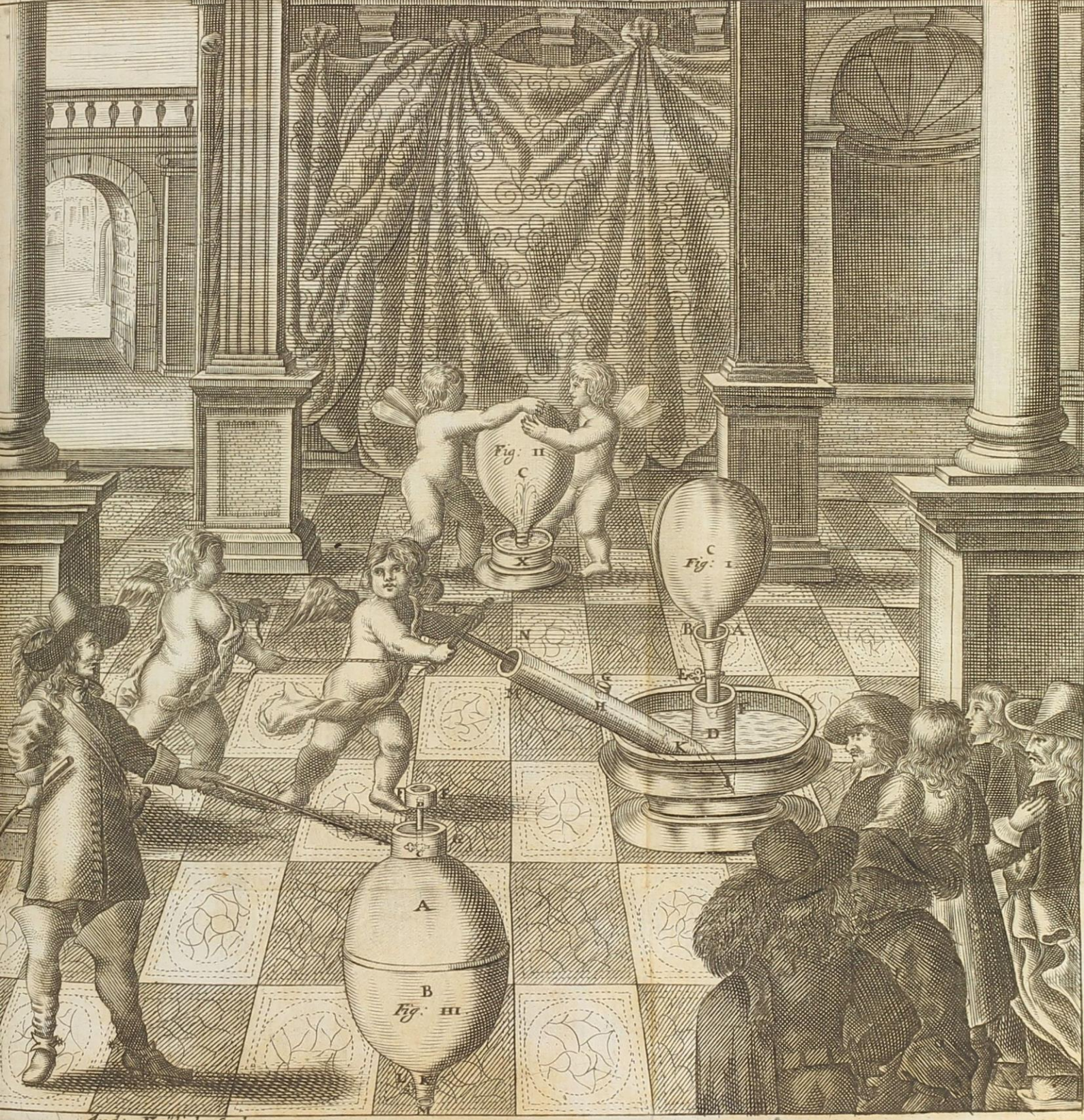


Milestones of Science Books



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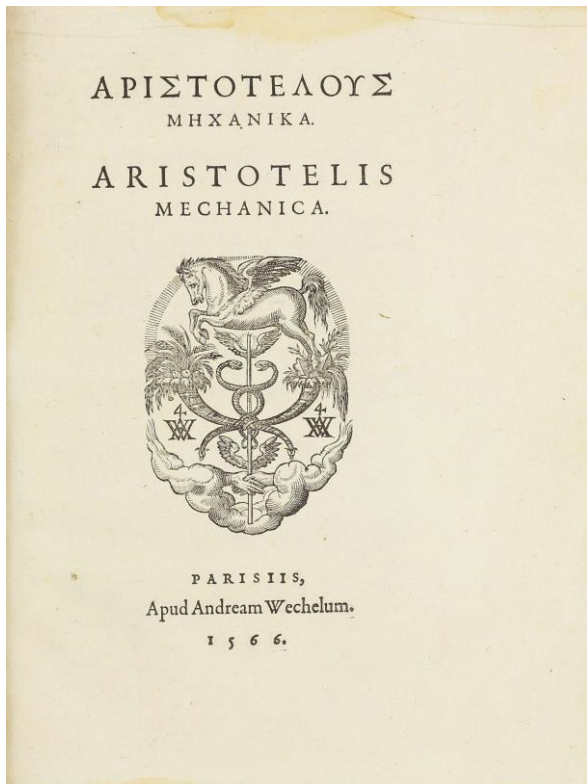
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1 **ARISTOTELES (ARISTOTLE).** *Μηχανικά. Mechanica.* Paris: Andreas Wechel, 1566. 4to (223 x 174 mm). [1] 2-19 leaves. Title in Greek and Latin, text in Greek, title with woodcut printer's device, woodcut initial, 17 woodcut text diagrams and 9 text illustrations. Bound without final blank E4.

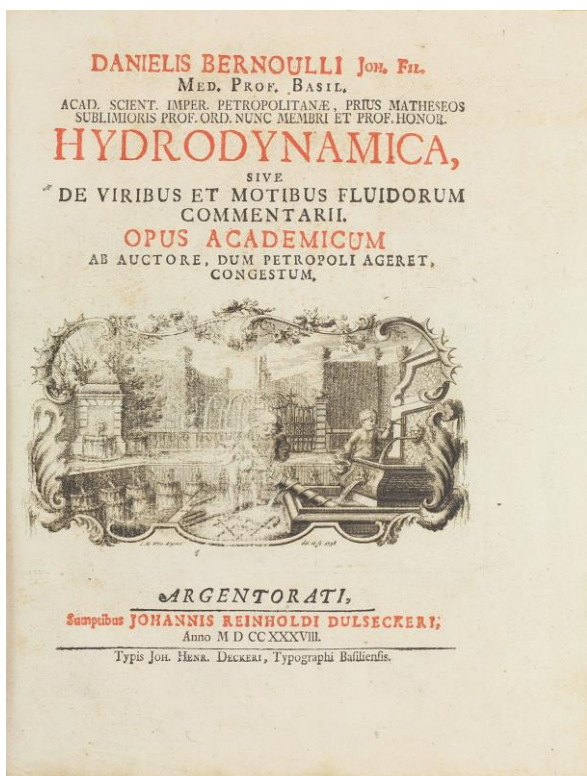


Signatures: A-E4 (-E4). Later simple paper wrappers, 18th century stitching. Text very little browned, light unobtrusive dampstaining to upper and lower blank margin, minor occasional spotting, but generally crisp and clean. Contemporary annotations in ink on f.5r. Provenance: Jacques Lacan. (#003386) € 5500

Graesse, I, 212; Honeyman 145 (2nd edition only); DSB I, pp. 250-58; DSB XI, pp. 286-9; not in Roberts & Trent, *Bibliotheca Mechanica*. VERY RARE FIRST SEPARATE EDITION of this treatise on mechanics attributed to Aristotle and very elegantly printed in Greek by André Wechel. The text, combining mathematics and physics, played a major role in the history of science during the Renaissance. Long forgotten, it was Aldus who, in 1497, printed it for the first time. It stands as an important source for mathematicians, allowing them to solve problems of dynamics, *statics*, weight and speed. Interest in this work in France was rekindled by the mathematician Pierre de la Ramée (Peter Ramus), who, some time before the publication of the text by Wechel, gave a lecture on *Mechanica*. It is also likely that he contributed to this edition.

The foundation of modern hydrodynamics

2 **BERNOULLI, Daniel.** *Hydrodynamica; sive, de viribus et motibus fluidorum commentarii.* Strassburg: Johann Heinrich Decker for Johann Reinhold Dulsecker, 1738. 4to (260 x 204 mm). [8], 304



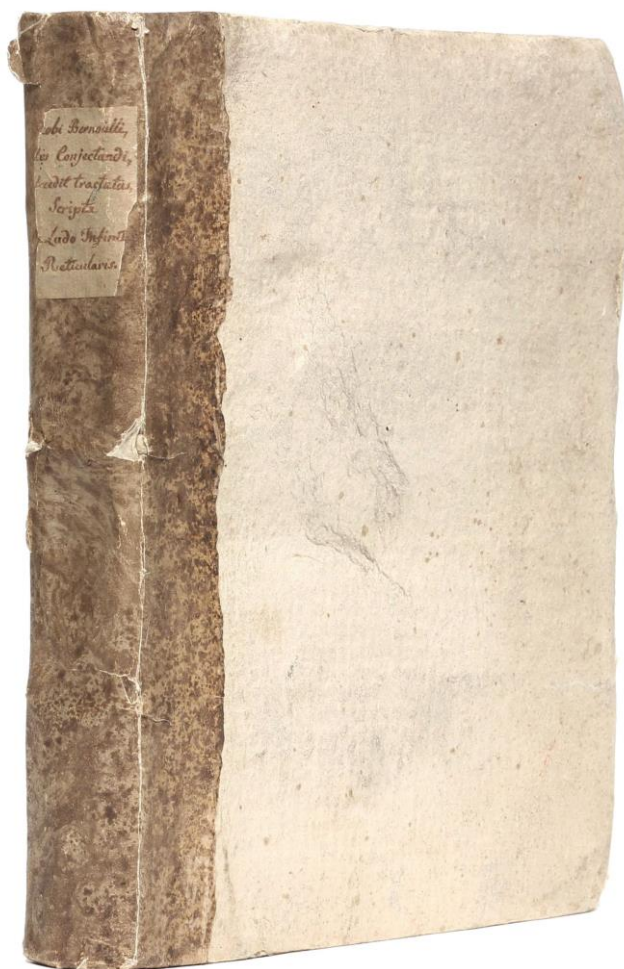
pp. Title and first text page with large engraved vignette, first dedication leaf verso with large woodcut initial, 12 folding engraved plates by I.M. Weis bound at end. Signatures: [pi]⁴ A-2P⁴. Contemporary full vellum, gilt-lettered spine label, red-dyed edges, xylographic endpapers (upper board repaired at fore-edge, very minor rubbing and soiling of vellum). Lower edge of plates uncut. Text with light even browning, occasional minor spotting, pale dampstain to plate VI, but generally very crisp and clean throughout. Excellent, wide-margined copy. (#003373) € 9500

Roberts & Trent, *Bibliotheca Mechanica*, pp. 34-35. Norman 215, PMM 179 (mentioned). - FIRST EDITION of Daniel Bernoulli's most important work, the foundation of modern hydrodynamics (a term first employed in this book), and containing his formulae for calculating the velocity, duration and quantity of liquid issuing from an opening in a container. Other chapters deal with water oscillations, a theory of machinery (including an extensive treatment of the screw of Archimedes) and an important section which introduces his kinetic gas theory.

Fine uncut copy in original boards

3 **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-d⁴ e², A-2P⁴ 2Q². 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

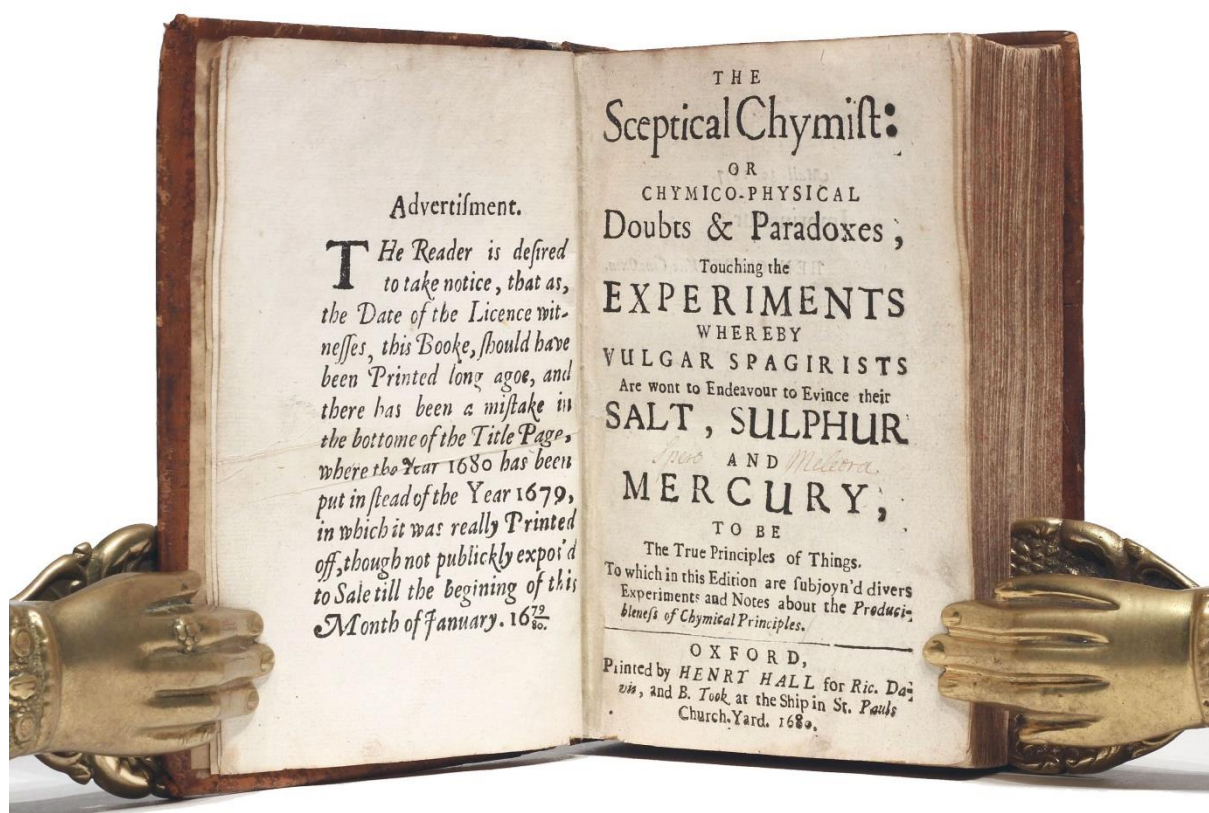
Europe. Some researches by Jacob, once regarded as curiosities are now found to have practical application to the construction of suspension bridges and in the transmission of high voltages." (PMM 179).

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.

With the rare advert leaf

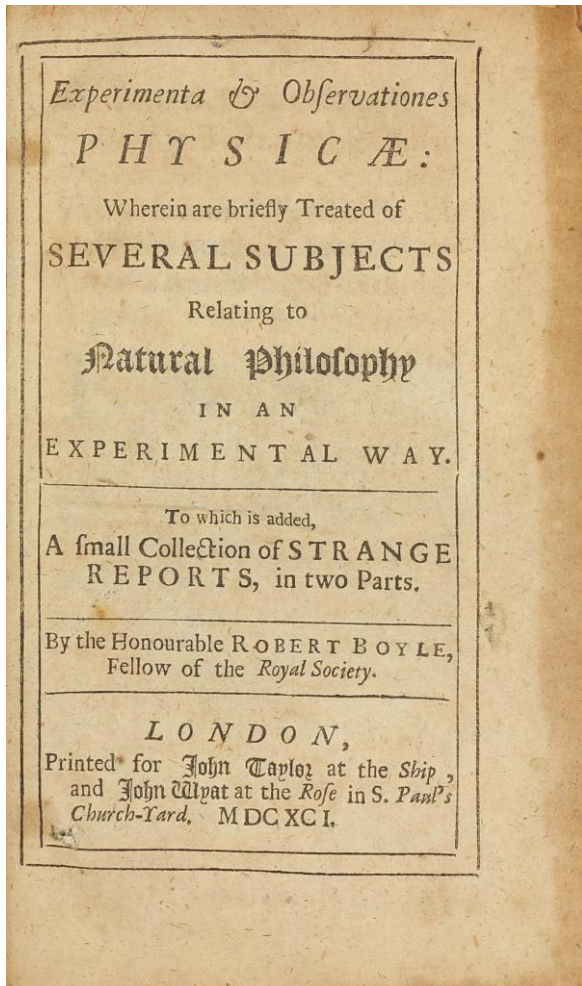
4 **BOYLE, Robert.** *The sceptical chymist : or chymico-physical doubts & paradoxes, touching the experiments whereby vulgar spagirists are wont to endeavour to evince their salt, sulphur and mercury, to be the true principles of things. To which in this edition are subjoyn'd divers experiments and notes about the producibleness of chymical principles.* Oxford: Henry Hall for R. Davis and B. Took, 1680. Two parts in one volume. 8vo (164 x 110 mm). [22], 440, [28], 268 pp., advertisement leaf bound before title in second state with date January 1679/80. Second part with separate title page and pagination. Signatures: [pi]1 A8 a2 B-2E8 2F4, *8 2*4 A4 B-R8 S4. Bound in 19th century mottled calf, spine with gilt-lettered red morocco label, red-sprinkled edges (upper joint repaired, extremities rubbed). Text generally quite crisp and clean with only minor browning, occasional pale damp-staining at outer margins, some scattered leaves trimmed short at upper margin, occasional minor spotting, small worm tracks at gutter and lower edge affecting a few letters at top inner margin of final 3 gatherings, tiny burn hole in a2 not affecting text, small paper flaw hole in 2E8 w/o loss of letters, clean tear to top margin of F1, paper flaw to fore-margin of 2H2. Provenance: Spero Meleora (old ink inscription on first title), collation notes by Bernard Quarich to rear pastedown. A very good, better than usual, copy. (#003410) € 17,500

Wing B 4022, Fulton 34, Sparrow 27. PMM 141, Dibner 39, Horblit 14 (for 1st ed.). ENLARGED SECOND EDITION OF A MILESTONE IN THE HISTORY OF CHEMISTRY, WITH THE RARE LEAF OF ADVERTISEMENT and with the second part not present in the original edition of 1661. "The importance of Boyle's book must be sought in his combination of chemistry with physics. His corpuscular theory, and Newton's modification of it, gradually led chemists towards an atomic view of matter . . . His argument was designed to lead chemists away from the pure empiricism of his predecessors and to stress the theoretical, experimental and mechanistic elements of chemical science. The Sceptical Chymist is concerned with the relations between chemical substances rather than transmuting one metal into another or the manufacture of drugs. In this sense the book must be considered one of the most significant milestones on the way to the chemical revolution of Lavoisier in the eighteenth century" (PMM). Written in the form of a dialogue, *The Sceptical Chymist* presented Boyle's hypothesis that matter consisted of atoms and clusters of atoms in motion and that every phenomenon was the result of collisions of particles in motion. Boyle suspected that none of the then accepted elements - the earth, air, fire and water of the Aristotelians or the salt, sulphur, and mercury of the Paracelsans - was truly elementary. In this work he also defended his corpuscular chemistry, the first clear outline of which he published earlier the same year in *Certain Physiological Essays*.



5 **BOYLE, Robert.** *Experimenta & Observationes Physicae: Wherein are briefly Treated of Several Subjects Relating to Natural Philosophy in an Experimental Way. To which is added, A small Collection of strange Reports, in two Parts.* . . London: Printed for John Taylor and John Wyat, 1691. 8vo (168 x 105 mm). [26], 158, [2], 28, [2] pp., including half-title and final errata leaf to second part. Bound in contemporary speckled sheepskin, spine with gilt-lettered morocco label, original endpapers (rebacked, extremities worn, boards warped, corners bumped and scuffed). Text somewhat browned (title stronger), some dust-soiling, minor scattered spotting. Provenance: from the Stephen White Collection. Collated and complete. (#003437) € 3800

Wing B-3959; Fulton 193. RARE FIRST EDITION and his last book published in his lifetime. "Though this was the last tract published during Boyle's life, it is less important than 'The History of Air', which came out a few months after his death. There is an interesting preamble in the form of a letter to Oldenburg in which Boyle expresses the hope that his observations 'may be taken in good part from a Person . . . that was never a Professor of



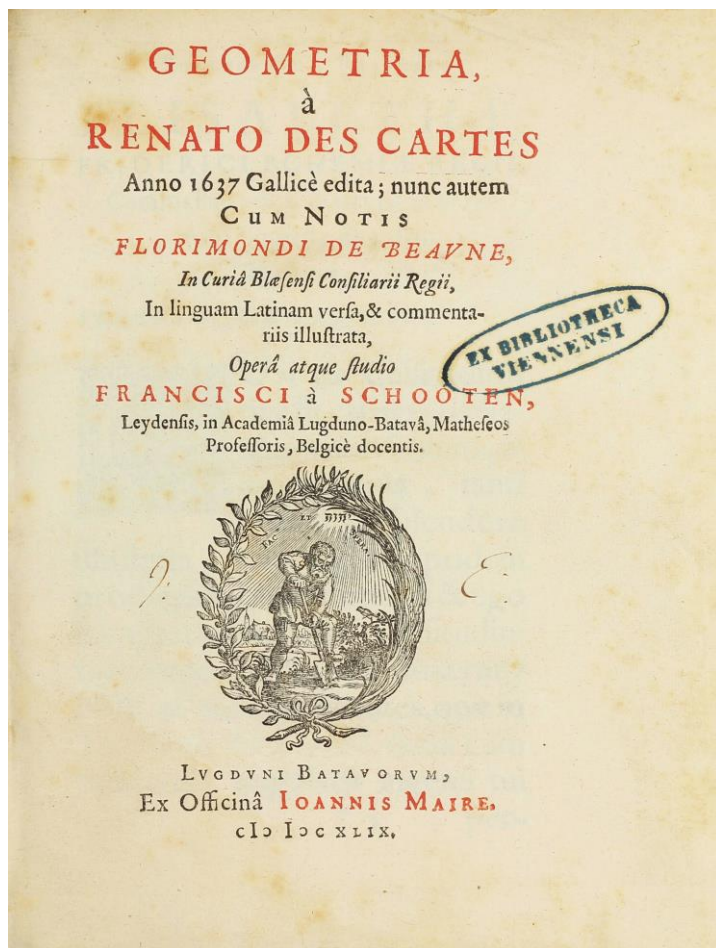
Philosophy, nor so much as a Gownman' [. . .] The *Experimenta* are a most diverse collection 'thrown together' with Boyle's characteristic casualness. In Chapter I he sets down a series of interesting observations on lodestones in which the influence of heating, rate of cooling, and of thermal gradients upon their magnetic properties is described at length. Chapter II is devoted to a further analysis (see his 'Essay on Gems') of the specific gravity and other physical properties of diamonds, and the third chapter deals again [. . .] with the influence of various chemical substances on the colour of solutions of vegetable pigments. One is surprised on turning to Chapter IV to find that it treats of the 'Art of Medicine', and the first case recorded (pp. 67-73) is as remarkable as it is well described. A knight of Boyle's acquaintance suffered an incomplete flaccid hemiplegia following a depressed fracture of the side of his head. Though some of the bone had been removed by the 'Chirurgeons' after the accident, the paralysis continued with little change for a period of twenty-four weeks, when the wound was again opened and a spicule of bone removed that was found pressing into the dura mater. Within five hours the man could move his little finger (for the first time in eight months), and after two or three days his whole arm recovered. Boyle did not appreciate the real significance of this extraordinary case; but, looking back at it now, one realizes how close he had come to the discovery of the motor area! For this, however, the world had to wait until the advent of Hitzig, Ferrier, and Sherrington -- some two hundred years later." (Fulton, pp. 132-33).

6 **CUVIER, Georges L.C., Baron.** *Discours sur Les Révolutions De La Surface Du Globe, et Sur Les Changemens Qu'elles Ont Produits Dans Le Règne Animal.* Paris: Chez G. Dufour et Ed. D'Ocagne, 1825. 8vo (192 x 123 mm). [4], II, 400 pp. Incl. half-title, 2 folding letterpress tables and 6 engraved plates. Extra illustrated with author's engraved portrait bound as frontispiece. [BOUND BEFORE, IBID:] *Recherches sur les Ossemens Fossiles, PROSPECTUS D'une Nouvelle Édition*, 4 pp., drop title to first page. Bound in contemporary half calf over tree-marbled boards, spine with gilt ruling and label lettered in gilt, yellow-dyed edges (extremities and boards little rubbed). Text generally clean and crisp with very minor occasional spotting, few pages somewhat browned at outer margins. Provenance: Compte Amaury de la Chevalerie (bookplate to front pastedown); small ink stamp "Borda" on first page of prospectus and p. 25; sales receipt by Librairie Paul Jammes, Paris, dated Dec. 28, 1993, loosely inserted. (#003485) € 150

FIRST SEPARATE EDITION. Taking advantage of the publication of the third edition of his *ossements fossiles*, G. Cuvier revised, corrected and increased his Discourse on the Revolutions of the Surface of the Globe and, at the request of many readers, had it printed separately. In this speech, which was a great success, Cuvier exposes his ideas on the cataclysms which upset the earth in the past, and in particular on the last, which coincides with the biblical deluge. The engravings show various fossilized skeleton finds, as well as the reconstruction of an Egyptian ibis.

7 **DESCARTES, Rene.** *Geometria; Anno 1637 Gallicè edita; nunc autem cum notis Florimondi de Beaune. Opera atque studio F. à Schooten.* Leiden: Jean Maire, 1649. 4to (204 x 156 mm). [12], 336, [4] pp., including final blank leaf, title printed in red and black, woodcut text diagrams, woodcut initials and tailpieces. Signatures: *4 **2 A-2T⁴ 2V². Bound in contemporary vellum with yapp edges, ink lettering on spine, blue sprinkled edges, original endpapers (vellum cleaned except for hand-lettered spine area, slight bending of lower board). Text with light even browning, occasional pale waterstaining to outer margins. Provenance: Ex Bibliotheca Viennensi (stamp and old ink monogram to title). (#003454) € 8500

RARE FIRST LATIN EDITION. Although the original French version was published some years earlier, it was this



Latin translation by Frans van Schooten which disseminated Descartes' treatise to the scientific community in Europe. Descartes originally published *La Géométrie* as an appendix to his *Discourse on Method* (1637) which he had entrusted to the same printer, Jean Maire. The Latin version and the commentaries of Frans van Schooten, his fervent disciple, received the approval of the master, hardly accommodating to those who considered the treatise rather obscure ("Et pour ceux qui se mêlent de médire de ma Géométrie sans l'entendre, je les méprise" (And for those who meddle in slandering my *Geometry* without hearing it, I despise them).

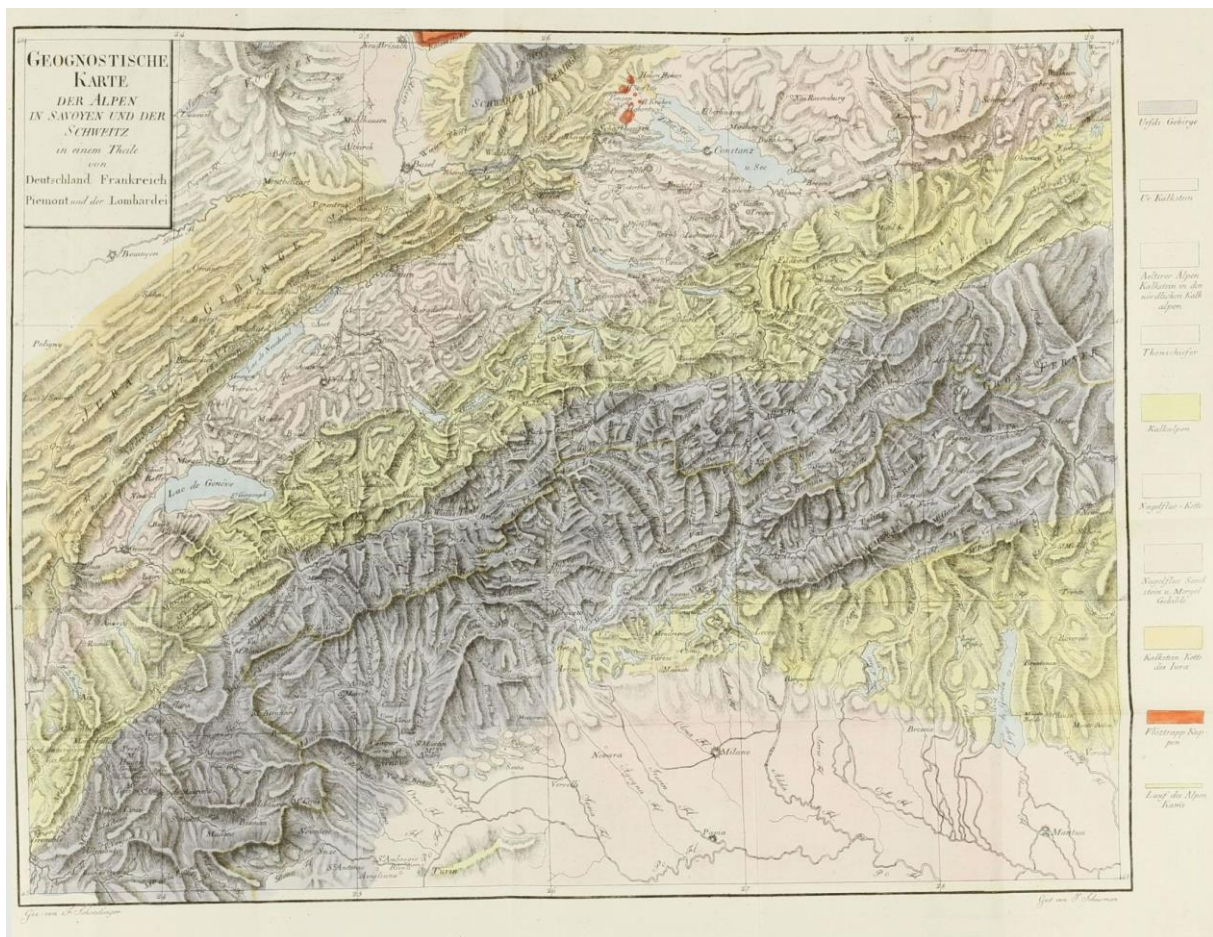
The influence of the translation commented on by Schooten and Florimond de Beaune was immense: It became the fundamental work in which all of Europe was educated (ref. René Poirier). Descartes professes that algebraic problems can be represented by geometry. He explains how to solve quadratic equations with the ruler and the compass; those of a higher degree involving the intersection of geometric curves. He also introduced modern algebraic notation: x, y, z, for unknowns, as well as exponential notation for any exponent (a², a³, ...). Thus,

Cartesian geometry, independently of Fermat, contributed to create by a decisive impetus what we will call, around 1800, "analytical geometry."

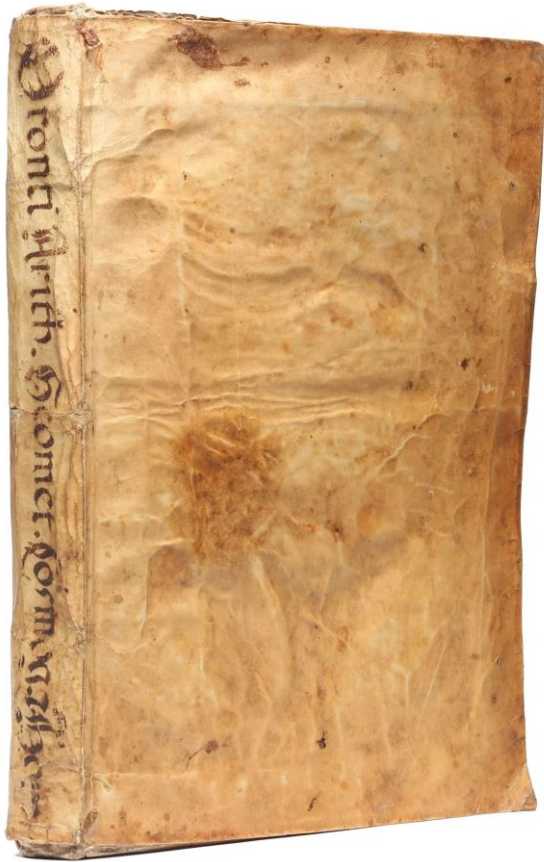
References: Chemerzine II, p. 796; Samuëli & Boudenot, *Trente livres de mathématiques qui ont changé le monde*, 2006, pp. 65-69; Guibert, *Descartes. Bibliographie des œuvres publiées au XVII^e siècle*, 1976, pp. 27-29. René Poirier, *L'ouvrage fondamental où toute l'Europe s'est instruite*.

8 EBEL, Johann Gottfried. *Ueber den Bau der Erde in dem Alpen-Gebirge zwischen 12 Längen und 2-4 Breitengraden nebst einigen Betrachtungen über die Gebirge und den Bau der Erde überhaupt.* . . Zürich: Orell Füssli und Compagnie, 1808. Two parts in two volumes. 8vo (200 x 115 mm). xxx, 408; [2], [16], [1], iv-x, 428 pp., including 8 leaves of errata bound after title and 6 hand-colored engraved folding maps bound at end of vol. II. Uniformly bound in Swiss green half kidskin over blue marbled boards, yellow-dyed edges, spines ruled and lettered in gilt (spine and extremities slightly rubbed). Text with scattered pale foxing (titles and first preliminary pages stronger), but generally quite crisp and clean internally. Provenance: Claude-Ignace de Barante (bookplate to front-pastedown of each volume). A very good set. (#003416) € 5000

FIRST EDITION and exceptionally rare, if complete as here, with all the 6 maps present that are almost always missing. This classic of alpine geology (of the structure of the earth within the Alps) is the main work of the German geologist and statistician Johann Gottfried Ebel (1764-1830). He studied medicine in Frankfurt-Oder, Vienna and Zurich. After practicing as a doctor in Frankfurt-Oder, he settled permanently in Zurich in 1810. He pioneered the study of the geology of the Alps. We also owe him a traveler's guide to Switzerland published in 1793 which influenced Friedrich Schiller for his *Wilhelm Tell*. The 6 engraved and hand-colored plates are: 1 map of the highest peaks in Europe, 2 maps of the Alps of Savoy and Switzerland, 3 panoramas of the Alps (Switzerland, part of Savoy, Mont Blanc via the St. Bernard, by Bonhomme and Mont Cenis).



9 **FINÉ, Oronce.** *Protomathesis: opus varium, ac scitu non minus utile quam iucundum, nunc primum in lucem foeliciter excusum.* Paris: G. Morrhay & J. Pierre, 1530-1532. Folio (368 x 265 mm). [8], 207 (i.e., 209), [1] leaves. Signatures: 2A⁸ A-L⁸ M-N⁶ O-2B⁸ 2C⁶ 2D⁸. Leaves F8 and N6 within pagination are blanks, errata leaf at end. Title within architectural woodcut border by Lassere after Finé's design. Part titles of "De geometria" dated 1530 and of "De solaribus horologiis" 1531. Dedication f. AA2r printed within woodcut border (with monogram "O F"). Large woodcut of Urania and the author beneath a celestial sphere (facing f. 1r, without name), repeated in the "Cosmographia" section (f. 101v, with name "Orontius"); large woodcut of a water-clock, repeated; 280 other woodcuts in the text; and numerous large historiated woodcut initials and headpieces, woodcut device at the end. Bound in its first, contemporary, limp vellum, spine lettered in ink (vellum somewhat wrinkled, soiled and spotted, slightly shrunk towards spine, bound without final flyleaf). Light browning of text, occasional light dampstaining to outer margins, some minor soiling and ink smudging, some mostly marginal spotting, long closed tear in f. 1 without loss of text, closed short tear at gutter of 2D7-8, f. 56 with manuscript ruler. In all an excellent copy well preserved in its original binding. (#003424) € 24,000



FIRST COLLECTED EDITION, containing the original publications of many of Fine's texts. The initial two parts of the *Protomathesis* deal with arithmetics and geometry, the third with cosmography, and the fourth with gnomonics. Oronce Finé (1494-1555) was Regius professor of mathematics and dedicated the volume to king François I. He published

on a wide range of topics, and was interested in practical concerns as well as abstract debates, so while he is remembered for theoretical achievements, such as giving the value of pi correct to four decimal places, he also worked extensively with instruments and maps. Finé represented the mathematical culture of the renaissance, encompassing geometry, surveying, optics, cosmography, cartography, and astronomy.

"The Protomathesis is the most important of the books illustrated by Finé" (Johnson). "His work as a designer is closely related to his major fields of mathematics, astronomy, and geography, and his contribution to book production is particularly interesting in extending beyond the illustration to the ornamenting of scientific texts" (Mortimer).

"'De arithmetica practica', the first part, is Finé's only work on arithmetics . . . The various operations carried out on the numbers were enumerated and described following a plan that distinguished whole numbers, common fractions, and natural or sexagesimal fractions. The latter were of particular interest to practitioners of Alphonsine astronomy, since they were the basis of their preferred mathematical tool . . . The two books on

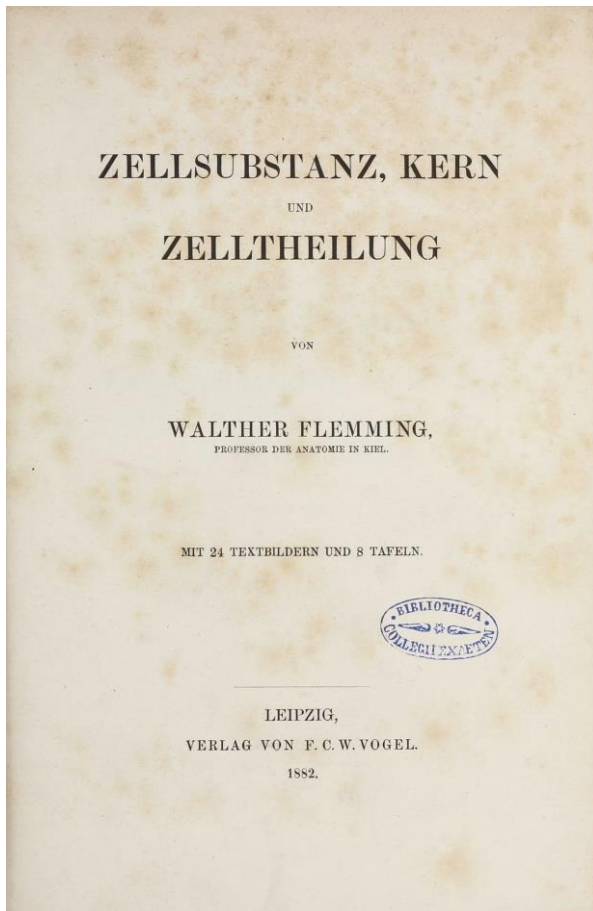


geometry treated the subject at a more elementary level . . . The 'Cosmographia' includes the description of the fixed celestial sphere used for reference, the essential ideas concerning the astronomy of the 'primum mobile' and a brief notion of astronomical geography . . . 'De solaribus horologiis et quadrantibus' [includes] a treatise on the new quadrant. Among the many types of sundials described in this book are a multiple dial and a 'navicula'" (DSB XV, p.154 ff).

The seminal work on cytogenetics

10 FLEMMING, Walther. *Zellsubstanz, Kern und Zelltheilung*. Leipzig: Verlag von F. C. W. Vogel, 1882. 8vo (235 x 160 mm). viii, 424 pp, 24 text illustrations and 8 tinted lithographed plates (one folding, 6 double-page). Contemporary black half roan and marbled boards, marbled endpapers and edges (spine and extremities rubbed, some paper chipping of board edges, corners worn, remnants of old manuscript label on spine). Text very crisp and clean, title with pale foxing, very minor occasional spotting. Provenance: Bibliotheca Collegii Exaeten (old stamp on title); Collection of Peter and Margarethe Braune. (#003522) € 1800

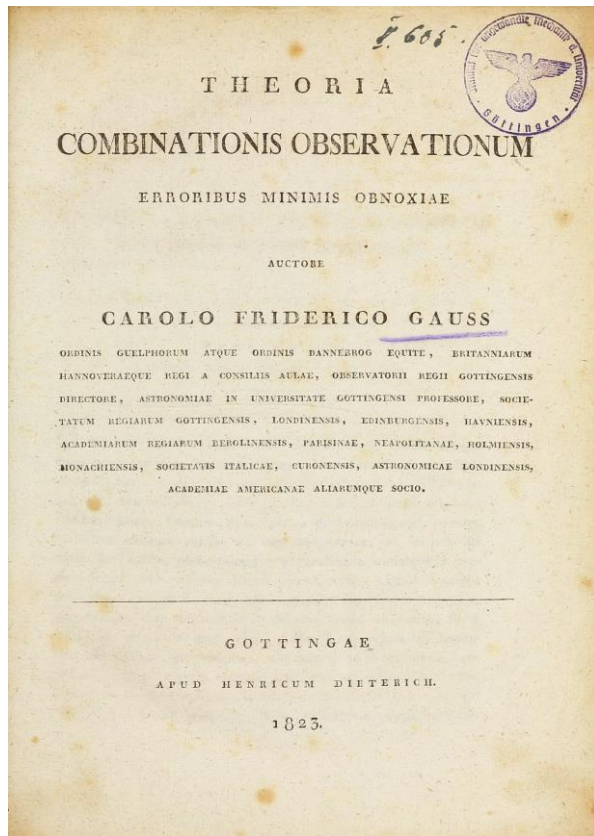
DSB V, pp. 34-36; Waller 3078; Fischer I, p.417. RARE FIRST EDITION of this seminal work on cytogenetics which first established, and named, the process of "mitosis." In the present work, the author also coins the terms "prophase", "metaphase" and "anaphase" and establishes that all cell nuclei come from another predecessor nucleus. The author was the first to observe and describe systematically the behaviour of chromosomes in the



cell nucleus during normal cell division. The book also includes the first illustration of human chromosomes, made possible by the use of aniline dyes. "[Flemming] settled at the small University of Kiel as professor of anatomy and director of the Anatomical Institute, a position he held until his retirement in 1901. Here he carried out the major part of his great work on cell division published in his classic book, *Zellsubstanz, Kern und Zelltheilung* (Leipzig, 1882) ... In the 1850's attempts to study the process of cell multiplication were vitiated by inadequate techniques of staining and the poor resolving power of lenses. By the 1860's it had become certain that before a cell divides the nucleus must first give rise to two daughter nuclei. This appeared to result either from direct fission or from a more indirect process in which dissolution of the mother nucleus was followed by coagulation of two daughter nuclei about two new centers; but the phases of this metamorphosis remained a mystery. It was seen that nucleoli came and went during indirect division, that their number was constant, and that the midpoint of the division process was marked by the appearance of nuclear granules. In the 1870's these granules were observed to elongate into threadlike structures which split up in some way, yielding the material for two daughter nuclei. It was Flemming's achievement to observe and interpret the stages correctly, to identify them in a wide variety of tissues, and to give indirect division the name by which it is still widely known -

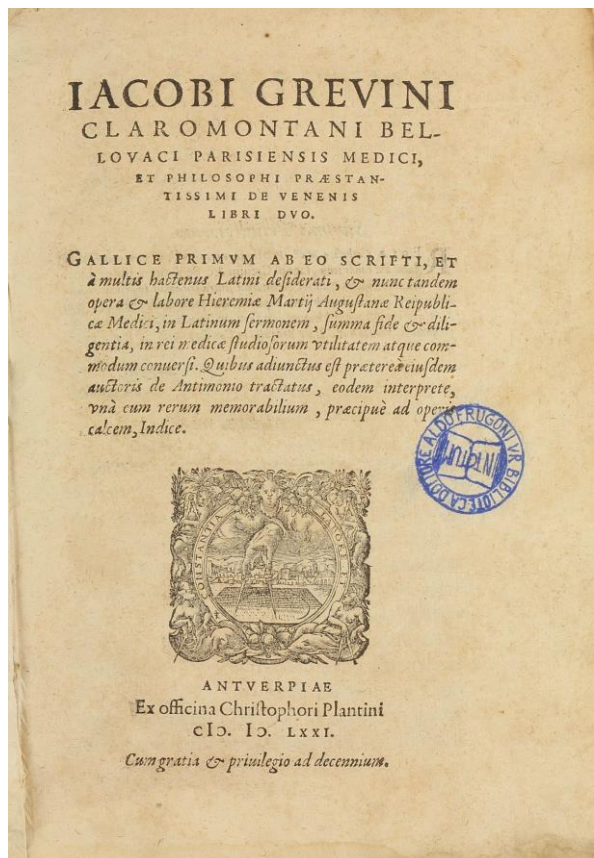
mitosis. . . . In the summer of 1879 Flemming turned his attention to nuclear division in the testes and concluded that the spermatozoa are formed from cells whose nuclei have arisen by indirect division, the head of the spermatozoon being composed solely of chromatin. He also failed at this time to observe doubled threads in the closing nuclear figures. In 1882, in his book on cell division, he declared this to have been an error, for now he could detect doubled threads. . . . Flemming's great merit as a theoretician lay in his attempt to find a single process to fit all forms of cell division. History has justified his vision." (DSB)

- 11 **GAUSS, Carl Friedrich.** *Theoria combinationis observationum erroribus minimis obnoxiae.* Göttingen: Dieterich, 1823. 4to (236 x 178 mm). [2], 58 pp. Half calf over marbled boards, gilt lettered and decorated spine (spine leather dry and rubbed, extremities rubbed, corners worn). Text little browned and spotted. Provenance: Universitätsbibliothek Göttingen (ink stamps to flyleaf and title, additional de-accession stamp to flyleaf). (#003460) € 2800



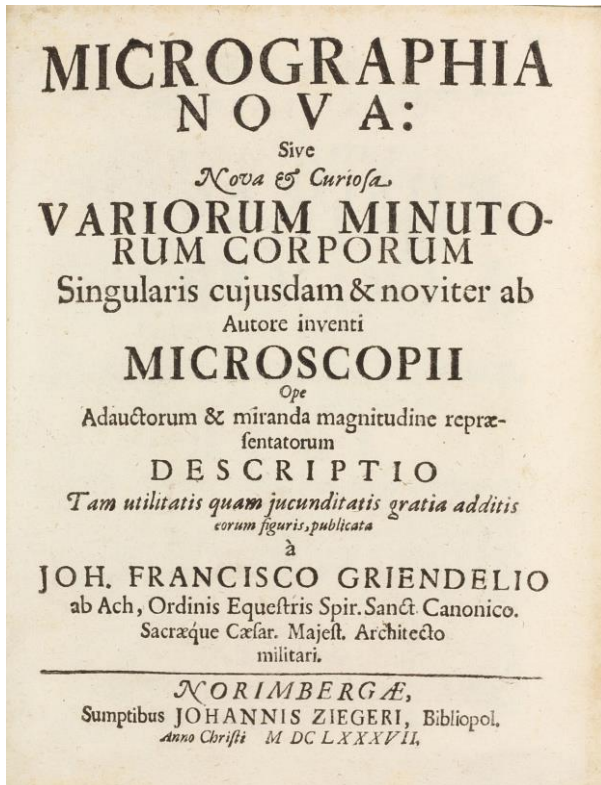
Poggendorff I, 855; DSB V, p.304; Merzbach 1823a-b (all for journal issue); not in Honeyman, Norman or Roller-G. - FIRST SEPARATE EDITION of pp. 33-90 in vol. 5 of "Commentationes societatis regiae scientiarum Gottingensis" (1823). Gauss had presented the two parts on February 15, 1821 and on February 2, 1823. A supplement not available here appeared in volume 6 in 1828 (presented on September 16, 1826). Inspired by the many years of preoccupation with celestial mechanics and geodesy, with the associated evaluation of observation results and the adjustment of observation errors, Gauss made several significant contributions to the development of probability and mathematical statistics. In 1823 the great work 'Theoria combinationis observationum erroribus minimis obnoxiae' was published, a work of lasting value for science, in which Gauss formulates his theory of observation errors and reinvents his method of least squares. (see NDB VI, 106).

- 12 **GREVIN, Jacques.** *De venenis libri duo...* Antwerp: Christoph Plantin, 1571. 4to (235 x 159 mm). [20], 332, [10] pp. Woodcut device on title, large floral and historiated woodcut initials, several woodcut illustrations in text. Signatures: *⁸ **² A-X⁸ Y⁴. Including the final blank Y4. Contemporary limp vellum, japp edges, flat spine and lower edge lettered in ink (vellum somewhat shrunked and wrinkled, spine dust-soiled and bumped at top, lower capital band frayed, inner upper hinge split). Text somewhat browned, some gatherings stronger, gathering B with light dampstain at lower blank margin, paper flaw to blank fore-margin of leaf G6. Provenance: Dr. Aldo Frugoni (small ink stamp on title). Still very good copy in original binding. (#003425) € 6500



First Latin translation by the Augsburg physician Hieremius Martius of the French edition of Grévin's "Deux livres des venins" and "Les oeuvres de Nicandre", both published by Plantin in 1568. A treatise on venoms and poisons as extracted from plants and animals. Jacques Grévin (1538-1570) was not only a famous physician and publisher of the French Vesalius edition, but also one of the classical dramatists (student of Ronsard). Ill. with 52 woodcuts in varying dimensions by Jehan de Gourmont, after Geoffroy Ballain, depicting snakes, worms, rats, lizards, scorpions, fish and flowers. Ref. Voet (Plantin Press) 1267. - Adams G-1244. - Nissen (ZBI) 1713. - Durling 2174. - BT 1336.

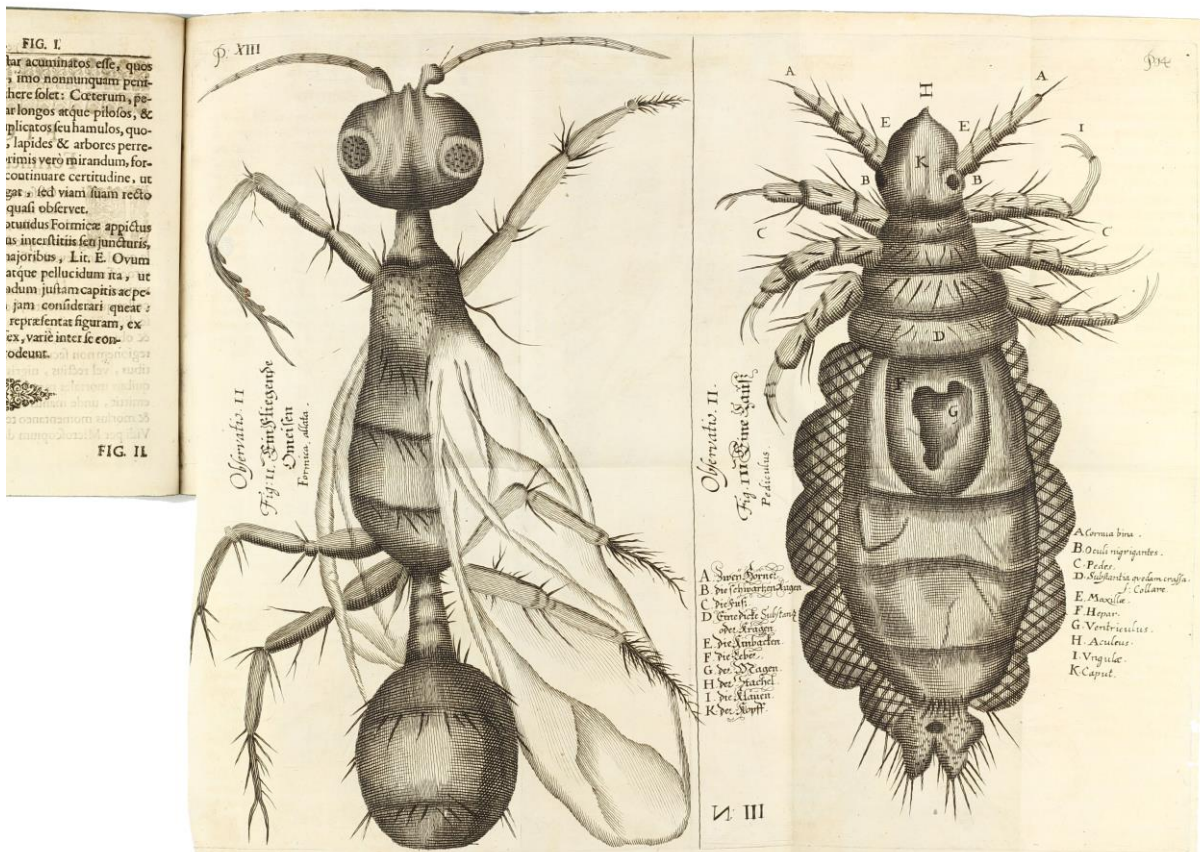
13 **GRIENDEL, Johann Franz.** *Micrographia nova: sive nova & curiosa variorum minorum corporum singularis cujusdam & noviter ab autore inventi microscopii ope adauctorum & miranda magnitudine repraesentatorum descriptio tam utilitatis quam jucunditatis gratiae additis eorum figuris...* Nürnberg: Johann Zieger, 1687. 4to (195 x 158 mm). [8], 64 pp, 27 sheets of plates (23 folding) representing 37 engraved plates of a total of 55 objects. Signatures: [pi]⁴ A-H⁴. Near contemporary



vellum, blue-dyed edges, new endpapers (boards a bit warped). Text and plates with only very little browning to outer margins. A fine, crisp and clean copy, complete with all the plates present as called for. (#003423) € 8000

Nissen ZBI 1715; Keynes, *A Bibliography of Robert Hooke*, p. 22; Hagen 304; Horn-Schenkl. II, 8583; Waller 10815; NLM/Krivatsy 4997; Wellcome III, 165. - FIRST EDITION in Latin, published simultaneously with an edition in German language. The microscope developed by GrienDEL enabled a much higher magnification than was previously possible with Hooke's microscope. The detailed engravings show ants, fleas, lice, mosquitoes, flies etc. as well as molds, seeds of plants, hair, textile fibers, pin heads, powdered grain and others. The author provides a circled true-to-scale representation next to the illustration of each magnified object, which provides a striking impression of the magnifying power of his microscope. The plate count given in the literature is somewhat confusing as the large sheets were intended to be cut-up by the binder and placed facing the corresponding text pages. Not all binders have followed this direction likely because of the potential

risk that images get cropped. A good example for this situation is the large folding plate bound after the section title "observatio V" in our copy. It represents 6 individual plates for separation. These plates are commonly found separated and bound-in facing the respective text pages in other copies.



14 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

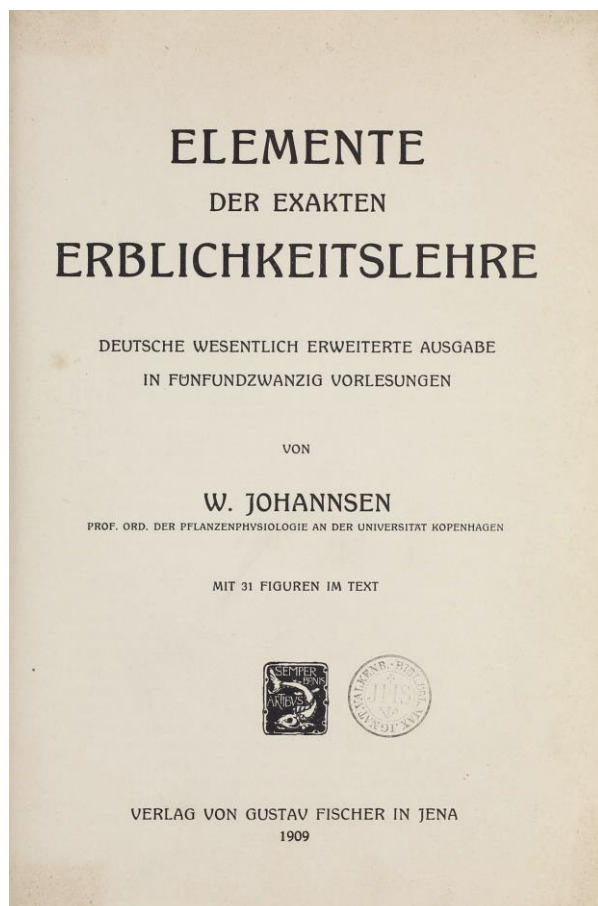
PMM 320; Norman 1112; Sparrow 106. First edition of the work that, in Humboldt's words, was intended "to represent in one work the whole material world, everything we know today of the phenomena in the celestial spaces and of life on earth, from the nebulae to the geography of mosses on granite rocks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



Coining the terms "gene", "phenotype" and "genotype"

15 JOHANNSEN, Wilhelm. *Elemente der exakten Erblchkeitslehre. Deutsche wesentlich erweiterte Ausgabe in funfundzwanzig Vorlesungen.* Jena: Verlag von Gustav Fischer, 1909. 8vo (231 x 158 mm). vi, 515 [1] pp., tables and diagrams. Contemporary half roan and marbled boards gilt, marbled edges (extremities rubbed). Provenance: Ignatiuskolleg Valkenburg (stamp on title, shelfmark label on spine); Collection of Peter and Margarethe Braune. A crisp and clean copy. (#003529) € 2500



Garrison-Morton 6844; DSB, VII, pp 113-115. FIRST EDITION OF THE FIRST AND MOST INFLUENTIAL TEXTBOOK ON GENETICS, whose author coined the word 'gene' in the present work to describe the Mendelian units of heredity in addition to the terms 'phenotype' (to mean the outward appearance of an individual) and 'genotype' (to mean its genetic traits). "Johannsen was one of the founders of the science of genetics. His view of the unit of heredity, to which he first gave the name 'gene' (1909), has survived the changes brought about by the discovery of the physical basis of heredity, first in the chromosomes and then more precisely in the structure of the nucleic acids" (DSB).

"More support for the Mendelian law of inheritance was provided by Johannsen, a Danish botanist, who showed that in certain self-fertilizing plants a pure line of descendants can be maintained indefinitely, in which case natural selection is not effective, selection depending upon genetic variability. He introduced the term 'gene' in 1909." (Garrison-Morton 242).

The complete run of a rare mathematical journal

16 LAGRANGE, Joseph Louis de; CIGNA, Jean-Francois; EULER, Leonhard and others. *Miscellanea philosophico-mathematica Societatis privatae Taurinensis* (vol. I), *Mélanges de philosophie et de mathématique de la Société Royale de Turin* (vols. II-V). All published. Turin: Imprimerie Royale, 1759-1773. 5 volumes. 4to (230 x 170 mm), uniformly bound in early 19th century half calf over sprinkled paper boards, spines ruled and lettered in gilt, light-blue endpapers, yellow-dyed edges (slightly rubbed, corners little bumped, vol I slightly smaller in size), in total 27 plates engraved and folding, engraved headpieces, half-title to each volume, title of vol. I with woodcut device, other volume titles with engraved devices. Text and plates generally very crisp and clean with only very minor occasional spotting and browning, in vol. III 3 plates a bit browned and foxed and a long clean tear w/o loss in pp. 357/8 and 359/60, plate IV in vol. V shaved at bottom costing the frame, pp. 108-9 of vol. V soiled. Provenance: Claude-Ignace de Barante (bookplate to front-pastedown of each volume). A fine, wide-margined set. (#003417) € 8500

FIRST EDITION, and rarely found complete with all five volumes present as here, of a series of early major papers by Lagrange and others on the calculus of variations and mechanics. In 1757, the Count of Saluce, Louis de Lagrange and Jean-François Cigna, physics and mathematics enthusiasts, joined forces to carry out experiments. In 1759, under the auspices of King Victor Amédée, they published the first volume under the Latin title *Miscellanea philosophico-mathematica Societatis privatae Taurinensis*. Shortly after, Albrecht Haller and Leonard Euler joined the Society, then three further partners, and little by little an academy and the publications of that academy were created. The second and all further volumes were published under the French title *Mélanges de philosophie et de mathématique de la Société Royale de Turin* and contain papers in French and Latin.

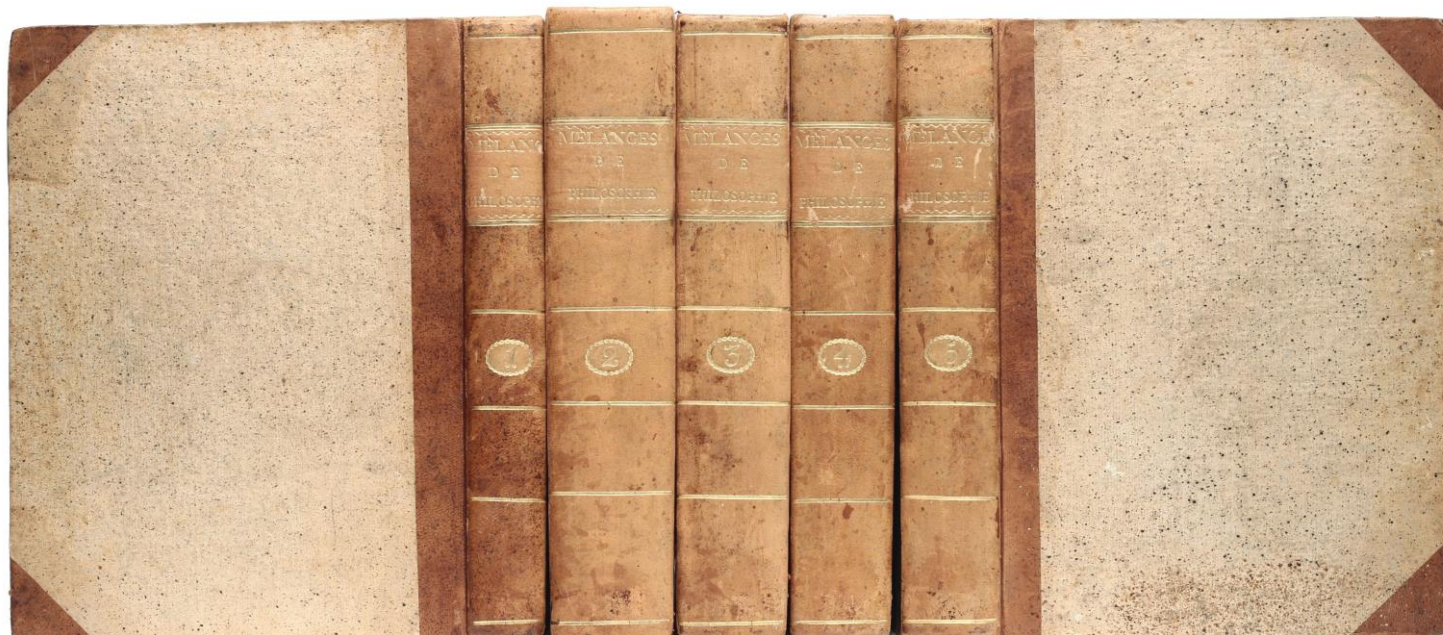
Vol. I: 1759. [8], 51 [1], 146, x, 146, [6] pp., 4 plates. Contains: J. F. CIGNA, on barometers and thermometers, a memoir by Count de SALUCE, *Sur la nature du fluide élastique qui se développe de la poudre à canon*, two treatises by LAGRANGE, *Sur l'intégration d'une équation différentielle à différences finies et des Recherches sur la nature et la propagation du son*, as well as papers by J. B. GABER, M. A. PLAZZA, A. BERTRAND and DAVIET de FONCENEX.

Vol. II: 1760-1761. [4], 224, 344, 108 pp., 6 plates and 1 map. Contains: A. HALLER, *Emendationes et auctaria ad stirpium helveticarum historiam* (on Swiss flora); CIGNA, *De motibus electricis experimentum*; an article on Corsican Flora by F. VALLA; a letter from EULER TO LAGRANGE; *Un essai d'une nouvelle méthode pour déterminer les maxima et les minima des formules intégrales indéfinies* by LAGRANGE, and several other papers by DAVIET de FONCENEX, P. GERDIL, L. RICHER and CARENA.

Vol. III: 1762-1765. [6], 220, 396, [4] pp., 7 plates. Contains: MACQUER, *Mémoire sur la différente dissolubilité des sels neutres dans l'esprit de vin*; SALUTS, *De l'action de la chaux vive sur différentes substances. Expériences pour chercher les causes des changements qui arrivent au sirop violat par le mélange de différentes substances*; DANA (J. P.) *De hirudinis nova speciae, noxa . . . De quibusdam urticae marinae*; EULER, *Sur le mouvement des cordes vibrantes - Recherches sur le mouvement des cordes inégalement grosses - Recherches sur la construction de nouvelles lunettes*, and two further mathematical treatises; LAGRANGE, *Solution de différents problèmes de calcul intégral*; Excerpts of letters from D'Alembert to Lagrange.

Vol. IV: 1766-1769. [8], 205 [1], 345 (i.e., 349) [3] pp., 4 plates, without the intermediate blank leaf. Contains: 3 articles by CONDORCET *sur les équations différentielles*; 3 dissertations by LAGRANGE: *équations différentielles, mouvement d'un corps attiré vers deux centres fixes - Sur la méthode des variations*; LAPLACE, *Recherches sur le calcul intégral aux différences infiniment petites, et aux différences finies*; memoirs by SALUCES, *sur la trompe du cousin et sur celle du taon*; by MONNET, *sur la cause de la décomposition du nitre et du sel marin par les intermèdes terreux - Au sujet du minimum - Sur la combinaison du mercure avec le tartre*; and DANA, *Descriptio et usus agarici seu boleti pellicei*. . .

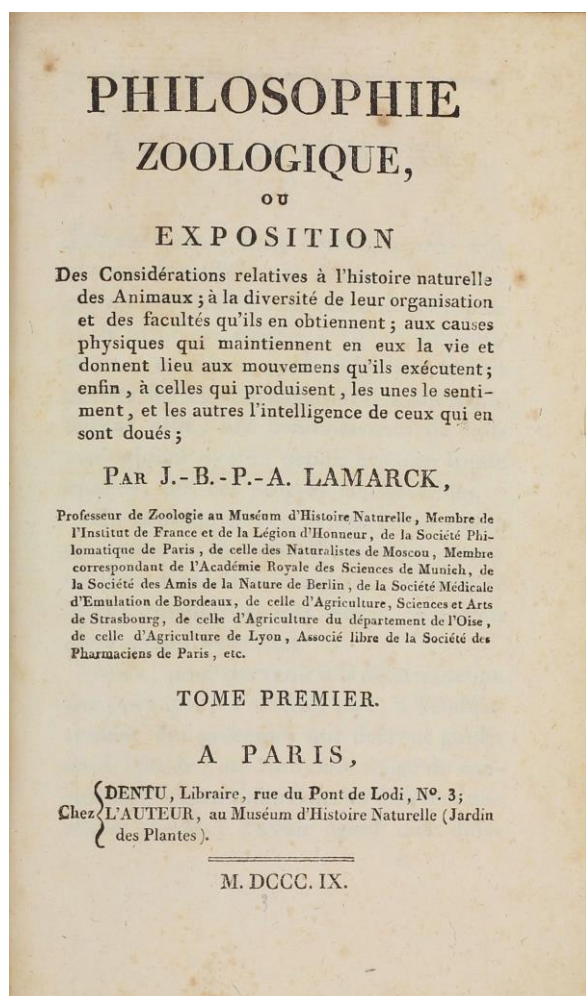
Vol. V: 1770-1773. [12], 214, 267 [1] pp., 5 plates. Contains: CONDORCET, *Mémoire sur différentes questions d'analyse - Mémoire sur les solutions particulières des équations différentielles*; MONGE, *Mémoire sur la détermination des fonctions arbitraires dans les intégrales*; LAGRANGE, *Mémoires sur la figure des colonnes - Méthode pour le calcul des probabilités*; CIGNA, *De electricitate - De respiratione*; MOUROUX, *Examen physico-chimique sur la couleur des fleurs*; ALLIONI, *Au sujet des plantes du Jardin Royal de Turin*, and various other memoirs on chemistry by MAQUER, SALUCE, GERDIL and others.



A classic in the literature of evolutionary theory

17 LAMARCK, Jean Baptiste de. *Philosophie Zoologique, ou Exposition des Considérations Relatives à l'Histoire Naturelle des Animaux.* Paris: Dentu et l'Auteur, 1809. Three parts in two volumes. 8vo (196 x 123 mm). [4], xxv [1], 428; [4], 475 [1] pp, including half-titles. Extra illustrated with a frontispiece portrait of the author in vol. I. Bound in contemporary uniform half sheepskin, spines with some gilt ruling and red morocco labels lettered in gilt, marbled edges (very little rubbing of extremities). Housed in modern custom-made slipcase. Text only little browned, some scattered spotting, a few ink smudges in vol. II. Copiously annotated in ink by a learned individual, possibly a colleague of Lamarck. Provenance: compte Amaury de la Chevalerie (bookplates to front pastedowns). (#003484) € 15,000

PMM 262; Sparrow 121; Evans 103; Norman 1267; DSB VII, pp.590-1; Wellcome III, p.435; Garrison-Morton 216; En français dans le texte 205. - S. Alcouffe, *Lamarck J.B. "Philosophie zoologique"*. FIRST EDITION OF LAMARCK'S MOST COMPLETE PRESENTATION OF HIS THEORY OF EVOLUTION - "a classic in the literature of evolutionary



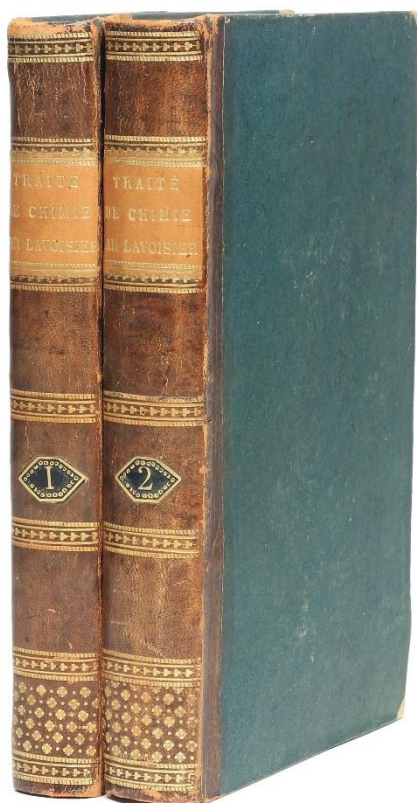
theory" (PMM). The first two parts of *Philosophie zoologique* restate and elaborate upon Lamarck's theory of evolution (originally posited in his *Recherches sur l'organisation des corps vivans*, Paris, 1802), which attributes evolution to two factors: the tendency of species toward increasing complexity, and the influence of the environment, which he considered responsible for these variations from the norm. "The third part contains the most important additions to the earlier theories. In this section Lamarck deals in great detail with the problem of a physical explanation for the emergence of higher mental facilities ... Lamarck's breakthrough was tying a progressive development of higher mental facilities in a physical way to structural development of the nervous system ... Higher mental faculties could emerge precisely because they were a product of increased structural complexity ... For Lamarck one of the most important events in the evolutionary process was the development of the nervous system, particularly the brain, because at that point animals began to form ideas and control their movements" (DSB).

Although Darwin initially disparaged Lamarck's work, he later amended his opinion, stating in the "Historical Introduction" to the third edition of *On the Origin of Species* that Lamarck "first did the eminent service of arousing attention to the probability of all change in the organic as well as in the inorganic world being the result of law, and not of miraculous intervention" (London: 1861, p. xiii).

This work is the standard source for the study of Lamarck's theory of evolution and a classic in its field. "It is a theory of the evolution of animal life, depending upon variations brought about mainly through use and disuse of parts, and also by responses to external stimuli, and the direct inheritance of the same. His theory is comprehensive, so much so that he includes mankind in his general conclusions" (W.A. Locy, *Biology and its Makers*, 1930, pp.384-385).

Laying the foundation of modern chemistry

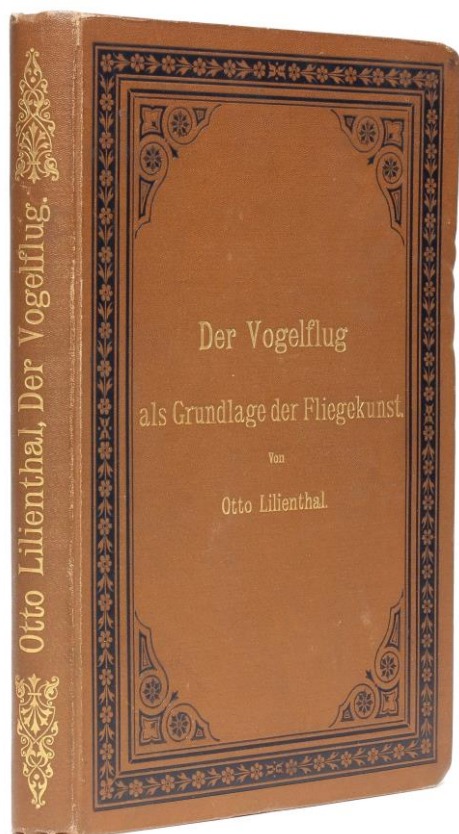
18 LAVOISIER, Antoine Laurent. *Traité élémentaire de chimie, présenté dans un ordre nouveau et d'après les découvertes modernes; avec figures...* Two parts in two volumes. Paris: Chez Cuchet, 1789. 8vo (205 x 124 mm). xlv, 322; viii, 323-653, [3] pp., including half title to each part, woodcut vignette 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 *Traite* "...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.

The first textbook of mechanical flight

19 LILIENTHAL, Karl Wilhelm Otto. *Der Vogelflug als Grundlage der Fliegekunst. Ein Beitrag zur Systematik der Flugtechnik. Auf Grund zahlreicher von O. und G. Lilienthal ausgeführter Versuche.* Berlin: R. Gaertners Verlagsbuchhandlung, 1889. 8vo (229 x 155 mm). viii, 187 [1] pp., coloured lithographed frontispiece of storks in flight, 8 folding plates, illustrations and diagrams. Original publisher's decorated brown cloth gilt (corners and front board fore-edge lightly bumped). Text generally clean and crisp, one plate dust-soiled at fore-edge with 2 short tears without loss, another plate with single short tear without loss, light offsetting from frontispiece to title, very light mostly marginal browning, some pencil annotations and marginalia. Provenance: Collection of Peter and Margarethe Braune. A fine copy. (#003515) € 4500



Norman 1353. FIRST EDITION, and a very fine copy, of the first textbook of mechanical flight. An early practitioner of gliding flight, Lilienthal pioneered a hang glider design that allowed him to make sustained flights of up to 250 metres distance from jumping-off places around Berlin. Working in conjunction with his brother Gustav, Lilienthal made over 2,000 flights in gliders of his design starting in 1891 with his first version, the *Derwitzer*. His total flying time was five hours. Lilienthal's valuable experiments were cut short when he crashed on 9 August 1896 while gliding and sustained a serious cervical break that ended his life prematurely at the age of forty-eight.

"Lilienthal's book [became] one of the chief bibles for the aeronautical world after he demonstrated that his theories could be put into practice . . . It was the basis on which the Wrights first started building their aerodynamic work, and they were always high in praise of its pioneering value, even when they were led to modify Lilienthal's findings" (Gibbs-Smith, *The Invention of the Aeroplane 1799-1909*, London, 1965). "The Wrights themselves, and virtually all their

21 **MAYER, Julius Robert.** Bemerkungen über die Kräfte der unbelebten Natur. In: *Annalen der Chemie und Pharmacie*. Herausgegeben von Friedrich Wöhler und Justus Liebig, vol. 42, pp. 233-240. Heidelberg: Academische Verlagsbuchhandlung von C. F. Winter, 1842. 8vo (201 x 127 mm). Entire volume no. 42: [8], 356 pp., including two general title pages. Bound in later marbled paper cardboard, gilt-lettered morocco spine label, red sprinkled edges (minor rubbing of extremities). Text with minor even browning, scattered minor foxing. Provenance: collection of Peter and Margarethe Braune. In all a clean and crisp copy. (#003540) € 1800

FIRST PRINTING OF ONE OF THE MOST IMPORTANT PAPERS IN PHYSICS OF THE 19TH CENTURY. It is the first to propose an equivalence of all forms of energy, including heat, and a conservation of total energy. Although Mayer was the first to set forth the general law of the conversation of energy (the first thermodynamical law), it was James Joule who first put the law on firm footing. "Sadi Carnot, in 1824, approached very close to the principle of the conservation of energy and his brother found among his papers an almost explicit statement of it, although Carnot had actually used the caloric theory in his researches. J. R. Mayer, in *Liebig's Annalen*, 1842, demonstrated its application in physiological processes, but his paper made little impression until it was reprinted as a polemic in 1867. J. P. Joule made a manuscript translation of Mayer's thesis for his own use, and, in a series of papers in the *Philosophical Magazine*, 1840-3, provided experimental proof of the mechanical equivalent of heat for physical phenomena." (PMM). The personal misfortunes of [Mayer's] genius (including neglect, impugned insanity and attempted suicide) have dulled the brilliance of his contributions to the mechanics of energy convertibility. From the expenditure of animal energy he developed the broader concept that all the natural forces were in universal conservation and remained so, as a law of nature. He held that work could be converted to heat, and heat to work, that when air is compressed the work appears as heat, and from this he calculated a numerical value for its mechanical equivalent. All these hypotheses remained neglected by physicists until John Tyndall, in 1862, discovered their importance and translated several of Mayer's papers into English." (Dibner 157).

References: Dibner, *Heralds of Science* 157 (for 1851 reprint); PMM 323 (rem.); Honeyman 2191; DSB IX, pp. 235-240; Parkinson, *Breakthroughs*, 1842.

22 **MENDELEEV, Dmitri Ivanovich.** Versuch eines Systems der Elemente nach ihren Atomgewichten und chemischen Functionen. In: *Journal für praktische Chemie*, vol. 106, p.251. Leipzig: Johann Ambrosius Barth, 1869. 8vo (211 x 130 mm). Entire volume: xi [1], 508 pp., including two title pages and 1 engraved plate. Bound in contemporary half calf over marbled boards, spine with gilt

6) Versuche eines Systems der Elemente nach ihren Atomgewichten und chemischen Functionen.

Von
D. Mendeleeff,
Professor an der Universität zu St. Petersburg.

			Ti = 50	Zr = 90	? = 180
			V = 51	Nb = 94	Ta = 182
			Cr = 52	Mo = 96	W = 186
			Mn = 55	Rh = 104,4	Pt = 197,4
			Fe = 56	Ru = 104,4	Ir = 198
		Ni = 59	Co = 59	Pl = 106,6	Os = 199
			Cu = 63,4	Ag = 108	Hg = 200
H = 1					
	Be = 9,4	Mg = 24	Zn = 65,2	Cd = 112	
	B = 11	Al = 27,4	? = 68	Ur = 116	Au = 197 ?
	C = 12	Si = 28	? = 70	Sn = 118	
	N = 14	P = 31	As = 75	Sb = 122	Bi = 210 ?
	O = 16	S = 32	Se = 79,4	Te = 128 ?	
	F = 19	Cl = 35,5	Br = 80	I = 127	
Li = 7	Na = 23	K = 39	Rb = 85,4	Cs = 133	Tl = 204
		Ca = 40	Sr = 87,6	Ba = 137	Pb = 207
		? = 45	Ce = 92		
		?Er = 56	La = 94		
		?Yt = 60	Di = 95		
		?In = 75,6	Th = 118 ?		

lettering, gilt ruling and shelf mark paper label, marbled edges (extremities worn, leather scratched, corners scuffed and bumped). Text with light even browning mostly to outer edges. Provenance: J.G. Strobl, Buchbinderei Wien (ink stamp to rear pastedown). Very good and clean copy. (#001718) € 1850

Sparrow 147 - The first appearance of Mendeleev's periodic table in a western journal. Mendeleev's work on *Osnovy khimii* led him directly in March 1869 to his formulation of the periodic law and table, in which the elements were grouped by atomic weight and grouped according to their chemical and physical properties. He famously used his table to predict accurately the elements which later came to be called gallium, germanium and scandium.

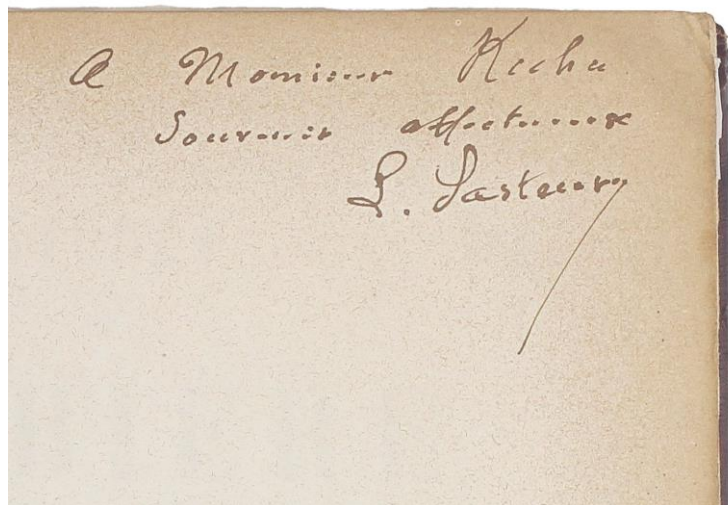
23 OHM, Georg Simon. *Nachweisung eines Ueberganges von dem Gesetze der Elektrizitätsverbreitung zu dem der Spannung*, part 1, pp. 1-25. *Ergänzender Nachtrag . . .*, part 4, pp. 452-461. In: *Archiv für die gesammte Naturlehre in Verbindung mit mehreren Gelehrten*, herausgegeben von K. W. G. Kastner. Nürnberg: J. L. Schrag, 1829. Entire parts 1 and 4 of volume XVII. 8vo (205 x 123 mm). xii, 144; 385-500 pp., folding engraved plate (plate partially detached and a little frayed). Original green printed wrappers (spine paper gone, wrappers dust-soiled, second part lacking lower wrapper). Text quite clean and crisp with only little age-toning and minor occasional spotting. Provenance: Collection of Peter and Margarethe Braune. (#003550) € 250

FIRST EDITION of two papers by Ohm in which he provides a physical explanation for the difference between electrical force and tension, based on his empirically derived law of the galvanic circuit.

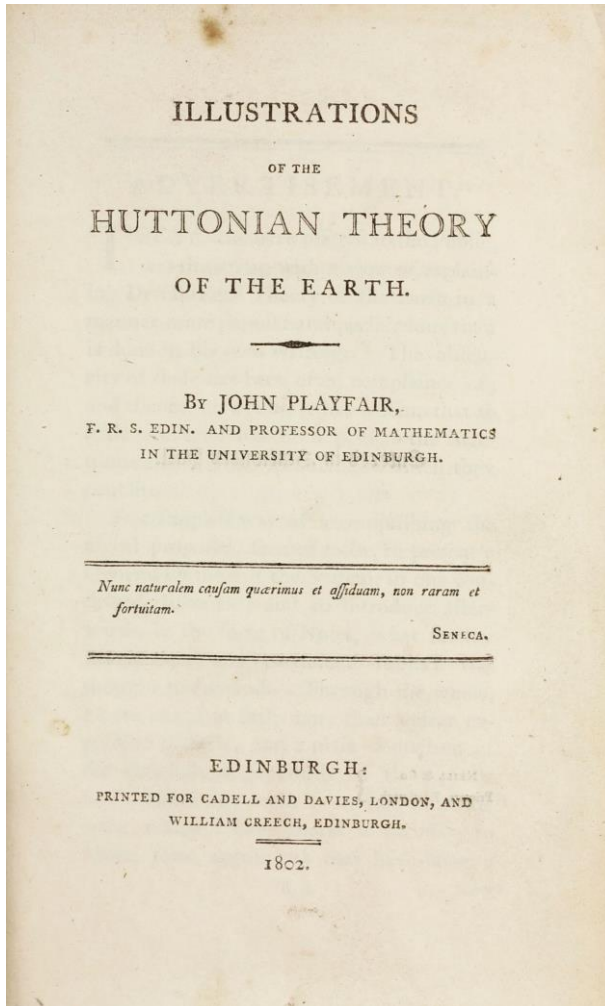
Dedication copy, inscribed and signed by the author

24 PASTEUR, Louis. *Études sur la Bière, ses Maladies, causes qui les provoquent procédé pour la rendre inaltérable, avec une Théorie nouvelle de la Fermentation*. Paris: Gauthier-Villars, 1876. 8vo (235 x 155 mm). viii, 387 [1], 4 pp. including half-title, 12 engraved plates protected by tissue paper, 85 illustrations in text, 4-pages advertisement bound at end. 20th century three-quarter morocco over marbled boards by Bretault, spine with 5 raised bands and gilt lettering, upper edge gilt, other edges uncut, marbled endpapers (little rubbing to extremities, corners slightly scuffed). Text crisp and clean, half-title and final page with minor browning mostly to outer margins, first pages with little dust soiling and age-toning. Provenance: Max Cointreau (bookplate to front pastedown), inscribed and signed by Pasteur on half-title "A monsieur Kicho(?) / Souvenir affectueux / L. Pasteur". (#003412) € 2400

Sparrow 158; Garrison-Morton 2485; Heirs of Hippocrates 1018; Norman 1658; Cushing P-139; Duveen 461. Osler 1550. Thornton & Tully, p. 184. Waller 10966; Bulloch, *History of bacteriology* p. 61f. - FIRST EDITION of Pasteur's important study of fermentation. Pasteur discovered that contaminated beer was caused by microorganisms in the air and not spontaneously generated as previously believed. He perfected a method of preparing pure yeast, acknowledging that a small quantity of oxygen was important for brewing.



25 **PLAYFAIR, John.** *Illustrations of the Huttonian Theory of the Earth.* Edinburgh and London: William Creech / Cadell and Davies, 1802. 8vo (210 x 130 mm). xx, 528 pp. Contemporary calf, rebacked with the original spine preserved, red morocco lettering piece. Text little age toned, occasional very minor spotting, brown offsetting from silk bookmark to pp. 411/12. Provenance: Cranstoun of Corehouse (armorial bookplate to front pastedown). A very good, clean copy. (#003409) € 6500



Horblit 52b; Evans 66; Norman 1717. FIRST EDITION. Landmark book in the development of the science of geology. "Playfair, a professor of mathematics at the University of Edinburgh and a friend of James Hutton, revised Hutton's Theory of the Earth to present his case more precisely, with additional evidence and without Hutton's religious ideas. Although Playfair's primary works were in mathematics and physics, he added substantially to the sum of geological knowledge of his time." (Norman).

Horblit 52b; Evans 66; Norman 1717. FIRST EDITION. Landmark book in the development of the science of geology. "Playfair, a professor of mathematics at the University of Edinburgh and a friend of James Hutton, revised Hutton's Theory of the Earth to present his case more precisely, with additional evidence and without Hutton's religious ideas. Although Playfair's primary works were in mathematics and physics, he added substantially to the sum of geological knowledge of his time." (Norman).

The first book on projective geometry

26 **PONCELET, Jean-Victor.** *Traité des Propriétés Projectives des Figures, ouvrage utile à ceux qui s'occupent des applications de la géométrie descriptive et d'opérations géométriques sur le terrain.* Paris: Bachelier, 1822. 4to (263 x 210 mm). xlvii, 426 pp., including half-title, 12 folding engraved plates, errata leaf bound in as facsimile. Later half buckram and marbled boards, gilt-lettered red morocco spine label (minor wear to extremities). Brown stain at head of title possibly from removed signature, text only very little browned, minor scattered foxing throughout, half title and title little dust soiled, dampstaining to blank gutter of first preliminary pages, a few annotations and diagrams in pencil. Provenance: L. Givebin (signature on half title and title); Collection of Peter and Margarethe Braune. Still very good, wide-margined copy. (#003552) € 500

DSB XI, p. 77-80; Gascoigne 214. FIRST EDITION of the first book on projective geometry. Poncelet, a pupil of Monge, "during his years in the prisons of Russia, meditated on the real cause of the power which algebraical analysis possessed, on the reason why geometry proper was deprived of it, and what might be done to give it a similar generality. . . . He was thus led to the enunciation of his celebrated and much-criticised principle or law of continuity. Analytical geometry, by substituting an algebraical expression for a geometrical figure, could apply to it all the artifices of abstract analysis" (Merz). In this book Poncelet announced his discovery of the principle of projection and the principle of figures. The *Traité* "was the first book wholly devoted to projective geometry, a new discipline that was to experience wide success during the nineteenth century. In this domain Poncelet considered himself the successor to Desargues, Blaise Pascal, and Maclaurin and the continuator of the work of Monge and his disciples. Concerned to endow pure geometry with the generality it lacked and to assure its independence vis-à-vis algebraic analysis, Poncelet systematically introduced elements at infinity and imaginary

elements, thus constructing the space employed in complex projective geometry. Basing his efforts on the principle of continuity and the notion of ideal chords, he also made extensive use of central projections and profitably utilized other types of transformations ... The distinction Poncelet made between projective and metric properties prefigured the appearances of the modern concept of structure. Among the many original results presented in the *Traité* are those stating that in complex projective space two nondegenerate conics are of the same nature and have four common points (a finding that led to the discovery of cyclic points, imaginary points at infinity common to all the circles of a plane), and that all quadrics possess (real or imaginary) systems of generatrices. The decisive influence that *Traité des propriétés projectives des figures* exercised on the development of projective geometry ... is brought to light by most commentators, particularly by E. Kötter, who made the most complete analysis of it. . . Of the later memoirs, the most striking is devoted to the theory of reciprocal polars, which in Poncelet's hands became an extremely fruitful instrument of discovery, although he did not perceive the more general character of the principle of duality, which was pointed out shortly afterward by Gergonne, Plücker, Möbius, and Chasles. Although it was prematurely interrupted, Poncelet's geometric work marks the first major step toward the elaboration of the fundamental theories of modern geometry." (DSB)

27 **PORTA, Giovanni Battista della.** *Magiae naturalis libri XX.* Naples: Oratio Salviani, 1589. Folio (316 x 224 mm). [16], 301 [1] pp. Title with woodcut border and author's portrait on the verso, 21 woodcut illustrations in text, woodcut initials and headpieces. 18th century half calf, spine ruled and decorated in gilt and with gilt-lettered morocco label, original endpapers (some rubbing and wear to extremities). Text generally quite crisp and clean with minor even browning and occasional minor spotting, short clean tear to title-page, final pages with pale dampstain to upper corner. Provenance: ink annotations in Italian to front pastedown and first flyleaf. Very good, wide-margined copy. (#003452) € 5000



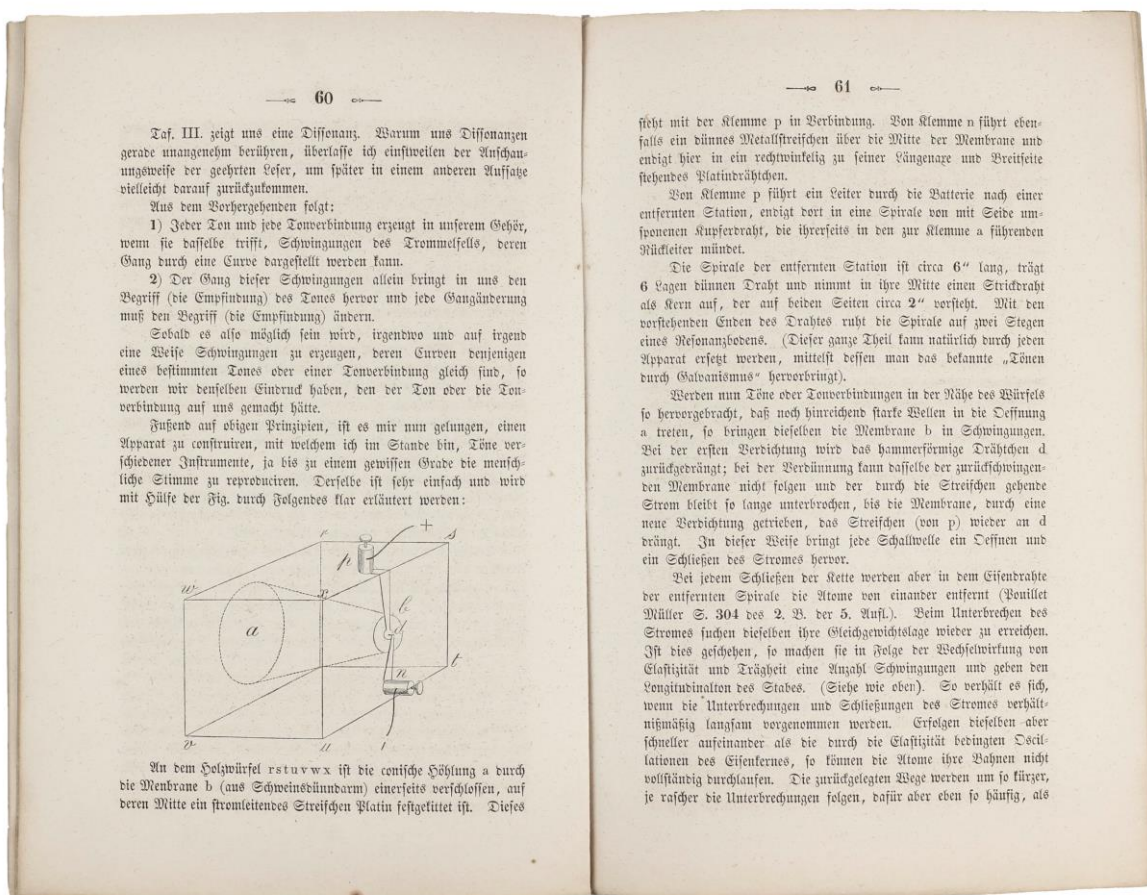
EDIT 16, CNCE 16535; Mortimer, Italian 400; Riccardi I/2, 307; Honeyman 2519; NLM/Durling 3728 (rem). FIRST EDITION of the complete text in twenty books, first published 1558 in 4 books only. "The 1588 text was Della Porta's earliest published work, and the 1589 volume is essential to an understanding of Della Porta and the science of his day" (Mortimer). Della Porta's *Natural Magic*, immediately and durably popular, dealt with mathematics, meteorology, astrology and natural philosophy, but also occult philosophy and alchemy. In 1592 his philosophical works were prohibited from further publication by the Church. "In the later enlarged edition some chapters were increased to books, recipes and processes were multiplied, while others were omitted or reduced in length . . . More attention was given

to agriculture, applied science and useful arts such as breeding hybrid animals, crossing plants, and preserving fruits" (Thorndike VI, 419).

Coining the term "telephone"

28 REIS, Johann Philipp. Ueber Telephonie durch den galvanischen Strom. In: *Jahres-Bericht des physikalischen Vereins zu Frankfurt am Main für das Rechnungsjahr 1860-1861*, pp. 57-64. Frankfurt am Main: G. Naumann's Druckerei, 1861. 8vo (204 x 138 mm). Whole volume, 80 pp., illustrations in text and 6 folding plates (the last printed in black, red and blue). Later brown wrapper to spine. Housed in custom-made cassette of brown cloth, gilt-lettered brown morocco spine, ties. Pages crisp and clean with just very minor browning to outer margins. Fine copy of the rare milestone paper. (#003517) € 2300

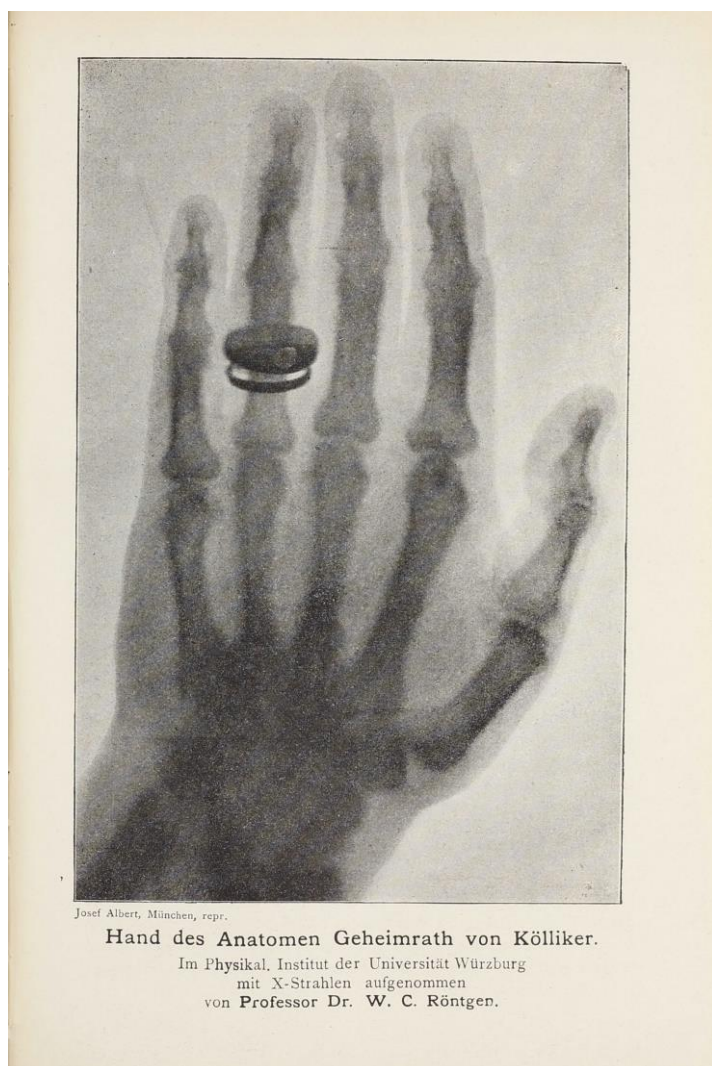
Darmstaedter 612. Wheeler Gift 1532 (detailed with ill.); see also DSB I, 582 and PMM 365 (for Ball). - The RARE FIRST EDITION of Reis's paper on the invention of the telephone as presented in a lecture before the Physical Society of Frankfurt on 26 October 1861. Reis was the second man after Bourseul to think of transmitting speech electrically. It was Reis who coined the term "telephone" and he was the first, in 1860, to produce a functioning device that could transmit musical notes, indistinct speech, and occasionally distinct speech by means of electric signals. Practically, Reis's telephones had varying success; some worked well and others produced only static. Nevertheless, they were displayed all over Europe and one was on show in Scotland when Bell was there visiting his father.



Röntgen's announcement including the first published X-ray image

29 RÖNTGEN, Wilhelm Konrad. *Ueber eine neue Art von Strahlen. (Vorläufige Mittheilung).* In: Sitzungsberichte der Physik.-Med. Gesellschaft zu Würzburg, Jahrgang 1895, Heft No. 9, pp. 132-141. Würzburg: Verlag und Druck der Stahel'schen K. B. Hof- und Universitäts- Buch- und Kunsthandlung, 1896. [Bound with:] *Ueber eine neue Art von Strahlen. II Mittheilung. (Als Beitrag eingereicht).* In: Sitzungsberichte der Physik.-Med. Gesellschaft zu Würzburg, Jahrgang 1896, Heft No. 1 u. 2, pp. 11-19. Würzburg: Verlag und Druck der Stahel'schen K. Hof- und Universitäts- Buch- und Kunsthandlung, 1897. Half tone plate of an X-Ray of a hand, captioned, "Hand des Anatomen Geheimrath von Kölliker. Im Physikal. Institut der Universität Würzburg mit X-Strahlen aufgenommen von Professor Dr. W. C. Röntgen." Two annual journal volumes bound in one. 8vo (219 x 149 mm). iv, 151 [1]; iv, 173 [3] pp. Contemporary three-quarter brown morocco over pebbled boards, two gilt-lettered red morocco spine labels and gilt stamp of the Chemical Society of London, red sprinkled edges (light rubbing of extremities). Text crisp and bright throughout, weak pre-binding central vertical fold throughout. Provenance: Chemical Society of London (ink stamp on p.82); Collection of Peter and Margarethe Braune. Fine copy. (#003518) € 4800

Evans 46, Horblit 90 (for journal issue); Norman 1841-1842, Dibner *Heralds* 162, PMM 380 (for offprint issues). FIRST EDITION OF THE JOURNAL ISSUE AND BY FAR RARER THAN THE OFFPRINTS. Further, only the journal issue includes the reproduction of the x-ray photograph of a hand, the first ever published x-ray image."



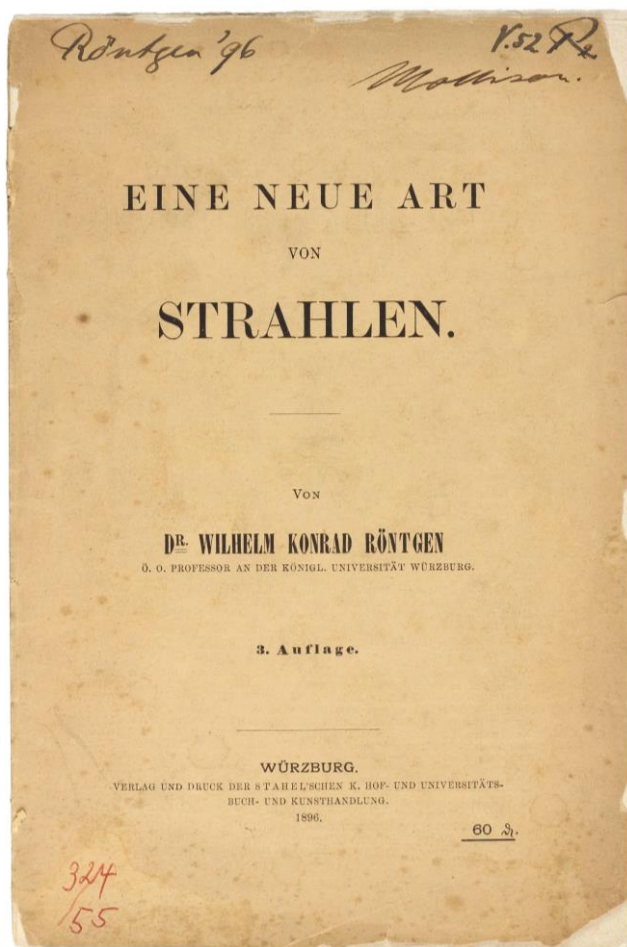
While performing experiments with a Crookes vacuum tube, a type of cathode-ray tube, Röntgen observed that some agent produced in the tube was causing barium platinocyanide crystals to fluoresce. Upon investigation he found that the fluorescence was caused by unknown rays (which he named 'X-rays') originating from the spot where cathode rays hit the glass wall of the vacuum tube. He announced his discovery in the present paper, which described the rays' photographic properties and their amazing ability to penetrate all substances, even living flesh. Although he was unable to determine the true physical nature of the rays, Röntgen was certain that he had discovered something entirely new, a belief soon confirmed by the work of other scientists such as Becquerel, Laue and the Curies. For his discovery, Röntgen was awarded the Nobel Prize in physics for 1901 . . . Röntgen submitted his paper for publication in the obscure Sitzungs-Berichte of the Würzburg Physical-Medical Society, a strategy deliberately employed to assure fast publication." (Norman 1841). "Röntgen's second paper on X-rays reported his latest findings: that X-rays render air conductive (a phenomenon already recognized), and that the target of the rays does not have to be simultaneously the anode of the cathode-ray tube. He described a scale for measuring X-ray

intensity, along with other innovations in equipment designed for the optimal production of X-rays." (Norman 1842). "Their importance in surgery, medicine and metallurgy is well known. Incomparably the most important aspect of Röntgen's experiments, however, is his discovery of matter in a new form, which has completely revolutionized the study of chemistry and physics. Laue and the Braggs have used the X-rays to show us the atomic structure of crystals. Moseley has reconstructed the periodic table of the elements. Becquerel was directly inspired by Röntgen's results to the investigation that discovered radioactivity. Finally J.J. Thomson enunciated the electron theory as a result of investigating the nature of the X-rays." (PMM).

Signed by Röntgen

30 RÖNTGEN, Wilhelm Konrad. *Eine neue Art von Strahlen.* Würzburg: Verlag und Druck der Stahel'schen K.B. Hof- und Universitätsbuch- und Kunsthandlung, 1896. Offprint from Sitzungsberichte der Würzburger Physikalisch-medicinischen Gesellschaft, 1895. 8vo (228 x 152 mm). 12 pp. Original publisher's printed wrappers (dust soiled and spotted, front wrapper somewhat chipped at edges with loss). Housed in custom-made folder. Title little browned at outer edges, text clean and unmarked throughout, inner text leaves disbound. Provenance: Morrison(?), signature on front wrapper, Collection of Peter and Margarethe Braune. (#003519) € 3800

Klickstein 5; Dibner 162, Sparrow 171, PMM 380 (for 1st edition). THIRD OFFPRINT EDITION, AND EXCEPTIONALLY RARE WITH RÖNTGEN'S SIGNATURE ON WRAPPER, of the groundbreaking presentation of the discovery of x-rays by Wilhelm Konrad Röntgen in the late part of 1895. X-rays nearly immediately became useful to the medical sciences and Röntgen was presented with numerous medals and prizes, including the Nobel Prize. As a result of the overwhelming demand for the information about Röntgen's discovery, this offprint edition was issued within a few weeks of the original.



"While performing experiments with a Crookes vacuum tube, a type of cathode-ray tube, Röntgen observed that some agent produced in the tube was causing barium platinocyanide crystals to fluoresce. Upon investigation he found that the fluorescence was caused by unknown rays (which he named 'X-rays') originating from the spot where cathode rays hit the glass wall of the vacuum tube. He announced his discovery in the present paper, which described the rays' photographic properties and their amazing ability to penetrate all substances, even living flesh. Although he was unable to determine the true physical nature of the rays, Röntgen was certain that he had discovered something entirely new, a belief soon confirmed by the work of other scientists such as Becquerel, Laue and the Curies. For his discovery, Röntgen was awarded the Nobel Prize in physics for 1901 . . . Röntgen submitted his paper for publication in the obscure Sitzungs-Berichte of the Würzburg Physical-Medical Society, a strategy deliberately employed to assure fast publication." (Norman 1841).

"Their importance in surgery, medicine and metallurgy is well known. Incomparably the most important aspect of Röntgen's experiments, however, is his discovery of matter in a new form, which has completely revolutionized the study of chemistry and physics. Laue and the Braggs have used the X-rays to show us the atomic structure of

crystals. Moseley has reconstructed the periodic table of the elements. Becquerel was directly inspired by Röntgen's results to the investigation that discovered radioactivity. Finally J.J. Thomson enunciated the electron theory as a result of investigating the nature of the X-rays." (PMM).

31 SCHLEIDEN, Matthias Jacob. *Beiträge zur Botanik - Gesammelte Aufsätze.* Leipzig: Verlag von Wilh. Engelmann, 1844. Volume one [all published]. 8vo (218 x 131 mm). viii, 242 pp., including half title, 9 lithographed plates. Contemporary cloth-backed marbled paper boards, spine lettered and ruled in gilt (corners bumped and scuffed, extremities rubbed). Text and plates with scattered foxing throughout. Provenance: from the Collection of Peter and Margarethe Braune. (#003553) € 400

FIRST EDITION of Schleiden's collected papers published previously and which includes his "Beiträge zur Phytogenesis" beside 13 other articles. "Schleiden . . . taking the embryonic cell as his starting-point proceeded

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