first Latin edition of letters 32-33, 37, 39-41, and 61-83.

II. Dobell 22 (first edition only); Waller 10878; Norman 1320 (3rd edition). - Dobell, *Antony van Leeuwenhoek and his "little animals"* London, 1932 (Dobell 25a), confusingly states that this is the second edition of *Arcana naturae detecta* (1695), whereas it is in fact the second edition of *Anatomia seu interiora rerum* (1687) containing letters 28-31, 34-36, 38, and 42-52.

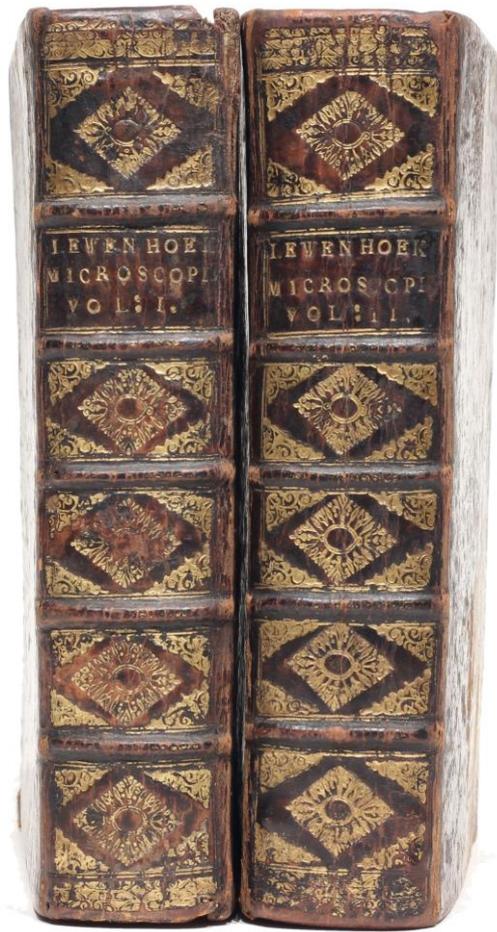
III. Dobell 24(a); Waller 10883. - Second Latin edition (first published in 1689). Contains letters 53-60, in order, with continuous pagination but unnumbered.

IV. Dobell 26; Eimas Heirs 590; Norman 1321; Waller 10880; Wellcome III, p.477. - First Latin edition. A continuation of the *Arcana naturae detecta* (1695). Contains letters 93-107, all numbered and with continuous pagination.

Leeuwenhoek was one of the first and greatest microbiologists. He discovered protozoa and bacteria and was the first to describe spermatozoa and red blood corpuscles. The first independent part of this celebrated collection of letters addressed to the Royal Society. These letters incorporate his epoch-making experiments with the MICROSCOPE, and his researches and discoveries opened up a new era of scientific investigation and earned him the title "Father of Protozoology and Bacteriology". Many of the letters are of outstanding importance and include his account of the animalcula.

The personal copy of Thomas Molyneux (1661-1733), Irish physician, professor of Physic at Trinity College and fellow of the Royal Society of London. The visit of Molyneux to Leeuwenhoek's home in 1685 on behalf of the Royal Society to inspect his microscopes is well documented in the literature. Molyneux gave a report of his visit

in a letter dated February 13, to the secretary of the Royal Society, Francis Aston. It was read at a February meeting:



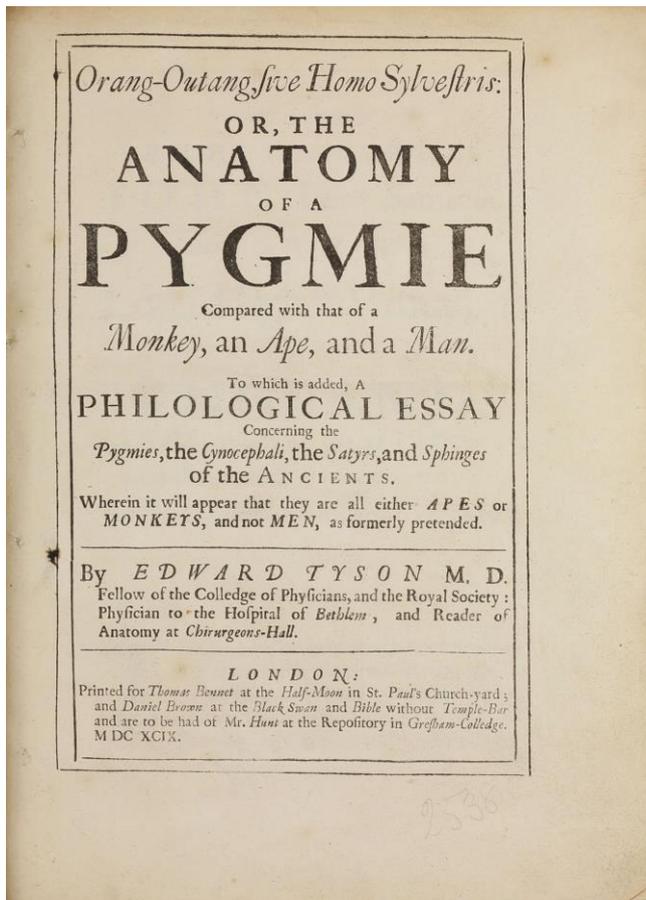
I have hitherto delayed, answering your last, because I could not give you an account of Mynheer LEEWENHOECK; but last week I was to wait upon him in your name: he shewed me several things through his microscopes, which 'tis in vain to mention here, since he himself has sent you all their descriptions at large. As to his microscopes themselves, those, which he shewed me, in number at least a dozen, were all of one sort, consisting only of one small glass, ground, (this I mention because 'tis generally thought his microscopes are blown at a lamp, those I saw, I am sure, are not) placed between two thin flat plates of brasse, about an inch broad, and an inch and a half long. In these two plates there were two apertures, one before, the other behind the glass, which were larger or smaller, as the glass was more or less convex, or as it magnified. Just opposite to these apertures on one side was placed sometimes a needle, sometimes a slender flat body of glass or opaque matter, as the occasion required, upon which, or to its apex, he fixes whatever object he has to look upon; then holding it up against the light, by help of two small screws, he places it just in the focus of his glass, and then makes his observations. Such were the microscopes, which I saw, and these are they he shews to the curious that come and visit him; but besides these, he told me he had another sort, which no man living had looked through setting aside himself; these he reserves for his own private observations wholly, and he assured me they performed far beyond any, that he had shewed me yet; but would not allow me a sight of them, so all I can do is barely to believe, for I can plead no experience in the matter. As for the microscopes I looked through, they do not magnify much, if anything, more than several glasses I have

seen, both in England, and Ireland: but in one particular, I must needs say, they far surpass them all, that is in their extreme clearness, and their representing all objects so extraordinary distinctly, for I remember we were in a dark room with only one window, and the sun too, was then off of that, yet the objects appeared more fair and clear, than any I have seen through microscopes, though the sun shone full upon them, or though they received more than ordinary light by help of reflective specula or otherwise: So that I imagine 'tis chiefly, if not alone in this particular, that his glasses exceeds all others, which generally the more they magnify the more obscure they represent the object; and his only secret I believe, is making clearer glasses, and giving them a better polish than others can do. I found him a very civil complaisant man, and doubtless of great natural abilities; but, contrary to my expectations, quite a stranger to letters, master neither of Latin, French or English, or any other of the modern tongues besides his own, which is a great hindrance to him in his reasonings upon his observations, for being ignorant of all other mens thoughts, he is wholly trusting to his own, which, I observe, now and then lead him into extravagancies, and suggest very odd accounts of things, nay, sometimes such, as are wholly irreconcilable with all truth. You see, Sir, how freely I give you my thoughts of him, because you desired it. (Dobell, p.57).

PMM 169 - The Missing Link
Thomas Brookes' copy

17 TYSON, Edward. *Orang-Outang, sive Homo Sylvestris: or, the Anatomy of a Pygmie Compared with a Monkey, an Ape, and a Man...* [ISSUED WITH:] *A Philological Essay Concerning Pygmies...* London: Thomas Bennet, Daniel Brown, Mr. Hunt, 1699. Two parts in one. 4to (288 x 213 mm). [12] 1-108, [2] 1-58 [2] pp. Signatures: pi⁴ A² B-O⁴ P2 chi² 2B-2H⁴ 2I₁, 91 leaves. Imprimatur leaf before title, separate title to second part, publisher's advertisement leaf at end, 8 folding engraved plates after William Cowper by Michael Vander Gucht (small tears at folds without loss). Modern blind-stamped calf, gilt red morocco spine label, red-dyed edges, new endpapers. Little browning, minor dust- and finger-soiling, scattered spotting mostly to outer margins of text, sewing holes at gutter from a former interim binding. Provenance: Joshua Brookes* (2 different bookplates of which one loosely inserted). A very good, wide-margined copy. (#002375) € 12,000

PMM 169; Norman 2120; Wing T-3598; Garrison-M. 153; NLM/Krivatsy 12028; Nissen ZBI 4194. - FIRST EDITION of the first anatomical study of a great ape and to identify the chimpanzee as the link directly below mankind in



the 'Great Chain of Being': "'Tis a true Remark, which we cannot make without Admiration; That from Minerals, to Plants; from Plants, to Animals; and from Animals, to Men; the Transition is so gradual, that there appears a very great Similitude, as well between the meanest Plant, and some Minerals; as between the lowest Rank of men, and the highest kind of Animals. The Animal of which I have given the Anatomy, coming nearest to mankind; seems the Nexus of the Animal and Rational" (Tyson, from *The Epistle Dedicatory*). This represents the first formulation of the idea of the 'missing link', which was more fully explored by the works of Huxley and Darwin in the 19th century. The 'typical pygmy' which Tyson placed between man and monkey was in fact an African chimpanzee.

"The earliest important study in comparative morphology ... he established a new family of anthropoid apes standing between monkey and man ... Tyson did not foresee the theory of evolution; but his work contributed substantially to its formulation and in that sense he was a forerunner of Blumenbach, Buffon, Huxley and Darwin" (PMM).

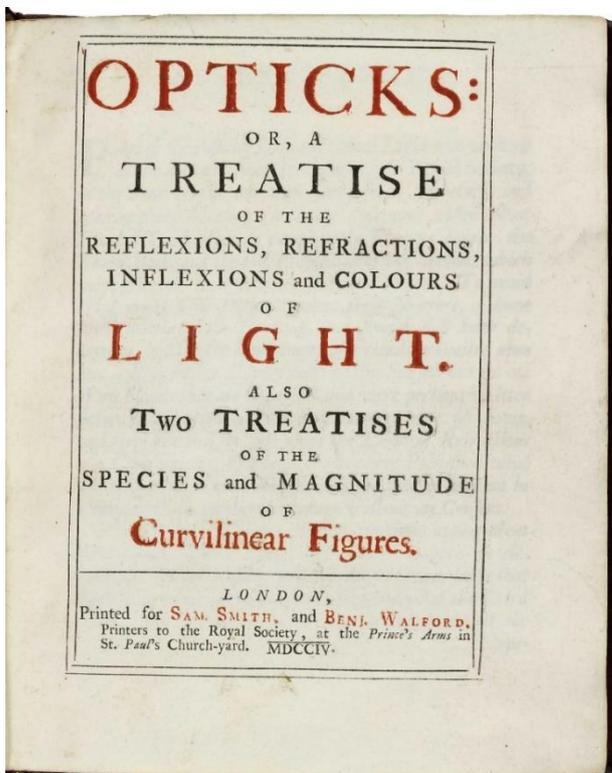
*Joshua Brookes (1761-1833). "Brookes taught anatomy to approximately 7000 students over a

forty-year period... [and was] generally esteemed to be among the best teachers of practical anatomy in London, having the benefit of original specimens rather than pictures" (ODNB). He assembled a vast collection of specimens of human and comparative anatomy, which he displayed in the two upper floors of his house in Blenheim Street. The collection, dispersed in sales in 1828 and 1830, was considered as second only to that of John Hunter.

PMM 172 - The Colours of Light
The Harrison D. Horblit copy

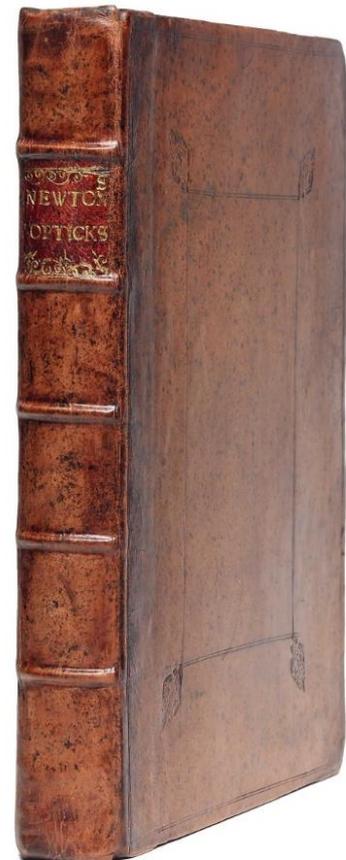
18 **NEWTON, Isaac.** *Opticks: or, a Treatise of the Reflexions, Refractions, Inflexions and Colours of Light. Also Two Treatises of the Species and Magnitude of Curvilinear Figures.* London: for Sam. Smith and Benj. Walford, printers to the Royal Society, 1704. 4to (244 x 191 mm). 181 leaves, [4] 1-144, 1-137 [1] 138 [1] 139-211 [1] pp. Signatures: (pi)², A-S⁴, Aa-Bb⁴ Dd-Zz⁴, Aaa-Ddd⁴, Eee² + single leaf inserted before Tt2 being the divisional title to *Enumeratio linearum tertii ordinis*. Title printed in red and black, 19 folding engraved plates. Contemporary polished panelled calf, expertly rebaked with the original backstrip and red morocco gilt-lettered label laid down, red-sprinkled edges, corners strengthened, slight wear to extremities. Text crisp and clean throughout, faint dampstain spots to a few upper blank margins near gutter, upper margin of 6 plates closely trimmed, partly affecting heading of plate *Curvarum Tab. II*. Provenance: Harrison D. Horblit (his bookplate to first flyleaf); Thomas Vroom (pictorial bookplate to front pastedown). A wide margined and internally exceptionally crisp copy. (#003251) € 80,000

Babson/Macomber 132; Wallis 174; Sparrow, *Milestones of Science* 150; Dibner, *Heralds of Science* 148; Horblit 79b; PMM / *Printing and the Mind of Man* 172; Norman 1588. FIRST EDITION, FIRST ISSUE of Newton's important



optical discoveries in collected form. "Newton's *Opticks* did for light what his *Principia* had done for gravitation, namely, placed it on a scientific basis" (E.W. Brown, quoted in Babson). "*Opticks* is also distinguished in two other ways: the first edition contained Newton's first mathematical papers in print [...] and in the later editions it was embellished with a set of 'Queries' long supposed to represent Newton's opinions on the chief mysteries of Nature". (PMM 172).

Opticks includes explanations of the rainbow, "Newton's rings," the color circle, the spectrum of sunlight, and the invention of the reflecting telescope. "This work includes assertions of the priority of Newton over Leibniz in the discovery of the calculus, explanations of optical phenomena such as the rainbow, 'Newton rings', the double refraction of Icelandic spar, and important 'Queries' as to



the nature of matter" (Horblit). *Opticks* itself was written in the 1670s. Newton showed the manuscript to microscope pioneer and fellow Royal Society member Robert Hooke, whose criticisms were so withering that Newton elected to stall publication until after Hooke's demise. Unusually for one of Newton's works, "Opticks" was first published in English, the Latin version following in 1706. This copy was consigned to Christie's by the Widow of Harrison D. Horblit, Mermin Horblit (1910-2009) and sold in New York on April 22, 1994 (USD 16,100).

PMM 179 - Family of Mathematicians
An unsophisticated copy

19 **BERNOULLI, Jacob.** *Ars conjectandi, opus posthumum. Accedit tractatus de seriebus infinitis, et epistola gallice scripta de ludo pilae reticularis.* Basel: Johann Rudolph & Emanuel Thurneisen, 1713. 4to (210 x 170 mm). [4], 35 [1], 306 pp. Woodcut title device, woodcut initials, head- and tailpieces, woodcut diagrams in text, 1 folding plate with woodcut diagrams and 2 folding letterpress tables. Signatures: $[\pi]^2 a-d^4 e^2$, $A-2P^4 2Q^2$. Final section on tennis and errata bound-in at front. All pages uncut. Contemporary carta rustica, brown marbled paper spine, hand-lettered paper spine label, original untouched endpapers (slight chipping of spine label, short tear to lower cover, a little chipping at lower joint, minor dust-soiling to cover and paper edges). Minor even browning of text and woodcut plate, lower blank corner of leaf c2 torn, light pale dampstaining to lower corner of first 8 leaves and a few leaves elsewhere, occasional very minor spotting, small wormtrack at upper blank margin of first 5 leaves. Provenance: small sticker of bookseller H. Th. Wenner, Osnabrück at rear pastedown. A highly unsophisticated, crisp, clean and unpressed copy. (#003451) € 32,000

FIRST EDITION, AND EXCEPTIONALLY RARE WIT ALL LEAVES LEFT UNCUT, OF "THE FIRST SIGNIFICANT BOOK ON PROBABILITY THEORY" which "set forth the fundamental principles of the calculus of probabilities and contained the first suggestion that the theory could extend beyond the boundaries of mathematics to apply to civic, moral and economic affairs" (Norman). *Ars Conjectandi* deals with the theory of combinations, gives concrete examples



on the expectation of profit in games, and considers probability from a philosophical perspective. The work is divided into four parts: Part one is a perceptive commentary on Huygens's '*De ratiociniis in aleae ludo*', the second part deals with the theory of combinations, the third part gives concrete examples on the expectation of profit in games, the fourth part contains philosophical thoughts on probability. The final section, written in French "*Lettre a un Amy sur les Parties de Jeu de Paume*", explains the various strategies in real tennis (jeu de paume) and the probabilities of winning in different situations. Bernoulli discusses players of uneven strength, games of two versus one, and other permutations of the game. "This is Jacob's thinly disguised satirical response to some caustic criticisms made earlier of his views on scholarly logic." (Tomash & Williams).

"Jakob Bernoulli's "great treatise (conjectandi) means literally 'casting', sc. dice) was published posthumously. It was the first systematic attempt to place the theory of probability on a firm basis and is still the foundation of much modern practice in all fields where probability is concerned - insurance, statistics and mathematical heredity tables. ... [He] was among the first to develop the calculus beyond the point at which it was left by Newton and Leibniz. Jacob was both a Cartesian and a Newtonian and did much to further the spread of Newton's ideas in Europe. Some researches by Jacob, once regarded as curiosities are now found to have practical application to the construction of suspension

bridges and in the transmission of high voltages." (PMM 179).

References: Dibner, *Heralds of Science* 110; Grolier/Horblit 12; Norman 216; PMM *Printing and the Mind of Man* 179; Sparrow *Milestones* p.21; Honeyman 291; Tomash & Williams B143; DSB II, p.49-51.

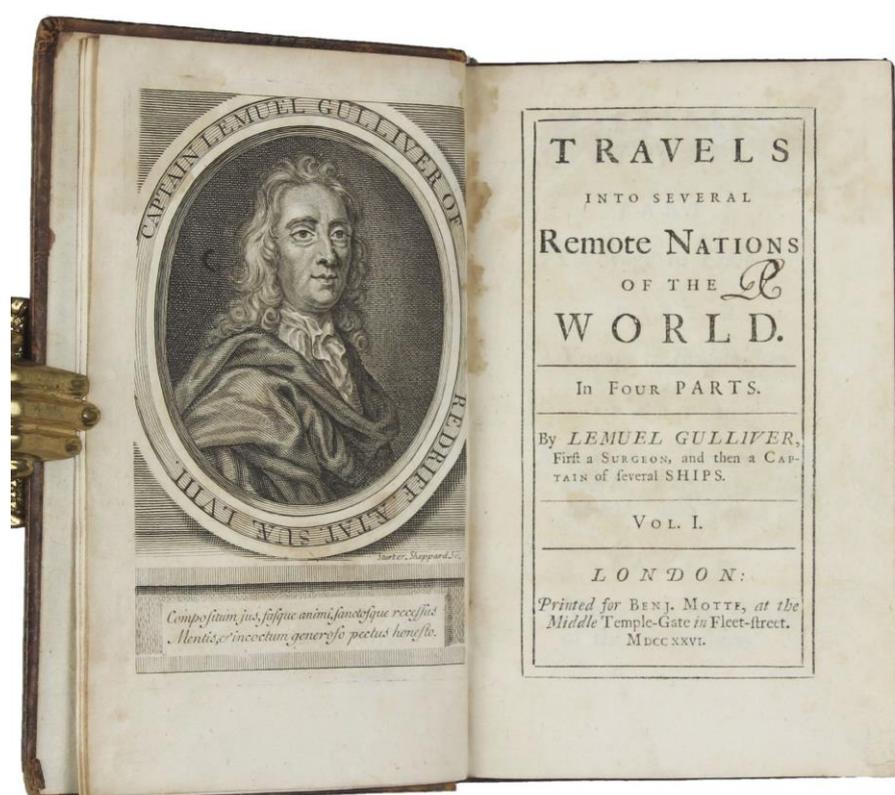
PMM 185 - Gulliver's Travels
Teerink's "AA" issue in contemporary binding

20 SWIFT, Jonathan. *Travels into several remote nations of the world: in four parts, by Lemuel Gulliver, First a Surgeon, and then a Captain of several Ships.* 4 parts bound in 2 volumes. London: Benjamin Motte, 1726. 8vo (193 x 120 mm). xii, 148, [6], 164; [6], 154, [8], 199 [1] pp., engraved portrait frontispiece by Sheppard after Sturt in volume 1, 5 engraved maps and 1 engraved plate of the automatic writing machine, woodcut head and tail pieces, plus other small decorations. Contemporary blind panelled calf, spines with 5 raised bands and with gilt-lettered morocco label in first compartment and the gilt monogram of George Clarke in 2nd compartment, joints of vol. II and upper joint of vol. I cracked but holding, spine ends little chipped, corners scuffed. Internally only very little age-toned. Gathering of signature "N" in Vol. II not originally bound in, but inserted and probably supplied from another copy. First and last several leaves with dampstaining to gutter, else the text generally quite clean and bright. Provenance: George Clarke* (gilt monogram on spines and autograph monogram on each title page); Richard V. Lee, M.D. (bookplate to front pastedowns). A handsome, wide-margined set in contemporary untouched binding with interesting provenance. (#002619) € 5500

Teerink 290; PMM 185; Rothschild 2104. BOTH VOLUMES FIRST EDITION, SECOND ISSUE (Teerink's "AA" state), published in November 1726 (the first issue was published 28 October 1726 and sold out within a week). The frontispiece portrait is in the second state printed on paper with vertical chain lines, with printed inscription "Captain Lemuel Gulliver of Redriff. Ætat. suæ LVIII"; misprint "subsidiues" present in Part I, p. 35, line 5; p. 74 in Part III is correctly numbered (was mis-numbered "44" in first issue); Part IV, p. 52, line 1 has the corrected "but his" present; plus other points mentioned by Teerink for the AA state.

No other English prose work is so multi-faceted. Of its time and timeless, it succeeds as a Scriblerian satire, burlesque travelogue, moral fable, anti-novel, adventure in science fiction, a uniquely loved children's book, and personal psychodrama. One of its great qualities is the kind of verisimilitude normally associated with Defoe. In contrast to Defoe, however, the world which Swift makes believable is one of exalted fantasy. "'Gulliver's Travels' has achieved the final apotheosis of a satirical fable, but it has also become a tale for children. For every edition designed for the reader with an eye to historical background, twenty have appeared, abridged or adapted, for readers who care nothing for the satire and enjoy it as a first-class story." (PMM 185).

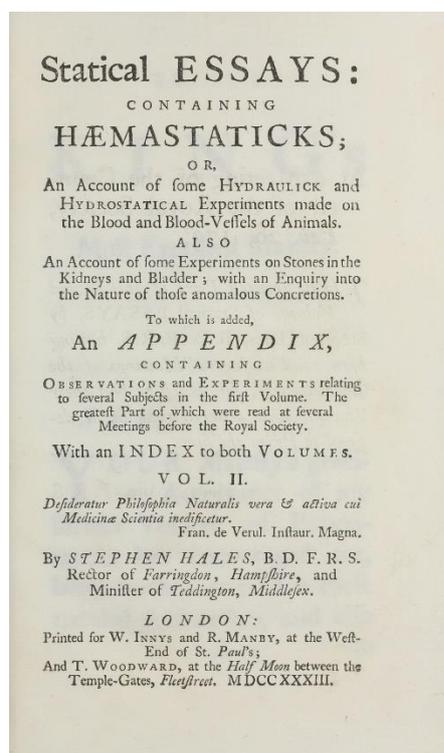
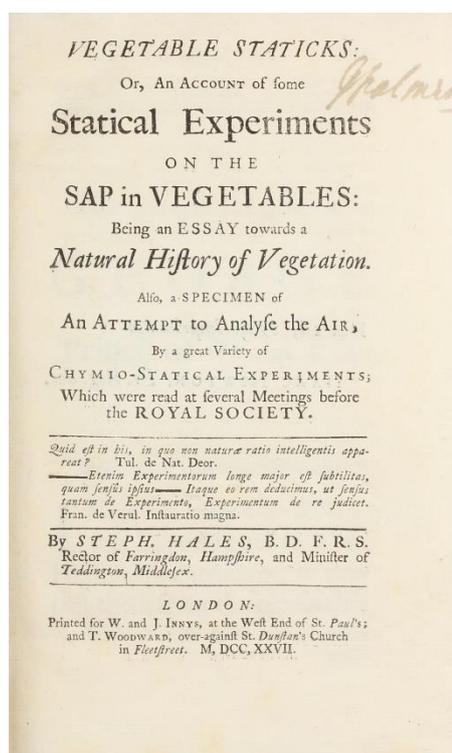
*George Clarke (1660-1736), scholar and virtuoso, friend of Alexander Pope, Tory politician and benefactor of Worcester College, Oxford.



21 HALES, Stephen. I: *Vegetable Staticks; or, an account of some Statical Experiments on the Sap in Vegetables. Also . . . an Attempt to analyse the Air, by a great Variety of Chymio-Statical Experiments...* - II: *Statical Essays: containing haemastaticks; or, an Account of some Hydraulick and Hydrostatical Experiments made on the Blood and Blood-Vessels of Animals.; Also an Account of some Experiments on Stones in the Kidneys and Bladder.* London: for W. Innys and R. Manby, and T. Woodward. 1727, (7) vii (2) 376 pp., 19 engraved plates by S. Gribelin (Vol. I); 1733, xxii, (26), 361, (23) pp. (Vol. II). First editions, 8vo (20x14cm). Contemporary ink signature on title, endpapers a little browned and spotted, bookplate on front pastedown, contemp. panelled calf, spine ends and label chipped, joints cracked, a little worming (Vol. I). Vol. II with the leaf before the title announcing the Royal Society's authorisation of publication, contemp. panelled calf, the backstrip with red morocco label and gilt lettering. (#001881) € 4500

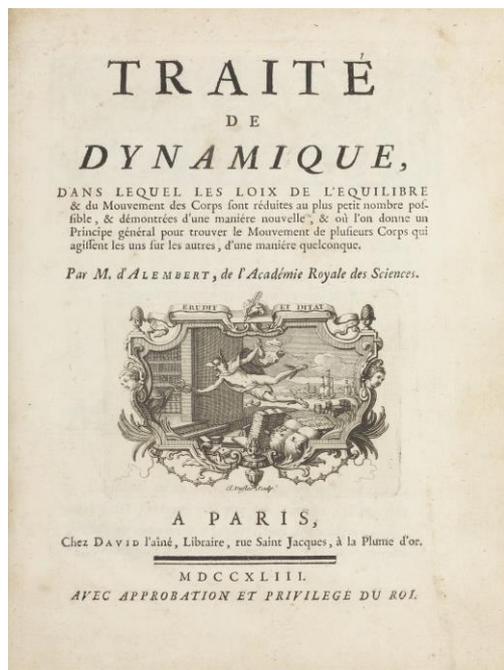
Dibner 26; Garrison-Morton 765 (*Haemastaticks*); Horblit 45a and 45b; Grolier *Medicine* 41; *Heirs of Hippocrates* 784; Henry 777-78; NLM/Blake, p.194; Osler 1081; Waller 11527; Wellcome III, p.194; Norman 970; PMM 189 (1731-3 edition) - FIRST EDITION. Hales applied his training in biology and mathematics (including physics) to make important scientific investigations presented in these separately published volumes. The first volume, *Vegetable staticks*, Hales describes his investigations of plant physiology, including the movement of water in plants and determining the three factors of water movement: root suction, root pressure and leaf suction. He also established that plants lose water continuously during transpiration through leaves. His quantitative measurements of these phenomena enabled him to show the rate of transpiration varied with temperature. Hales established that plants do not have true circulation system, and developed techniques of measuring the varying growth rates in different plant structures.

The second volume, or *Haemastaticks*, 'contains the studies on blood pressure which make Hales one of the founders of modern experimental physiology. The application of the principle of the pressure-gauge or manometer enabled him to measure blood pressure during the contraction of the heart. He computed the circulation rate and estimated the velocity of the blood in the veins, arteries and capillary vessels and by showing that the capillary vessels are liable to constriction and dilation he made an important contribution both to the study of physiology and the practice of the physician of today ... Hales's work marked the greatest advance in the physiology of the circulation between Harvey and the introduction of the mercury manometer and other instruments for the measurement of blood pressure by J.L.M. Poiseuille in 1828' (PMM).



PMM 195 - Dynamics

22 ALEMBERT, Jean le Rond d'. *Traité de dynamique, dans lequel les lois de l'équilibre & du mouvement des corps sont réduites au plus petit nombre possible.* Paris: David l'Aine, 1743. 4to (213x165 mm). [4], xxvi, [2], 186, [2] pp, engraved title-vignette, 4 engraved folding plates at end. (A



few minor marginal stains on title-page and preliminaries.) Contemporary calf (extremities scuffed, boards and spine worn, hinges repaired), marbled endpapers. Very light toning and occasional very minor spotting of text. Provenance: Antonii Scherbrant(?), illegible signature to first flyleaf. Very good, internally crisp copy. (#002001) € 4800

PMM 195; Poggendorf I, 28; Wellcome II, p. 28; Norman 31. - FIRST EDITION OF D'ALEMBERT'S IMPORTANT CONTRIBUTION TO THE FORMALIZING OF NEWTON'S NEW SCIENCE OF MECHANICS.

"The 'Treatise on Dynamics' was d'Alembert's first major book and it is a landmark in the history of mechanics. It reduces the laws of the motion of bodies to a law of equilibrium. Its statement that 'the internal forces of inertia must be equal and opposite to the forces that produce the acceleration' is still known as 'd'Alembert's principle'. This principle is applied to many phenomena and, in particular, to the theory of the motion of fluids. It has become useful in the practical solution of many

technical and mechanical problems, and is as important for the motion of bodies as is the principle of virtual velocities for their equilibrium -- the latter formulated by Johann Bernoulli in 1717 (see [PMM]179). It was left to Lagrange to combine both these principles and to construct mechanical equations applicable to the motions of any system of bodies." (PMM).

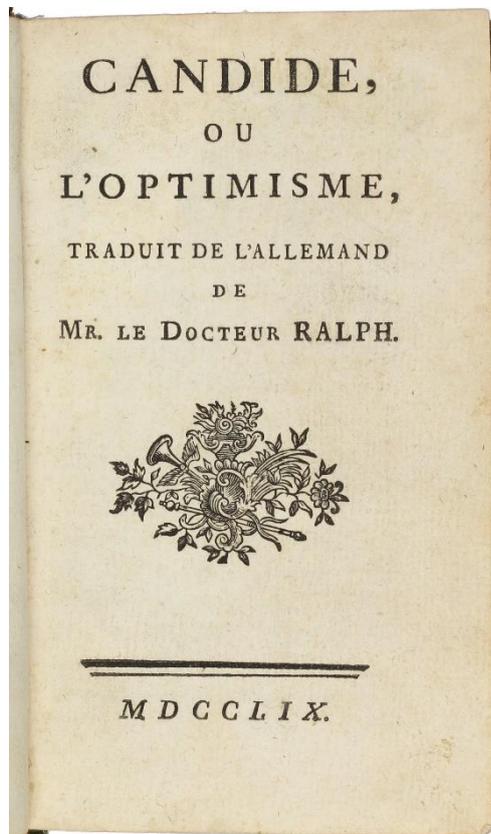
PMM 204 - Le Meilleur des Mondes Possibles

23 VOLTAIRE, Francois Marie Arouet De. *Candide, Ou l'optimisme, Traduit De l'allemand De Mr. Le Docteur Ralph.* [Geneva]: [Cramer], 1759. 12mo (163 x 94 mm). 299 [3] pp. Signatures: A-M¹² N⁸ (-N7-8). Woodcut title vignette, repeated on p. 193 and 266, other woodcut ornaments and vignettes in text, bound without binder's 'avis au reliure' leaf N8 and blank leaf N7 as almost always. Leaves B4, B9, D6 and D7 are cancels. Contemporary French mottled calf, flat spine with gilt decoration and gilt-lettered red morocco label, marbled endpapers, red-dyed edges (rubbing to extremities, minor wear and bumping of corners, joints at head and foot with a few mm of insignificant repair). Text crisp and clean throughout, occasional very minor spotting, paper flaw to upper corner of leaf A7. Provenance: Biblioteca Lucini Passalacqua (bookplate to front pastedown), author's name added on first flyleaf in manuscript. Exceptionally well preserved copy in virtually untouched contemporary binding. (#003611) € 28,000

PMM 204; *En français dans le texte* 160; Barber 299G, Bengesco 1434; Morize 59a; Wade 1; Princeton 3298.323.1. RARE FIRST EDITION, identified as the true first of *Candide* by Giles Barber in 1978. The bibliographical history of this book has been exasperatingly complex and confused, not least because before handing over a final manuscript to Cramer, Voltaire went behind his back and sent a slightly different version of the manuscript to John Nourse, a printer in London, who may well have dispatched copies to other publishers. The result was that within weeks of the first edition of *Candide* appearing in Geneva, sixteen other editions appeared in Paris, London and Amsterdam. Drawing on the Lisbon earthquake of 1755 for inspiration, this conte philosophique became an almost instant best-seller with about 20,000 copies selling in the first year, in spite of initial censorship.

"Voltaire made a number of changes to the text of *Candide* during the printing in Geneva. He made further corrections after the printing was finished, requiring the replacement of 4 leaves of text with corrected versions. These cancel leaves were included in the first edition in the final gathering of 12 leaves (effectively N9-12),

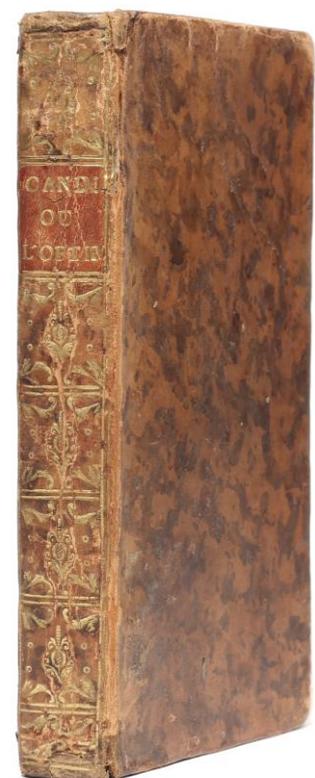
together with a printed 'avis au relieur' leaf, i.e. instructions to the binder as to where to place the four corrected leaves in the text. The corrected leaves were inserted at pp. 31/32, 41/42, 83/84, 85/86, in each case as conjoint leaves, so no stubs were required, making the changes undetectable. The 'avis au relieur' leaf was almost always then discarded by the binder, as having served its purpose." (Nicholas Marlowe Rare Books, *List 3: The Candide Conspiracy*, pp. 11-12).



"It was Voltaire himself and his long career of disorderly, troubled and occasionally glorious opposition to established authority rather than his books which caught the imagination and occupied the mind of his contemporaries and succeeding generations. Whether writing frivolously to amuse, or seriously to put right injustice, he was never unnoticed: his best-sellers made him a rich man; when he tried to right injustice, as in the case of Lally Tollendal, he was listened to. Voltaire lived for a very long time and from his youth on was always in some sort of trouble. In 1716 he was exiled for the first time for writing or being thought to have written lampoons against the Regent. In 1718 his first tragedy, *Oedipe*, was produced, and the next year he was exiled again. And so it went on, flattery, scribbling, insult and trouble taking equal shares in his life. In 1726, after some particularly bad trouble, Voltaire went to London. Here he stayed for three years; it was one of the most important visits of his life. The eighteenth-century English were more different from the eighteenth-century French than any two European nations can be imagined to be now, and the piquancy of this difference had the liveliest effect on Voltaire. Moreover, the English, unlike the French, who regarded Voltaire as a writer of elegant trifles, took him seriously, and paid him correspondingly. Voltaire responded by behaving seriously and even gratefully. Much struck by the admirable English phlegm and toleration of free thought and eccentricity, he wrote the *Lettres Philosophiques sur les Anglais*, the most sympathetic of critiques.

Back in France, this only made more trouble, and he took refuge at Cirey in Lorraine with the talented Marquise de Chatelet. In the 1740s he was partially restored to favour and through the influence of Mme de Pompadour he was made historiographer royal on New Year's Day 1745. He was soon back in hiding, and Mme de Chatelet died. So in 1751 Voltaire yielded to the persistent invitations of Frederick of Prussia, and set out for Berlin. There, despite his farcical quarrels with the King, he remained for three years, until the breach became total. Then he fled to Geneva where he found and bought the ideal refuge, Ferney, four miles from the city. Here, just on French soil, he could enjoy the political liberty of Geneva with the social liberty of France. Here *Candide*, the most perfect of the light-weight parables which were his especial and peculiar forte, was written. Typically, it was published anonymously, and many times printed and pirated in its early years. Which of the editions of 1759 is the first is still open to doubt. But what does it matter? Voltaire would be pleased to know that his attempts to cover his tracks have been successful and even more to contemplate the book's continued popularity. For the optimistic, innocent *Candide*, and his equally guileless if more worldly-wise mentor, Dr Pangloss, and their delicious adventures, still command our attention. The folly of philosophic and religious optimism is displayed with a vigour and wit that carries the reader away. Irony without exaggeration, a perfect restraint in its admirable humour, a gift for the 'throwaway line' ('pour encourager les autres' is a classic example); all these show Voltaire's style and originality at their incomparable best." (PMM 204).

Literature: Wade Ida O., *The First Edition of Candide - A Problem of Identification*. In: The Princeton University Library Chronicle, 20, 1959, pp. 63-88. Bengesco, Voltaire, *Bibliographie de ses oeuvres*, 1882-90, I, 444 ff. Morize, André, *Candide; ou L'optimisme. Critical Edition*, Paris, 1913, pp. lxxvi-lxxxvii. Barber, Giles. *Some Early English Editions of Voltaire*. British Library Journal, vol. 4, issue 2, 1978. Besterman, Theodore. *Some eighteenth-century Voltaire editions unknown to Bengesco*. Oxford, Voltaire Foundation, 1973.



PMM 215 - The Bible of Materialism

24 **HOLBACH, Paul-Henry Thiry, Baron d'**. *Système de la Nature. Ou des Loix du Monde Physique & du Monde Moral*. 'Londres' [i.e. Amsterdam]: [Marc-Michel Rey], 1770. 2 parts in two volumes. 8vo (200 x 124 mm). [12], 370; [4], 412 pp., including half-title and 4pp. errata bound after contents in first vol. Contemporary polished calf, boards ruled in gilt, plain spines richly so and with double red morocco labels, all edges gilt (extremities rubbed, corners worn, boards soiled, rubbed and stained, joint to upper board of vol. II split at foot), marbled endpapers. Internally only little browned in margins, ink signature to titles, leaves D4-5 vol. I soiled, faint dampstaining to a few leaves in vol. II, very minor occasional spotting. Provenance: bookplate with the arms of the Verthamon family to front pastedown of vol. I (removed in vol. II); Kachanska? (signature to title pages). A fine set in original binding. (#002396) € 2900

PMM 215; Kress 6737; Tchemerzine VI, 243. FIRST EDITION, FIRST ISSUE (with comma after 'Londres' in imprint and the errata leaves). Published under the late Mirabaud's name to avoid censure. "In the Systeme, Holbach rejected the Cartesian mind-body dualism and attempted to explain all phenomena, physical and mental, in terms of matter in motion. He derived the moral and intellectual faculties from man's sensibility to impressions made by the external world, and saw human actions as entirely determined by pleasure and pain. He continued his direct attack on religion by attempting to show that it derived entirely from habit and custom. But the Systeme was not a negative or destructive book: Holbach rejected religion because he saw it as a wholly harmful influence, and he tried to supply a more desirable alternative" (PMM 215).

PMM 217 - Oxygen Foreshadowed

25 **PRIESTLEY, Joseph**. *Observations on different Kinds of Air ... Read March 5, 12, 19, 26, 1772*. In: *Philosophical Transactions, Giving Some Account of the Present Undertakings, Studies, and Labours, of the Ingenious in Many Considerable Parts of the World*. Vol. 62, pp. 147-264. London: Printed for Lockyer Davis, in Holbourn, Printer to the Royal Society, 1772. 4to (220 x 163 mm). Entire volume: xiv, 494, [2] pp., 14 folding engraved plates (one illustrating Priestley's contribution), errata leaf at end. 2 plates torn without loss, occasional light spotting and staining. Bound in contemporary calf, spine with two hand-lettered labels, gilt ruling to boards (binding rebaked and recornered, boards rubbed and scratched), red-dyed edges, original endpapers. Provenance: Belfast Society (stamped in gilt on upper board); Peter and Margarete Braune. Very little even browning throughout, occasional minor spotting and dust soiling, small worm hole to fore-edge of first 4 leaves, 2 plates torn without loss. A very good and clean copy in original binding. (#003322) € 2800

Dibner 40; Honeyman 2535; PMM 217; Norman 1749. FIRST EDITION of the author's most important work on gas theory, published in the *Philosophical Transactions* two years before its first appearance in book form under the title *Experiments and Observations on Different Kinds of Air* in 1774). "The paper here cited, for which the Royal Society awarded Priestley the Copley medal, announced the discovery of hydrochloric acid and nitric oxide, and the use of the latter in measuring the purity of air, which led through the work of Cavendish, Fontana and others to exact eudiometry. Priestley also observed that plants consume carbon dioxide and give out oxygen, thereby purifying air which has been vitiated by combustion, respiration or putrefaction, and that this action takes place only under daylight. This proved of the greatest value for the subsequent work on respiration by Ingenhousz and Senebier." (PMM). "Priestley showed that in air collected after the processes of combustion, respiration or putrefaction, one-fifth of the volume disappeared. He had also observed that mint grew vigorously in air tainted by animal respiration and that evidently plants reversed the process of polluting the air as respiration did. In this paper he also announced two new gases that he had obtained: nitrous oxide and carbonic oxide" (Dibner).

PMM 229 - The solar system in motion

26 **HERSCHEL, William.** On the proper Motion of the Sun and Solar System; with an Account of several Changes that have happened among the fixed Stars since the Time of Mr. Flamstead. In: *Philosophical Transactions of the Royal Society of London*, 73 (1783), part II, pp. 247-283, 3 engraved folding plates by James Basire. London: Lockyer Davis and Peter Elmsly, 1783. 4to (275 x 214 mm). Entire volume, two parts, vii [1], 1-246, vii [1]; iv, 247-310, *303-*370, 311-501, [3] pp. and 10 plates. Title pages to both parts, the first with engraved vignette, errata bound at end. Later half calf over marbled paper-covered boards, spine with gilt-lettered red morocco label, additional lettering and some ruling in gilt (little wear to extremities, light rubbing, upper joint cracked at top). Text and plates little browned in margins and with scattered light foxing (stronger to general title), 4 plates (not belonging to Herschel's paper) cropped at bottom. Provenance: (ownership inscription to front flyleaf). (#002667) € 3400

PMM 227; Norman 1059. FIRST EDITION. In this celebrated paper, one of his earliest contributions to the Royal Society, Herschel demonstrated his discovery of the movement of the sun and of the entire solar system with it. "Herschel analyzed the individual motions of a small number of stars, showing that most of their observed motions were actually the result of the movement of our solar system through space." (Norman)

PMM 229 - The First Aerial Voyage

Interesting association copy from the library of Gaston Tissandier.

27 **FAUJAS DE SAINT-FOND, Barthelemy de.** *Description des experiences de la machine aerostatique de MM. de Montgolfier et de celles auxquelles cette decouverte a donne lieu.* Paris: [Chardon for] Cuchet, 1783-1784. 2 volumes, 8vo (204x127 mm). Vol. 1: [i-iii] iv-xl, [1] 2-299, [3], [4] pp., 9 engraved plates (plate v as frontispiece), folding table; Vol. 2: [2], [1] 2-24, *24-24*, 25-62, [67] 68-366, [2] pp., 5 engraved plates (plate I as frontispiece). Contemporary green paste paper boards (light chipping along spine and edges). Internally crisp, with only very minor occasional spotting and toning, offsetting by a few plates, title and frontispiece of vol. 2 slightly soiled, leaves partially untrimmed. Provenance: Gaston Tissandier (ex-libris to front paste-downs); Aéro-club de France (ex-libris stamp and affixed deaccession card to first fly-leaves). A fine, wide margined set with interesting provenance. (#001996) € 6500

Dibner, Heralds of Science 179; PMM 229; Norman 769; Sparrow, Milestones of Science 179; Tissandier p.21 (this copy). - FIRST EDITION, second issue, with the four page supplement.

"THE FIRST SERIOUS TREATISE ON AEROSTATION AS A PRACTICAL POSSIBILITY" (Printing and the Mind of Man), a detailed historical and technical account of the first balloon flights carried out in 1783 by the brothers Etienne and Joseph de Montgolfier, written by one of their principal sponsors, the geologist Faujas de Saint-Fond. The first successful balloon ascent took place in Annonay on June 5, 1783 using the Montgolfiere' technique of heating air with a straw fire sufficiently to make the balloons rise. Although subscribers preferred the hydrogen balloons invented by the physicist Jacques-A.-C. Charles, whose first launch was a 13-foot balloon from the Champ-de-Mars in August 1783, the Montgolfiers created a sensation by sending up ever more populated hot-air balloons; a trio of farm animals were the first mammals to fly, on September 19, and the first manned ascent followed two months later, on November 20, when Pilâtre de Rozier and the Marquis d'Arlandes ascended from the Bois de Boulogne and crossed Paris, covering a total distance of 5 1/2 miles in approximately 20 minutes. (Rozier was later killed in an attempted balloon crossing of the English Channel.) The second volume contains accounts of later balloon flights, all inspired by the Montgolfiers' initial successes - "their experiments were so successful, and so decisive, that it is inarguably to them that we owe all of the experiments that followed" (vol. 2, pp. 1-2) - including the first flight of a passenger-carrying hydrogen balloon, designed and manned by Jacques Charles, who on December 1, 1783 made a two-hour ascent from Paris, landing near a village 27 miles distant (this trip was also largely underwritten by Faujas de Saint-Fond). Charles's hydrogen balloon, constructed with the aid of the celebrated artisans the Robert brothers, formed the prototype for later modern balloon construction.

The copy of Gaston Tissandier (1843-1899), French chemist, meteorologist and aviation pioneer. He founded and edited the scientific magazine *La Nature* and wrote several books, including the important bibliography on aeronautics in 1887 ("*Bibliographie aéronautique: Catalogue de livres d'histoire, de science, de voyages et de*

fantaisie, traitant de la navigation aérienne ou des aérostats"). His interest in meteorology led him to take up aviation. His first trip in the air was conducted at Calais in 1868 together with Claude-Jules Dufour, where his balloon drifted out over the sea and was brought back by an air stream of opposite direction in a higher layer of air. In September 1870, during the Franco-Prussian War, he managed to leave the besieged Paris by balloon. His most adventurous airtrip took place in April 1875. Together with Joseph Croce-Spinelli and Théodore Sivel, he was able to reach in a balloon the unheard-of altitude of 8,600 metres. Both of his companions died from breathing the thin air. Tissandier survived, but became deaf. In 1883, Tissandier fit a Siemens electric motor to an airship, thus creating the first electric-powered flight. The technical problems encountered by the Montgolfiers and those who followed them are discussed by Tissandier in *Histoire des ballons et des aéronautes célèbres* (1887-89).



*Expérience faite à Versailles, en présence de leurs Majestés et de la Famille Royale, par M. Montgolfier, le 19 Sept. 1783.
La Machine Aérostatique avoit 67 Toises de haut sur 41 de Diamètre.*

DESCRIPTION
DES EXPÉRIENCES
DE LA MACHINE
AÉROSTATIQUE
DE MM. DE MONTGOLFIER,

*Et de celles auxquelles cette découverte a donné lieu ;
SUIVIE*

DE RECHERCHES sur la hauteur à laquelle est parvenu le Ballon du Champ-de-Mars ; sur la route qu'il a tenue ; sur les différens degrés de pesanteur de l'air dans les couches de l'atmosphère ;

D'UN MÉMOIRE sur le gaz inflammable & sur celui qu'ont employé MM. de Montgolfier ; sur l'art de faire les Machines aérostatiques, de les couper, de les remplir, & sur la manière de dissoudre la gomme élastique, &c. &c. ;

D'UNE LETTRE sur les moyens de diriger ces Machines, & sur les différens usages auxquels elles peuvent être employées.

OUVRAGE orné de neuf planches en taille-douce, représentant les diverses Machines qui ont été construites jusqu'à ce jour, particulièrement celle de Versailles, & celle dans laquelle des hommes ont été enlevés jusqu'à la hauteur de 324 pieds, &c. &c.

Par M. FAUJAS DE SAINT-FOND,

A PARIS,

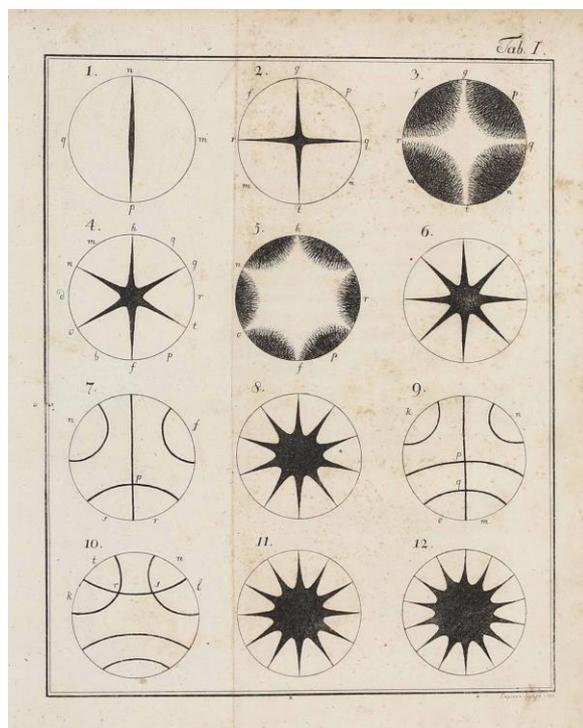
Chez CUCHET, rue & hôtel Serpente,

M. DCC. LXXXIII.

Avec Approbation & Privilège du Roi

PMM 233a - Acoustics

28 CHLADNI, Ernst Florens Friedrich. *Entdeckungen über die Theorie des Klanges.* Leipzig: Weidmanns Erben und Reich, 1787. 4to (212 x 176 mm). [4], 77 [1] pp.; 11 folding engraved plates bound at end. Contemporary quarter calf, rebacked spine lettered and decorated in gilt, remnant of paper sticker to front board. Text browned throughout, occasional minor brown spotting, tiny burnhole in p.3/4, upper inner hinge strengthened, plates less browned and slightly foxed. Provenance: Dr. v.F. (armorial bookplate to front pastedown), illegible ink signature and pencil annotations on flyleaf. Still very good copy. (#001759) € 5500

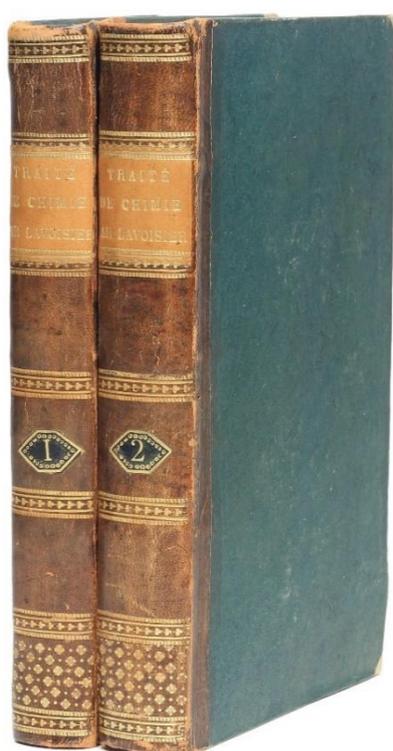


burnhole in p.3/4, upper inner hinge strengthened, plates less browned and slightly foxed. Provenance: Dr. v.F. (armorial bookplate to front pastedown), illegible ink signature and pencil annotations on flyleaf. Still very good copy. (#001759) € 5500

PMM, 233a; Dibner, *Heralds of Science* 150; Norman 480; Sparrow, *Milestones of Science* 39; DSB III, 258ff - EXCEPTIONALLY RARE FIRST EDITION of this important work which established acoustics as a science. Chladni was the first to work out the quantitative relationships governing the transmission of sound and its velocity in different media. The vibrations of strings had been studied in the seventeenth century but not the vibrations of plates. Chladni devised a method of making the vibrations visible by spreading sand on the plate and running a violin bow across the edge. The study of 'Chladni figures', as they are now known, using plates of different sizes, shapes and materials and clamped in different places enabled Chladni to develop the principles of acoustics and advance the understanding of wave forms in general.

PMM 238 - A New Epoch in chemistry

29 LAVOISIER, Antoine Laurent. *Traité élémentaire de chimie, présenté dans un ordre nouveau et d'après les découvertes modernes; avec figures...* Two parts in two volumes. Paris: Chez Cuchet, 1789. 8vo (205 x 124 mm). xlv, 322; viii, 323-653, [3] pp., including half title to each part, woodcut vignette to titles, woodcut head- and tailpieces, 2 folding letterpress tables in volume I, 3-pages errata



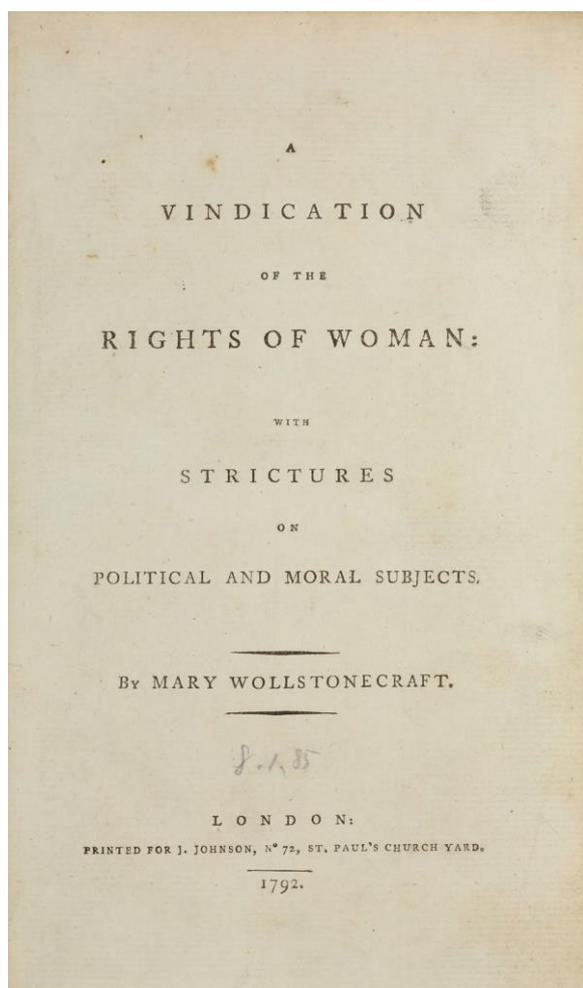
and 13 folding engraved plates bound at end of volume II. Contemporary half calf, gilt-decorated spine with gilt-lettered morocco labels, vellum corners and dark-green pastepaper-coated boards (slight rubbing to spine ends and hinges), sprinkled edges. Content very crisp and clean with only very little even browning (the two folding tables and p.160 a bit stronger), minor occasional spotting of plates, errata corrected in text in ink, first title-leaf with loss of a few mm of lower corner, tiny burnhole in p.357/8 and 391/2. A near fine copy with ample margins. (#003237) € 4500

Dibner 43; Grolier/Horblit 64; PMM 238; Wellcome III, p. 460; Norman 1295; Duveen 340. - FIRST EDITION, second issue. Lavoisier's *Traité* "...was a decisive move in the final overthrow of alchemy and the phlogiston theory introduced by Stahl a century earlier. By the use of the balance of weight determination at every chemical change and the building of a rational system of elements, Lavoisier laid the foundation of modern chemistry" (Dibner). The illustrations for this edition were conceived and executed by Lavoisier's wife, a skilled painter and engraver who had studied under Louis David, and who collaborated with her husband in his scientific experiments and researches. The second issue contains tables and various approvals of the work not included in the single-volume first or trial issue, of which only two copies are known.

PMM 242 - The Rights of Woman

31 **WOLLSTONECRAFT, Mary.** *A Vindication of the Rights of Woman: with Strictures on Political and Moral Subjects.* Volume 1 (all published). London: Printed for J. Johnson, 1792. 8vo (214 x 135 mm). xix [1], 452 pp. Text block only slightly trimmed preserving several uncut edges. Near contemporary calf, spine with gilt-lettered label and some gilt decoration; boards, board edges and turn-ins tooled in gilt, marbled edges and endpapers (light rubbing of extremities, upper joint split but cords holding). Text crisp and clean throughout, paper flaw at lower blank corner of Ff4 not affecting text. Provenance: Merthyr Guest (armorial bookplate to front pastedown), short pencil inscription to title-page, affixed to the endpapers are newspaper clippings from January 1885 discussing the authenticity of a portrait of Mary Wollstonecraft by William Opie then recently purchased by the National Gallery. Excellent, wide margined copy. (#003575) € 17,000

PMM 242; Windle 5. FIRST EDITION of this early and highly important feminist manifesto, in which Wollstonecraft outlines how the equality of women cannot be achieved due to the lack of education available to them.



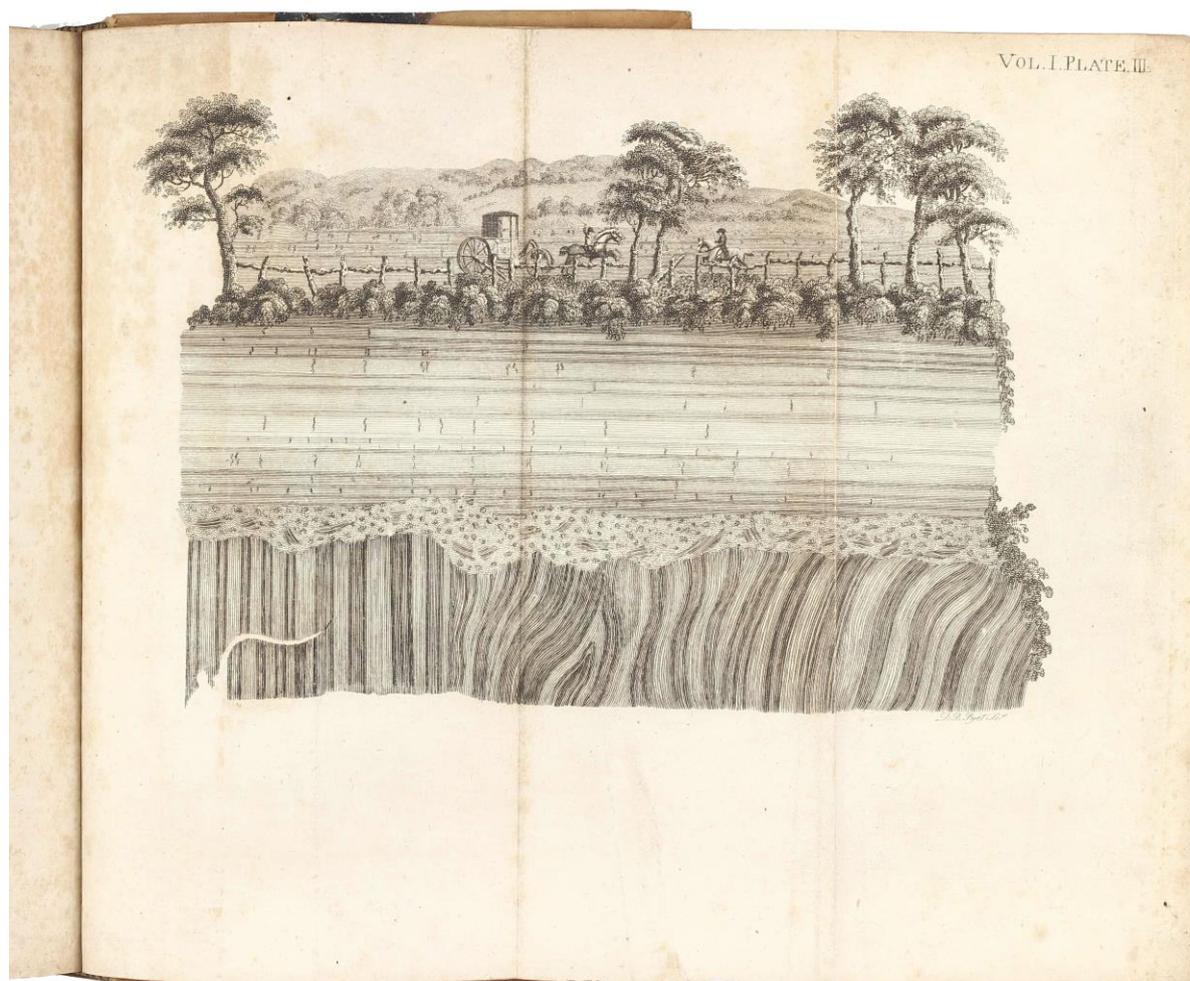
"*A Vindication of the Rights of Woman* is dedicated to (of all people) Talleyrand, whom Mary Wollstonecraft still believed to be inspired by the same progressive views as her own. To him she wrote that her main argument was 'built on this simple principle that, if woman be not prepared by education to become the companion of man, she will stop the progress of knowledge, for truth must be common to all'. The main part of her book was written in an equally plain and direct style, and it was this, as well as the idea of writing a book on the subject at all, which caused the outcry which ensued. There was indeed nothing specially shocking in her matter. She did not attack the institution of marriage or the practice of religion. Instead, she argued for equality of education for both sexes, and for state control and co-education. It was a rational plea for a rational basis to the relation between the sexes (here she disagreed with Rousseau ([PMM]207), with whom in other respects she had so much common ground). Its chief object was to show that women were not the playthings of men but ought to be their equal partners, which they could be only if they were educated in the same way. After publishing the *Vindication*, Mary Wollstonecraft went to France to observe the Revolution and remained there throughout the Terror. She became involved with an American, Gilbert Imlay, who cruelly deserted her, leaving her with an infant daughter. After a frustrated attempt at suicide, she met and married William Godwin ([PMM]243) with whom she enjoyed a few months of tranquillity and happiness; but she died a few days after the birth of their daughter Mary, later wife of Shelley. Her memory was

lovingly preserved by her husband, who collected her letters and in 1798 published a memoir of her. Her courage and her most famous work were to be remembered years later (see [PMM]398) when the struggle which she began was successfully concluded." (PMM 242).

PMM 247 - The Theory of the Earth

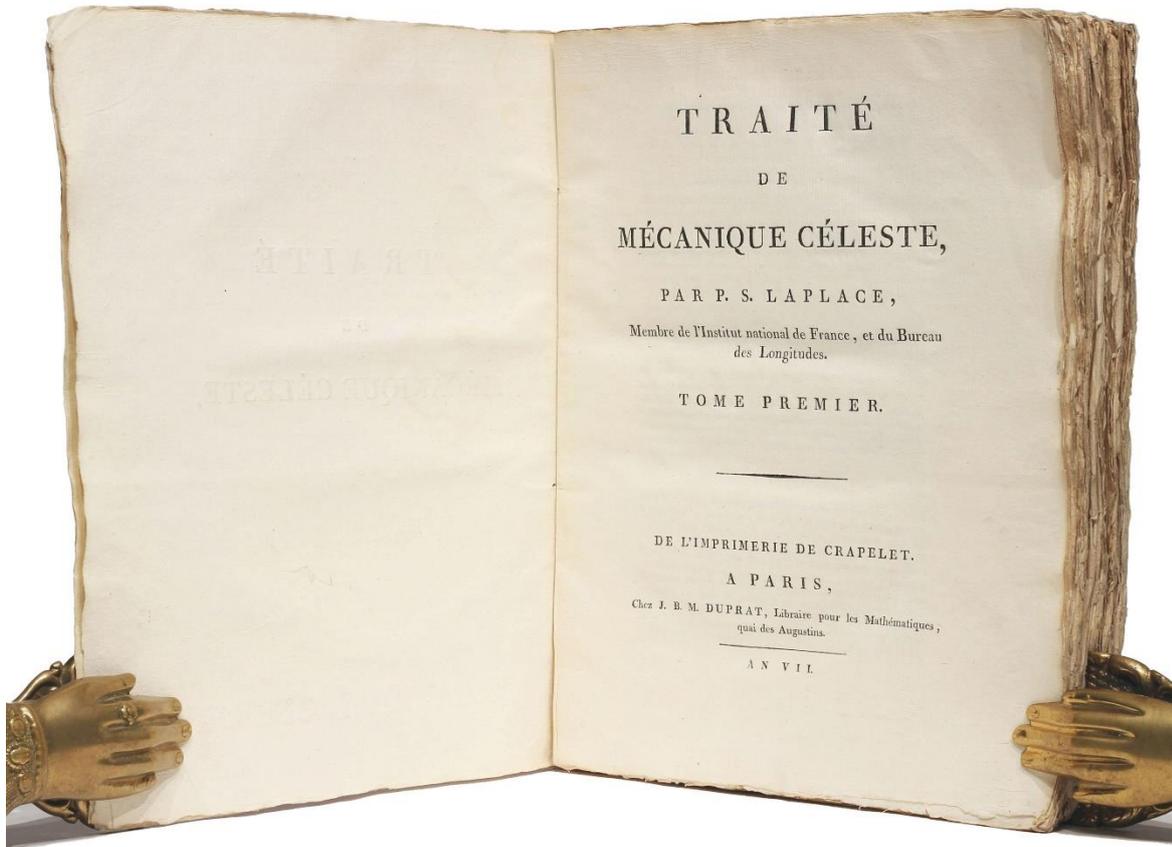
32 HUTTON, James. *Theory of the Earth, with Proofs and Illustrations.* Edinburgh: printed for Cadell and Davies, London, and William Creech, 1795 (Vol. I and II); London: Geological Society, 1899 (Vol. III). Bound in three volumes, including the posthumous third part edited by Sir Archibald Geikie for the Geological Society. 4to (211 x 129 mm). viii, 620; viii, [103] 4-567 [1], xvi, 278, xiii [1] pp., including half-title in each volume and 6 folding engraved plates. Uniformly bound in fine 20th-century half calf, by Bayntun of Bath, spines ruled in gilt and with gilt-lettered morocco labels, original printed green wrappers of vol. III laid down and bound in at end (very slight fading to spines and light rubbing of extremities), brown sprinkled edges. Text and plates of first two volumes somewhat browned and foxed as usual (plate 2 in vol. II stronger), large folding plate of Mont Blanc with small defect in sky area (skilfully repaired and fairly unobtrusive with c. 4 x 3 cm section supplied in pen and ink like clouds). Provenance: Robert Dalley-Scarlett (1887-1959); David Branagan (ownership inscription to flyleaf of vol. I); small embossed stamp to upper outer corner of title and a few other leaves in vols. I and II). A very good set. (#001667) € 15,000

PMM 247; Horblit 52a, Norman 1131 - EXCEPTIONALLY RARE FIRST EDITION of this classic work on geology. "His fundamental conception - now accepted as a matter of course, but then entirely new - was the doctrine of uniformitarianism. The formation of the surface of the earth is one continuous process which can be studied entirely from terrestrial materials without cosmological or supernatural intervention...Hutton had no clear idea of the significance of fossils for the theory of gradual evolution and not all his theories are now accepted, but his central ideas of uniformitarianism and of the effect of small changes in nature leading eventually to gigantic transformations have had far-reaching consequences in their influence on Charles Lyell and Darwin." PMM.



the heavenly bodies. The final parts of the fourth volume and the entire fifth volume really constitute a separate work and contain important material on physics not already included in the original sequence.

Only few volumes of the *traité* have survived in original wrappers and complete sets are of utmost rarity. The Haskell Norman set for example had the first 4 volumes in original wrappers but vol. V rebound in modern quarter morocco (see his sale at Christie's 1998, lot 597, sold at \$16,100).

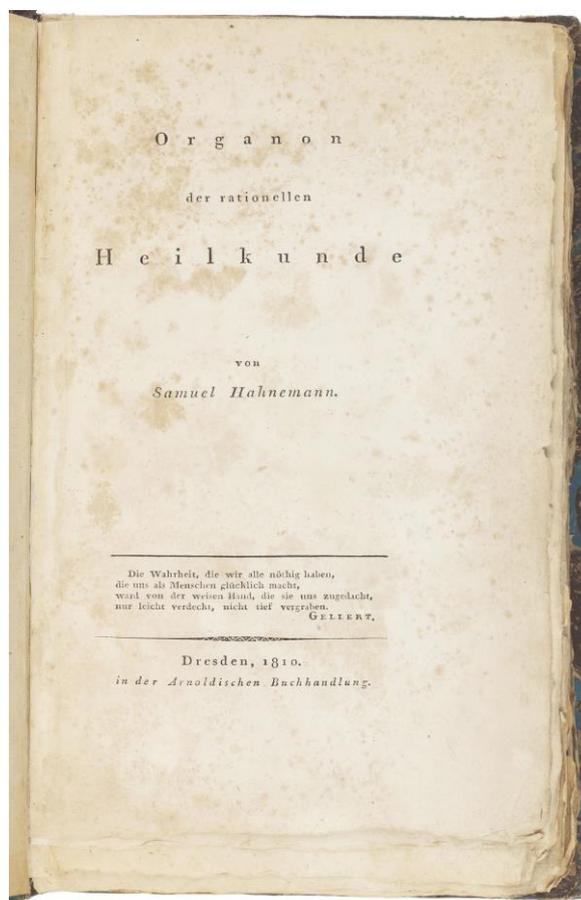
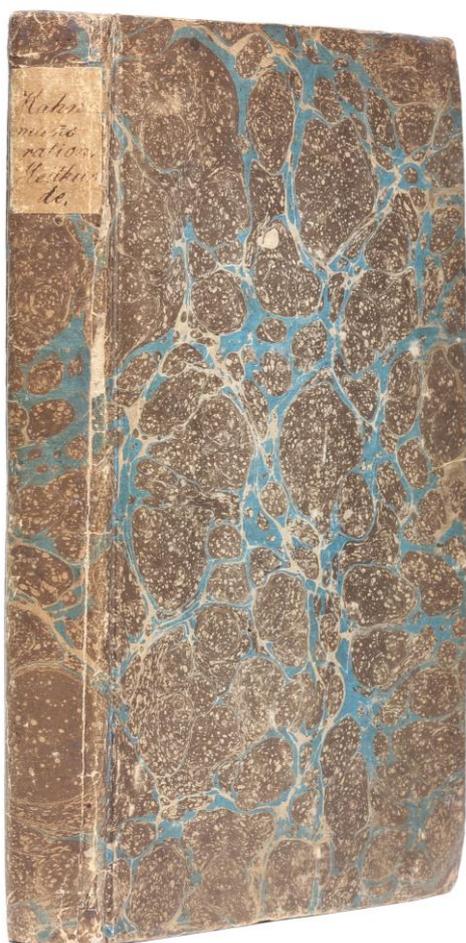


PMM 265 - Homoeopathy

34 HAHNEMANN, Samuel. *Organon der rationellen Heilkunde.* Dresden: Arnoldische Buchhandlung, 1810. 8vo (231 x 142 mm). [2], xviii, 222, [2] pp., including errata leaf at end. Title-leaf is a cancel as called for, printed on stronger and shorter-margined paper, p.43 and 206 with instructions to bookbinder at lower margin. Contemporary marbled papercard boards, spine with paper label lettered in script (little soiled, corners bumped, little chipping to upper hinger). All text leaves untrimmed. Even mild browning of text throughout, very little occasional spotting, title-page foxed as usual due to different paper-stock. An exceptional, unsophisticated and unmarked copy in a rare uncut state. (#002317) € 18,000

PMM 265; Norman 964; Lilly Library, Notable Medical Books, p. 163; Garrison-M. 1966; Wellcome III, 191; Waller 3960; Tischner, p. 348, No. 14; Schmidt, Hahnemann 3; Müller, Hahnemann 122. - RARE FIRST EDITION. 'Hahnemann, the founder of homeopathy, embodied his theories in the *Organon*. The minute doses set down by him did much to correct the evils of the polypharmacy of his time, in which overdosage was pervasive. He professed to base medicine on a knowledge of symptoms, regarding investigation of causes of symptoms as useless; he thus rejected all the lessons of pathology and morbid anatomy. There are several English translations, the first of which appeared in 1833' (Garrison-Morton).

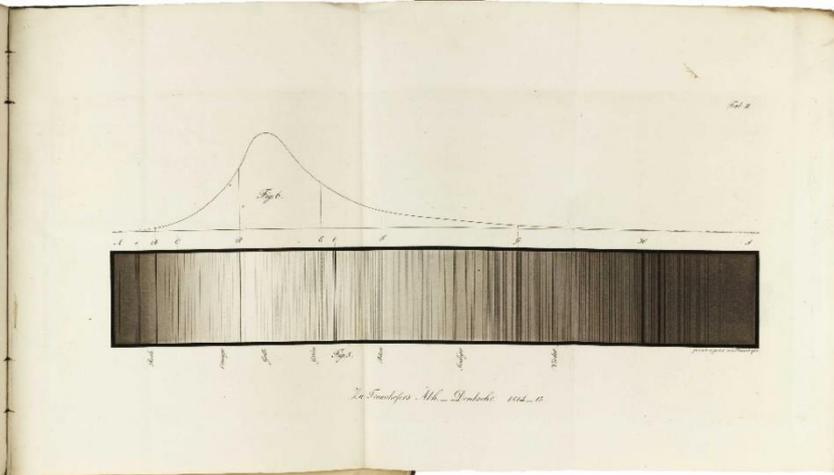
"Hahnemann was convinced that minute doses of drugs in greatly attenuated concentrations were efficacious cures. When modern practice is compared with the indiscriminate and massive prescriptions of his own day it will be seen how much closer we are to his views than to those of his contemporaries. Certainly his treatment showed that the *vis medicatrix naturae*, given a chance, with occasional and gentle assistance, often suffices to effect a cure. He gave great prominence to therapeutics, introduced many new specifics, but ignored the growing science of pathology. In his emphasis on the importance of studying the patient as a whole, he foreshadowed the psychosomatic component of modern medicine." (PMM 265).



PMM 278a - The Solar Spectrum
Uncut and in original wrappers

35 FRAUNHOFER, Joseph. *Bestimmung des Brechungs- und Farbenzerstreuungs- Vermögens verschiedener Glasarten.* In: Denkschriften der königlichen Academie der Wissenschaften zu München für die Jahre 1814 und 1815, vol. 5, pp. 193-226, 3 engraved folding plates (2 folding). München: Lentner, 1817. 4to (270 x 230 mm), whole volume [8], xlii, 62, 226, 91 [1] pp., including half-title, general title page, 4-page index and 13 engraved plates. Original wrappers with printed spine label (little dust-soiled and spotted, spine ends slightly frayed), all pages uncut. Small worm hole in front wrapper extending into half-title without affecting text, occasional minor spotting, page edges a bit dust-soiled and frayed at lower edge, two of Fraunhofer's plates somewhat browned as usual, otherwise generally crisp and clean. Provenance: Peter and Margarete Braune (tipped-in bookplate on inner front wrapper). An exceptional, unsophisticated and wide-margined copy. (#003206) € 22,000

Dibner 153; PMM 278a; Sparrow 70; Norman 836 (offprint); DSB V, p.143. - FIRST EDITION AND OF GREAT RARITY, of a fundamental paper in astrophysics. The journal issue of Fraunhofer's milestone paper is even rarer than the offprint issue because the journal appeared in a very small print run. We can trace only two copies of the journal issue at auction in the past 30 years (Richard Green Library sale, Christies 2008, and the Norman Library Sale, Christies, 1998). Fraunhofer, a skilled optician and designer of precision optical instruments, described in this paper, read before the Bavarian Academy in 1815, his accidental discovery of the absorption lines of the solar spectrum.



In 1814, while conducting tests on the dispersion and refractive index for different kinds of optical glass, Fraunhofer "observed the effect of the refracting medium on light, comparing the effect of light from flames with light from the sun, and found that the solar spectrum was crossed with many fine dark lines, a few of which William Hyde Wollaston had observed and reported upon in 1802. [Wollaston had incorrectly interpreted the lines as borders between the colors]. Designating the more distinct lines with capital letters... he mapped many of the 574 lines that he observed between B on the red end and H on the violet end of the spectrum. Sometime later he noted that some of these lines appeared to

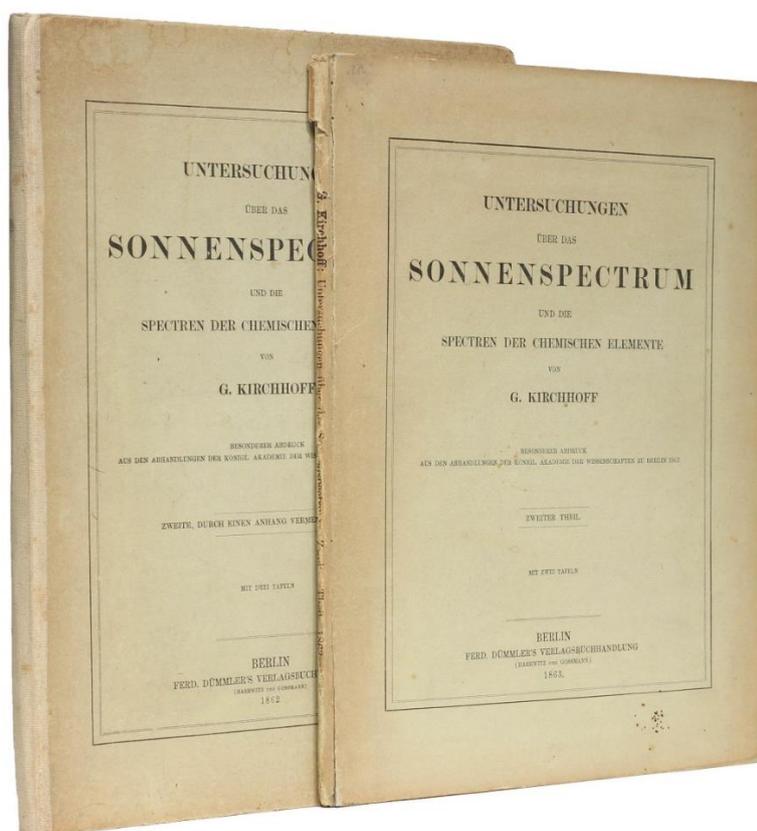
correspond to the bright doublet of lines in many flame spectra; yet he noted further that while the pattern observed for the sun and planets [being reflected sunlight] appeared identical, the patterns for the sun, Sirius, and other bright stars differed from one another. He concluded that the lines originated in the nature of the light source. "These observations stimulated considerable interest for the next half-century among natural philosophers, whose speculations culminated in the classical explanation of absorption and emission spectra made by Kirchoff and Bunsen in 1859" (DSB). The dark lines, whose exact explanation has never been explained, are still known as Fraunhofer lines. Their discoverer continued to explore and map them during the following years; using a grating device of his own invention he eventually was able to determine the wavelengths of specific colors of light and to make highly precise measurements of dispersion (see below). Although his research was conducted with the purely practical aim of producing the finest possible optical instruments, Fraunhofer's achievements "justify describing him as the founder of astrophysics" (PMM). Plate 2, reproducing Fraunhofer's map of the lines of the solar spectrum, is the FIRST ILLUSTRATION OF THE SOLAR SPECTRUM.



PMM 278b - Bringing the stellar universe into the laboratory

36 KIRCHHOFF, Gustav Robert. *Untersuchungen über das Sonnenspectrum und die Spectren der chemischen Elemente. [Erster Teil] - Zweiter Teil.* Two volumes. Offprints from: *Abhandlungen der königlichen Akademie der Wissenschaften zu Berlin*, 1861-1862. Berlin: Ferd. Dümmler, 1862-1863. 4to (305 x 238 mm). [4], 43 [1]; [3] 4-16 pp., 5 lithographed plates (3 for part I and 2 for part II; 4 folding). Pages of part II unopened. Original printed boards, part I cloth backed, part II printed paper spine (minor soiling and spotting of covers, slight wear to extremities, spine of part II rubbed and partly split at head). Text generally crisp and clean with only minor age-toning, little spotting of part II, minor dust-soiling to outer margins of plates in part I. Cutout of newspaper article dated 2. February 1866 pasted to inner front-cover of part I. A very good, unsophisticated set, free of library stamps or markings. (#003301) € 3800

PMM 278b; Horblit 59; Sparrow 117; Norman 1219 (all for 1st ed. of part 1); DSB VII, p.379-82. - ENLARGED SECOND EDITION OF PART I, FIRST EDITION OF PART II, OFFPRINT ISSUE, with "Zweite, durch einen Anhang vermehrte Ausgabe" on the front cover of Part 1. "Kirchhoff found that by exposing in the flame of a Bunsen burner a platinum wire dipped in salt he obtained in the spectrum the characteristic bright yellow lines of sodium superimposed on the spectrum of platinum.



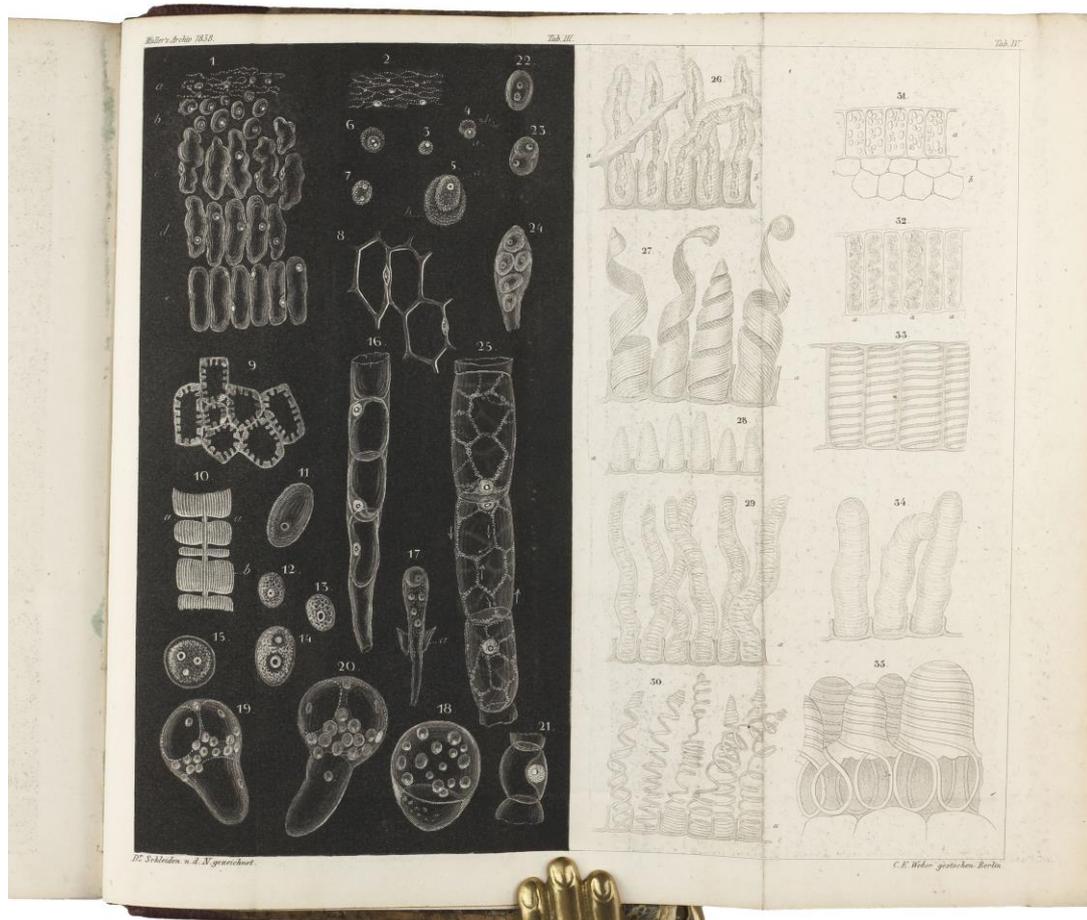
By repeating the process and introducing vaporized sodium between the incandescent wire and the screen, the yellow lines were replaced by dark lines. With great ingenuity he repeated the experiment with sunlight and got the same result. The fact that the dark lines were produced when a beam of light from an incandescent element passed through the same substance at a lower temperature suggested that this was due to absorption. In the solar spectrum, for example, the dark lines were caused by absorption in the gases of the sun's atmosphere . . . With these experiments Kirchhoff and his colleague Robert Wilhelm Eberhard Bunsen (1811-1899), inventor of the eponymous burner, created the new science of spectroscopy, brought "the stellar universe into the laboratory and showed that the basic materials of the universe are everywhere the same" (PMM 278b). Kirchhoff "was able to elaborate a quantitative relationship between the absorptive and emissive power of electromagnetic radiation for all material bodies, as a universal function of wavelength and temperature." Thus Kirchhoff's law was the key to the whole thermodynamics of radiation.

PMM 307a - The Cell as the Basis of Life

37 SCHLEIDEN, Matthias Jacob. *Beiträge zur Phytogenesis.* In: *Archiv für Anatomie, Physiologie und wissenschaftliche Medizin* 5, Heft 2 (1838), pp 137-76. Includes two etched and aquatint plates (nos. III and IV) on one folding sheet. Berlin: Veit et Comp., 1838. 8vo (209x128 mm). Whole volume: [2], cxcviii, 608 pp. 16 plates on 15 sheets. Pp. 605-8 bound before p.1. Contemporary marbled boards, rebacked and repaired. Light browning, occasional faint spotting. Provenance: Muséum d'Histoire Naturelle Paris (stamps to general title-page). A fine copy of an exceedingly rare paper, only one other copy is recorded to have appeared at auction in the past 50 years (Norman sale, 1998, offprint issue, \$18,400). Both, PMM and Sparrow list the journal issue. (#002059) € 2800

PMM 307a; Sparrow 175; Norman 1907 (offprint issue); Hughes, *History of Cytology*, 37ff; Garrison-Morton 112; DSB XII, p.173-174.

THE VERY RARE FIRST EDITION of Schleiden's enunciation of his cell theory, in which he stated that the cell is the basic unit of plant life. A well-to-do botany professor who gave up academia to devote himself full-time to a successful career as lecturer and writer of popular scientific works, Schleiden made a name for himself through the present paper, which provoked wide discussion and was quickly translated into French and English. Schleiden was the first to postulate that plant tissue is composed of aggregates of individual cells, and attempted in this article to describe the development of the vegetable cell. His mistaken view based on a theory "as old as the study of the cell itself" (DSB), was that the cell develops from a nucleus or "cytoblast" which crystallizes within an amorphous primary liquid composed of sugar, gum and mucous. Although this theory of spontaneous generation of the cell was erroneous, Schleiden's work marked an important stage in the development of modern cell theory. A year later Theodor Schwann was to bring it one step further with his conclusion that cells were the basic unit of animal as well as plant life, and the two are generally regarded as co-founders of the cell or Schleiden-Schwann theory.



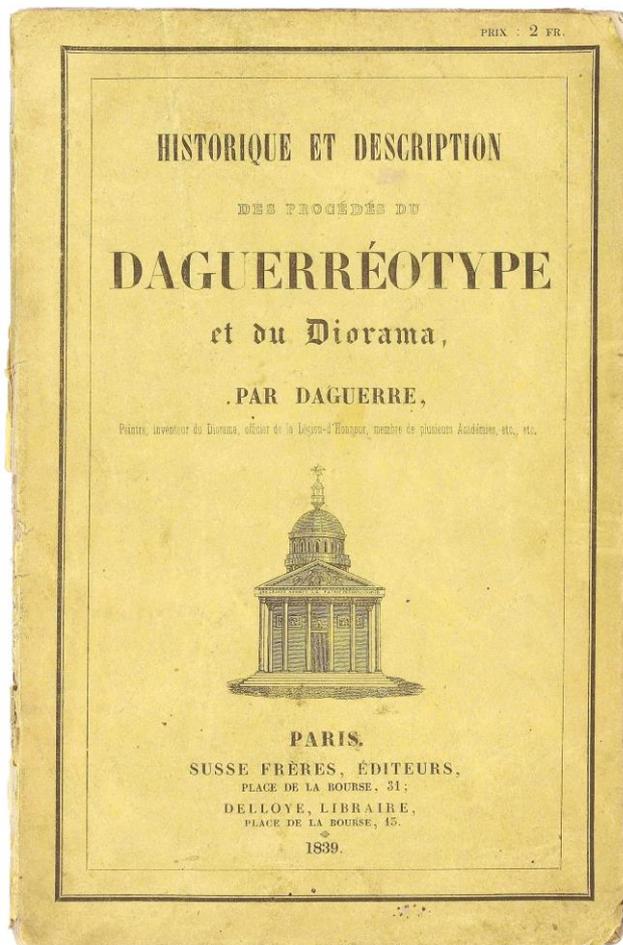
PMM 318b - Photography
The first edition, first issue in untouched yellow wrappers as issued

38 DAGUERRE, Louis-Jacques Mandé. *Historique et description des procédés du daguerréotype et du diorama.* Paris: Béthune and Plon for Susse frères and Delloye. 1839. 8vo (212 x 138 mm). [4], 79 [1], [4] pp., including half-title, 6 lithographed plates and 2 advertisement leaves at end. Original printed yellow wrappers (dust-soiled, some chipping of blank paper over spine with loss, small hole in rear cover), protected in custom slipcase. Text very little toned, half-title somewhat spotted, p.63 and facing plate III slightly dust-soiled, a little dust-soiling to outer margins elsewhere, faint dampstain to blank upper gutter of a few pages, two leaves with short tear without loss, some dog-earring to corners. A fine, completely unsophisticated copy. (#003106) € 80,000

"THE BEGINNINGS OF PHOTOGRAPHY" (Horblit). "PERHAPS NO OTHER INVENTION EVER CAPTURED THE IMAGINATION OF THE PUBLIC TO SUCH A DEGREE AND CONQUERED THE WORLD WITH SUCH LIGHTENING RAPIDITY AS THE DAGUERREOTYPE" (Gernsheim).

FIRST EDITION, FIRST ISSUE, second imprint of Daguerre's exposition of his photographic process.

AN ATTRACTIVE COPY IN ITS ORIGINAL PRINTED WRAPPERS OF THIS GREAT RARITY. Dibner 183; *En français dans le texte* 255; H. & A. Gernsheim, *The History of Photography*, chapter 6; Horblit/Grolier 21a (reproducing the 4th issue); Norman 569 (same issue); PMM 318b.



We know of only three other unsophisticated copies of the first issue in its original wrappers that have appeared at auction in the past 40 years: the Honeyman copy (Sothebys 1979, lot 802, GBP 1400), the Meyer Friedmann copy (Sothebys 2001, lot 40, \$55,375) and finally the Richard Green copy (Christies 2008, lot 66, \$122,500). In contrast to ours, which is completely unrestored, the Richard Green copy featured the yellow wrappers in a cleaned and repaired state.

Daguerre's manual, published by order of the government, was quickly sold out. A total of 39 reprints, new editions, and translations appeared in the following 18 months. The great demand accounts for the profusion of issues of the first edition: 7 are recorded, all from the same basic setting of type. Of these the first four differ in the booksellers' names alone. The present copy is of the first Susse issue which was released on 14 September 1839. It is the second to appear, preceded only by the Alphonse Giroux issue, published shortly after Arago's 19 August announcement, of which only two copies are known (see Honeyman 802), both preserved in the George Eastman Museum, Rochester.

"At a joint meeting of the French Academies of Arts and Sciences, Count François Arago announced the miraculous invention of Daguerre, a method for making faithful impressions of objects on sheets of

copper, coated with light-sensitive silver salts. Arago's announcement trumped the efforts of Talbot, much to the Englishman's chagrin" (Parr-Badger vol. 1, p. 13).

Louis-Jacques-Mandé Daguerre, inventor of the Diorama, a picture show based on lighting effects, started experiments in the 1820s with fixing the images of the camera obscura on silver chloride paper. His lack of success using this method stimulated his interest in the heliographic method invented by Nicéphore Niépce, who had produced the first successful photographic image in 1826 or 1827 on a pewter plate coated with bitumen of Judea dissolved in oil of lavender. In 1829 Daguerre succeeded in persuading the reluctant Niépce to become his

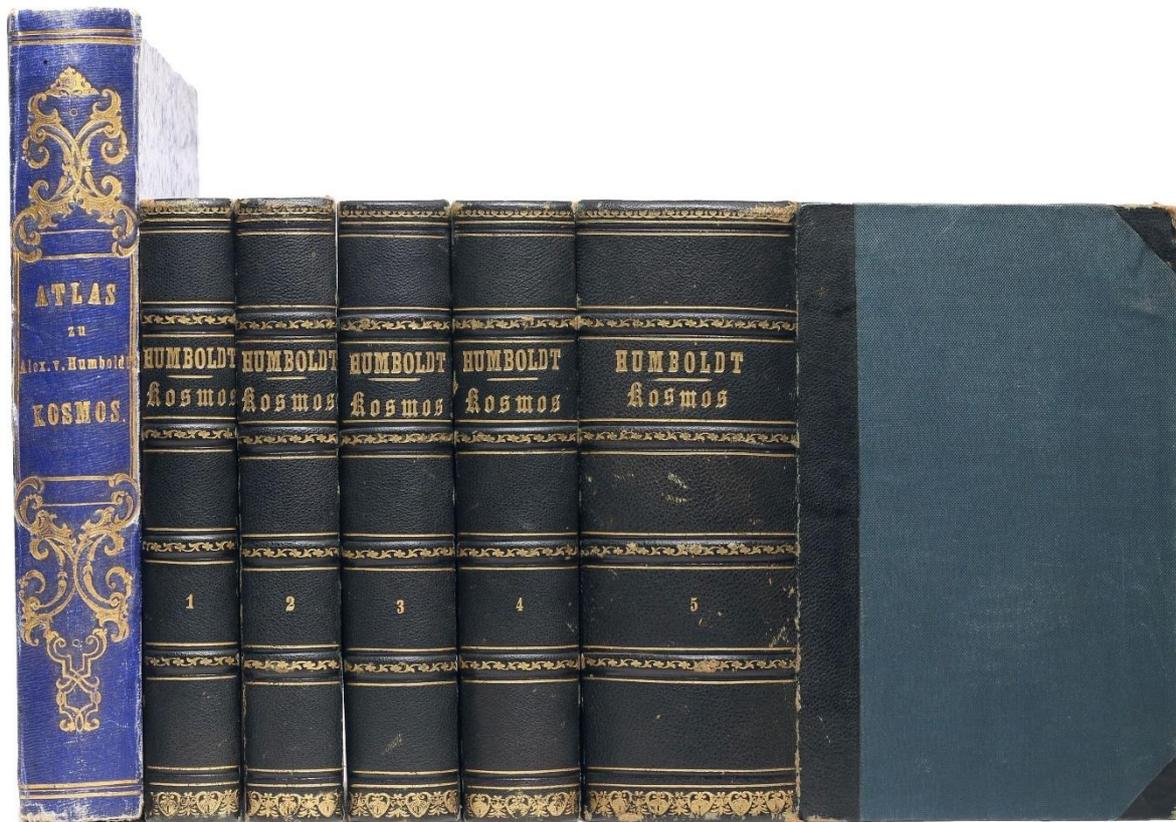
partner. However, it was only after Nièpce's death, in the spring of 1835, that Daguerre accidentally discovered a quicker method of exposing and developing the Niècian image through the application of mercury vapor. Using this method, with common table salt as the fixative, he produced his first successful permanent photographic image in 1837. Still under contract with Nièpce's son Isidore, Daguerre agreed to split the profits from the new invention in exchange for calling it by his name alone. He then proceeded to launch a publicity campaign with the goal of attracting 400 subscribers at 1,000 francs each, stipulating that the processes of heliography and 'daguerrotype' would not be revealed until 100 subscribers were enrolled. This failed, and the resourceful Daguerre turned to other methods, privately approaching a number of leading scientists with the goal of interesting the government. "He was fortunate in finding in François Dominique Arago an influential ally, for he was a member of the Chamber of Deputies as well as a distinguished physicist and astronomer. Soon afterwards, Arago gave the discovery official status by a brief announcement at the Acadmie des Sciences, on 7 January 1839" (H. & A. Gernsheim, *The History of Photography*, p. 68). Arago energetically promoted the invention and succeeded in obtaining government funding for the two partners, although in the course of his arguments he gradually shifted credit for the invention to Daguerre, at the expense of Nièpce's pioneering work. By the summer, Daguerre was finally obliged to divulge the details of "his" process (though not before Fox Talbot, in reaction to the news of Daguerre's invention, had published his own announcement of his independent invention of a photographic process). On August 19 Arago made a full announcement to a packed house at a joint meeting of the Académies des Sciences and des Beaux-Arts at the Institut de France. The excitement was palpable. "Perhaps no other invention ever captured the imagination of the public to such a degree and conquered the world with such lightening rapidity as the daguerreotype" (H. & A. Gernsheim, *The History of Photography*, p. 71). Along with the official documents relating to the government's review of the procedure, Daguerre's manual includes details of its genesis, including a transcription of Nièpce's own description of his heliographic process, submitted to Daguerre in 1839, and a full illustrated description of his daguerreotype process - presented as an independent invention, superior to Nièpce's.

PMM 320 - The Universe Surveyed

39 HUMBOLDT, Alexander von. *Kosmos. Entwurf einer physischen Weltbeschreibung.* Volume 1 to 5. Stuttgart und Tübingen: Cotta, 1845-1862. 8vo (215 x 133 mm). *Atlas zu Alexander von Humboldt's Kosmos.* Stuttgart: Kraus & Hoffmann, [1851]. Oblong folio (280 x 350 mm). Text volumes: xvi, 493 [1]; [2], 544, [6]; [2], 644; [2], 649 [1]; [2], 1297 [1] pp., vol. I with 3 unnumbered advert leaves to the *Physikalischer Atlas* by Berghaus bound at end, vol. III with folding letterpress table, but without errata leaf. Atlas volume: [6], 136 pp. With 42 numbered plates, including 39 hand-colored lithographs (nos. 1-34, 38-42) and 3 steel-engravings (nos. 35-37). Text volumes uniformly bound in contemporary black half morocco and cloth covered boards, spines lettered and decorated in gilt and with raised bands, marbled edges, brown endpapers (extremities lightly rubbed, minor wear to corners). The text crisp and clean throughout with only very minor occasional pale foxing. Atlas bound in contemporary blue cloth over blind-stamped papercard boards, spine decorated and titled in gilt (some wear to extremities). Some spotting to endpapers, text and plates crisp and virtually unfoxed with only little yellowing of paper. Exceptional, clean and bright set. (#003528) € 4500

PMM 320; Norman 1112; Sparrow 106. First edition of the work that, in Humboldt's words, was intended "to represent in one work the whole material world, everything we know today of the phenomena in the celestial spaces and of life on earth, from the nebulae to the geography of mosses on granite rocks ... It is meant to describe a chapter in the intellectual development of mankind." PMM 320.

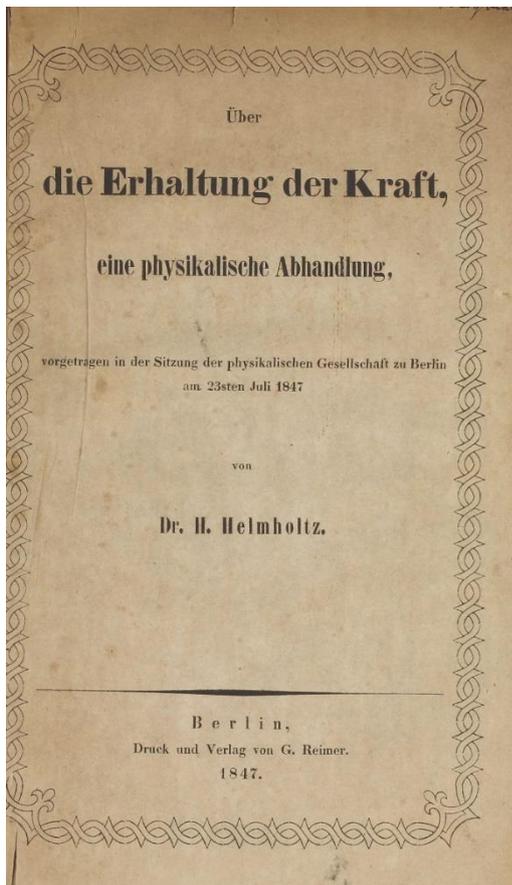
"Humboldt's survey of contemporary knowledge of the physical world and the cosmos - the last such scientific survey undertaken by a single individual - occupied him for the last three decades of his life. The first two volumes, in which Humboldt described the entire material world from the galaxies to the minutiae of the various mosses, proved enormously popular. The later three volumes, containing Humboldt's special research findings, were less successful, but the fifth volume, completed after Humboldt's death, cites over 9,000 sources to which he felt indebted, and is thus a valuable reference for the history of science" (Norman).



**PMM 323 - The Conservation of Energy
With the original printed wrappers**

40 HELMHOLTZ, Hermann von. *Über die Erhaltung der Kraft, eine physikalische Abhandlung, vorgetragen in der Sitzung der physikalischen Gesellschaft zu Berlin.* Berlin: G. Reimer, 1847. 8vo (220 x 139 mm). [4], 72 pp. Contemporary German half cloth over marbled boards, hand-lettered paper label to upper board, original printed wrappers bound in, original endpapers, custom black cloth clamshell case (rubbing of boards and extremities, smaller patches of frayed cloth along hinges). Light age-toning of text, minor occasional foxing, vertical crease in printed wrappers, text marking in light pencil on two pages. Provenance: C. Bergmann (signature on front wrapper and title); Rostock University Library (ink stamp repeated 4 times); Peter & Margarethe Braune (bookplate to front pastedown). A very good copy in untouched binding. (#003287) € 37,500

PMM 323; Horblit 48; Dibner 159; Norman 1039; Sparrow 96; Garrison-Morton 611; DSB VI, p.244-246. FIRST EDITION, AND EXCEPTIONALLY RARE WITH THE ORIGINAL PRINTED WRAPPERS PRESERVED. "The first comprehensive statement of the first law of thermodynamics: that all modes of energy, heat, light, electricity, and all chemical phenomena, are capable of transformation from one to the other but are indestructible and cannot be created" (PMM). In his brilliant analysis of the conservation of energy, Helmholtz classified different forms of energy and kinds of force and motion, into kinetic or potential. He gave mathematical expression to the energy of motion, thus providing "a fundamental measure in research of all forces including muscular and chemical" (Dibner).



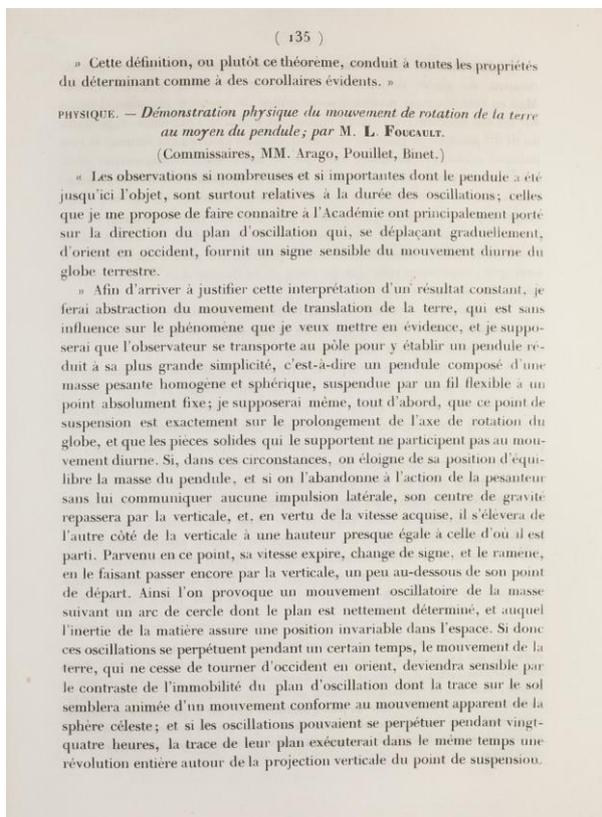
"*Ueber die Erhaltung der Kraft* (1847) set forth the philosophical and physical basis of the conservation of energy. It drew heavily on the works of Sadi Carnot, Clapeyron, Holtzmann, and Joule, although it was far more comprehensive than those previous treatises. The philosophical introduction clearly illustrated the influence of Kantianism on Helmholtz' thought. Science, he began, views the world in terms of two abstractions, matter and force. The goal of science is to trace phenomena to their ultimate causes in accordance with the law of causality; such ultimate causes are unchangeable forces. We can, Helmholtz implied, know the nature of such forces virtually a priori. If we imagine matter dispersed into its ultimate elements, then the only conceivable change which can occur in the relationship of those elements is spatial. Ultimate forces, then, must be moving forces radially directed. Only the reduction of phenomena to such forces constitutes an explanation to which we may ascribe the status of 'objective truth' . . . That ultimate forces must be of this nature can also be inferred from the impossibility of producing work continually from nothing. That impossibility, Helmholtz demonstrated, is equivalent to the well-known principle of the conservation of *vis viva*. Assuming that principle to hold for a system of bodies in motion, Helmholtz attempted to prove that the forces under which those bodies move must be functions only of position (and hence not of velocity or acceleration) and also radially directed . . . Helmholtz then demonstrated how the conservation principle could be applied to various physical phenomena. The principle of the conservation of *vis viva* had

already been applied to gravitation, wave motion, and inelastic collision. Previously an absolute loss of force had been assumed in inelastic collision and friction. Helmholtz argued to the contrary that the *vis viva* apparently lost in such cases is merely converted to tension forces or heat; on the latter assumption Joule had recently measured a mechanical equivalent of heat equal to 521' meter-kilograms per calorie in mks units. Helmholtz then proceeded to an extended defense of the dynamic theory of heat against the caloric theory, arguing that the free heat of a body consists in the microscopic motion of its particles, its latent heat in the tension forces between its atoms. He then introduced the equations of Clapeyron and Holtzmann for the expansion of gases. The derivation of Clapeyron's equations, he pointed out, rests upon the untenable assumption that no heat is lost when work is done by a gas in expanding. He concluded by applying the conservation principle to electrostatic, galvanic, and electrodynamic phenomena." (DSB VI, pp. 243-244).

PMM 330 - The Earth's Rotation Demonstrated

41 FOUCAULT, Jean Bernard Leon. Demonstration physique du mouvement de rotation de la terre au moy. In: *Comptes Rendus Hebdomadaires des Seances de l'Academie des Sciences* **32**, Paris, Bachelier, 1851. 4to. (266 x 216 mm); pp. 135-138 (entire volume: 1010 pages). New endpapers. Library stamp and deaccession stamp of Universitätsbibliothek Paderborn and some additional library markings on the lower margin of page 2. Pages 959 to 1010 (index according to author and topic) in facsimile. Modern cloth with gilt-embossed spine. Internally crisp and bright throughout. (#001723) € 2800

PMM 330, Dibner 17, Norman 818 (offprint). - THE FIRST MECHANICAL DEMONSTRATION OF THE EARTH'S ROTATION FIRST EDITION, RARE. To postulate astronomical behaviour is one order of thought, to prove its demonstration is of quite another order. The rotation of the earth had been accepted since Copernicus but it remained for Foucault to demonstrate it. He suspended an iron ball pendulum from the dome of the Pantheon in Paris, set it swinging and chartered its constantly rotating angular shift and proved it to rotate completely in one day." (Dibner, Bern. Heralds of Science 17).

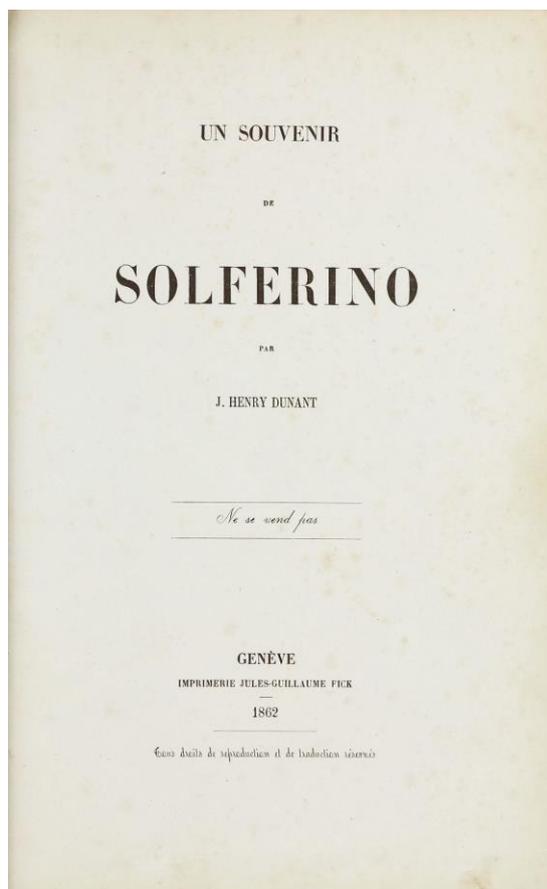


Although the rotation of the earth had been accepted since Copernicus, it was Foucault who first demonstrated it by experiment."His early experiments were private, but Louis Napoleon (later Napoleon III) became so interested that he arranged for them to be repeated publicly. This was a splendid affair which took place in the Pantheon in 1851 before a fashionable audience. A heavy ball was suspended from the dome on a wire 220 feet long; beneath the ball was a table 12 feet in diameter covered with sand on which the ball would leave a mark. This is known as 'Foucault's pendulum'. It soon became apparent that the plane in which the pendulum was swinging moved in a clockwise direction and in about thirty-two hours the plane of vibration had completed a full circuit... The audience in the Pantheon was greatly impressed; some ladies fainted with excitement, while other spectators maintained that they could feel the earth move beneath them." (PMM 330). "Continuing to experiment on the mechanics of the earth's rotation, Foucault in 1852 invented the gyroscope, which, he showed, gave a clearer demonstration than the pendulum of the earth's rotation and had the property, similar to that of the magnetic needle, of maintaining a fixed direction. Foucault's pendulum and

gyroscope had more than a popular significance (which continues to this day). First, they stimulated the development of theoretical mechanics, making relative motion and the theories of the pendulum and the gyroscope standard topics for study and investigation. Second, prior to Foucault's demonstrations, the study of those motions on the earth's surface in which the deflecting force of rotation plays a prominent part (especially winds and ocean currents) was dominated by unphysical notions of how this force acted. Foucault's demonstrations and the theoretical treatments they inspired showed conclusively that this deflecting force acts in all horizontal directions, thus providing the sound physical insight on which Buys Ballot, Ferrel, Ulrich Vettin, and others could build" (Dictionary of Scientific Biography V, p. 86).

PMM 350 - The Red Cross
Presentation copy

43 **DUNANT, Jean-Henry.** *Un souvenir de Solferino*. Geneva: Imprimerie Jules-Guillaume Fick, 1862. 4to (262 x 165 mm). [4] [1] 2-115 [1] pp., including half-title and double-page chromolithograph map drawn by B. Müller from the author's instructions; lithographed by Pilet & Cougnard, Geneva. Contemporary half-calf over marbled boards, spine lettered and ruled in gilt (light wear to extremities, upper hinge cracked but firm), marbled endpapers. Internally only little age-toned, occasional very minor spotting, otherwise crisp and clean. Provenance: Van Tuijll(?)*, Red Cross, s-Gravenhage. A very fine, untouched copy. (#002714) € 7500



PMM 350; Norman 670; Garrison-M 2166; Grolier/Norman 73; Waller 2639; Heirs of Hippocrates, 1945; *En Français dans le Texte* 284. - FIRST EDITION. "On 24 June 1859 the Battle of Solferino - one of the bloodiest of the nineteenth century - was fought between the Austrians and the French-Piedmontese alliance. Dunant, a Swiss philanthropist, witnessed the battle and its dreadful aftermath, in which the nearly 40,000 casualties were left to die with no medical treatment except what he and the local inhabitants could provide them. Upon returning to Geneva Dunant published *Un souvenir de Solferino*, an account of the horrors he had seen coupled with an appeal for "some international principle, with the sanction of an inviolable convention, which. . . might constitute a basis for the relief of the wounded in the various countries of Europe." The wide interest generated by Dunant's book led in 1863 to the formation of a committee which later became the International Red Cross, and in 1864 to the establishment of the Geneva Convention. Dunant shared with Frédéric Passy the first Noble Peace Prize in 1901" (Norman 670). "The first edition of *Un Souvenir de Solferino* consisted of sixteen hundred copies printed in November 1862 for private distribution. Only four hundred of these were actually distributed; these copies, constituting the original issue, have a title page stating 'Ne se vend pas' above the imprint. A month later, in December 1862, Dunant had another thousand copies bound with a title page indicating 'deuxième édition'. The third edition, in which Dunant

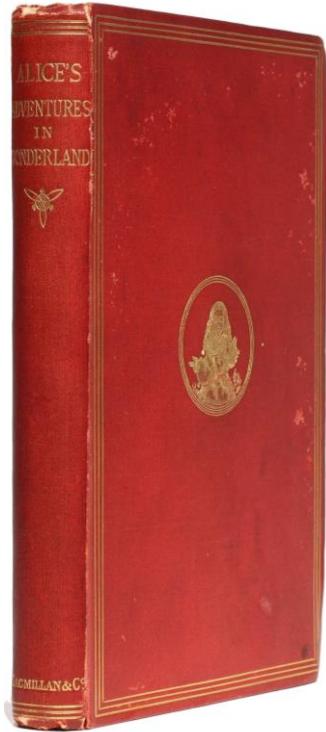
suggested the extension of Red Cross services to victims of natural disasters, appeared in 1863. An English translation was published by the American Red Cross in 1939." (Haskell Norman, *One Hundred Books Famous in Medicine* 73, p. 269).

*According to a Dutch inscription on the half-title, this copy was given by the author to "(?) van Tuijll" who added his address "Parkstraat 213". It was later donated to the "Jeugd Roode Kruis Afd. 's-Gravenhage"

PMM 354 - Alice in Wonderland

First published edition, first issue in the earliest binding with light-blue endpapers

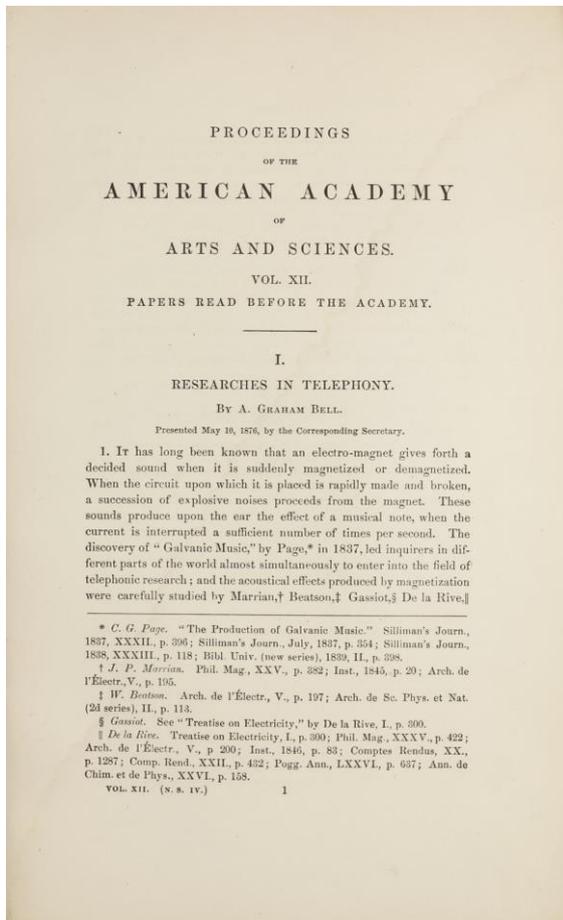
44 CARROLL, Lewis (DODGSON, Charles Lutwidge). *Alice's Adventures in Wonderland*. London: Macmillan and Co., 1866. 8vo (194 x 128 mm). [12], 192 pp., half-title, electrotyped frontispiece protected by tissue guard, and 42 illustrations from the woodcuts by Dalziel after John Tenniel. Original



publisher's pictorial red cloth ruled in gilt, covers with gilt vignettes (Alice on front, Cheshire Cat on rear), spine lettered in gilt, light blue endpapers, Burn's ticket on lower pastedown. Binding completely untouched with some light spotting and soiling to cloth, upper joint with a bit of deterioration to cloth at head, about 5 cm split at lower joint towards head of spine, corners bumped, light wear and fraying to cloth at spine ends and corners, signature 'P' slightly pulled with resulting cracking in gutter between pages 104/105, front endpaper split at fold. Internally bright and clean with very little age-toning only. Provenance: Harry Vinton Long (armorial bookplate to front pastedown). A very good or better and unsophisticated copy. (#002707) € 16,000

PMM 354. FIRST PUBLISHED (SECOND ENGLISH) EDITION. The first edition of 2,000 was recalled by Dodgson, following the unsatisfactory printing of Tenniel's illustrations, and was never offered for public sale. Only about 20 copies of this 1865 Macmillan survive, most in institutional collections. This copy is in the first state with inverted "S" in the last line of contents page and with the earliest endpapers in light blue (later bindings had dark green end-papers). For this new edition the book was re-set by the printer Richard Clay from a copy of the 1865 Alice (prepared by The Clarendon Press, Oxford); it is this version which formed the basis for all future Macmillan editions.

PMM 365 - The Telephone

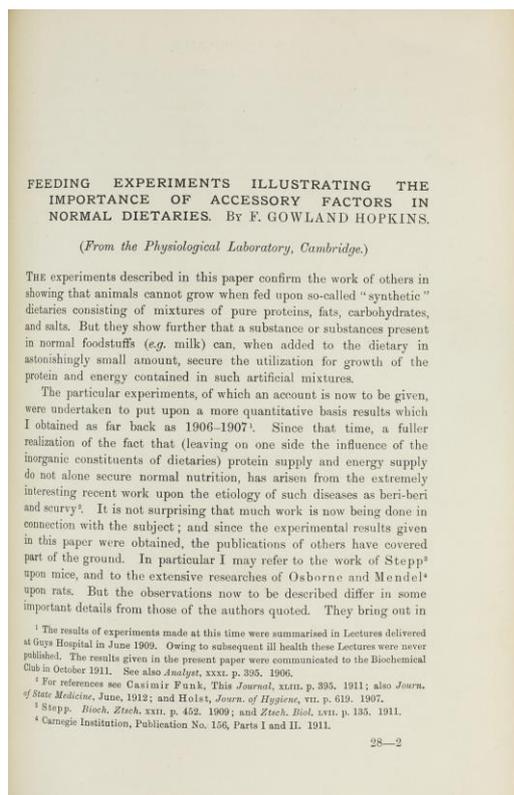


45 BELL, Alexander Graham. *Researches in Telephony*. Boston: Press of John Wilson and son, 1877. Extract from: *Proceedings of the American Academy of arts and science*. New Series vol. IV, whole series vol. XII, from May 1876 to May 1877. 8vo. iv, (1)-10 pp. General journal title and content list bound in as issued. Later (20th century) black paper binding with grey cloth spine, paper label with title on cover, protective paper wrapper. Faint damp staining and soiling, minor paper repairs to gutter and margins of general title, few minor tears to margins. A fine, unstamped copy. (#001748) € 5400

Dibner 69; PMM 365; Origins of Cyberspace 116; From Gutenberg to the Internet 5.3; Norman 164. - THE VERY RARE FIRST EDITION. Philip Reis had produced the first telephone in 1861, but it was not capable of transmitting intelligible speech. In March 1876 Bell spoke the first words to be heard and understood over the telephone, patented his invention the same month, and on 10 May this paper was read to the American Academy The following year the first public telephone service was installed between Boston and New York.

PMM 404 - Vitamins

46 HOPKINS, Frederick Gowland. *Feeding Experiments Illustrating the Importance of Accessory Factors in Normal Dietaries.* In: *Journal of Physiology*, Vol. XLIV, Nos. 5 and 6, pp. 425-460. London:



Cambridge University Press, 1912. 8vo (229 x 162 mm). Entire volume, 513, [25] pp. Bound in early 20th century beige library cloth, spine titled in black. Text generally clean with little yellowing, a few early leaves somewhat wrinkled (but unstained). Hopkin's paper with chipping of a few mm of upper corner well outside text area. Provenance: Springfield College, Babson Library (bookplate to front pastedown). Very good copy in the rare entire volume. (#002765) € 6500

PMM 404; Garrison Morton 1048. FIRST EDITION of Hopkins' landmark paper. Hopkins was already convinced that certain 'accessory factors' were essential to the health and growth of animals, and on returning to work he discovered that rats who declined and died on what appeared adequate feeding throve when small quantities of milk were added to their diet. In 1912, in the paper cited, he made the pronouncement upon which all subsequent vitamin research is based: that 'accessory factors' are essential to nutrition. Entire journal volumes are rarely seen on the market. We can trace only one copy sold at auction in the past 20 years (Sotheby's sale N07732, 2001, lot 92, sold USD 10,200).

PMM 407 - The Atomic Table

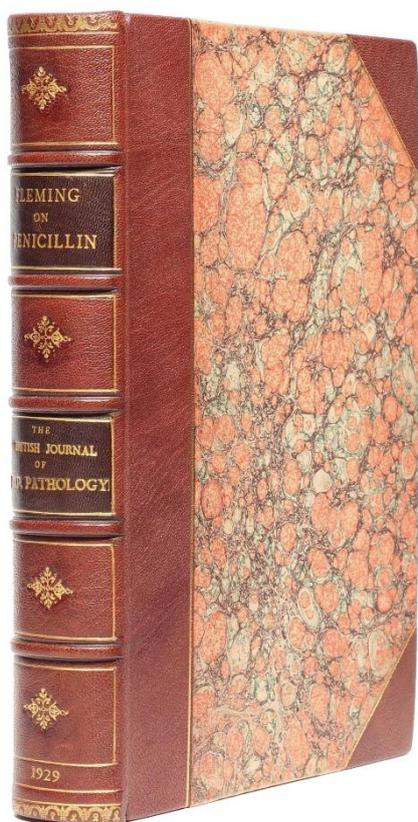
47 MOSELEY, Henry Gwyn Jeffreys. *The high-frequency spectra of the elements / The High-Frequency Spectra of the Elements. Part II.* In: *The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science*, Sixth series, vol.26, no. 156 (December 1913), pp. 1024-1034, plate XXIII; and Sixth series, vol.27, no. 160 (April 1914), pp. 703-713. [Bound with]: II. **BOHR, Niels.** *On the Constitution of Atoms and Molecules.* 3 parts. In: *The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science*, Sixth series, vol.26 (July-December 1913), pp. 1-25, 476-502 and 857-75. London: Taylor and Francis, 1913-1914. 2 volumes, 8vo (210x140 mm). Whole volumes: viii, 1064 pp., 23 plates, Sept. issue misbound at end; viii, 1044 pp., 16 plates. Contemporary half cloth (spine sun-faded, boards somewhat rubbed and scuffed). Rear inner joint of vol. 26 broken; endpapers with library stamps, title stamped, slightly browned. Margins of some plates occasionally shaved (not affecting plate to Meseley's paper). Provenance: Bundesamt für Eich- und Vermessungswesen (bookplates with shelf numers to front pastedowns and stamps to general title pages). Good set with the important milestone papers. (#002069) € 2200

I. DSB IX, 542; PMM 407; Norman 1559 - FIRST EDITION of Moseley's breakthrough work which placed the atomic table on a firm scientific foundation. "Moseley, working under Rutherford at Manchester, used the method of X-ray spectroscopy devised by the Braggs to calculate variations in the wavelength of the rays emitted by each element. These he was able to arrange in a series according to the nuclear charge of each element. Thus if the nuclear charge of hydrogen is 1, in helium it is 2, in lithium 3, and so on by regular progression to uranium as 92. These figures Moseley called atomic numbers. He pointed out that they also represented a corresponding increase in extra-nuclear electrons and that it is the number and arrangement of these electrons rather than the atomic weight that determines the properties of an element. It was now possible to base the periodic table on a firm foundation, and to state with confidence that the number of elements up to uranium is limited to 92. When Moseley's table was completed, six atomic numbers had no corresponding elements; but Moseley himself was able to predict the nature of four of the missing elements" (PMM 407)

II. DSB II, 239; PMM 411; Norman 258 - FIRST EDITION. "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).

PMM 420 - Penicillin

48 FLEMING, Alexander. On the Antibacterial Action of Cultures of a Penicillium, with Special Reference to Their use in the Isolation of B. Influenzae. In: *The British Journal of Experimental Pathology* (eds. DODDS, E.C. DRUMMOND, J.C. et al.), vol. 10, pp. 226-36. London: H. K. Lewis & Co., 1929. 4to (241 x 175 mm). Entire volume: vii [1], 407 [1] pp., including half-title. Bound in 20th-century three-quarter calf over marbled boards, spine with 5 raised bands gilt decorated and ruled in compartments and with two gilt-lettered morocco labels in compartments, red-sprinkled edges,



housed in a custom-made slip-case. Very little age-toned internally, half title reattached, a few upper corner tips torn away, short tears to upper margin of pp. [109]/110 and lower margin of pp. 111/112; short tear to upper margin of pp. 113/114, entering the text (with an old tissue repair), tear to lower margin of plate facing p.194 (not affecting image), final leaf repaired in upper gutter. Provenance: Children's Hospital / Research Foundation Library (blue ink stamp to title-page), Library of the Children's Hospital Research Foundation Cincinnati, Ohio (embossed stamp on title-page, with the last line erased, ink accession number on verso of title-page); black ink stamp of "The Children's Hospital," mostly in the upper margin on pages 51, 151, 201, 251, 301, and 351, a few times with offsetting onto the facing page; pencil note at foot of p. [1]. A fine, handsomely bound copy. (#003267) € 12,500

Printing and the Mind of Man / PMM 420a; Norman 798 (journal extract); DSB V, p.30; Garrison-M. 1933; Grolier Medicine 96; Heirs of Hippocrates 2320. FIRST ANNOUNCEMENT OF THE DISCOVERY OF PENICILLIN. This first printing of Fleming's announcement of the antibacterial properties of penicillin marking the dawn of the age of antibiotics. Fleming, however, was unable to stabilise the drug, but when, in 1940, Ernest Chain and Howard Florey succeeded in doing so, the full benefit of the drug was appreciated. Fleming, Chain and Florey shared the Nobel Prize for medicine in 1945. An offprint of the original

article was published in 150 copies; but after Chain and Florey's later work, Fleming was so inundated with requests for copies of his original article that in 1944 he had privately printed a second edition of about 250 copies. The original offprint is rarely seen at auction, one copy sold for \$126,750 in 2001 at Sotheby's.

PMM 422c - The Atom Bomb

From the library of Otto Hahn's Kaiser-Wilhelm-Institut

49 MEITNER, Lise; FRISCH, Otto Robert, et al. I: *Disintegration of uranium by neutrons: a new type of nuclear reaction.* - II: *Physical evidence for the division of heavy nuclei under neutron bombardment* (Frisch only). - *Products of the fission of the uranium nucleus.* - III: *Liberation of Neutrons in the Nuclear Explosion of Uranium* (Halban, Joliot, Kowarski). - IV: *New products of the fission of the thorium nucleus* (Meitner only). - pp. 239-240, 276, 470-471, 471-472 and 637-638. In: *Nature. A Weekly Journal of Science.* Vol. 143. London: Macmillan, 1939. 4to. Whole semi-annual volume, liv,1080, [40] pp. Half library cloth over marbled boards, spine lettered in gilt (light rubbing of boards and extremities, vertical crease in spine). Internally fresh and sound. Provenance: Kaiser-Wilhelm-Institut für Chemie (ink stamp to general title-page). Very good copy. (#002916) € 1100

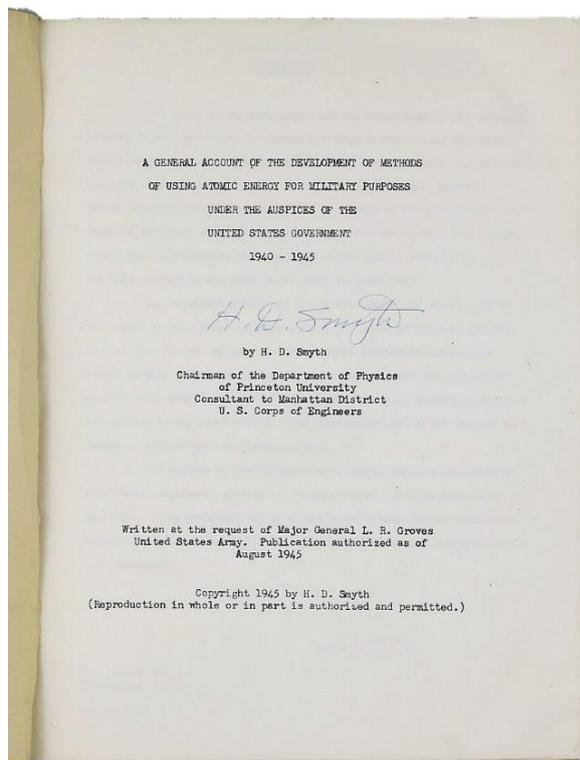
PMM 422 (b) (I) & (c) (II) & (d) (III); Norman 1487 (I), 845 (II) u. 1488 (IV). - First printing of four important papers on the phenomenon for which Frisch coined the term "nuclear fission". "Meitner calculated, using Einstein's mass-energy equivalence, the large amount of energy that would be released during the fission process. Frisch confirmed Meitner's calculations experimentally in January 1939" (Norman).

Our copy comes from the Library of the Kaiser-Wilhelm-Institut für Chemie in Berlin Dahlem, where Otto Hahn was director from 1928 to 1946. It was at this very institute on December 17, 1938 when Otto Hahn and Fritz Strassmann observed the fission of uranium nuclei for the first time in history. The teamwork of Otto Hahn (1879-1968), Lise Meitner (1878-1968) and Fritz Strassmann (1902-1980) led to this discovery, but only Otto Hahn received the Nobel prize in chemistry in 1944.

PMM 422e - The Atom Bomb
One of just a few copies signed by Smyth of the rare lithoprint version

50 **SMYTH, Henry DeWolf.** *A General Account of the Development of Methods of Using Atomic Energy for Military Purposes under the Auspices of the United States Government 1940-1945. Written at the request of Major General L. R. Groves United States Army. Publication authorized as of August 1945.* Washington DC: War Department, 1945. Preface dated July 1, 1945. 4to (263 x 199 mm). [8], I:1-19 [1], II:1-10, III:1-7 [1], IV:1-15 [1], V:1-9 [1], VI:1-14, VII:1-15 [1], VIII:1-17 [1], IX:1-13 [1], X:1-10, XI:1-13 [1], XII:1-12, XIII:1-3 [1], A1:1-6, A2:1-2, A3:1-3 [1], A4:1-5 [1], A5:1 [1]. Leaf IV-9/10 a duplicate. With the printed version of page VI-12. Original printed cream paper wrappers, staple-bound as issued. Front wrapper somewhat buckled at edges and with light water, a few leaves with short tear to blank fore-margin, otherwise clean and unmarked. Added is the first printed edition of the General Account by the Government Printing Office, Washington DC (Coleman No. 5), stapled and pasted into printed cardboard case as issued, 8vo (229 x 148 mm), vii, 182 pp. The set is housed in a custom-made clamshell box. A fine copy. (#002249) € 7500

PMM 422e; Norman 1962; Coleman, The "Smyth Report": a Descriptive Check List, No. 3. This is the rare lithoprint version of the Smyth Report on the creation of the atomic bomb and one of Henry DeWolf Smyth's own copies, signed by him on the title page, complete and in original wrappers, one of only 1000 copies printed, accompanied by a copy of the first printed edition of this work in octavo format (Coleman No. 5).



The Smyth Report is renowned for its "remarkably full and candid account of the development work carried out between 1940 and 1945 by the American-directed but internationally recruited team of physicists, under the code name 'Manhattan District,' which culminated in the production of the first atomic bomb" (PMM).

This is a copy of the lithoprint version, preceding the first printed edition and intended for press release distribution immediately after the atomic bombings of Hiroshima and Nagasaki in August of 1945. The lithoprint version was produced from stencils made by several typewriters in the Adjutant General's Office, along with a virtually unobtainable 12-chapter mimeograph version (Coleman No. 1) and a very small number of 'ditto' printings with text in purple (Coleman No. 2), sent out to project leaders and a few others belonging to the Manhattan District work. All copies of the mimeograph version were probably destroyed. It is not yet determined if the Ditto version precedes the Lithoprint version or not, and it might be just a proof copy.

This copy includes the secret page VI-12 which is left blank in most copies, because it deals with production rates of plutonium. Since the leaves were gathered for binding in great haste and under tight security, surviving copies often contain missing and/or repeated leaves. No leaves are missing in this copy.

TERMS of SALE

1. Prices and tax

All listed prices are in Euro currency and include value-added tax (VAT, Mwst.) for private end-consumers within the European Union. The shipping is free of charge.

Listed items are subject to prior sale.

2. Revocation

2.1 Right of Revocation

You have the right to withdraw from this agreement within fourteen days without stating a reason. The period of revocation is fourteen days from the date on which the goods were accepted by you or by a third person appointed by you, who is not the carrier.

In order to exercise your right of revocation, you must notify us

Milestones of Science Books
Jörn Koblitz
Schulstrasse 18A
27721 Ritterhude, Germany
Phone: +49 (0) 421 1754235
E-Mail: info@milestone-books.de

accordingly in an unequivocal statement (e.g. letter sent by post, telefax or e-mail) of your decision to withdraw from the agreement. You may use the attached sample revocation form for this purpose, however this is not mandatory. Sending notification of your intention to exercise your right of revocation prior to expiry of the period of revocation shall be sufficient to comply with the period of revocation.

2.2 Consequences of Revocation

If you withdraw from this agreement, we shall refund all payments that we have received from you, including delivery costs (with the exception of additional costs that arise if you have selected a form of delivery other than the cheapest form of standard delivery offered by us) without undue delay and within fourteen days at the latest from the date on which we received the notice of revocation. For this refund we use the same method of payment that you used for the original transaction, unless expressly agreed otherwise with you; in no event will you be charged any fees for this refund.

We may refuse the refund until the goods have been returned to us or until such time as you have provided evidence that you have returned the goods, whichever is the earlier.

You must return or hand over the goods to us without undue delay and, at all events, within fourteen days at the latest from the date on which you notified us of your withdrawal from the agreement. The deadline shall be deemed to have been complied with if the goods are dispatched prior to expiry of the deadline.

The immediate costs of returning the goods shall be borne by you.

You shall only be required to compensate any loss of value if said loss of value can be attributed to any unnecessary handling of the goods for the purpose of testing the condition, properties and functionality of said goods.

2.3 Exclusion of the right of revocation.

There is no right of revocation for agreements on the delivery of goods that are not prefabricated and for the manufacture of which the consumer has made an individual selection or stipulation, or that have been clearly tailored to meet the personal requirements of the consumer.

Widerrufsbelehrung für Verbraucher

Widerrufsrecht

Sie haben das Recht, binnen vierzehn Tagen ohne Angabe von Gründen diesen Vertrag zu widerrufen. Die Widerrufsfrist beträgt vierzehn Tage ab dem Tag, an dem Sie oder ein von Ihnen benannter Dritter, der nicht der Beförderer ist, die Waren in Besitz genommen haben bzw. hat.

Um Ihr Widerrufsrecht auszuüben, müssen Sie uns

Milestones of Science Books
Jörn Koblitz
Schulstrasse 18A
27721 Ritterhude, Deutschland
Tel.: +49 (0) 421 1754235
E-Mail: info@milestone-books.de

mittels einer eindeutigen Erklärung (z.B. ein mit der Post versandter Brief, Telefax oder E-Mail) über Ihren Entschluss, diesen Vertrag zu widerrufen, informieren. Sie können dafür das beigefügte Muster-Widerrufsformular verwenden, das jedoch nicht vorgeschrieben ist. Sie können das Muster-Widerrufsformular oder eine andere eindeutige Erklärung auch auf unserer Webseite [<http://www.milestone-books.de/terms.php>] elektronisch ausfüllen und übermitteln. Machen Sie von dieser Möglichkeit Gebrauch, so werden wir Ihnen unverzüglich (z. B. per E-Mail) eine Bestätigung über den Eingang eines solchen Widerrufs übermitteln.

Zur Wahrung der Widerrufsfrist reicht es aus, dass Sie die Mitteilung über die Ausübung des Widerrufsrechts vor Ablauf der Widerrufsfrist absenden.

Folgen des Widerrufs

Wenn Sie diesen Vertrag widerrufen, haben wir Ihnen alle Zahlungen, die wir von Ihnen erhalten haben, einschließlich der Lieferkosten (mit Ausnahme der zusätzlichen Kosten, die sich daraus ergeben, dass Sie eine andere Art der Lieferung als die von uns angebotene, günstigste Standardlieferung gewählt haben), unverzüglich und spätestens binnen vierzehn Tagen ab dem Tag zurückzuzahlen, an dem die Mitteilung über Ihren Widerruf dieses Vertrags bei uns eingegangen ist. Für diese Rückzahlung verwenden wir dasselbe Zahlungsmittel, das Sie bei der ursprünglichen Transaktion eingesetzt haben, es sei denn, mit Ihnen wurde ausdrücklich etwas anderes vereinbart; in keinem Fall werden Ihnen wegen dieser Rückzahlung Entgelte berechnet. Wir können die Rückzahlung verweigern, bis wir die Waren wieder zurückerhalten haben oder bis Sie den Nachweis erbracht haben, dass Sie die Waren zurückgeschickt haben, je nachdem, welches der frühere Zeitpunkt ist.

Sie haben die Waren unverzüglich und in jedem Fall spätestens binnen vierzehn Tagen ab dem Tag, an dem Sie uns über den Widerruf dieses Vertrags unterrichten, an uns oder an zurück zusenden oder zu übergeben. Die Frist ist gewahrt, wenn Sie die Waren vor Ablauf der Frist von vierzehn Tagen absenden. Sie tragen die unmittelbaren Kosten der Rücksendung der Waren.

Sie müssen für einen etwaigen Wertverlust der Waren nur aufkommen, wenn dieser Wertverlust auf einen zur Prüfung der Beschaffenheit, Eigenschaften und Funktionsweise der Waren nicht notwendigen Umgang mit ihnen zurückzuführen ist.

Ausnahmen vom Widerrufsrecht

Das Widerrufsrecht besteht nicht bzw. erlischt bei folgenden Verträgen:

- Zur Lieferung von Zeitungen und Zeitschriften oder Illustrierten, mit Ausnahme von Abonnement Verträgen;
- Bei der Lieferung digitaler Inhalte (ebooks), die nicht auf einem körperlichen Datenträger (z.B. einer CD oder DVD) geliefert werden, wenn Sie dem Beginn der Ausführung vor der Bestellung ausdrücklich zugestimmt und zur selben Zeit bestätigt haben, dass mit der Ausführung begonnen werden kann und Sie Ihr Widerrufsrecht verlieren, sobald die Ausführung begonnen hat.

Ende der Widerrufsbelehrung

