

*Fig. 1.*



**ANTIQUARIAT  
Michael Kühn**

*Berlin*

*April 2021*

*Fig. 2.*



*Fig. 3.*



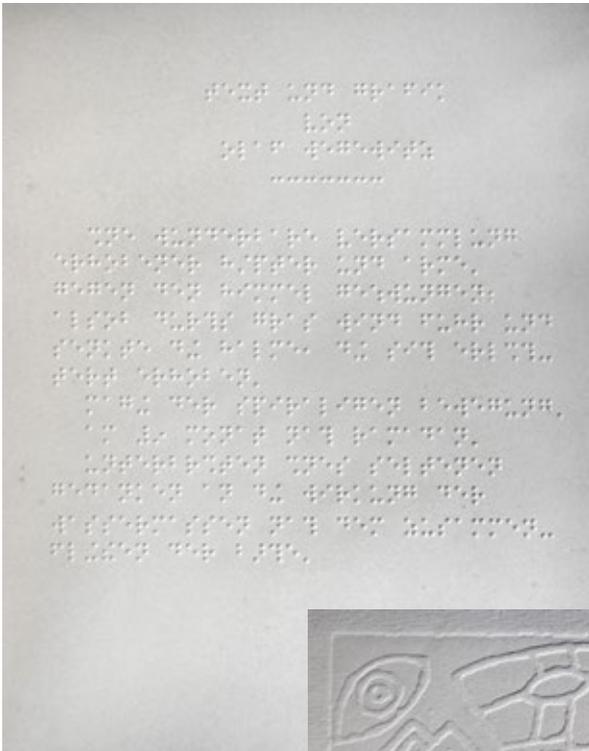
## Artist Book for the Blind made in the GDR

### (ARTIST BOOK)

*Blindenbuch. Leipzig, Selbsterlag, 1988. Quarto with 6 Bll. in Braille or embossed printing (Blindenschrift) by the artist Olaf Wegewitz and each one printing in Braille by Ralf Klement, Frieder Heinze, Olaf Wegewitz, Fotis Žapras and Günther Huniat, together 15 Bll. Cover in ceramics with incisions by Olaf Wegewitz and Frieder Heinze in Original paper card box with handwritten inscription, titled & dated: 1988.*

EUR 2.400.-

Artist book for the Blind of the late GDR, one of 45 copies. Olaf Wegewitz (\* October 2, 1949) is a German artist who, in addition to his work as a draftsman and painter, primarily deals with the relationship between human culture and nature in his art projects. Wegewitz completed an apprenticeship as a tractor mechanic in 1966. He practiced the profession until 1971. Then he worked as a paperwall - gluer in Leipzig until 1975. He taught himself the ideas of the Bauhaus. In 1974/75, he studied with Hans Schulze at the Academy of Visual Arts Leipzig and then worked as a freelance graphic artist and painter from 1975. In 1984, Olaf Wegewitz was one of the initiators of the 1st Leipzig Autumn Salon, a semi-legal exhibition in the Messehaus. It was not banned by the cultural functionaries only because they feared protest actions when the exhibition was closed. From 1980 onwards, he began working together with Frieder Heinze. In 1999 Olaf Wegewitz was awarded the Art Prize of the State of Saxony-Anhalt. - Henkel/Russ B 8.



## First Colored Shell Book



**GEVE (Geven), Nicolaus Georg.**

*Nicolaus Georg Gevens, ... Belustigung im Reiche der Natur. Erster Band, aus den Papieren des Verstorbenen vollendet durch (Dr.) Johannes Dominicus Schultze, ... Mit 18 ausgemahlten Kupfertafeln. - Hamburg: bey den Gebrüdern Herold, 1790. 4to (260 x 220 mm) VI, 121 pp., (1) with 18 finely hand-colored engraved plates, the plates partly printed in bistre. Contemporary half calf, spine and binding restored, little used and unfresh condition, inside clean, hand-coloring and plates fine.*

EUR 5.000.-



First book on shells with colored plates; first edition, second issue with cancelled title-page.

In 1755 the painter Nicolaus Georg Geve began to publish on his own cost a series of hand-colored plates of shells under the title „Monatliche Belustigungen im Reiche der Natur“; as he distributed the book himself, interest was low and publication ceased after the 8 installment. The publisher Herold from Hamburg bought the surviving finished plates, printed text and manuscripts leaves from the estate of Nicolaus Georg Geve who had died in 1789.

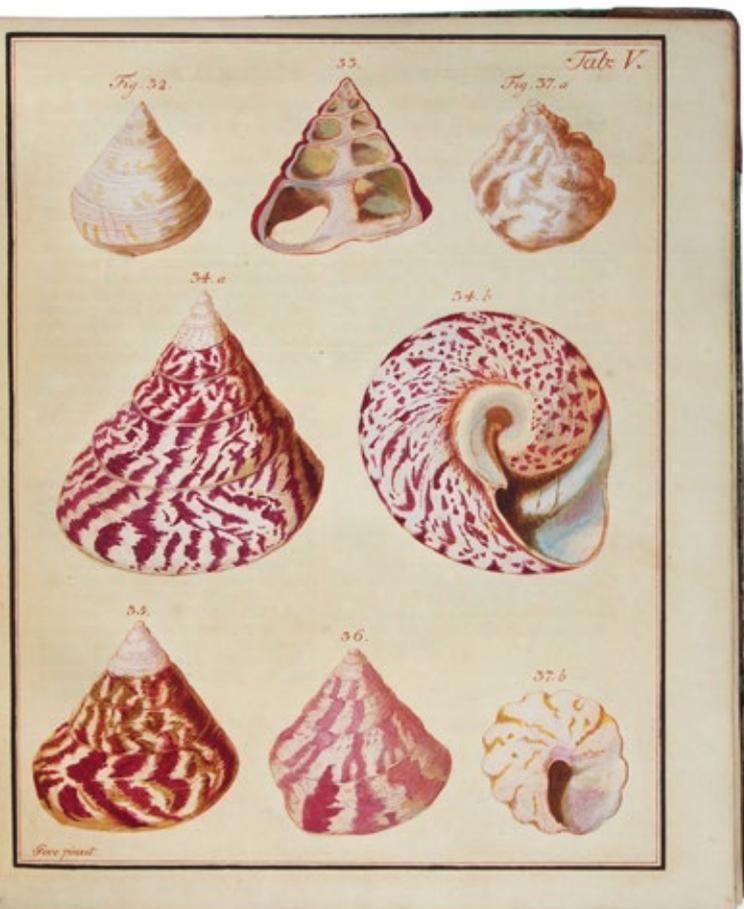
He intended to re-publish the work under new title and with new text as „Belustigung im Reiche der Natur“. The first part with minor changes edited by Johann Dominikus Schultze was published in 1790 but the intended second volume with plates 19 - 33 was not published as the editor, J. D. Schultze, died in the same year.

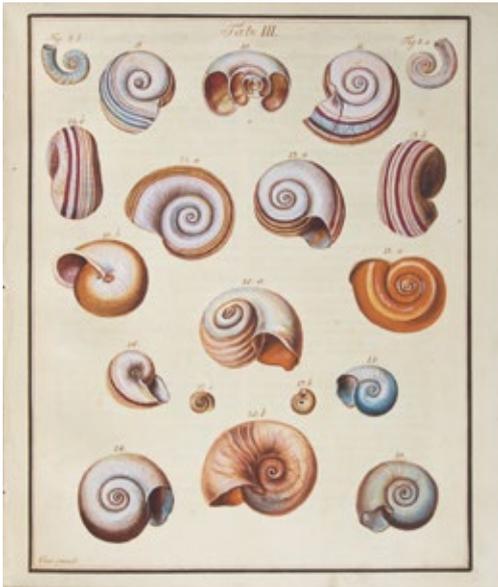
The complete work was first re-published by the shell collector Friedrich Bachmann in Luneburg with the publisher Herold & Wahlstab in 1830-1831, then with the complete set of 33 plates and rewritten text: „Noch 1831 fand Gevens Conchylien-Cabinet durch F. Bachmann erneute Bearbeitung. Geve lieferte für dies Werk 33 Tafeln in Kupferstich mit 434 Fig., deren äußerst sorgfältige Ausmalung in Wasserfarben viel gerühmt wurde und lange vorbildlich blieb.“ (Thieme/B).

„Die Figuren sind übrigens gut, manche selbst vorzüglich gut zu nennen, zumal was das Colorit anbetrifft. Sie stellen sämtlich nur einschalige Conchylien dar, unter diesen einige seltene Arten, hauptsächlich aber eine Auswahl vorzüglicher Exemplare. Es verdienen daher die Geve'schen Kupfertafeln mehr bekannt zu werden, als solches bis dahin der Fall war, da Schröter und Gmelin nicht alle Tafeln citiert haben ...“ (Allgemeine Lit.-Zeitung, Dec. 1838, 410-12)

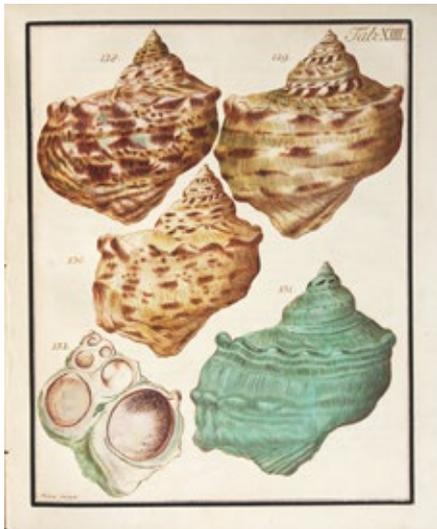
„Up to 1758 the illustrations in the pioneering works of Buonanni, Lister, Rumphius and d' Argenville had been the shell collector's chief aids to identification but they failed to illustrate many shells in his cabinet and, a few years later, were rendered obsolete when the officers and crews who sailed with Captain Cook brought back to Europe an abundance of new species from the ‚South Seas‘. The ‚Monatliche Belustigung im Reiche der Natur, an Conchylien und Seegewächsen‘ of Nicolaus Georg Geve, a painter of Hamburg, could have supplied the demand for extra illustrations. Published in 1755 it was the first book on shells to be produced with coloured plates and was intended to be issued at monthly intervals; but only twenty-four plates had been published when, owing to the appearance of a pirated edition, it was discontinued and eventually abandoned.“ (Dance).

The Danish painter and illustrator Nicolaus Georg Geve (1712-1789 in Schleswig) was a student of the royal Danish court painter Johann Salomon Wahl in Copenhagen and made numerous trips through Germany, France and Italy to earn a living in cities and on country estates as a portrait painter. In the 1740s he worked in Lübeck, Schwerin and Hamburg. In 1756 he applied to paint the audience room in the Lübeck town hall but this commission went to Stefano Torelli. From 1765/66 he stayed in Schleswig and finally settled there in 1770, working for the governor Karl von Hessen-Kassel and as a drawing teacher at the Schleswig cathedral school. Several of his portraits have

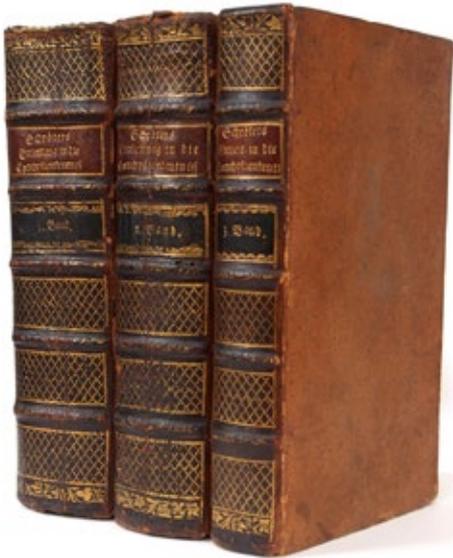




survived through engravings by Martin Bernigeroth and Christian Fritsch. In 1759 he married Catharina Dorothea Zöllner, a daughter of the decorative painter Johann Martin Zöllner in Copenhagen, who had been a chambermaid of Louise of Denmark. In 1755 he began publishing the *Monatliche Belustigungen im Reiche der Natur* (Monthly amusements in the realm of nature) in Hamburg: on 33 published plates, he showed a total of 463 shells in detail on engravings, finely colored by hand. The last eighteen plates were posthumously published in 1790 from his estate by the Hamburg doctor and natural scientist Johann Dominikus Schulze (1751-1790) who had a fine natural history collection incl. herbarium and numerous fossils. After studying in Göttingen with Blumenbach and Weber, in 1776 he settled as a physician in Hamburg, and worked also as a physician at this institution for the poor, where his father had worked for years as a pastor. During his work there, he successfully campaigned for better medical care for the inmates. He died in May 1790 at the age of only 39. With Joachim Friedrich Bolten, he was involved in the creation of a new system for shells, but the work remained fragmentary. The 1776 description of *Papilio arnaca* by Johann Christian Fabricius was based on an unspecified number of specimens from Suriname, in Schulze's collection. Schulze said that Fabricius had visited him in Hamburg to see his collection, and would be including the new species in the „mantissa“ (or supplement) to his *Systema entomologiae* (1775). Fabricius duly did so in the 1777 *Genera insectorum* and Schulze's new names are often credited to Fabricius in error. - Dance, *Shell Collecting* 49/50; Caprotti, pp. 55-56; Nissen ZBl 561; Agassiz III, 52; Thieme/Becker XIII, 503-04; AKL LII, 429.



# Linne's Shells

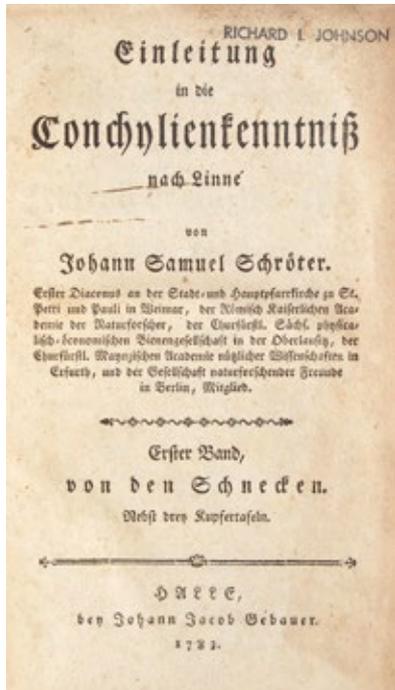


## SCHROETER, Johann Samuel.

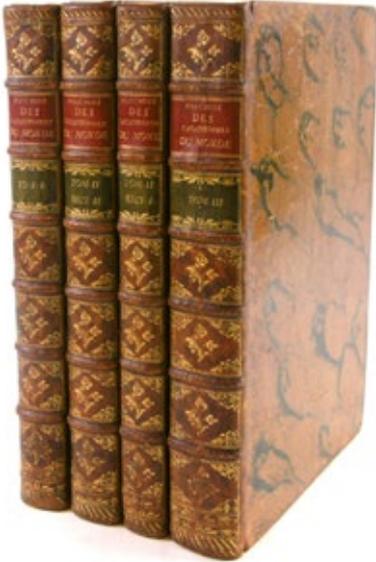
*Einleitung in die Conchylienkenntniß nach Linné. Erster Band, von den Schnecken. (Zweyter und Dritter und letzter Band). 3 Vols. - Halle: bey Johann Jacob Gebauer, 1783-1786. 8vo (195 x 115 mm). XXXII, 860 pp., (2); VIII, 726 pp.; XVI, 596 pp. with 9 engraved folding plates by Capieux. Contemporary calf, spines gilt in compartments, two morocco lettering pieces. Minor chipping to spine ends. Browned due to paper quality, overall a nice set.*

EUR 3.800.-

First edition of the first comprehensive concordance of the Linnean system and conchological literature. In addition, Schroeter lists numerous species and varieties not mentioned by Linné. Johann Samuel Schröter (1735-1803) was a German rector, deacon, minister and superintendent in the Weimar region of Germany who studied fossils, shells, minerals and other natural objects for the improvement of health. Schröter is perhaps better known as a pioneer in palaeontology as he published one of the earliest descriptions and figures devoted to Devonian brachiopods, although he wrote much on recent shells. The *Einleitung* was supposed to contain descriptions and synonymies of every known shelled mollusc an ambitious project at any time. But it supplied figures of only a few and so was far less useful than the *Conchylien - Cabinet* of his friend, the physician and naturalist Friedrich Wilhelm Martini. - Nissen ZBI 3756. Lit.: H. Friess. Johann Samuel Schröter (1735-1808), a pioneer in palaeontology; in: *Archives of Natural History* 11 (1982), pp. 83-98. Provenance: C. A. Braureiser, Holler (? 1855); Richard I. Johnson.



## Extraordinary



### Knorr, Georg Wolfgang and Johann Ernst Immanuel Walch.

*Recueil des monumens des catastrophes que le globe terrestre a essuies, contenant des petrifications dessinees, gravees et enluminees d'apres les originaux... avec l'histoire naturelle de ces corps par Mr. Jean Ernest Emanuel Walch. 6 parts in 4 volumes. P. J. Felssecker for heirs of Knorr 1768-1777-1778. 2 aquatint portraits, 1 hand-coloured double-page engraved plate of a quarry, 272 colour-printed and hand-coloured engraved plates, many double-page. (57; 81; 50; 84 plates). (6), 156 pp.; (6), 59 pp.; (6), 159 pp.; (6), 268 (recte 266) pp.; (8), 203 pp.; (2), 124 pages. Cont. French brown cats-paw calf on six raised bands with green and red morocco gilt lettering-pieces in second and third compartments, all others richly gilt. Marbled end-papers. Folio (420 x 260 mm.). Covers lightly rubbed. Corners bumped.*

EUR 37.500.-

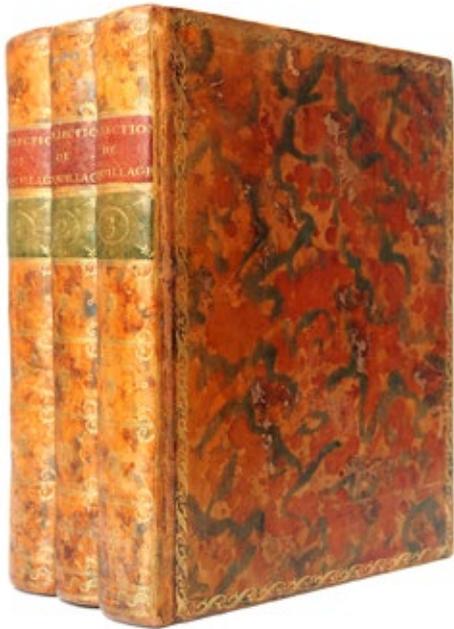


A beautiful copy in a fine contemporary binding of the French, and most desirable and complete, edition of Knorr's 'Sammlung', his monumental work on fossils, the greatest work of its kind and an outstanding piece of book production and colour printing. As DSB notes, Knorr was one of the protogeologists of the eighteenth century who is intermediate between the collectors of cabinets of natural history and those who first made use of fossils for the identification and mapping of stratigraphic succession. Knorr's 'Sammlung' is generally regarded as his greatest achievement, the extraordinary quality of the plates, representing the eighteenth-century continuation of the tradition of Durer, led to an expansion of the work by Walch, as well as to French and Dutch editions... the detail and accuracy of Knorr's engravings not only made possible zoological classification but firmly established the distinction between fossils of organic origin and sports of nature (Cecil J. Schneer in DSB VII, 411). Volume I with the foreword for the 1768 edition comprising 59 pages bound in after the plate section. The index in the fourth volume "Table alphabétique des choses contenues ..." is by the renowned

scholar J. Samuel Schroeter. Our copy with the often missing impressive double-page view of a quarry, but without the engraved titles to the first three volumes which due to the publication history are sometimes found with the plates, although there is no evidence of engraved title-pages in any of the four volumes. The plates are celebrated for being printed in multiple colours, and then finished by hand. Sir Archibald Geikie, wrote in 'Founders of Geology', that it is scarcely possible to exaggerate the beauty and accuracy of the representation of the fossils. Such illustrations had never appeared before, and have scarcely been equalled since. They have been drawn mostly after specimens found in various natural history collections, with the names of their owners engraved in lower margin of the plates. Gessner, Schmidel, Walch, Andreae, and d'Anone are probably among the most famous and influential 18th century collectors of shells and fossils mentioned among others on the plates. - Nissen, ZBI 2232. Landwehr, Books with coloured plates 95 (Dutch edition). Zittel 27. DSB VII, 411 ff. Engelmann 596. Ward/Carozzi, Geology emerging 1284.



## The Duchess's Shells



**KNORR, Georg Wolfgang.**

*Delices des yeux et de l'esprit ou collection generale des differentes espèces de coquillages que la mer renferme, communiquée au public. 6 volumes bound in 3. Nuremberg, no imprint (by the author and his heirs) 1760-1765-1768-1770-1771-1773. 6 handcoloured additional engraved and handcoloured title-pages, 190 handcoloured engraved plates of shells by and after G. W. Knorr, J. C. Keller, J. C. Dietzsch, C. N. Kleemann, G. P. Trautner, J. A. Eisenmann, A. Hoffer and others, the majority of them with engraved calligraphic names of owners of natural history cabinets and shell collections in lower part of the plates. 6 letterpress title-pages (included in pagination), 24, (16), 52 pages; 56 pages; 55 pages; 54, (14) pages; 48 pages; 76, 11 (1), 18 pages. Cont. marbled calf in light brown and red with green streaks, flat spine richly gilt with two contrasting green and red gilt morocco labels, covers framed by gilt border. Inner dentelles gilt. All edges gilt. Endpapers covered with blue veined paste papers. Letterpress ownership ticket of M. le. Bon G. de Joigny pasted onto front paste-down of first volume, other volumes with manuscript inked ownership entry on front fly-leaf. 4to (285 x 210 mm). Minor rubbing to covers and extremities.*

EUR 19.000.-



First French edition of a splendid set of this most beautiful book on shells. The plates are handcoloured, bringing out all the exotic beauty in brilliant colors. The last ten plates show the shells in white on dark brown background. Knorr (1705-1761), an artist and naturalist from Nuremberg, is the author of several sumptuous and exquisitely illustrated books on the wonders of natural history, among them one on geology and petrification, and this present work, on corals and shells, and other salt water animals. It required particular care since these objects appear in many striking and diversified colours. Knorr, and the artists who continued his work, employed some of the most accomplished Nuremberg artists to make the illustrations as faithful and perfect as possible, and the result is one of the most exciting and colorful illustrated books of the 18th century. The majority of the shells depicted on the plates are sketched after specimens contained in four German and three Dutch private natural history cabinets and shell collections which are named on the respective plates. Ranking first regarding number of specimens depicted are examples from the collection of August Martin Schadeloock (1707-1774), a theologian from Nuremberg, and an ardent book collector, his library described in two volumes was sold in 1774, who had also built up a natural history cabinet which contained about 4000 specimens of shells, a large collection of minerals and fossils and other cabinet of wonder objects. According to the scholar J. S. Schröter his natural history collection was regarded as one of the most important private collections existing in Germany in 1775. Unfortunately no catalogue of this natural history collection seems to exist. (Grieb, Nürnberger Künstlerlexikon vol. III, 1303. Not mentioned in Wilson, The History of Mineral Collecting 1530-1799). Other examples are from the collection of Philipp Ludwig Stadius Müller (1725-1776), a German zoologist who published among many other works a German translation of Linnaeus' "Naturesystem" and from the collection of Johann Phillip Breyne FRS (1680-1764), a Polish botanist, palaeontologist, zoologist and entomologist. He is best known for his work on the Polish cochineal insect, used in the production of red dye. Proposed by Hans Sloane, he was elected, on 21 April 1703, a Fellow of the Royal Society. He was also a member of the German Academy of Sciences Leopoldina (after 1715) and the Societas Litteraria (after 1720); last but not least a few examples are from the collection of a certain D. J. H. Sommer, a doctor from Nuremberg. Ranking second regarding number of specimens depicted are those from the shell collection of Martinus Houttuyn (1720?-1786), a Dutch naturalist who studied medicine in Leiden and an author of many books on natural history who brought together a large collection of shells which was said to contain numerous rare species. Other examples are from the collections of Joan Coenraad Brandt (1703-1791), an Amsterdam druggist, whose cabinet was famous and naturalists and travellers often came to see it and from the collection of Willem van der Meulen, a wealthy merchant from Amsterdam. (Cf. Dance, Shell collecting pp. 82-85). "In the French edition there are nearly a thousand figures, all extremely well drawn and beautifully painted ... No order is preserved in the figures, however, and the same species is sometimes figured more than once on different plates to show slight variations. The text is simply an amplification of the plates relating chiefly to the appearance of the shells represented" (Dance, Shell

Collecting. An Illustrated History p. 74). According to Dance the plates to volume III in the French edition differ from those in the German edition (Dance p. 318). The six volumes are divided as follows: The first volume contains illustrations by Knorr himself, a few plates signed by him this being the only illustrations by Knorr for this book, and the shells represented not related to any specific collection. Volumes two through four contain illustrations after specimens from the collections of Schadeloock, Breyne, Müller and Sommer including a few from Houttuyn's collection in volume four. Volumes five and six contain illustrations after specimens from the collections of Houttuyn, van der Meulen and Brandt.

“Trotz fehlender Universitätsbildung unterliess Knorr es nicht, die Texte zu seinen Werken selbst zu schreiben. Zwar bemerkte die gelehrte Welt durchaus, dass seine Werke unsystematisch angelegt waren und wissenschaftlich nicht befriedigten. Dennoch erfreuten sich seine schönen und sorgfältig gearbeiteten Kupferstiche grosser Beliebtheit. ... Wie in seinen Petrefakten- und Konchylienwerken griff Knorr auch hier auf Exponate aus Naturaliensammlungen zurück. ... Mit dem Werk wandte er sich nicht so sehr an die Naturgelehrten, sondern eher an ein bürgerliches Liebhaberpublikum, dem er auf dem Weg der graphischen Reproduktion rare Naturalien zugänglich machen wollte, die es selbst nicht erwerben konnte. ... Die meisterhaften Kolorierungen der Kupferstiche in Knorrs Publikationen sind besonders bestechend. ... Die alten Kolorierungen der Werke Knorrs, Seligmanns und Rösels gehören sicherlich zum Besten, was im 18. Jahrhundert auf diesem Gebiet geleistet wurde. Die schier unglaubliche Mühe, die um 1750 in Nürnberg für die Illumination naturgeschichtlicher Kupferstiche aufgewendet wurde, lässt sich nicht nur mit marktorientierten Verkaufsstrategien erklären. Wie in der naturhistorischen Kabinetmalerei waren es in den gedruckten Tafelwerken auch die ästhetischen Ideale der

Physikotheologie, durch die diese hohen Qualitätsmassstäbe gesetzt wurden. Illuminatoren, Stecher, Sammler und Käufer orientierten sich am physikotheologischen Dogma der idealisierenden Mimesis.“ (Heidrun Ludwig, *Nürnberger Naturgeschichtliche Malerei im 17. und 18. Jahrhundert*, pp. 173-174). Cf. Cobres, p. 428, 30 (German edition). Brunet III, 679: "Les figures sont enluminées avec beaucoup de soin"; Nissen, ZBI 2235 and vol. II, p. 151 f. Heidrun Ludwig, *Nürnberger naturgeschichtliche Malerei im 17. und 18. Jahrhundert*, pp. 346-348 (for Knorr).



## Two Rare Works on Pearls and Shells

### HAUF(F), Friedrich Joseph.

*Margaritologie vermisch mit conchyliologischen Beyträgen zur Naturkunde von Baiern.* – München: bey Joseph Lindauer, 1795. 8vo (170 x 100 mm) (8), 127 pp., (1, blank)

(bound with:)

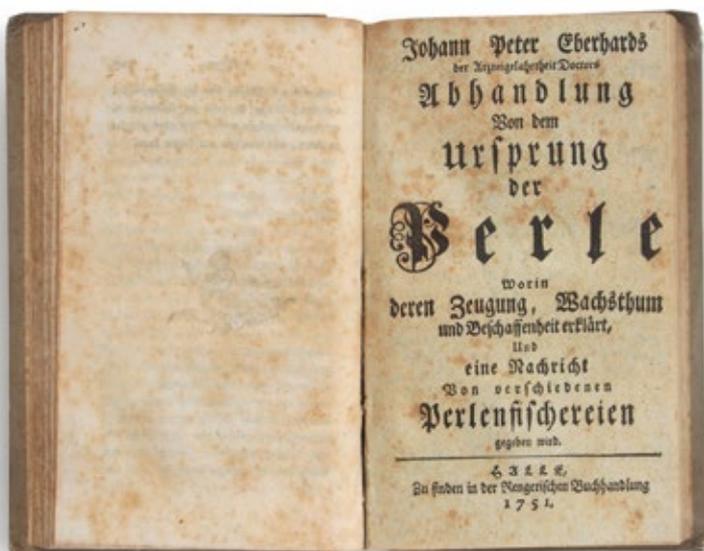
### EBERHARD, Johann Peter.

*Von dem Ursprung der Perle Worin deren Zeugung, Wachstum und Beschaffenheit erklärt und eine Nachricht von verschiedenen Perlenfischereien gegeben wird.* – Halle: zu finden in der Rengerischen Bhdl., 1751. (14), 172 pp., (4) Contemporary plain Paper-card boards with handwritten title on spine, partly spotted, two ownership stamps verso title and deceased stamp. The frontispiece plate to the second work is bound wrongly in front of the first work.

EUR 1.800.-



Two very early works on pearls and their origin, especially freshwater mussels and their pearls. The works reviews previous writings on the problem of pearl genesis, describes anatomy and natural history of the mussel, pearl fisheries around the world, improvement & conservation of mussel resources, speculations on pearl origin, differences among pearls from different mollusk species, uses of pearls, commerce and imitations. On the whole both are surprisingly comprehensive and informative works on pearls. Eberhard was of the opinion that pearls grew around infertile eggs of the host. The German physician Johann Peter Eberhard (1727–1779) became in 1752 a professor of philosophy at the University in Halle, and in 1756 he also became a professor of medicine. Ten years later he was given the chair of mathematics and in 1769 the chair of physics at the University of Halle. Eberhard's Wolffian presentation of physics is given in his *Erste Gründe der Naturlehre* (1753) which was used by Immanuel Kant as the basis for his lectures on physics. Eberhard distinguishes between two methods in physics: (i) the synthetic and a priori method, which derives consequences through correct inferences (richtige Schlüsse) from first principles, and (ii) the analytic and a posteriori method, which derives knowledge on the basis of experience. Physics combines these methods. From observation and experiments we must (analytically and a posteriori) derive laws of nature and then subsequently, synthetically and a priori, derive consequences from the laws of nature. Eberhard also adopted Wolff's method of seeking harmony between reason and experience. He provided deductions of propositions from principles, which he then also corroborated by experiments. – Sinkankas 1844 (Eberhard); Hauf is not in Sinkankas (while most libraries name „Hauf“ with Friedrich J., the Bavarian State Archive name the author as Franz Joseph); Engelmänn 446; Heinsius II, 287; Hessling. *Perlmuscheln* pp. 151: „Cooperator (Kaplan, chaplain) zu Langenmoosen“.



# First Microscopists

## LEDERMÜLLER, Martin Frobenius.

*Amusement microscopique, tant pour l'esprit que pour les yeux. Réponse ... à quelques objections et doutes ... faits par M. le Baron de Gleichen, laquelle servira de supplément aux Amusemens microscopiques. 3 parts and supplement in 2 vols.. - Nuremberg (Nürnberg), Lanoy for Adam Wolfgang Winterschmidt, 1764 - 1768. 4to (270 x 225 mm). With engraved frontispiece and 152 plates, 150 colored by hand. Some light browning and foxing to text, stronger in places. Some water staining to margins of part 3, generally stronger browning to part 3 and supplement. Minor browning to plates, slight foxing in places. Uncut copy with wide margins, bound in old marbled boards, little worn but fine.*

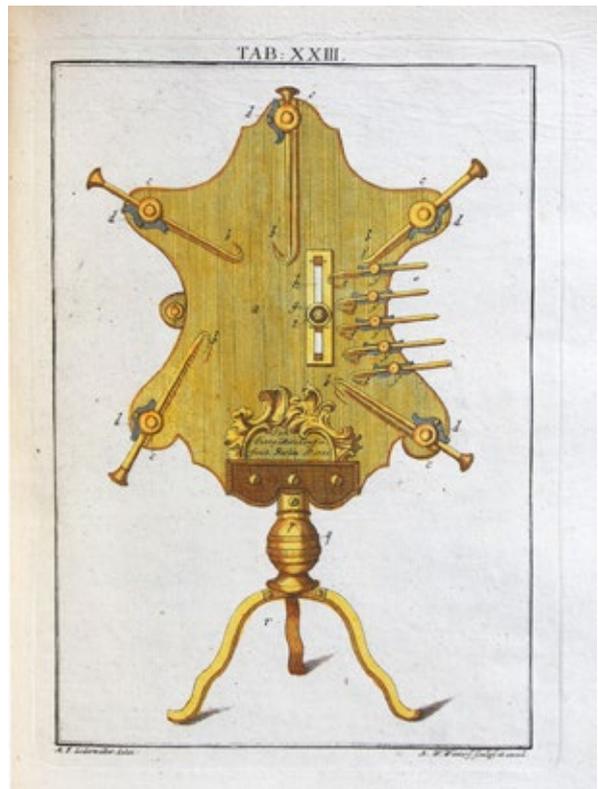
EUR 6.000,-



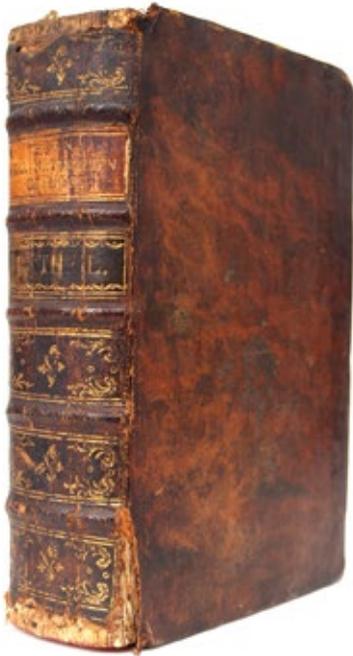
Fine, broad margined, hand-colored copy of the first edition in French of this famous and beautifully illustrated microscopical work. Ledermüller's classic work was first published in 1763 as *Mikroskopische Gemüths- und Augenergötzungen*. Two frontispieces were engraved for the first two parts, but that to the second part seems to have been omitted from most copies as here. There are 50 plates to each part, most showing objects under the microscope. The supplement, which is often missing, includes an addition to the main work which is on the 'mouche de chambre' or house fly, brilliantly portrayed in one of the two plates.

Martin Frobenius Ledermüller (1719–69), a polymath, displayed a discerning interest in the art and science of natural history and especially in the newer science of microscopy, which made it possible to study the characteristics of a great variety of specimens. The fine engravings, made by Winterschmidt from the author's drawings and beautifully hand-colored, depict a wide range of objects under magnification including insects, plants, fungi, minerals, cochineal, mites, hydra, mollusks, etc. Several microscopes and their component parts are also illustrated. - Brunet, III, 918-19. Clay & Court, *The History of the Microscope*, pp. 154, 182, & 183; Horn-Sch. 13093; Nissen, BBI 1156; Stafleu-C. 4288; Hunt 581 Anm.; Roper 56; NLM/Blake p. 261; Wellcome III, 472.





## Famous Shell Collection



### BORN, Ignaz von.

*Ignatii a Born ... Index rerum naturalium Musei Caesarei Vindobonensis. Pars Prima: Testacea. Verzeichniß der natürlichen Seltenheiten des k.k. Naturalien Kabinets zu Wien. Erster Theil Schalthiere. - Vindobonae (Vienna), ex Officina Krausiana. 1778. (colophon: Wien, gedruckt bei Joseph Gerold, kaiserl. Reichshof-raths- und Universitätsbuchdruckern. 1778. 8vo (202 x 135 mm) 21 Bll., 458 pp., 42 Bll. with engraved title within an elaborate engraved border, and three engraved title vignette and one hand colored engraved plate. Contemporary calf, gilt spine in compartments, two morocco lettering pieces, covers and spine rubbed and faded, spine on upper and lower edge defective, red edges, fine floral front paper, front-fly and title stamped, title at lower border little shaved, one leaf with paper flow, else fine. Printed on strong paper.*

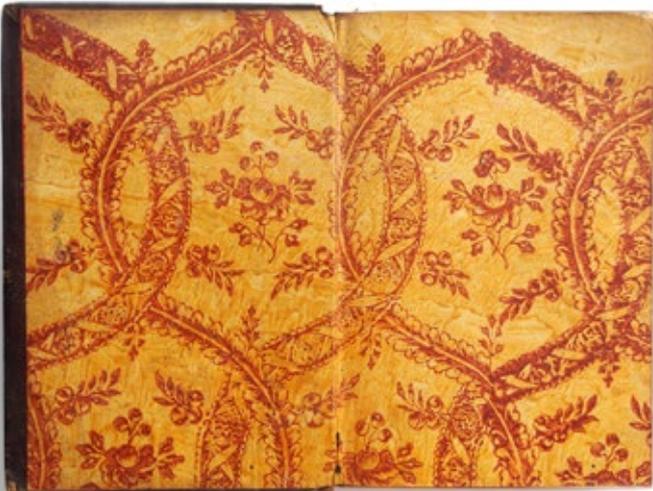
EUR 2.000.-

Rare first catalogue of the shell collection of Emperor Franz Stephan von Lothringen (1708–1765). The introduction is written in latin and german, the description of the specimens also in dutch, french and engl.

In order to establish a Court Natural History Cabinet of its own, separate from other collections ("Physical Cabinet", The Coin and Antique Collection), Emperor Franz Stephan von Lothringen (1708–1765) decides in the middle of the 18th century to buy the world renowned 'museo' of Jean de Baillou (1684 or 1668–1758), who had worked as a director of gardens and mines in Tuscany. The Collection of de Baillou consisted mainly of minerals, which were collected in Italy (some came from famous places all over the world), a large number of selected crystals, Colombian emeralds and fossils (notably ammonites), but also shells, corals and crustaceans. It was one of the most famous and richest European collections of its type. It represented the Emperor's passion for science, modern 'know-how' and his self-confidence at being a personal centre, not for politics, but for special taste. The Emperor spent a lot of money on the collection. Furthermore, he sent naturalists to collect specimens and thus increase the collection. The Collection was the emperors private treasure and was placed near the Library of the Viennese court. De Baillou became managing director for life and after his death was succeeded by his son.

In the first decades no catalogue was made. In order to finally have a written documentation of the collection twenty years after the death of Franz I. Stephan von Lothringen, Graf Orsini-Rosenberg, the Court-Chamberlain, advised the Empress to charge a renowned expert of mining, Ignaz von Born, with cataloguing the imperial collection. Ignaz von Born was from Transylvania, had studied at the Montanistic Academy of Schemnitz and was a councillor for

mining before retreating to his estate in Altdedlitzsch. There he published a book on his own mineral collection, which however, he had to sell to England for financial reasons. He was, what today would be called a scientific manager and was extremely active in founding a private Science Society in Prague. Since the mineralogy part of the natural history collection in Vienna was still missing a reference, that is a connection to the Habsburg territories, Born concentrated on furnishing the collection with pieces characteristic for the Habsburg countries. For this reason he started by cataloguing the shells, the part of the collection that seemed to be complete and which represented the richness of the imperial collection. In 1778 Born published a taxonomic description of the imperial shell collection which contained one plate only, and was swiftly followed two years later by a sumptuous folio volume containing colored figures of many of them. The collection is of great importance to systematists as Born described from it a number of species new to science. (Dance, 66). But Born also pointed out the low standard of the natural history collection and the scientific necessity of a rich mineral collection (in which he was interested). As far as mineralogy was concerned, Born really followed new paths, the paths of bureaucracy. All local mining authorities in the Habsburg countries were ordered by the mining authority in Vienna to send in samples of all „newly-found ores". Due to this new strategy the collection was transformed into a documentation site, in which series of minerals from many different areas of the Habsburg Monarchy were kept. While it used to be the Emperor, whose joy it was to own precious stones and items, who was the centre of the collection, it was now the natural history collection which, as far as minerals are concerned, was becoming a medium of the consciousness of the montanistic richness of the various Habsburg countries. In 1780 the collection, now filling two rooms in the Augustinersaal of the Hofburg Court, was completely new organized. - Provenance: F.v.Z. (stamp; astronomer Franz Xaver von Zach, 1754–1832); k.k. Naturalien - Cabinets Bibliothek (stamp); Richard I. Johnson. DSB II, 315/16; Pogg. I, 242/43; ADB III, 164; not in Sinkankas



## Early Bird



### SOEMMERRING, Samuel Thomas.

Über einen Ornithocephalus, oder über das unbekannte Thier der Vorwelt, dessen fossiles Gerippe C. Collini im 5ten Bande der Actorum Academiae Theodoro-Palatinae nebst einer Abbildung in natürlicher Grösse im Jahre 1784 beschrieb, und welches Gerippe sich gegenwärtig in der Naturalien-Sammlung der königlichen Akademie der Wissenschaften zu München befindet. (= Denkschriften der Königl. Akademie der Wissenschaften zu München für die Jahre 1811 u. 1812). - München: auf Kosten der Akademie, 1812. Quarto (270 x 210 mm) 3 ff., 89-158 pp. with three (one fold.) plates (numb. V-VII) by Christ. Koeck pinx. New half calf period style, gilt spine in compartments, nice clean copy on better paper, uncut, sporadic foxing.

EUR 1.400.-

First edition, Journal issue, of Soemmerring's most important study of the famous natural history specimen from Mannheim: the flying Dino - Pterodactylus antiquus („antique wing finger“).

„Sometime during the 18th Century, the first Pterodactylus specimen was uncovered from the lithographic limestone near Eichstätt, today a part of Bavaria, but at the time a semi-independent state of the Holy Roman Empire. The fossil, a complete skeleton crushed flat, came into the possession of the Count Johann Friederich Ferdinand of Pappenheim, who donated it to the nature cabinet of Elector Carl Theodor in Mannheim.

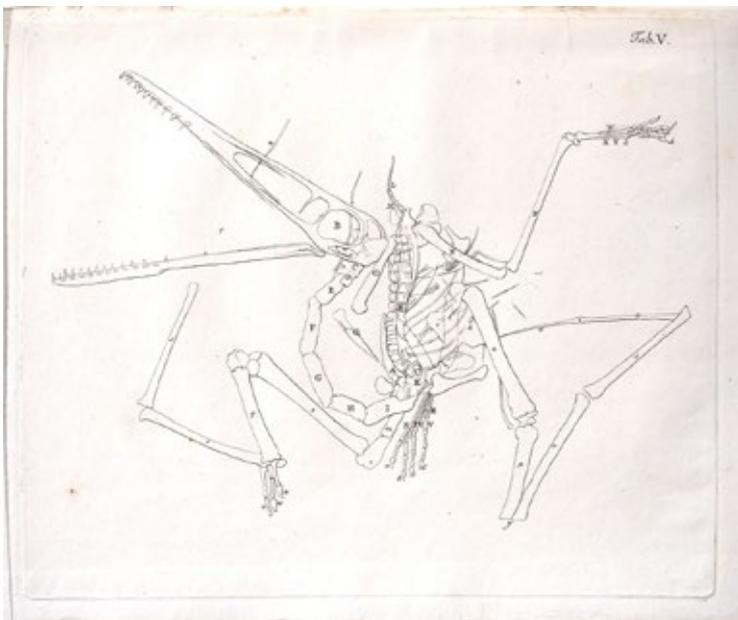
Carl Theodor's nature cabinet was curated by a Florentine scholar named Cosimo Collini, one-time secretary and friend of Voltaire. Collini took an interest in the strange fossil when he began his tenure at Mannheim in 1757, and published a description of it in 1784. The fossil animal was like nothing seen before - a bird-like head and neck, a small, mammal-like body and tail, long, reptilian claws and teeth and, most curiously, one incredibly long finger on each hand. Collini was at a loss, totally unable to identify even its class.

Unable to sort out the fossils chimerical nature and identify its known modern forms, Collini speculated that such a bizarre animals must exist in the mysterious depths of the sea to have avoided scientific notice for so long. He did note that in some ways it was bird-like, and in some ways appeared bat-like, but rightly concluded it was not a close relative of either. The German-French scientist Johann Hermann became aware of the fossil sometime after Collini published his description. In 1800, Hermann was concerned because Napoleon Bonaparte's occupying

army was confiscating any interesting or culturally significant German artifacts they came across. Hermann figured that the fossil would likely be taken from the Mannheim palace nature cabinet, and sent to French scientists for study. Hermann wrote a letter to the top French scientist of the day, expert anatomist Georges Cuvier, letting him know that the strangest fossil he'd ever seen was likely coming his way.

Hermann became the great-grandfather of all pterosaur-related paleontology by providing the first ever life illustration of the small creature. He decided that the long fingers supported a wing membrane, and that the creature was a long-snouted bat-like mammal. Furthermore, he pointed out that some stories coming out of China indicated that similar creatures might still be alive in the jungle there. Cuvier replied that the China bit was total nonsense, but was intrigued by Hermann's diagrams. He agreed the finger probably formed a wing, though he disagreed on Hermann's classification, believing it to be a reptile rather than a mammal. Cuvier eagerly awaited the opportunity to study it. He was waiting a while. Napoleon had not actually raided the nature cabinet. Elector Carl Theodor had died in February of 1799, and in 1802, his entire natural history collection was brought to Munich, much to the dismay of Cosimo Collini, who felt a personal connection and obligation to its care.

Once in Munich, the Baron Johann von Moll managed to convince the French to grant the Bavarian collections a exemption from being confiscated. By the time Cuvier learned of the fossils whereabouts and wrote to von Moll asking to study the fossil, von Moll replied that the fossil was missing. This didn't deter Cuvier, who published his own description in 1809 based on the previous reports from Collini and Hermann. Without ever having seen the specimen, he gave it a name: Petro-Dactyle, literally 'stone finger.' In a later reprint, Cuvier made it seem like this was a spelling error, and emended the name to Ptero-Dactyle, 'wing finger.' The saga of the perpetually absent fossil continued. Moll could not find it in his collection because other scientists had already checked it out for personal study: first Johann Friedrich Blumenbach, who decided it was a type of shorebird in 1807. Blumenbach is also notable as one of the first scientists to ever study a similar perplexing chimera of an animal, the platypus. Next, Samuel von Sömmerring studied the fossil in depth, concluding with a lecture on December 27, 1810. Shortly thereafter, he wrote to Cuvier apologizing for the situation, claiming that he had only just been told of Cuvier's request for information. Nevertheless, he published the contents of his lecture in 1812, and took the opportunity to give it his own name, Ornithocephalus antiquus. Sömmerring disagreed vehemently with Cuvier regarding the identity of the fossil, arguing that it was a link between birds and bats, not a reptile (though a link in 'affinity' rather than the modern evolutionary concept of relatedness between animal types). Sömmerring notoriously misidentified several portions of the Pterodactylus skeleton, especially in a restoration of a second specimen that he described in 1817 as a new species (but now recognized as a juvenile or 'flapling'). It wasn't until the 1860s that general consensus was reached and Cuvier's view won out: pterodactyls were reptiles, until then, several other theories were proposed including that it was a big-eared, bat-like marsupial or even an amphibian, with flippers instead of wings.“ (Matt Martyniuk)





Christ. Koock pinx.

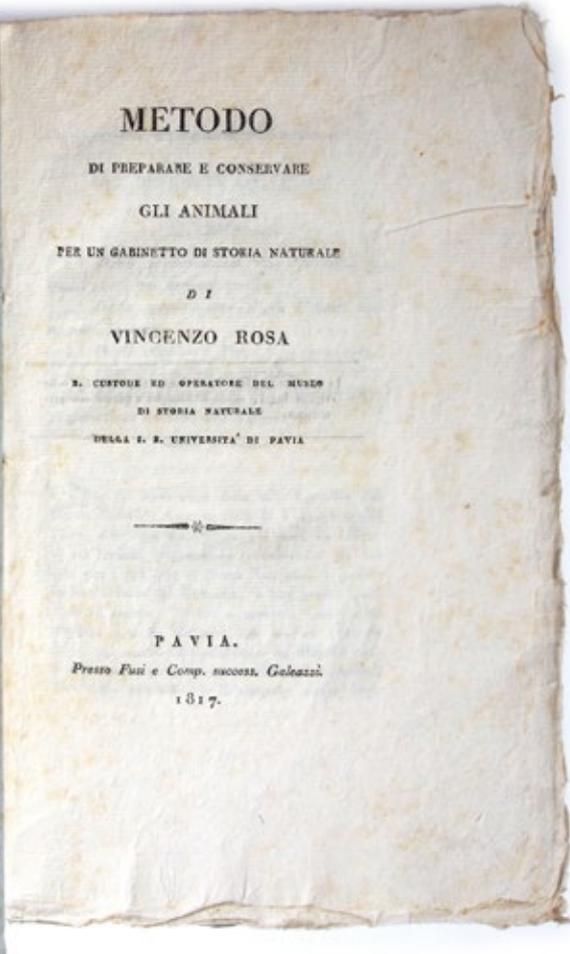
J. A. Manz sculp.

# Preserving Nature

## ROSA, Vincenzo.

*Metodo di preparare e conservare gli animali per un Gabinetto di Storia Naturale di .... - Pavia: presso Fusi e Comp., success. Galeazzi, 1817. 8° (230 x 154 mm) 76 pp. Plain blue wrappers, used and with stockings, inside clean, fresh & uncut copy. Fine.*

EUR 1.000.-



Very rare work on the taxidermy of mammals (paragraph 7-51), birds (52-109), amphibians and fishes (129-139), and general questions of preserving natural history objects written by the director of the Natural History Museum of the University of Pavia; founded in 1775, it was one of the oldest museums of natural history in Europe.

The museum was founded as part of the renovation projects by the empress Maria Theresia of Austria for the University of Pavia in 1771. It was set up by Lazzaro Spallanzani, a professor of Natural History in the university. The museum received its first collection by donation of the empress Maria Theresia: a collection of minerals from Vienna.

In 1778 a new wing for comparative anatomy was added to the existing sections of mineralogy, containing also instruments that had belonged to the surgeon Antonio Scarpa. In 1780, the museum housed over 24,000 specimens which came from all over the world.

In 1772, Jean-Baptiste Chevalier, last French governor of Chandannagar decided to gift an elephant to King Louis XV. The elephant was a two-year old Indian elephant. Ten months later, the elephant landed in Britain. It made a long journey on foot, under the watchful eyes of curious crowds, all the way to Versailles. There, it remained at the Court

of the King as an animal attraction for the guest of the palace and naturalists, among them, Petrus Camper, a Dutch anatomist who eventually published a volume on the natural history of elephants (Camper, 1803). The elephant died sometime in the night between 24th and 25 September 1782, after falling into the waters of a canal in the park. The body was taken to the Jardin du Roi in Paris and dissected by Edme-Louis Daubenton. In 1804, Napoleon Bonaparte donated the elephant skin to the Natural History Museum of Pavia, along with other zoological specimens. The curator of Vincenzo Rosa Museum took care of the creation of the specimen and mounted it in 1812.

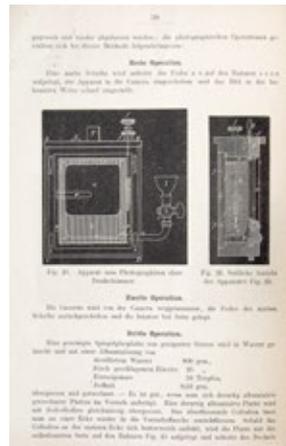
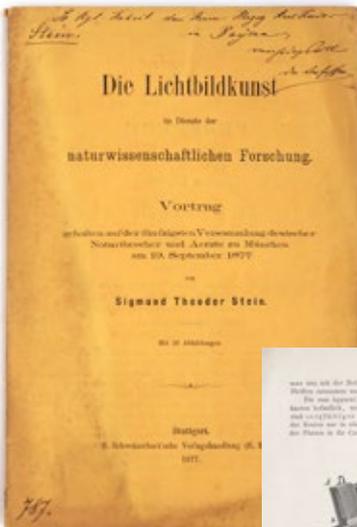
Rosa is also known for his globe which was presented in Pavia in 1793. Written and drawn by hand, Antonio Scarpa wrote in 1798 in a letter about the importance of the globe: „The three geographical globes built by the citizen Vincenzo Rosa, one of which is placed in this Library [...] provoke the admiration of everyone in the field, as for the ordinary greatness of these globes, the accuracy that marks each one of them until the most minute geographical thing together with the most recent discoveries. It is known to all employees of this university that the citizen Rosa [...] is by nature very diligent and very patient.“

# Art of Light

## STEIN, Sigmund Theodor.

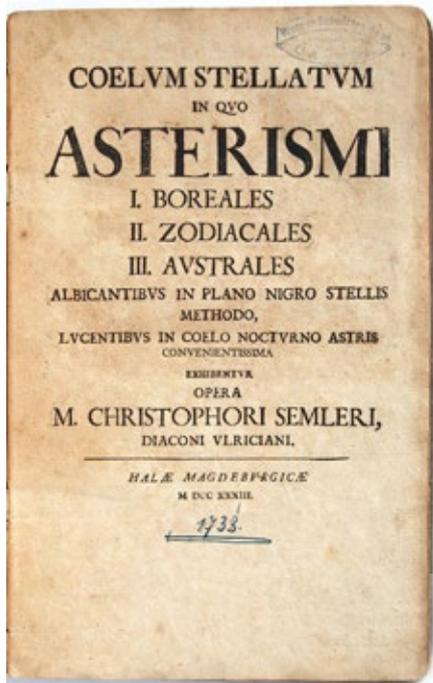
*Die Lichtbildkunst im Dienste der naturwissenschaftlichen Forschung. Vortrag gehalten auf der Versammlung... München am 10. September 1877. - Stuttgart: E. Schweizerbart, 1877. 8° (224 x 150 mm) (4), 46 pp. with 32 text illustrations. Original Wrappers with handwritten dedication by the author to Carl Theodor von Bayern.*

EUR 300.-



Rare lecture on the use of photography in medicine and science by the Jewish medical writer & physicist Sigmund Theodor Stein (1840-1891) who had studied chemistry and physics in Heidelberg and Munich and medicine in Erlangen, Würzburg, Prague and Berlin. After his promotion in 1864 he began practicing as a medical doctor in Frankfurt, because, as the son of a rabbi and a professing Jew he was not allowed to begin an academic career. In 1881 he founded the Electrotechnical Society in Frankfurt a. M. - KVK: outside Germany rare; COPAC: only BL London; OCLC: Harvard Ernst Mayr, Case Western, NY Public. Others have only a Microfiches edition, but: „original in poor condition; some text missing on page edges.“

# Firmament



## SEMLER, Christoph.

*Coelum stellatum in quo asterismi I. Boreales, II. Zodiacales, III. Australes albicantibus in plano nigro stellis methodo, lucentibus in coelo nocturno astris convenientissima exhibentur. Halle, [for the author], 1731. 8vo (210 x 132 mm), ff. [1, title], and 35 plates with 36 white-on-black illustrations; a few spots, but a fine copy in contemporary plain paper card boards; the binding a little stained; covers a little warped, rubbed and soiled. Nearly uncut.*

EUR 4.000.-

First edition, very rare, of this charming work with white-on-black illustrations of the signs of the Zodiac and constellations of the Northern and Southern hemispheres: „[Semler] derived his constellations and star positions from the Hevelius atlas“ (William Ashworth, *Out of this World*).

Christoph Semler (1669–1740) was a Protestant clergyman living in Halle who had a great interest in astronomy, mathematics, and mechanics. The teacher, astronomer and model and instrument maker was an influential figure who participated in the educational reform efforts that swept through Halle beginning in the 1690's with his ‚Mathematical and Mechanical Realschule‘ which was founded in 1707. Semler as a student of Weigel strategically aligned his plans with those of the Berlin Academy of Sciences and others interested in making learning like play. He taught at the Realschule „useful sciences“ to children using naturalia and instruments. As one of his pupils remembers: „In his house was also a mechanical fabrique. He worked on building earthly and celestial globes and we children helped him with this. He instilled in us, playfully, a love of mathematics this way.“

In 1731 he published an atlas entitled: *Coelum stellatum*, which consisted of 35 maps, each with one or more constellation figures. The maps varied in size up to 10 x 13 cm, and the images were geocentric. The stars and constellations were printed in white against a black background to give a sense of seeing the stellar patterns in the night sky: „According to the Linda Hall Library celestial catalog (Ashworth 1997) each of Semler’s plates was printed from a woodblock and was meant only to outline the constellations and pinpoint the stars; there was essentially no coordinate system. But, reminiscent of Piccolomini, the direction to celestial north was indicated by an arrow appearing on each plate. Semler derived all of his constellations and star positions from Hevelius’ *Firmamentum Sobiescianum*, although his images were not externally oriented.“ (Nick Kanas, *Star Maps: History, Artistry and Cartography* p. 171, no. 6.3.4.6).- Provenance: W. Schultzenstein, Karlsruhe (stamp; 19th cent.); Jandt (handwriting; early 19th cent.) *Out of this World* no. 25; not in Houzeau and Lancaster; see Warner 238 for the edition of 1733; outside Germany OCLC locates copies at Linda Hall and Adler Planetarium only.



## Scientists didn't believe in the Cosmic Origin of Meteorites until 1803

In the early afternoon of 26 April 1803 a meteorite shower of more than 3000 fragments fell upon the town of L'Aigle in the Normandy, 140 km at the Northwest of Paris.

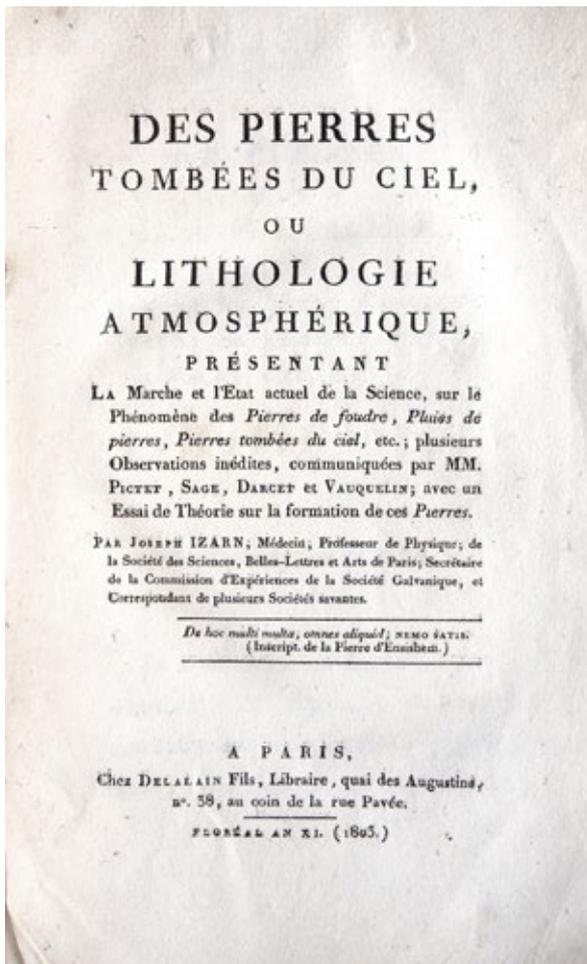
Upon hearing of this event the Secretary of the French Academy of Sciences, Chaptal, sent the young scientist Jean-Baptiste Biot to investigate that spectacular fall of stones.

At the time of the L'Aigle fall, the mere existence of meteorites was harshly debated. The German physicist Ernst F. Chladni's book on iron-masses had been published in 1794, but his ideas of the extraterrestrial origin of meteorites had not yet convinced the savants of the time. Biot himself defended the theory of a lunar volcanic origin for meteorites. This might be the reason why Chaptal, a scientist himself, sent Biot to L'Aigle when rumors started to fill Paris with stupor and astonishment. Biot did not start his enquiry at L'Aigle, but in the nearby town of Alençon to check on the local mineralogy and human artefacts. Traveling between Alençon and L'Aigle, he questioned travellers and coachmen about the meteor

seen the same day the stones fell. Once in L'Aigle, he questioned clergymen as well as laymen on the apparition of stones, and on the meteor.

Summarizing his observations, Biot distinguished two kinds of evidence of an extraterrestrial origin of the stones. Physical evidence included the absence of any stone or human artifact in the area similar to the fallen stones, the sudden appearance of a large number of identical stones similar to previous meteorites such as the Barbotan stone. Moral evidence included the number of witnesses who saw "a rain of stones thrown by the meteor" as well as their diversity in term of profession, interests and social status. Together, these lines of evidence pointed toward the fact that extraterrestrial stones fell around L'Aigle, July 26th 1803.

Biot's passionate paper describing how these stones must undoubtedly be of extraterrestrial origin effectively gave birth to the science of meteoritics. The L'Aigle event was a milestone in the understanding of meteorites and their origins because at that time the mere existence of meteorites was harshly debated.



### IZARN, Joseph.

*Des Pierres tombées du Ciel, ou Lithologie Atmosphérique, présentant la Marche et l'Etat actuel de la Science, sur le Phénomène des Pierres de foudre, Pluies de pierres, Pierres tombées du ciel, etc.; plusieurs Observations inédites, communiquées par MM. Pictet, Sage, Darcet et Vauquelin; avec un Essai de Théorie sur la formation de ces Pierres. Par Joseph Izarn, Médecin; Professeur de Physique; ... A Paris, chez Delalain Fils, Libraire, quai des Augustins, no. 38, au coin de la rue Pavée, Floréal an XI (1803.) 8vo (198 x 118 mm) VIII, 421 pp., [1] with one folding table. Uncut copy in plain wrappers, binding weak but holding. Verso front-title with authors dedication: à Monsieur Mazurie par l'auteur.*

EUR 2.400.-

Very scarce work on the origin of meteors published shortly after the meteorite shower at L'Aigle in April 1803, paralleling the work of Biot. The title reads: Stones fallen from the sky, or atmospheric lithology, presenting the advance of science on the phenomena of lightning stones, showers of stones, stones fallen from the sky, etc. with many unedited observations communicated by ... with an essay on the theory of the formation of these stones.

The author, a medical doctor and physicist, collected here works on meteorites, which theorized that they were formed in the upper atmosphere of the earth. The first section compiled reports and opinions on falling bodies that had been published in France between 1700 and 1803, including extracts of articles from foreign journals. This brought the whole story together in the earliest history of the beginnings of meteoritics. Part two was a critical examination of current opinions on the reality of the fall of stones from the atmosphere. Izarn compiled a table listing all of the falls of matter for which he could find references: there were 34 of them. Part three is devoted to his theory claiming that meteors were formed in the atmosphere. Like

**OBSERVATIONS  
ANCIENNES ET MODERNES,  
De la Chûte de diverses Substances solides sur la surface de la Terre.**

SUBSTANCES QU'ON A VUES ÊTRE TOMBÉES	LIEUX OÙ ON LES A VUES TOMBER	ÉPOQUES DE LEURS CHUTES	TÉMOINS OU SARRATEURS DU PRÉSENTÉRE	Pages et Paragraphes	
				À la fin de la notice	de
Pierre de pierre	à Rome	en 1784	Tin-Lin	15	15
Pierre de pierre	à Rome	en 1784	John Gougenon	16	16
Pierre de fer	à Rome	en 1784	Pois	17	17
Pierre de fer	à Rome	en 1784	Deux	18	18
Pierre de fer	à Rome	en 1784	Deux	19	19
Pierre de fer	à Rome	en 1784	Deux	20	20
Pierre de fer	à Rome	en 1784	Deux	21	21
Pierre de fer	à Rome	en 1784	Deux	22	22
Pierre de fer	à Rome	en 1784	Deux	23	23
Pierre de fer	à Rome	en 1784	Deux	24	24
Pierre de fer	à Rome	en 1784	Deux	25	25
Pierre de fer	à Rome	en 1784	Deux	26	26
Pierre de fer	à Rome	en 1784	Deux	27	27
Pierre de fer	à Rome	en 1784	Deux	28	28
Pierre de fer	à Rome	en 1784	Deux	29	29
Pierre de fer	à Rome	en 1784	Deux	30	30
Pierre de fer	à Rome	en 1784	Deux	31	31
Pierre de fer	à Rome	en 1784	Deux	32	32
Pierre de fer	à Rome	en 1784	Deux	33	33
Pierre de fer	à Rome	en 1784	Deux	34	34
Pierre de fer	à Rome	en 1784	Deux	35	35
Pierre de fer	à Rome	en 1784	Deux	36	36
Pierre de fer	à Rome	en 1784	Deux	37	37
Pierre de fer	à Rome	en 1784	Deux	38	38
Pierre de fer	à Rome	en 1784	Deux	39	39
Pierre de fer	à Rome	en 1784	Deux	40	40
Pierre de fer	à Rome	en 1784	Deux	41	41
Pierre de fer	à Rome	en 1784	Deux	42	42
Pierre de fer	à Rome	en 1784	Deux	43	43
Pierre de fer	à Rome	en 1784	Deux	44	44
Pierre de fer	à Rome	en 1784	Deux	45	45
Pierre de fer	à Rome	en 1784	Deux	46	46
Pierre de fer	à Rome	en 1784	Deux	47	47
Pierre de fer	à Rome	en 1784	Deux	48	48
Pierre de fer	à Rome	en 1784	Deux	49	49
Pierre de fer	à Rome	en 1784	Deux	50	50
Pierre de fer	à Rome	en 1784	Deux	51	51
Pierre de fer	à Rome	en 1784	Deux	52	52
Pierre de fer	à Rome	en 1784	Deux	53	53
Pierre de fer	à Rome	en 1784	Deux	54	54
Pierre de fer	à Rome	en 1784	Deux	55	55
Pierre de fer	à Rome	en 1784	Deux	56	56
Pierre de fer	à Rome	en 1784	Deux	57	57
Pierre de fer	à Rome	en 1784	Deux	58	58
Pierre de fer	à Rome	en 1784	Deux	59	59
Pierre de fer	à Rome	en 1784	Deux	60	60
Pierre de fer	à Rome	en 1784	Deux	61	61
Pierre de fer	à Rome	en 1784	Deux	62	62
Pierre de fer	à Rome	en 1784	Deux	63	63
Pierre de fer	à Rome	en 1784	Deux	64	64
Pierre de fer	à Rome	en 1784	Deux	65	65
Pierre de fer	à Rome	en 1784	Deux	66	66
Pierre de fer	à Rome	en 1784	Deux	67	67
Pierre de fer	à Rome	en 1784	Deux	68	68
Pierre de fer	à Rome	en 1784	Deux	69	69
Pierre de fer	à Rome	en 1784	Deux	70	70
Pierre de fer	à Rome	en 1784	Deux	71	71
Pierre de fer	à Rome	en 1784	Deux	72	72
Pierre de fer	à Rome	en 1784	Deux	73	73
Pierre de fer	à Rome	en 1784	Deux	74	74
Pierre de fer	à Rome	en 1784	Deux	75	75

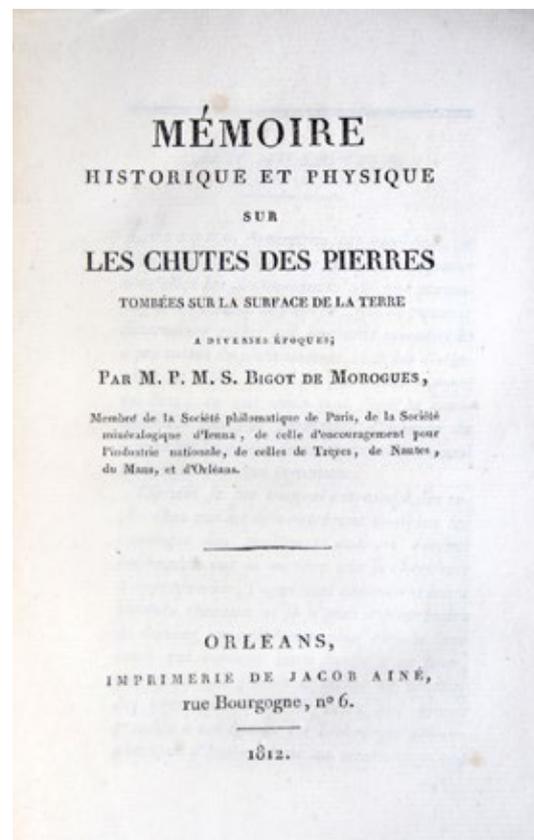
**T A B L E A U  
DES PRINCIPALES OPINIONS  
Émises jusqu'à ce jour, sur les Substances solides tombées sur notre Globe.**

NOMS DES PHYSIENS QUI LES ONT REGARDÉES COMME

DES PRODUITS ARRIVÉS DE LA TERRE PAR LES VOLCANES OU LES Océans.	DES SUBSTANCES MINÉRALES POUSSES PAR LA NATURE, à l'extérieur ou sous les écorces.	DES CONCRÉTIONS FORMÉES DANS L'ATMOSPHÈRE.	DES MASSES ÉTRANGÈRES À NOTRE PLANÈTE.
Tréves . . . . . 15 et 16	Lemery . . . . . 3	Descartes . . . . . 74	Chabot . . . . . 115
Cassendi . . . . . 16	Les Académiciens . . . . . 61	Lezzer . . . . . 75	Bosc . . . . . 116
Muschelbroeck . . . . . 5 (et 17)	Agriada . . . . . 55	Guyon-d'Arret . . . . . 91	Poisson . . . . . 118
Burhold . . . . . 58	Schal . . . . . 77	Sir Williams Hamilton . . . . . 92	Bibliothèque Britannique, n° 171
G. A. Deluc . . . . . 117	Goussier . . . . . 79	Edward King . . . . . 100	
	Paris . . . . . 118	Enache Salverte . . . . . 101	

many other he accepted Lavoisier's assertion of 1789 that solid bodies may coagulate within the upper atmosphere. With some exceptions, Izarn received mostly friendly reviews and in all countries of Europe, a sizeable number of publications favored an atmospheric origin of meteors following the ideas of Izarn. The idea of atmospheric origin finally was abandoned in the 1860s.

The French physician Joseph Izarn (1766–1835) was a doctor in the French army; professor of physic, then General-inspector of the Universities of France until 1815.- Pogg. I, col. 1174; Burke, Cosmic Debris, 59; U. B. Marvin. Ernst Florens Friedrich Chladni (1756–1827) and the origins of modern meteorite research; in: Meteoritics & Planetary Science, Vol. 31 (1996), pp. 545-588 (spez. 572)



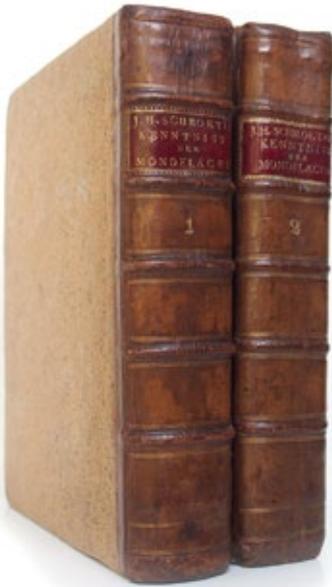
**BIGOT de MOROGUES, Pierre M. S.**

*Mémoire historique et physique sur les chutes des pierres tombées sur la surface de la terre, A diverses époques. - Orléans, imp. de Jacob aîné, 1812. 8vo (mm) IV, 361 pp. Uncut copy in plain blue wrappers. Little spotted but fine original condition as it would have been send to the binder.*

EUR 2.400.-

Rare first edition of the finest history of meteorite controversy. Pierre M. S. Bigot de Morogues (1776–1840) started his career as a mineralogist and later turned gentleman farmer. In 1812 he published a 361-page book which qualifies as the first history of meteoritics. In his preface, Bigot acknowledged the excellent writings of Izarn and Chladni and articles in French journals as his main sources. He also informed his readers that he had no new theory of his own to offer, he felt that those of Laplace and Lagrange were the only ones to accord with all findings. His book is a clearly written compendium of information on falls and finds, mineralogy, chemical analyses, and hypotheses of origin up to 1812. Some critics complained that it was derivative of Izarn, and indeed it was to some extent. But Izarn finished writing his book just before the fall at L'Aigle, and there were only so many original sources to consult up to that date. Bigot carried the story up through the first fall of a chondrite at Charsonville, France in 1810. Westrum (1978) justifiably calls this book the best overview of the meteorite controversy. Grandson of Viscount Sébastien Bigot de Morogues (1705–1781), founder and first director of the Royal Marine Academy, Bigot de Morogues was first destined for the navy and studied science at the military school in Vannes until the suppression of this college due to the French Revolution. In 1794 he entered the École des Mines de Paris, where he first studied chemistry and mineralogy under Vauquelin and Haüy. He completed his training by excavating the soil of Brittany, Jura, Vosges, Switzerland and Savoy. He published numerous dissertations on mineralogy, geology, as well as on various points of constitutional law and political economy.- Ward & Carozzi 215; Coquelin & Guillaumin pp.177; Quéard fr. litt. I, 331.

# Mapping of the Moon



## SCHROETER, Johann Hieronymus.

*Selenotopographische Fragmente zur genaueren Kenntniss der Mondfläche, ihrer erlittenen Veränderungen und Atmosphäre, sammt den dazu gehörigen Specialcharten und Zeichnungen. Lilienthal, for the author, 1791-1802. Two vols., 4to, pp. [18], xx, 676, [1]; [8], xxii, 565, [1], with engraved title vignettes to both volumes, and 75 engraved plates, five folding; a very few leaves with the odd spot; contemporary half calf over speckled board, red leather labels.*

EUR 22.000.-

A superb copy, crisp, clean, entirely uncut, and complete with the very rare second volume, of Schroeter's famous work, 'the foundation of modern selenography' (Brown).

'Schröter studied law at Göttingen but also attended lectures in mathematics, physics, and astronomy, the last under Kästner ... Through his appreciation of music he met the Herschel family, who revived his interest in astronomy. In 1781 he became chief magistrate at Lilienthal, a post that left him free time to devote to astronomy. With the aid of the optician J.G. Schrader he built and equipped an observatory that subsequently became world-famous for the excellence of the instruments. Some were made in his own workshop; others he bought from Herschel, the latter including a reflector with a twenty-seven-foot focal length, the largest on the Continent. George III of England enabled Schröter to continue his astronomical work by buying all of his instruments, with the stipulation that they remain in Schröter's possession until his death, when they would become the property of the University of Göttingen. Schröter was also awarded a grant to hire an assistant. K.L. Harding and, later, F.W. Bessel were among those who held the post.

'For thirty years the observatory at Lilienthal was a center of astronomical research and was visited by foreign astronomers. On 21 September 1800 it was the site of the congress organized to search the space between Mars and Jupiter for a planetary body. Lilienthal was occupied during the Napoleonic Wars by the French, who looted and partly destroyed the observatory, although most of the instruments were saved. In the ensuing fire Schröter lost all copies of his own works, which he had published himself ... 'Schröter

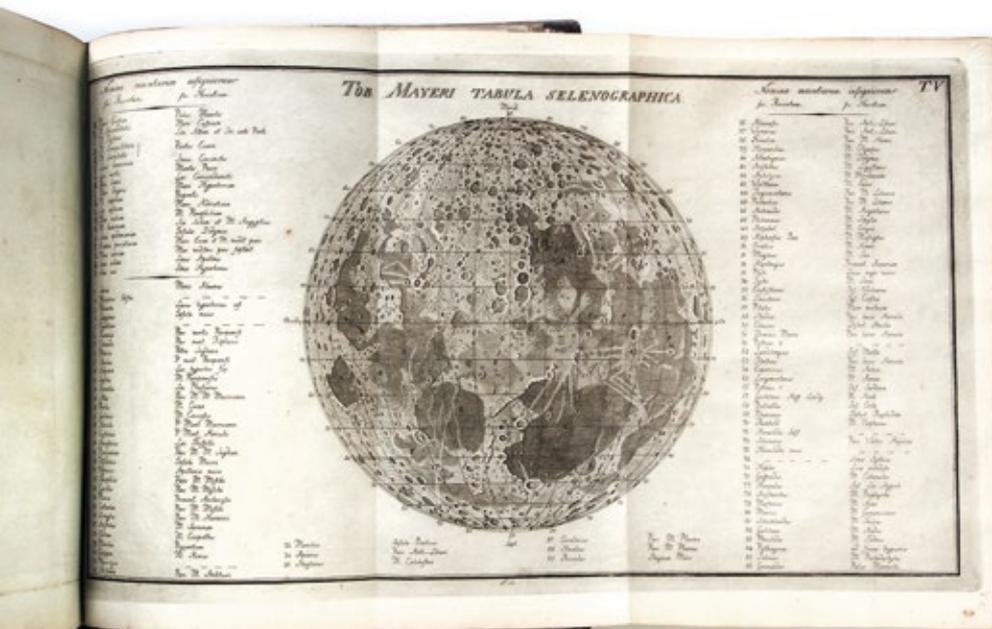
was the first to observe the surface of the moon and the planets systematically over a long period. He made hundreds of drawings of lunar mountains and other features, and discovered and named the lunar rills' (DSB).

'The face of the moon is not only furrowed with craters, valleys, and seas, but it is laced with narrow clefts, or rills, and the honor of discovering the first lunar rills lies squarely in the lap of Johann Schröter. ... His Fragments of Lunar Topography contains the results of a dozen years of observing; it has a large re-engraving of the Mayer moon map, and more importantly, dozens of engraved views of particular features of the lunar landscape. Especially noteworthy in Schröter's lunar studies was his practice of studying the same feature under different angles of illumination, by which he was able to get a much better idea of actual lunar topography. He even calculated altitudes of many lunar mountains' (Linda Hall exhibition catalogue).

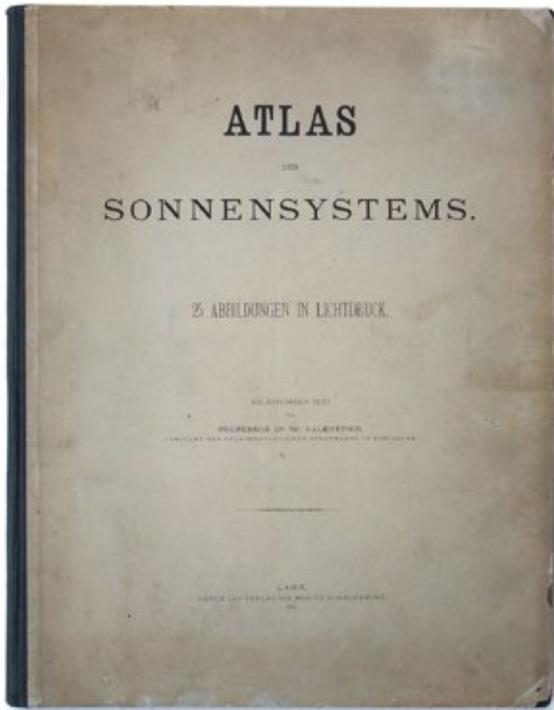
Whilst most copies of Schröter's work were destroyed in 1813 during the occupation of Lilienthal by the French, the second volume, published closer to the event than the first, is of the greatest rarity.

Complete with all the plates, the copy offered here is further enhanced through the addition at the time of binding of three folding plates by Bode, including a large chart illustrating the parabolic paths of 72 comets, and a fine stereographic celestial map, measuring 76.5 x 76.5 cm and 67.5 x 66 cm respectively (these with short tears to folds and lightly offset). The large, apparently separately printed maps by Bode are of similar rarity, with the chart of cometary paths recorded at the Staatsbibliothek zu Berlin, and Technische Universität Bergakademie Freiberg only, and - whilst a number of different examples of the stereographic celestial chart are recorded in German libraries - the only copy recorded as engraved by the Berlin engraver 'C.C. Glassbach', as here, is at the Burndy Library (giving a date of 1787, whereas the present is undated).

The Face of the Moon 14 (vol. I only); see Ewen Whitaker, Mapping and Naming the Moon, pp. 89-109, and Sheehan and Dobbins, Epic Moon, chapter 6 'A compulsion to observe', pp. 59-73; for Bode's celestial chart, see Warner, The Sky explored p. 37.



# Plagiarism of Nasmyth's Moon Atlas



**VALENTINER, [Karl] W[ilhelm] [Friedrich Johannes].**

*Atlas des Sonnensystems. 25 Abbildungen in Lichtdruck. – Lehr: Druck und Verlag von Moritz Schauenberg 1884. (= Grimm's Atlas des Sonnensystems) Folio [440 x 336 mm] [2], 19 pp., [1] with 25 helio-gravures resp. photogravures partly after photographs by Julius Grimm. Original Publ. half cloth with printed title on covers, rubbed and soiled, else a fine copy. Ex Libris on inner front cover.*

EUR 2.800.-

Rare astronomical atlas using photographic techniques and drawings to show the moon and its surface made in collaboration with the astronomer Karl Valentiner (1845–1931), who led in 1874 a successful German solar eclipse expedition to Tschifu (China), and the scientific photographer and court photographer Julius Grimm (1842–1906).

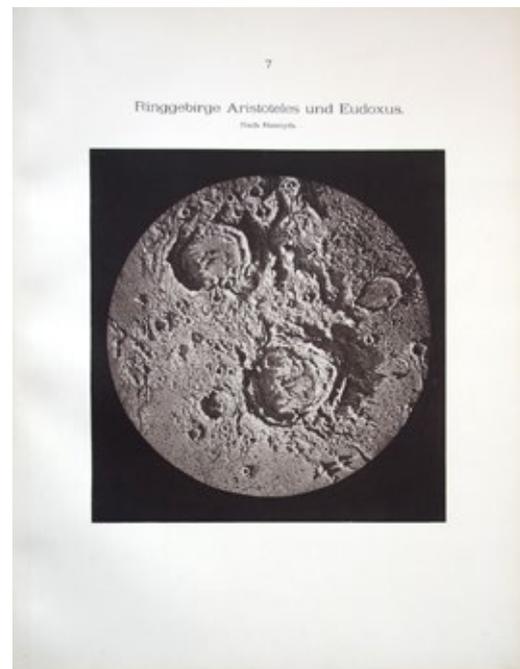
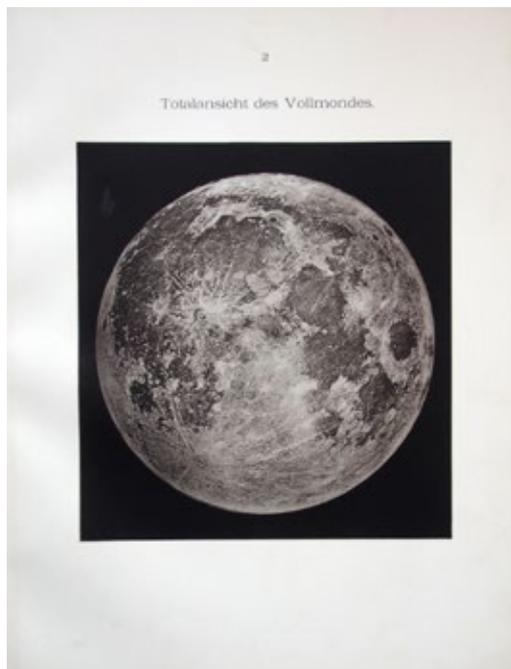
In 1874 James Nasmyth and James Carpenter had published one of the earliest, most influential, and still-startling collections of lunar imagery – *The Moon: Considered as a Planet, a World, and a Satellite*. With three decades of “assiduous observation” behind them, British scientists not only summed up lunar knowledge to date, but cleverly exploited photography’s descriptive powers to work around the medium’s late nineteenth century technical limitations. While highly detailed close-ups of the moon’s surface were yet to be taken, based upon notes and drawings they made while looking through telescopes, Nasmyth and Carpenter crafted accurate plaster models of the moon’s surface, which when “placed in the sun’s rays, would faithfully reproduce the lunar effects of light and shadow,” and once photographed would “produce most faithful representations of the original.” The twentyfour

woodburytypes images produced are, to contemporary eyes, beautiful and audacious, in light of photo fakery charges that would bedevil images shot by America’s Apollo astronauts who orbited and walked on the moon, a century later. The German edition appeared in 1876.

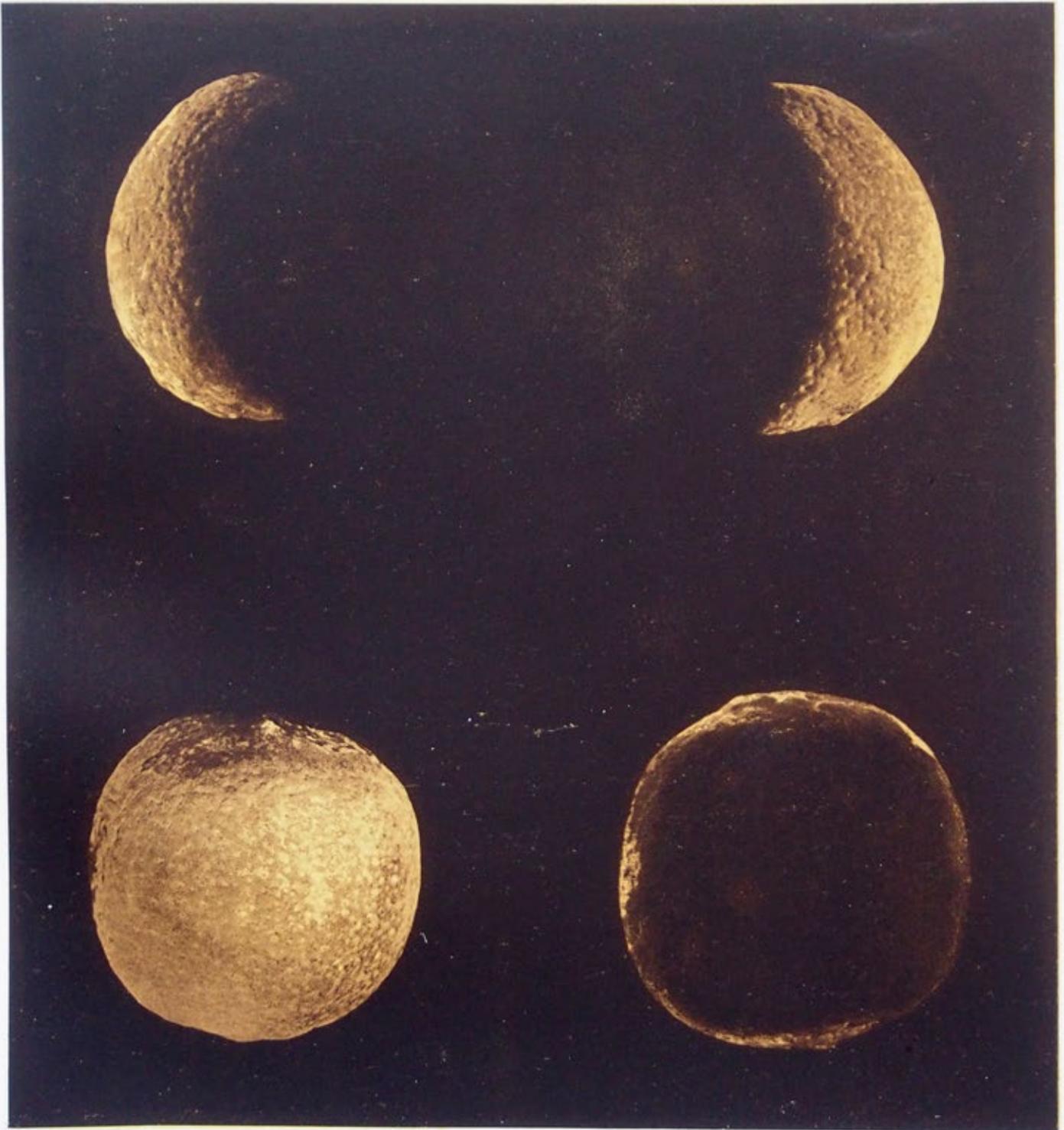
The publisher Moritz Schauenberg here engaged Wilhelm K. Valentiner and Julius Grimm to produce a similar book for the market: some bibliographer thought he just used the images of the Nasmyth/ Carpenter work but they re-invented the images of the original edition.

The photographs are independent, but similar to Grimm’s famous moon oil-painting: [www.carltonhobbs.net/news/moonshadows/2009/07/21/](http://www.carltonhobbs.net/news/moonshadows/2009/07/21/)

The photographer Julius Grimm (1842–1906) from Offenburg was in contact with several universities and supplied micro- and macro- photographs for different scientific works & atlases (among others for the chemical engineer Karl Birnbaum, the meteorite researcher Gustav Tschermak, the physician Sigmund Theodor Stein, the anatomist Julius Kollmann and the astronomer Wilhelm Valentiner). These photographs were published as heliogravures. The Grimm’s studio („art institute”) had its own astronomical- photographic observatory. Perhaps with the help of projection of lunar photographs onto a canvas, Grimm in 1895 created a large oil painting of the surface of the moon, as can be seen through a telescope (i.e. rotated by 180 degrees), but with somewhat unnatural (artistic) light from the left. - Poggendorff III, 1382. Not with Heidtmann.



Veranschaulichung der vier Mondphasen  
mittelst einer künstlich beleuchteten Citrone.



# Bunsenbrenner



## BUNSEN, Robert Wilhelm.

*Anorganische Experimental-Chemie nach Vorlesungen von Bunsen.* (Heidelberg, Wintersemester 1877/78) Contemporary manuscript in ink in legible hand. Quarto (200 x 170 mm). 576 hand-numbered pages, and (7) pages index. With hand-drawn and mounted sketches of experimental set-ups. Contemporary half calf over marbled boards, rubbed and soiled, little bumped, but fine.

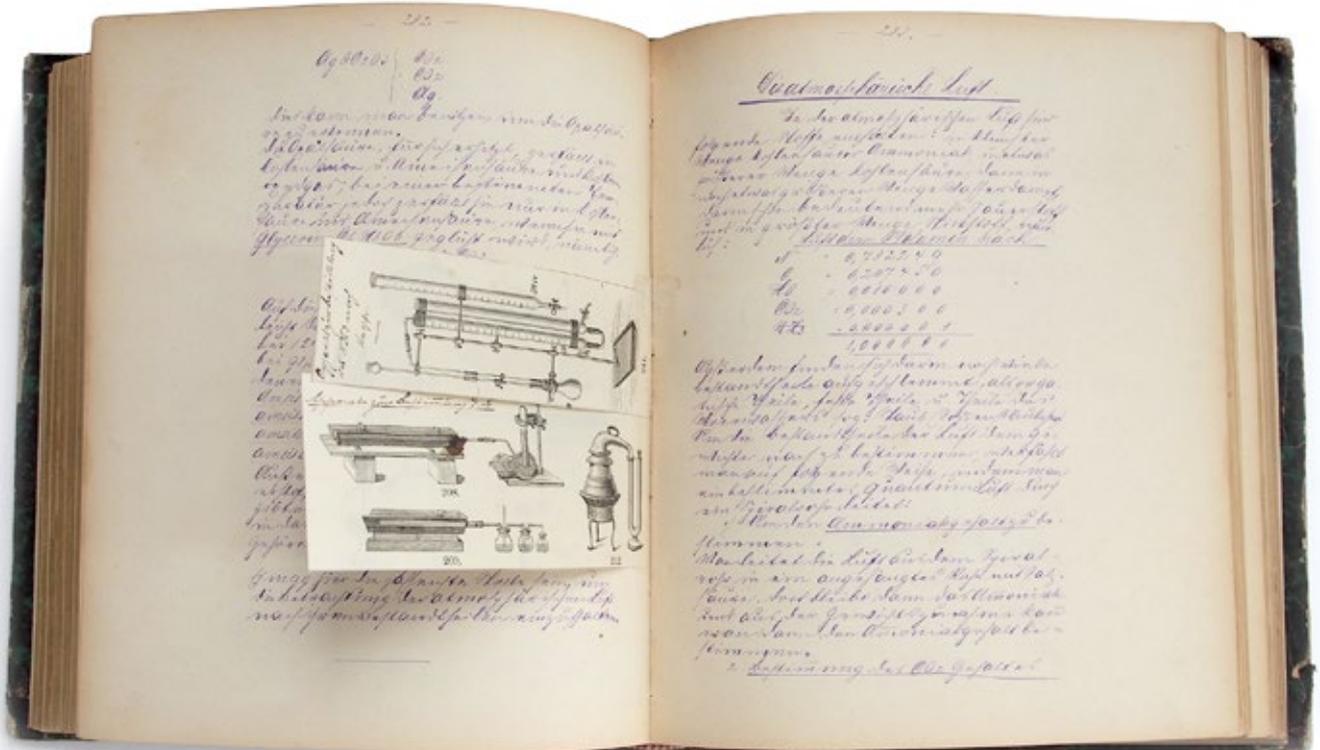
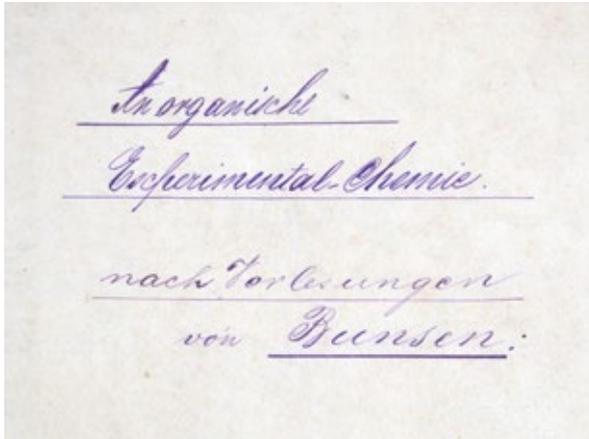
EUR 1.800.-

Rare handwritten lecture notes on inorganic chemistry written by a student of Robert Bunsen in his lectures held at Heidelberg University in 1877–1878.

„In 1852 Bunsen succeeded Leopold Gmelin at the University of Heidelberg. Although offered a position as Mitscherlich’s successor at the University of Berlin in 1863, Bunsen remained at Heidelberg until he retired in 1889, at the age of seventy-eight. A laboratory, constructed for him by the government of Baden, was completed in the summer of 1855; there Bunsen did his research and guided the work of numerous young men who became well-known scientists during the second half of the nineteenth century.

Bunsen was a most devoted teacher. He presented 100 hours of lectures during each of seventy-four semesters in a course entitled “Allgemeine Experimentalchemie”. The lectures were concerned with inorganic chemistry; organic chemistry was excluded. Theoretical aspects were at a minimum: neither Avogadro’s hypothesis nor the periodic law of the elements – developed by his own students, Dmitri Mendeleev and Lothar Meyer – was mentioned.

In his research, as in his teaching, Bunsen emphasized the experimental side of science. He enjoyed designing apparatus and, being a skilled glassblower, he frequently made his own glassware. He was also an expert crystallographer. Bunsen developed and improved several pieces of laboratory equipment, including the Bunsen burner, the Bunsen battery, an ice calorimeter, a vapor calorimeter, a filter pump, and a thermo-pile. A man of wide scientific interests, Bunsen concentrated on inorganic chemistry. His most important work was the development of a variety of analytical techniques for the identification, separation, and measurement of inorganic substances. Throughout his life Bunsen gave much attention to geology. He was also interested in the application of experimental science to industrial problems.” (Susan G. Schacher).- DSB II, 586; Partington IV, 281–293; Ferchl, 77; Poggendorff I, 1546.

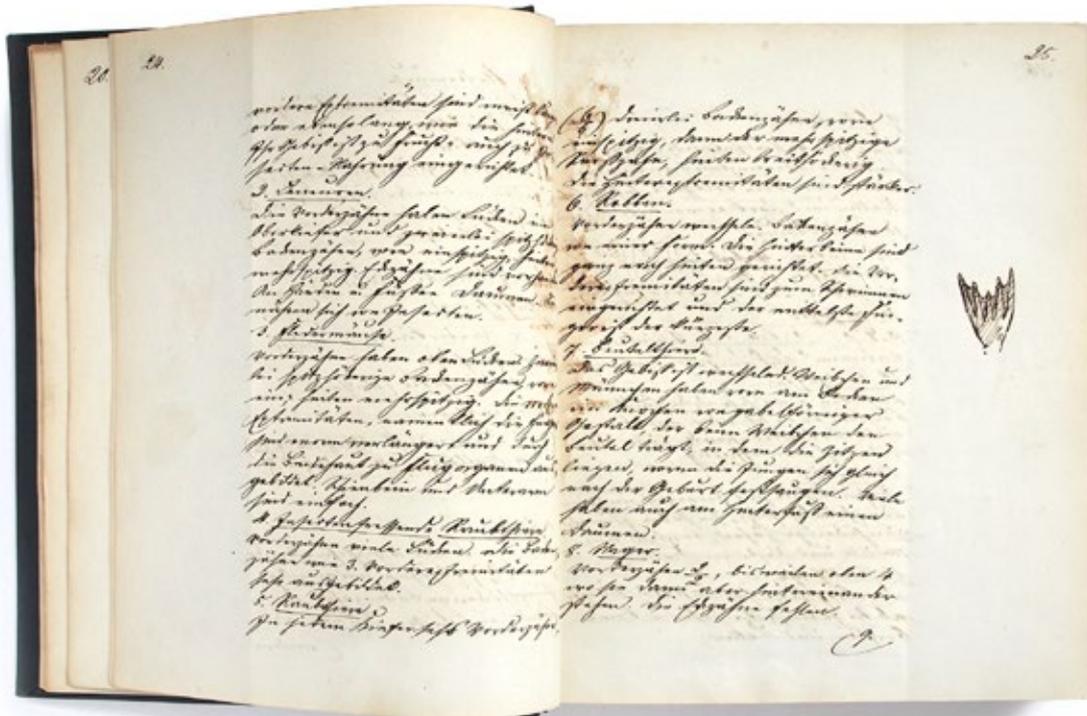
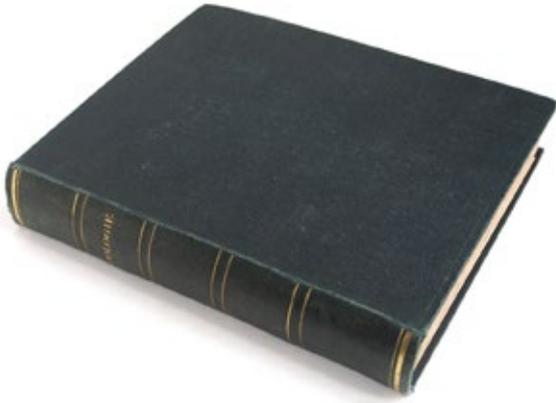


# Zoological Lectures

**BLASIUS, Johann Heinrich.**

„Zoologie, Vorgetragen von H(ernn). Professor Blasius. Wintersemester 1860/61. (Mitgeschrieben von) R. Frühling.“ (title-page) Handwritten German manuscript in ink on paper by a legible hand. (Braunschweig, 1860-1861). 4to (205 x 165 mm) (2, blank), (2), 527 pp., (21, blank) with around 40 little ink and pencil illustrations within text. Contemporary green cloth, gilt printed title on spine, marbled edges, little used, but fine copy.

EUR 1.200.-



Rare handwritten lecture notes on zoology written by the student and later chemist Rudolf Frühling of lectures held by the zoologist Johann Heinrich Blasius (1809-1870) at the Collegium Carolinum in winter 1860 to 1861. Most of the pages are concerned with ornithology, no literature or names of authors are mentioned, only different classes and subclasses of animals. A text of his lecture was probably never published. The lecture begins with a short introduction on the different classes and classifications of animals (Vertebraten, Evertebraten oder Wirbelthiere, Gliederfüßer, Würmer, et al. ), from page 15 with „Wirbelthiere“ (vertebrates), from page 27 with „Vögel“ (Aves), page 32 with reptils, page 36 to 71 cites amphibian, fishes, „Gliederfüßer“, mollusks, cephalophoren, acephalen, bryozoen, and „Schleimthiere“. Then the more detailed description of the different classes of animals begins with vertebrates, I. Zehenthiere (up to page 167), II. Hufthiere (up to page 207), than III. Flossenthiere (up to page 214). From page 215 to 479 birds are described (Vögel): like „Raubvögel“, „Schwimmvögel“, „Singvögel“, like Schwalben, Staare, Tauben, Krähen, etc., „Sumpfvögel“, „Sturmvögel“, from page 480 reptiles and amphibians are described, from page 508 the fishes are described. The zoologist Heinrich Blasius (1809-1870) achieved groundbreaking results with his work on the characteristics and natural history of European birds. The system of natural history, the correct division into families, subfamilies, genera and subgenera with a clear identification of the species were the goals of his scientific work. In 1836, Blasius was appointed as a professor of natural history and he founded in 1842 the Botanical Garden, the first director of which he became. The zoological

teaching collections of the Collegium Carolinum that he founded were merged with the collections of the Natural History Museum in 1857. He was given the management of the museum. In 1866 Heinrich Blasius was entrusted with the overall administration of all ducal museums (incl. Herzog Anton Ulrich Museum). He was the author of two major books on vertebrates: „Fauna der Wirbelthiere Deutschlands“ (1857), which Wood calls „an uncompleted but important systematic treatise on the zoology of middle Europe“ and „Die Wirbelthiere Europa's“ (1840). Blasius was also an early contemporary critic of Darwin's Origin of Species.

„Gleichzeitig begann er mit dem Aufbau einer eindrucksvollen Samml. europ. Vögel, die auch außerhalb der dt. Grenzen ihre Bewunderer fand. Das Museum entwickelte sich in der Tat unter seiner Leitung zu einem der Mittelpunkte der orn. Forschung in Deutschl. Während er neue diagnostische Methoden einführt und das Prioritätsgesetz befürwortete, trieb er in der Rolle des wachsamem, kritischen Zensors die wissensch. Beschäftigung mit der Vogelk. in vielfacher Weise voran. Kennzeichnend für seine konservative, eigenwillige Einstellung war die Hartnäckigkeit, mit der er als einer der namhaftesten Gegner die subtile Vogelbeschr. und Artenspaltung seines Freundes Ch. L. Brehm bekämpfte und die metaphysische Deduktionen L. Okens ebenso ablehnte wie Darwins Deszendenztheorie. So blieb ihm nur die Beschränkung auf die Unters. der empirisch erfassbaren Einzelercheinungen.“ (Gebhardt) - Provenance: Wilhelm Blasius (1913-1995); Gebhardt I, 37; II, 150; Stresemann 190/91; ADB II, 695 (O. Schmidt); NDB II, 289 (Stresemann); not in Walters.

# Thunberg's Camelia from Kyoto 1776



**SONNTAG, Ernst (photogr.)**

*Ansichten aus dem Park des königl(ichen). Lustschlosses zu Pillnitz (cover title). 27 original albumen photographs in various sizes from 210 x 330 mm to 250 x 365 mm mounted on boards. – Dresden, around 1883. Folio (365 x 480 mm). Contemporary brown cloth folder with gilt printed title on cover. Rubbed and soiled. Mounts slightly dust-soiled, photographs in good condition with only minimally fading. A very scarce suite of photographs.*

EUR 6.800.-

Exceedingly rare portfolio with original photographs of the Pillnitz Castle & Gardens in Dresden, including images of famous trees.

The photographs were made by Ernst Sonntag, who has been resident in Dresden between 1884 and 1910. The images show the Pillnitz Castle and its park. The 28-hectare park surrounding the main buildings was famous for its botanical attractions from all over the world. Among them is a camellia tree more than 230 years old – one of the oldest in Europe. Legend is that Carl Peter Thunberg brought it from Kyoto in 1776. The tree was planted in its current location in 1801.

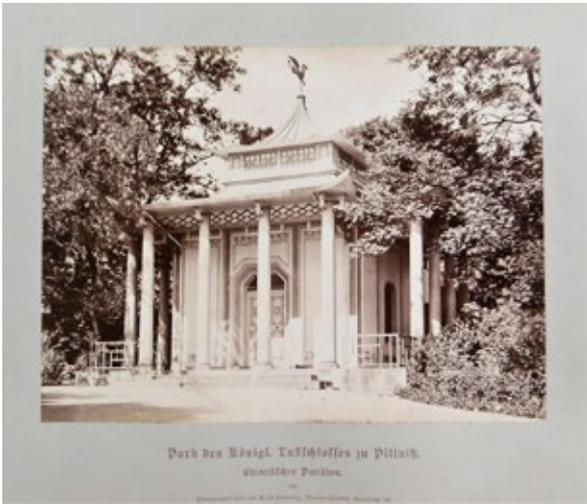
The park also features a late 18th century English garden with an English pavilion, a Chinese pavilion, a conifer garden and an orangery. The English pavilion, built in 1780, is a copy of Donato Bramante's Tempietto in Rome. It is located next to a pond in the English garden. In 1804, the Chinese Pavilion was erected on the northern edge of the park. While the Chinese elements of the castle are only decorations, this small pavilion was built in the authentic Chinese style. The paintings on the walls inside depict actual Chinese landscapes. Also shown is a replica of the red royal gondola which Friedrich August I. used for transport between his residence in Dresden, the Royal Palace, and his country seat in Pillnitz. The palm house was built between 1859 and 1861. Covering 660 square metres and 93.7 m (307 ft) in length, it was the largest greenhouse in Germany at the time.

The images dated 1883, included are: Königl. Lustschloss, Lustgarten, Lustgarten von der Maille nach dem Speisesaal gesehen, Mittelpalais,

Neues Schloß, Flora mit Ruine, Flora vor dem Rondell, Flora. Große Durchsicht, Allee und Maille, Bergpalais, Bergpalais, Chinesischer Pavillon, Englischer Pavillon, Englischer Pavillon, Orangerhaus, Abies Casiocarpa, Pinus Benthamiana, Große rothe Buche, Große Camellie, Partie vom Kaiserflügel ..., Partie von der großen rothen Buche, Palmenhaus, Palmenhaus innere Ansicht, Prinzensgarten, Alte Reitbahn, Kegelbahn, Chinesischer Teich mit Ruine.

This album was a present for the German chancellor Otto von Bismarck to his 85th birthday, removed from his property at Schönhausen.

Ernst Sonntag (aktiv ca. 1884–1910). Über die Person des Photographen und seine Beziehungen zu Hermann Krone gibt es keine genauen Angaben. 1884 - 1907 sind drei Atelieradressen Sonntags in Dresden nachweisbar. Die letzte, „Wilder Mannstraße 63“ firmierte unter dem zusätzlichen Titel "Vereinigte Fachschulen für Photographie und Malerei". 1903 berichtete der Deutsche Photographen-Verein über seine kurz zuvor abgehaltene Wanderversammlung in Dresden. Mit Formulierungen, die auf ein gutes Renommé Sonntags schließen lassen, wurden hier auch seine in der dazugehörigen Ausstellung gezeigten Kohle- und Gummidrucke erwähnt. In manchen Quellen erscheint der Ort Trachau bei Dresden als Wohnort Sonntag's. - OCLC: no copy.



## The Einstein - de Sitter Circle



### SITTER, Willem de.

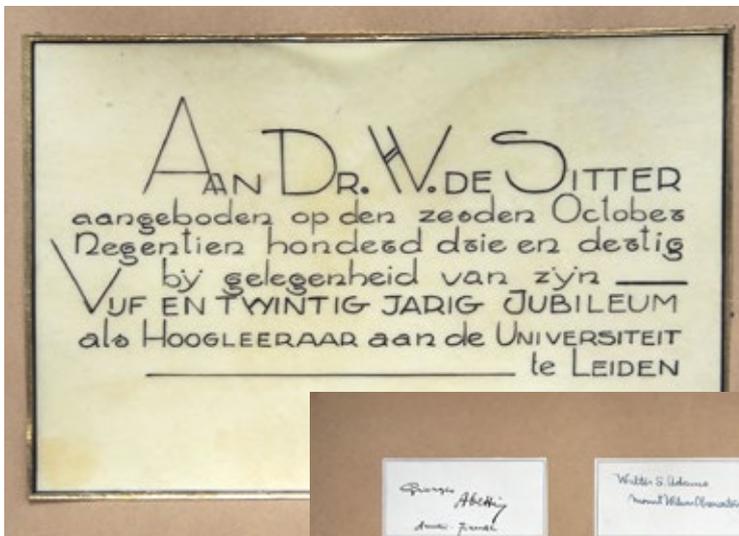
Album compiled on the occasion of his 25th anniversary as a professor at the University of Leiden (1908–1933) on October 6, 1933: *Aan Dr. W. de Sitter aangeboden op den zesden October Negentien honderd drie en dertig bij gelegenheid van zijn Vijf en twintig Jarig Jubileum als Hoogleraar aan de Universiteit te Leiden.* (Leiden, 1933) oblong large folio (345 x 460 mm) with 23 leaves incl. a full-page watercolor showing the observatory of the University of Leiden, made by J. M. Graadt van Roggen (250 x 360 mm) and over 200 handwritten original signature by colleagues and friends on mounted cards attached to boards. Master binding in leather with a splendidly colored embossed coat of arms on the front cover. The associated box is little defective, but overall a perfect survival.

EUR 9.500.-

Very fine presentation album with signatures of famous astronomers including Sitter's working circle, scientific network and his friends, incl. Albert Einstein. The signatures are mounted from A-Z, including signatures of the astronomers Giorgio Abetti, Walter S. Adams, Sir Arthur Eddington, Ejnar Hertzsprung, Milton S. Humason, August Kopff, F. K. Küstner, George Lemaître, Bertil Lindblad, J. H. Oort, Antonie Pannekoek and Harlow Shapley, the astrophysicist Henry Deslandres, Dyson und Edward A. Milne, the physicists Albert Einstein, W. J. de Haas, W. H. Keesom, J. D. van der Waals und Pieter Zeeman, Sydney Chapman, Sande Bakhuysen, the mathematicians Emile Picard and others. Other famous members of the circle were already death, like Ehrenfest who just died and H. A. Lorentz (died 1928).

Willem de Sitter (1872–1934) was a Dutch mathematician, astronomer, and cosmologist who developed theoretical models of the universe based on Albert Einstein's general theory of relativity. Like Eddington, de Sitter was one of the few astronomers who had the educational background and interests necessary to pursue both the special and general theories of relativity. He began work on the relativity principle (Einstein's first postulate for SRT) already in 1911; two years later he tried to bolster Einstein's second postulate by providing evidence for the constancy of the velocity of light. Even older were de Sitter's interests in gravitational theories, which can be traced back to 1908. Moreover, he closely followed Einstein's attempts to construct a field-theoretic approach to gravitation, including the controversial Einstein-Grossmann theory of 1913. de Sitter's more famous work on the general theory of relativity was a consequence of his prior research rather than a result of the sudden interest in Einstein's theory that emerged in 1916. The N.Y. Times in Nov. 1934 wrote in his obituary: „In [de Sitter's] work we see the creative mathematician at his best. He is not a cold, dispassionate juggler of Greek letters, a balancer of equations, but rather an artist in whom wild flights of the imagination are restrained by the formalism of a symbolic language and the evidence of observation. Only the musician can fully grasp what it must have meant to de Sitter to see the cosmos shaping itself in new ways in his formulas. Like musical notes, strange symbols, standing for forces and masses that were divined rather than known, arranged themselves into a coherent message. And when the message came to be read a totally new universe was revealed. Here we have something of the direct personal experience of the outer world, of the significance of nature's wonders,

that comes only to a Beethoven or a Milton. The expanding universe of de Sitter must be regarded as something more than an inexorable conclusion drawn from the strictest kind of logic with which the human mind is familiar. It is poetry of a new sort - the scientist's way of writing an epic.“





# Predicting Epidemics

**LOTKA, Alfred James; F. R. SHARPE.**

*Contributions to the Analysis of Malaria epidemiology. Reprinted from The American Journal of Hygiene, Vol. III (January Suppl.) (Baltimore, Mass., 1923) 4 to (265 x 180 mm) 121 pp.; (1, blank) Gray original paper wrappers, bumped and traces of use.*

EUR 900,-

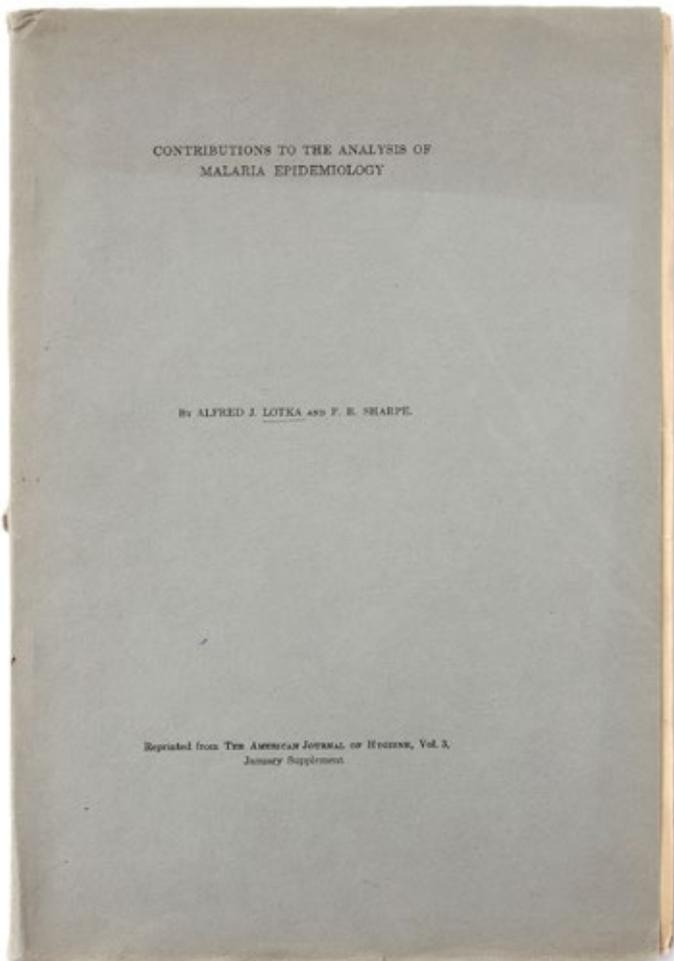
First edition of a landmark achievement in the mathematical analysis of mosquito-borne disease models and in theoretical ecology.

The Nobel Prize Winner for Medicine in 1902, Ronald Ross, and George Macdonald are credited with developing a mathematical model of mosquito-borne pathogen transmission. Alfred Lotka solved Ross's second Malaria model in 1912, and in 1923, Lotka published a five-part analysis of Ross's malaria models (here). The first analyzed Ross's second model and the second showed how Ross's first two models were related. Lotka's third paper in the series included a comprehensive numerical analysis, a diagram of the phase-plane, and a photograph of a clay model that interprets the phase plane as a topographic surface. In the fourth, Sharpe and Lotka extended Ross's second model and considered the pathogen's latent period in the mosquito, commonly called the extrinsic incubation period, and the pathogen's latent period in the human or other vertebrate host, or the intrinsic incubation period. Altogether, Lotka's five-part analysis and extension of Ross's original models represented a landmark achievement in the mathematical analysis of mosquito-borne disease models.

Mosquitoes transmit the pathogens that cause malaria, filariasis, dengue, yellow fever, West Nile fever, Rift Valley fever, and dozens of other infectious diseases of humans, domestic animals, and wildlife. Physicians and scholars have, throughout history, suspected mosquitoes of transmitting pathogens, but the mosquito hypothesis was neither formally tested nor widely accepted until the late 19th century.

Ronald Ross conducted his research while serving in a military post in India, and in 1897 he demonstrated that mosquitoes transmit malaria parasites. Almost immediately thereafter, Ross argued that mosquito population densities could be reduced through larval control and combined with other measures to prevent mosquito-transmitted diseases. He became an important advocate for the public health and economic benefits of control in publications, speeches, and debates. Of all important pioneers in malaria research, Ross casts the longest shadow on mosquito-borne disease because of his contributions to the quantitative theory of malaria and mosquito-borne disease transmission and also to the quantitative foundations of epidemiology.

In 1904, partly in response to a large, failed larval control trial conducted in Mian-Mir that Ross had debated earlier that year, he published a mathematical model describing adult mosquito movement and the spatial scale of larval control required to reduce mosquito populations and eliminate disease from an area. Ross was considering transmission dynamics and control as early as 1902, but did not publish his first malaria transmission model until 1908. He published a second malaria transmission model in 1911 in an addendum to his book, *The Prevention of Malaria*. Ross's last original contribution to modeling malaria, in 1921, discussed the value of repeated drug treatment to "cure" malaria infections. - David L. Smith; Katherine E. Battle; Simon I. Hay; Christopher M. Barker; Thomas W. Scott; F. Ellis McKenzie. Ross, Macdonald, and a Theory for the Dynamics and Control of Mosquito-Transmitted Pathogens in: *Plos Pathogens* (2012) <https://doi.org/10.1371/journal.ppat.1002588>



# „Maximum Power principle“

**LOTKA, Alfred James.**

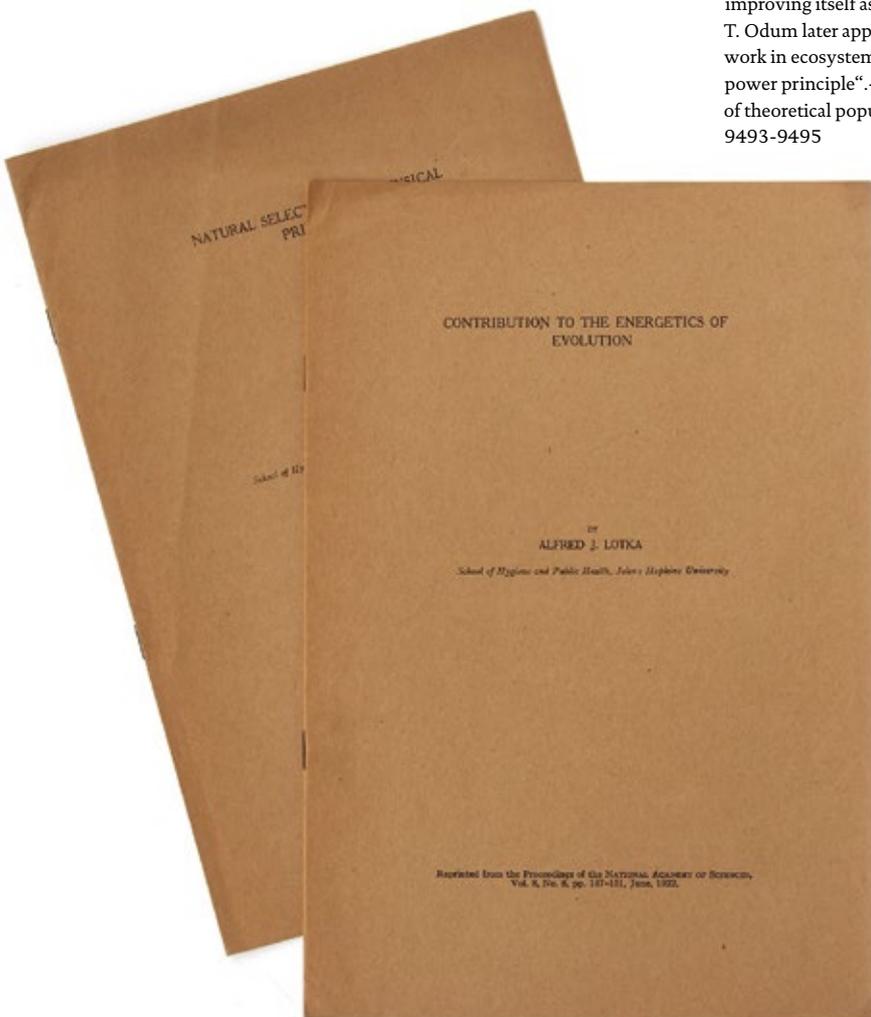
*Contribution to the Energetics of Evolution. Reprinted from the Proceedings of the National Academy of Sciences, Vol. 8, no. 6 (Washington, June 1922) (with:) Natural selection as a physical principle. Reprinted from the Proceedings of the National Academy of Sciences, Vol. 8, no. 6 (Washington, June 1922) pp. 147-151; pp. 151-154. Two Off-Prints in Original Wrappers. Little used, paper little browned due to quality.*

EUR 1.000,-

Rare Off-Print issues of two important papers by Lotka (1880 - 1949) on theoretical ecology.

Alfred J. Lotka's earlier work was centered on energetics and applications of thermodynamics in life sciences. His goal was to create a new biological discipline called "physical biology," by which he meant the "broad application of physical principles and methods in the contemplation of biological systems". The analogy between physical chemistry and physical biology lay in the idea that the same basic laws governed both kinds of systems. In both systems, all processes could be reduced to two kinds of changes: those involving exchanges of matter between the components of the system, and those involving exchanges of energy. In the chemical system the components were molecules. In the biological system the components were organisms plus the raw materials in their environment, and the exchanges of matter and energy took place through the web of food relationships, growth, and reproduction. Understanding these relationships mathematically was the goal of physical biology.

Lotka proposed the theory that the Darwinian concept of natural selection could be quantified as a physical law. The law that he proposed was that the selective principle of evolution was one which favored the maximum useful energy flow transformation. Lotka was especially keen to explore the energetics of evolution: that is, how to understand evolution broadly as a process involving the capture and transmission of energy. Lotka envisioned systems as giant machines or energy transformers that changed over time. For him, natural selection could be understood as a physical principle with the same level of generality as the laws of thermodynamics. Lotka argued that natural selection would tend to favor an increase in the rate of circulation of matter through the system, and would also favor more efficient use of energy. Seeking to derive a general law expressing this idea, Lotka proposed the principle that "evolution proceeds in such direction as to make the total energy flux through the system a maximum compatible with the constraints". In a manner of speaking, the evolving "world engine," as he conceived it, accomplished the remarkable achievement of improving itself as it went along. The general systems ecologist Howard T. Odum later applied Lotka's proposal as a central guiding feature of his work in ecosystem ecology. Odum called Lotka's law the "maximum power principle". - see Sharon Kingsland. Alfred J. Lotka and the origins of theoretical population ecology; in: PNAS 112 (August 2015) pp. 9493-9495

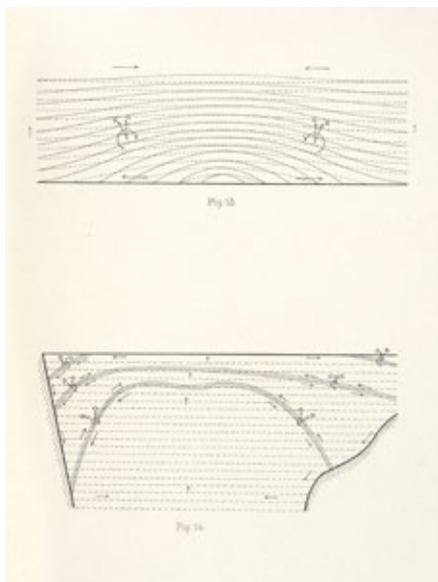
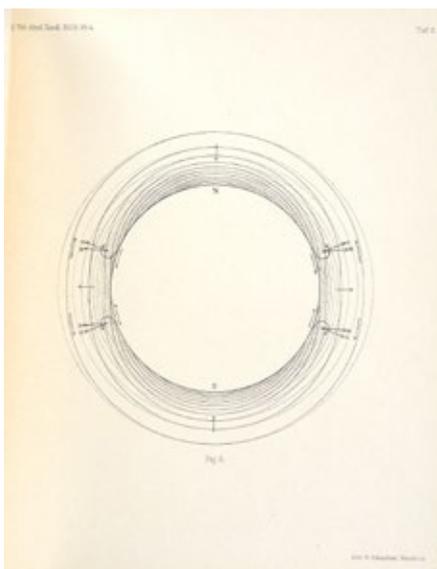
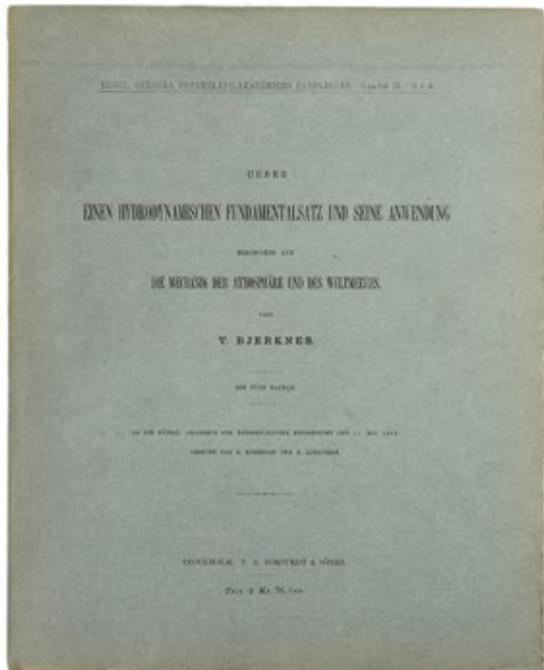


# Weather Forecast

## BJERKNES, Vilhelm Friman Koren.

*Über einen hydrodynamischen Fundamentalsatz und seine Anwendung besonders auf die Mechanik der Atmosphäre und des Weltmeeres. – Stockholm: P. A. Norstedt & Söner, 1898. (= Off-Print from Kongl. Sven. Vetensk. Akad. Handlingar 31.4) 4to (315 x 250 mm) 35 pp. with 5 plates. Original wrappers. Mint.*

EUR 1.000.-



Rare Off-Print-issue of his landmark paper describing the circulation theorem.

During the nineteenth century, interest in the general circulation of the atmosphere gained ground in meteorology. Studying the tropical wind systems, Edmond Halley had explained the dynamics as a result of solar heating (1686), while George Hadley had added the earth's rotation as a basic factor (1735). Referring to both theories Heinrich Wilhelm Dove developed his law of turning (Drehungsgesetz), claiming that all local winds are minor eddies of the alternating polar and equatorial wind flows (1837). However, the differential heating and rotation could not fully explain wind patterns. Another force was needed to explain meridional and zonal wind flows when William Ferrel rediscovered the Coriolis force and applied it to the atmosphere (1858). With this 'new force' taken into account, the earth's atmosphere generated three circulation cells and oblique wind in mid-latitudes with high velocities from the west. Moreover, high pressure at the poles which would be expected because of low temperature was reversed to low pressure by the excessive centrifugal force of the whirling winds. Conversely, high pressure was generated near the tropics. Ferrel's work inaugurated what became known as dynamical meteorology. Parallel to this development the dynamic of the atmosphere became a topic of hydrodynamics, although this field "had turned into a subject matter for mathematicians and theoretical physicists" during the nineteenth century by virtue of its focus on idealised fluids. The most problematic aspect of idealized fluids was the conclusion that no vortices could occur, as vorticity was conceived as friction between particles. Although Hermann von Helmholtz showed in 1858 that vortices can persist in idealised fluids, he was forced to claim that they can not be created or destroyed in such fluids (1858). Applying hydrodynamics to the atmosphere requires explaining both the appearance and disappearance of vortices as well as the transition from laminar to turbulent flow. It was Helmholtz's claim about vorticity and his assumption that density depends solely on pressure in an idealized fluid that evoked Vilhelm Bjerknes' interest in the 1890s and inspired him to articulate the "generalized circulation theorem".

"He hoped to derive equations that would be independent of the specific shape of the bodies and to consider situations analogous to various electromagnetic phenomena. Difficulties ensued. Attractive and repulsive phenomena between the fluid bodies seemed to occur with an accompanying production of vortices in the boundary layer between the fluid bodies and the surrounding fluid. This result contradicted the well-established theorems of Helmholtz and Lord Kelvin which claimed vortex motions and circulations in frictionless, incompressible fluids are conserved" (FRIEDMAN,

Weather 1989, pp. 19). Questioning the simplifying assumptions, Bjerknes realised that density in a heterogeneous fluid without any restrictions on compressibility depends not only on pressure, as in the concepts of Helmholtz and Kelvin, but on other variables as well. In other words: There could be various reasons for circulation in a heterogeneous fluid. In particular, Bjerknes' geometrical model of circulation claimed that pressure and density intersecting in a three-dimensional surface would form a series of tubes he called solenoids. The number of solenoids encompassing the fluid curve would determine the rate of increase of circulation. When pressure and density coincide, no solenoids exist and circulation remains invariable with time (THORPE et al., 2003).

Bjerknes' generalised circulation theorem immediately provoked the interest of meteorologists like Nils Ekholm and Svante Arrhenius when he presented his theory at the Stockholm Physics Society in March 1897, and again in February 1898, on the latter occasion with some references to the mechanics of the atmosphere (BJERKNES, 1898). In particular, Ekholm's interest in a theory of cyclones – he had realised that in the vicinity of a cyclone pressure and density do not always coincide (EKHOLM, 1891) – pointed the way to a fruitful application of Bjerknes' theorem in meteorology. Soon after the theorem began circulating in the international meteorological community Bjerknes was asked to publish his ideas in the *Meteorologische Zeitschrift* and in *Monthly Weather Review*, both in 1900, followed by a seminal paper in 1904 (BJERKNES, 1900, 1904). The Norwegian physicist and meteorologist Vilhelm Friman Koren Bjerknes (1862–1951) did much to found the modern practice of weather forecasting and formulated the primitive equations that are still in use in numerical weather prediction and climate modeling. He developed the so-called Bergen School of Meteorology, which was successful in advancing weather prediction and meteorology in the early 20th century. His early landmark paper of 1898: „Über einen hydrodynamischen Fundamentalsatz und seine Anwendung besonders auf die Mechanik der Atmosphäre und des Weltmeeres,“ formulated his circulation theorem: it provided a key insight into the way circulation develops in geophysical fluids, and it also marked the the beginning of the transition of Vilhelm Bjerknes' research from the field of electrostatics, electromagnetic theory and pure hydrodynamics into that of atmospheric physics. Other physicists had already made the mathematical extension of Kelvin's theorem to compressible fluids, but it was not until Bjerknes landmark paper of 1898 that meteorology and oceanography began to adopt this insight.- Alan J. Thorpe, Hans Volkert and Michael J. Ziemanski. The Bjerknes' circulation theorem. A historical perspective. American Meteorological Society (2003)

# Cyclone Model

## BJERKNES, Vilhelm.

*On the Dynamics of the Circular Vortex with applications to the atmosphere and atmospheric vortex and wave motions.* – Kristiania: Grondahl & Sons, 1921.  
(= *Geofysiske Publikationer Vol. II.4*) 4to (307 x 230 mm) (2), 88 pp., (2)  
Original wrappers, stamped by the Stockholm Meteorol. Inst., else very fine, near mint.

(with:)

## BJERKNES, Jacob.

*On the structure of moving cyclones.* – Kristiania: Grondahl & Sons, 1919.  
(= *Geo-fysiske Publikationer Vol. I.2*) 4to (307 x 230 mm) 8 pp. Original wrappers, stamped by the Stockholm Meteorol. Inst., little used, but fine.

(with:)

## BJERKNES, Jacob; Halvor SOLBERG.

*Meteorological conditions for the formation of rain.* – Kristiania: Grondahl & Sons, 1921. (= *Geofysiske Publikationer Vol. II.3*) 4to (307 x 230 mm) 60 pp., one fold. plate. Original wrappers, stamped by the Stockholm Meteorol. Inst., else very fine.

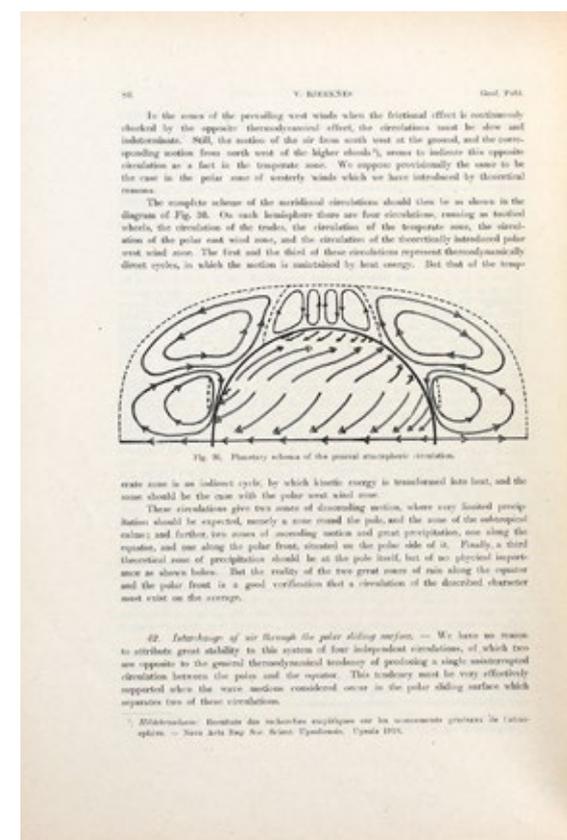
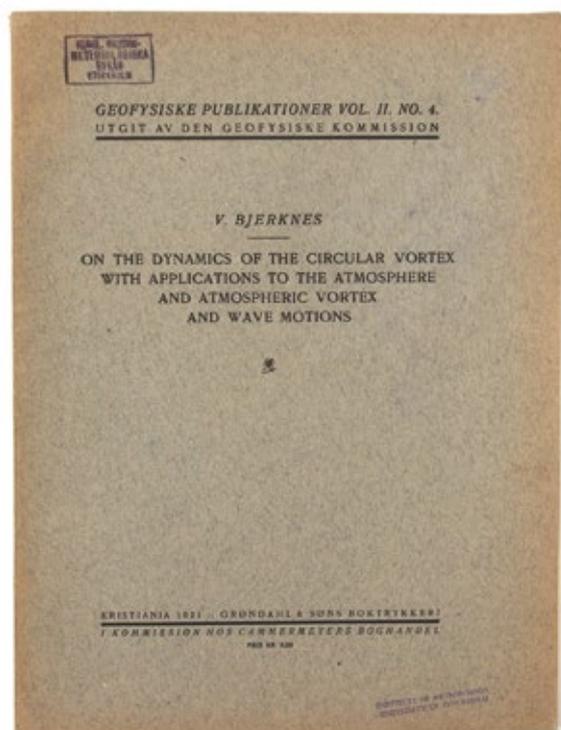
EUR 1.200.-

Rare Off-Print issue of the most important paper describing the Norwegian cyclone model, developed during and shortly after World War I. within the Bergen School of Meteorology.

Most of Bjerknes's major results in the area of weather forecast appeared in this paper: „One of his finest books, it contains a clear explanation of the most important basic ideas in his research.“

The older of the models of extratropical cyclone development is known as the Norwegian cyclone model, developed during and shortly after World War I within the Bergen School of Meteorology. In this theory, cyclones develop as they move up and along a frontal boundary, eventually occluding and reaching a barotropically cold environment. The theory was developed completely from surface-based weather observations, including descriptions of clouds found near frontal boundaries. Developed from this model was the concept of the warm conveyor belt, which transports warm and moist air just ahead of the cold front above the surface warm front. Polar front theory is attributed to Jacob Bjerknes, derived from a coastal network of observation sites in Norway during World War I. This theory proposed that the main inflow into a cyclone was concentrated along two lines of convergence, one ahead of the low and another trailing behind the low. The convergence line ahead of the low became known as either the steering line or the warm front. The trailing convergence zone was referred to as the squall line or cold front. Areas of clouds and rainfall appeared to be focused along these convergence zones. The concept of frontal zones led to the concept of air masses. The nature of the three-dimensional structure of the cyclone would wait for the development of the upper air network during the 1940s.

A key paper by Jacob Bjerknes and Halvor Solberg (1895–1974) on the dynamics of the polar front, integrated with the cyclone model, provided the major mechanism for north-south heat transport in the atmosphere. The „Bergen School of Meteorology“ invented much of modern weather forecasting. Founded by the meteorologist Vilhelm Bjerknes and his younger colleagues in 1917, the Bergen School attempts to define the motion of the atmosphere by means of the mathematics of interactions between hydro- and thermodynamics, some of which had originally been discovered or explained by Bjerknes himself, thus making mathematical predictions regarding the weather possible by systematic data analysis. The Bergen School was crucial in the early development and operationalization of numerical weather forecasting in the 1940s and 1950s, which was largely a cooperation between Scandinavian and US researchers. In this development, extant meteorological theories were synthesized. Due to the vast amount of calculations necessary for producing viable forecasts, the mathematical models were adapted to computer programs. The cross- Atlantic cooperations was also important to the development of the Bergen School and the Norwegian meteorology community.



# Mathematics and Philosophy



**KÄHLER, Erich.**

*Die Mathematik als Sprache und Schrift. Ein Entwurf. (ohne Ort, ohne Jahr; Leipzig: Universität Leipzig, 1950) 4to (295 x 210 mm) (2), 113 pp. Autographed Typoscript / Maschinenschriftl. Typoskript. Plain Wrappers. Browned due to paper quality.*

EUR 420.-

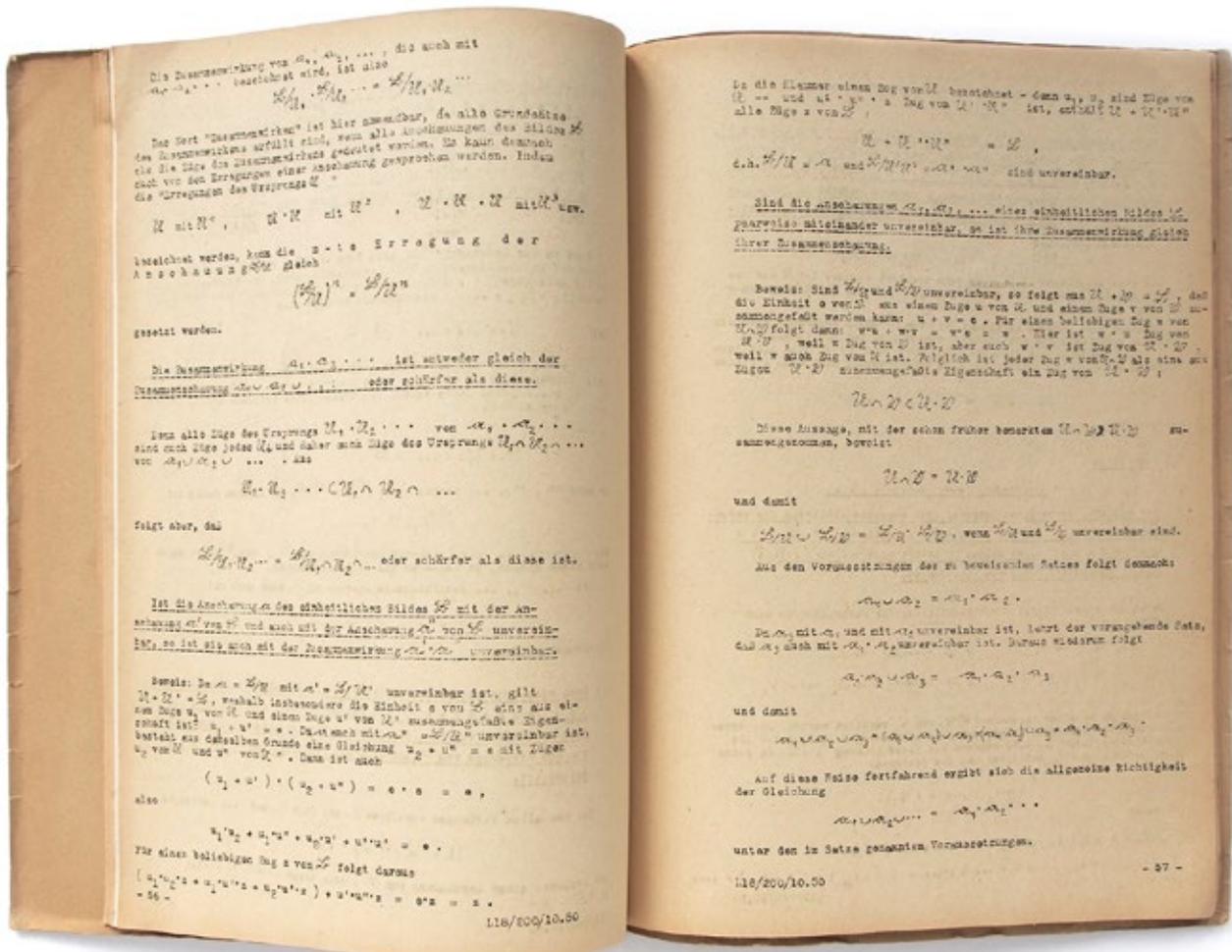
Rare printed Typoscript of a lecture held by Erich Kähler in 1950 at Leipzig University, reproduced in small numbers.

The first announcement of his attempt to bring together mathematics and philosophy which is fully exploited in his „Geometria Aritmetica“ of 1958.

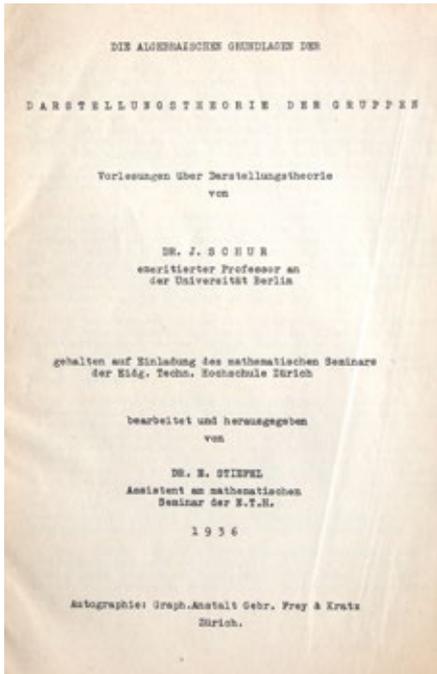
The German mathematician Erich Kähler (1906 – 2000) had wide-ranging interests in geometry and mathematical physics, and laid important mathematical groundwork for algebraic geometry and for string theory.

„In retrospect the time in Leipzig was the most fruitful scientific period of Erich Kähler's life.... [He] gave a five semester course with sometimes more than 10 hours of classes per week, in which he expostulated on algebra, algebraic geometry, function theory and arithmetic. The results presented in this course were then published in 1958 in a 399 pages volume of *Annali di Matematica* under the title „Geometria Aritmetica“. However, Kähler's friend André Weil reviews the work in a somewhat more critical way: „This, in more ways than one, is an unusual piece of work. By its size,

it is a book; it appears as a volume in a journal. The author is German; the book appears in Italian. The subject combines algebra and geometry, with some arithmetical flavouring; but the author, instead of following in his terminology the accepted usage in either one of those subjects, or adapting it to his purposes, has chosen to borrow his vocabulary from philosophy, so that rings, homomorphisms, factor-rings, ideals, complete local rings appear as „objects“, „perceptions“, „subjects“, „perspectives“, „individualities“. The book includes altogether new material along with much which turns out to be quite familiar (sometimes to the point of triteness) once it is translated back into more familiar language; but no attempt is made to point out what may be novel and what is not so; there are no historical or bibliographical indications, no „Leitfaden“, no introduction apart from a two-page philosophical discourse which ends up with the following statement: „... bibliographical references would probably have obscured the fact that a single philosophical tendency has been the real motive power behind the chain of my reasonings.“ <https://mathshistory.st-andrews.ac.uk/Biographies/Kahler/>; OCLC: 246614064



# Exil



## SCHUR, Issai.

*Die algebraischen Grundlagen der Darstellungstheorie der Gruppen. Vorlesungen über Darstellungstheorie von Dr. J. Schur, emeritierter Professor an der Universität Berlin, gehalten auf Einladung des mathematischen Seminars der ETH Zürich bearbeitet und herausgegeben von Dr. E. Stiefel, ... Autographie. - Zürich: Frey & Kratz, 1936. 4to (300 x 210 mm) 5 Bll., 74 Bll. printed one sided, reproduced machine typescript. Gray wrappers, paper browned.*

EUR 600.-

Rare autographed (reproduced typescript) lecture held by the Russian mathematician Issai Schur (1875–1941) in 1936 in Zürich at the famous ETH on group theory. Issai Schur had worked for most of his life in Germany. He studied at the University of Berlin and obtained his doctorate in 1901, became a lecturer in 1903 and, after a stay at the University of Bonn, he became professor of mathematics in Berlin University in 1919. As a student of Frobenius, he worked on group extensions (the subject with which he is most closely associated), but also in combinatorics and number theory and even sometimes in theoretical physics. He is perhaps best known today for his result on the existence of the Schur decomposition and for his work on group representations (Schur's lemma). From 1933 events in Germany made Schur's life as a Jewish Russian increasingly difficult. Schur found himself lonely after the flight of many of his students and

the expulsion of renowned scientists from his previous place of work. Schur was able to leave Germany in early 1939; his health, however, was already severely compromised. He traveled in the company of a nurse to his daughter in Bern, and then emigrated to Palestine. Two years later he died in Tel Aviv of a heart attack.

In his commemorative speech, Alfred Brauer (a student of Schur) spoke about him as follows: „As a teacher, Schur was excellent. His lectures were very clear, but not always easy and required cooperation – During the winter semester of 1930, the number of students who wanted to attend Schur's theory of numbers lecture, was such that the second largest university lecture hall with about 500 seats was too small. His most human characteristics were probably his great modesty, his helpfulness and his human interest in his students.“ <http://mathhistory.st-andrews.ac.uk/Biographies/Schur.html>



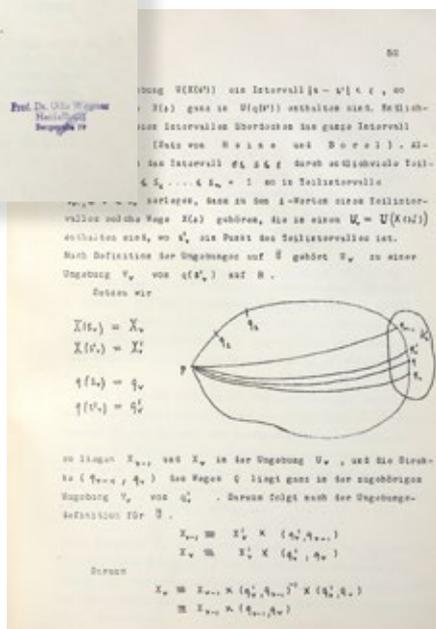
## WAERDEN, Bartel van der.

*Vorlesungen ueber kontinuierliche Gruppen von Professor B. L. van der Waerden. Göttingen Sommersemester 1929. (Göttingen, Math. Inst. 1929) 4to (290 x 210 mm) 5 Bll., 203 Bll. Reproduced machine written typograph, printed one sided. Half-cloth binding, with red morocco label, partly defective*

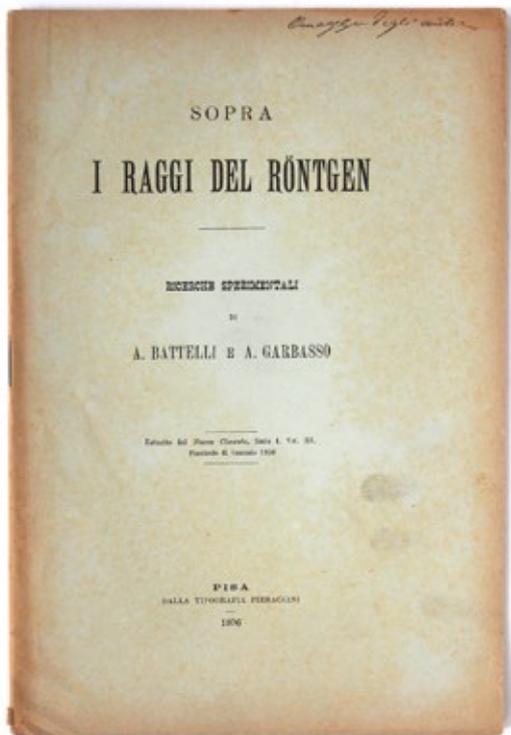
EUR 520.-

Rare reproduced lecture notes on group theory by the Dutch mathematician Bartel van der Waerden (1903-1996).

In 1926 van der Waerden had been awarded a Rockefeller fellowship for a year and, following the semester in Göttingen with Emmy Noether, he went to Hamburg to study for a semester with Hecke, Artin and Schreier. There he attended Artin's algebra course and took notes with the aim of writing a joint book with him. However, when later Artin saw the part of the text van der Waerden was writing, he suggested that he write the whole book without any chapters being contributed by Artin. This eventually became van der Waerden's famous text *Moderne Algebra*. The year 1927 was a busy one for van der Waerden. He was offered a position at the University of Rostock but was appointed to a lectureship at Groningen in the same year. He returned to Göttingen as a visiting professor in 1929 and he continued working on *Moderne Algebra* which contained much material from Emmy Noether's lectures as well as those of Artin. In 1931 he was appointed professor of mathematics at the University of Leipzig where he became a colleague of Werner Heisenberg. His interaction with Heisenberg and other theoretical physicists led to van der Waerden publishing *Die gruppentheoretische Methode in der Quantenmechanik* in 1932. He then began to publish a series of articles in *Mathematische Annalen* on algebraic geometry. In these articles, van der Waerden defined precisely the notions of dimension of an algebraic variety, a concept intuitively defined before. His work in algebraic geometry uses the ideal theory in polynomial rings created by Artin, Hilbert and Emmy Noether. His work also makes considerable use of the algebraic theory of fields. Note: most libraries state 203 pp. (we have 203 leaves); it might be that this is a reproduction from the 1930's of the original typescript which might be two-sided. The binding indicate a date of the 1920-1940's.



# X-Ray



## BATTELLI, Angelo; GARBASSO, Antonio.

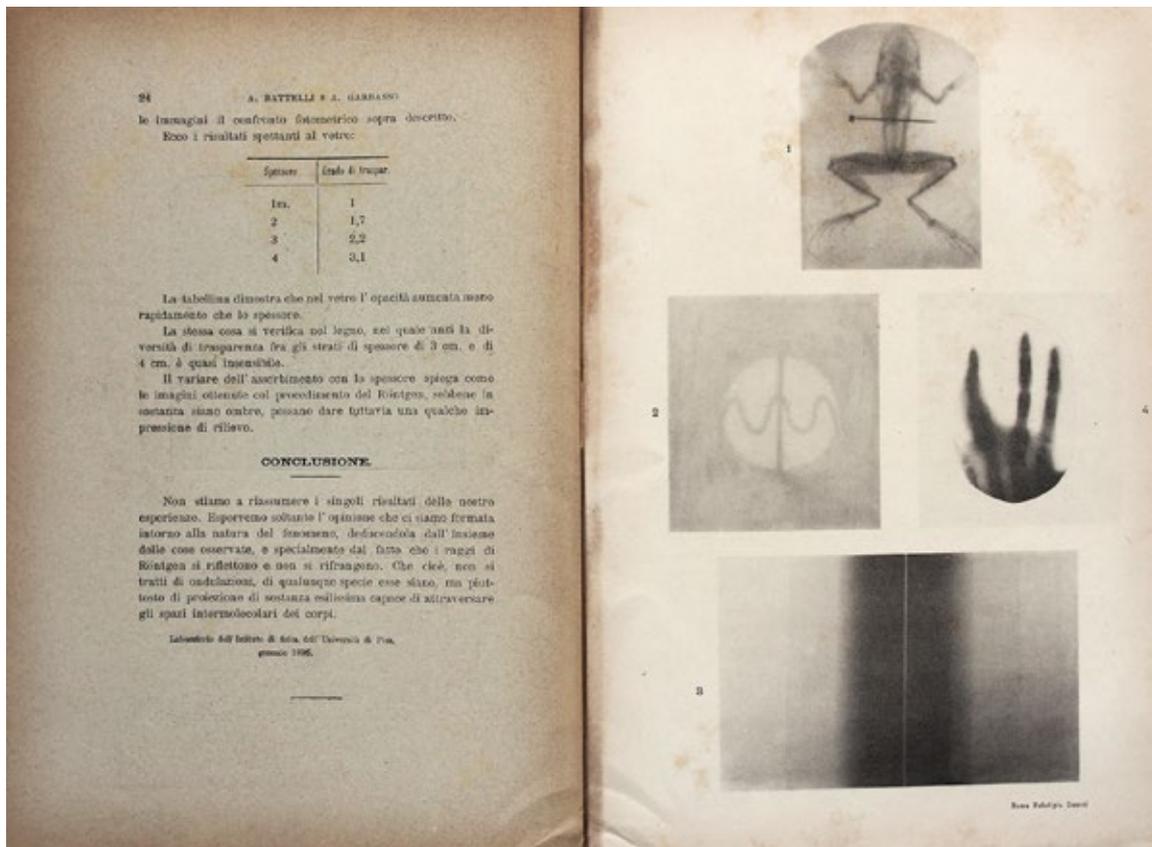
*Sopra i Raggi del Röntgen. Ricerche Sperimentali di ... Estratto del Nuovo Cimento, Serie 4, Vol. III. Fasciolo di Gennaio 1896. - Pisa: dalla Tipografia Pieraccini, 1896. 8vo (250 x 170 mm) (2), 24 pp., 1 plate. Original wrappers with dedication on cover: omaggi degli autori. Little used and bumped, else fine.*

EUR 500.-

Early reaction to Röntgen's discovery in November 1895, rare Off-Print issue with dedication by the authors.

The idea of placing a fluorescent screen directly behind the photographic plate while making an exposure had been suggested by Röntgen in order to shorten the exposure time, on the basis that the fluorescent light of the screen would increase the direct photographic action of the rays. Although the idea was developed in many laboratories at the time, the two Italian physicists were the first to describe this method in January 1896.

„When, in January 1896, the news about the discovery of X-rays spread around, Italian physicists were ready to enter this exciting new field of investigation. However, before the X-Rays discovery, Italian physicists had never studied cathode rays and had dedicated scarce attention to the electrical discharge in rarefied gases. As it is well known, the study of electrical conduction in rarified gases led to the discovery of cathode and canal rays and, later, to the discovery of X-rays and of the electron. In the period 1870-1895, we find only four papers by Italian physicists dealing with this topic. Furthermore, they have been written by four different authors in a period ranging from 1873 to 1894. Battelli and Garbasso learned from the newspapers about the „discovery, made by Röntgen, of rays endowed with peculiar properties“ and tried at once „to repeat some experiments of the German physicist“. They got „almost at once very good results“. Battelli and Garbasso presented their results at a public conference on January 25, 1896.



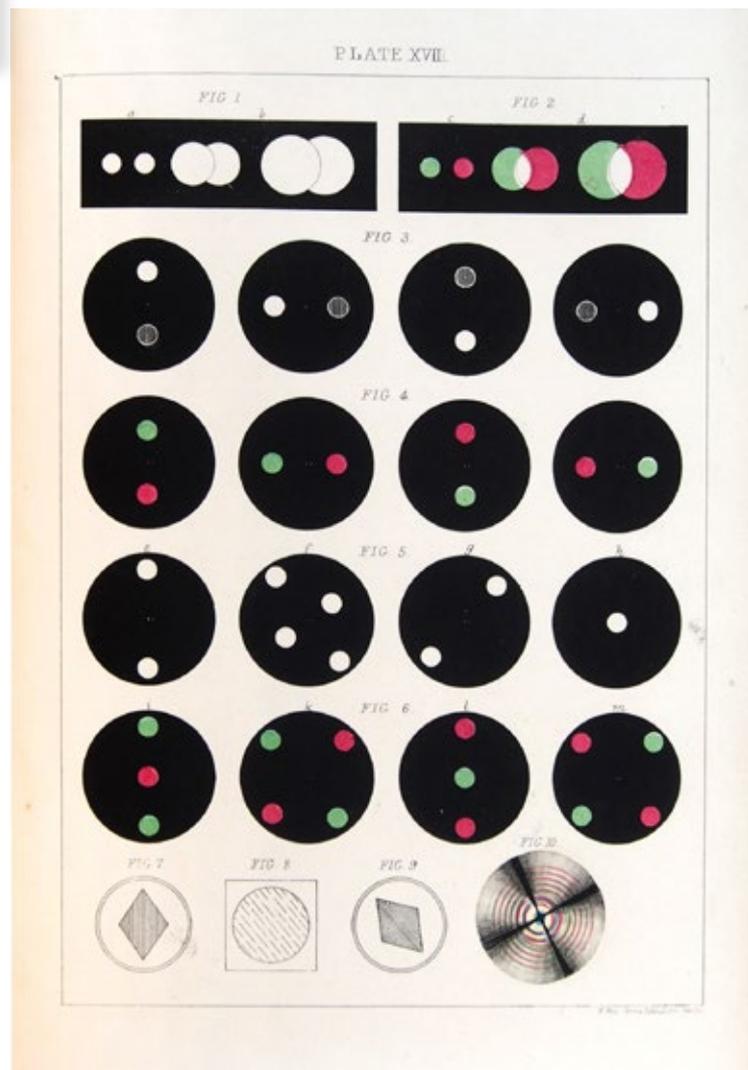
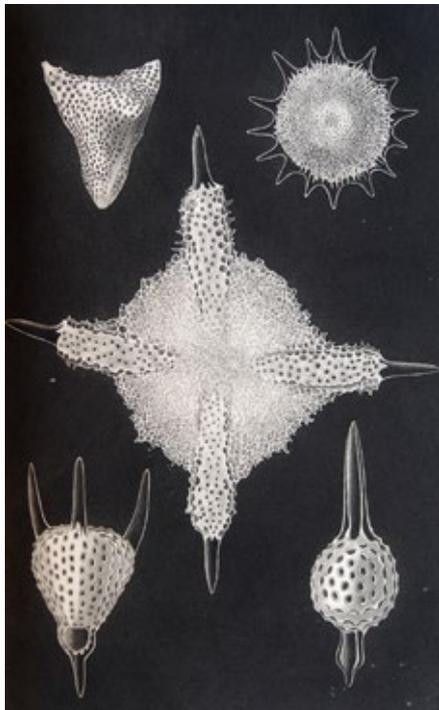
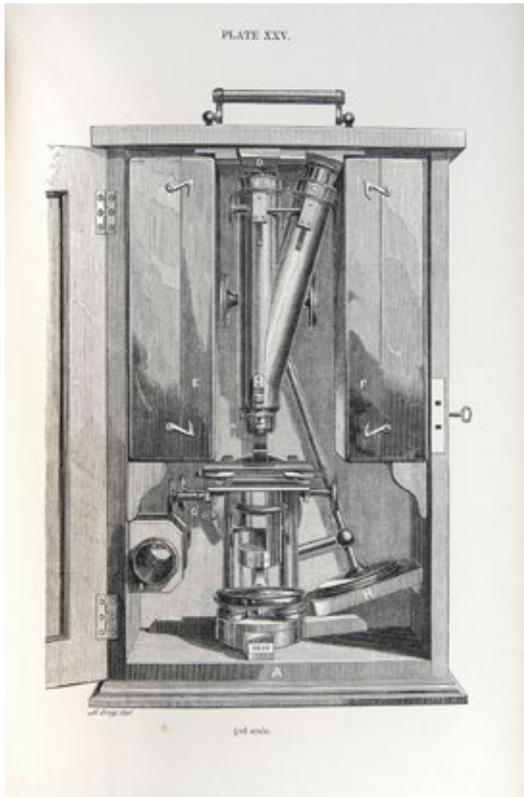
# Microscopes

## BECK, Richard.

*A treatise on the construction, proper use, and capabilities of Smith, Beck and Beck's achromatic microscopes. - London: printed for Smith, Beck, and Beck, 1865. royal 8°. (260 x 175 mm) VIII, 144 pp., with 27 engraved plates (of which 2 are colored) each with a leaf of explanatory text, 76 text woodcuts, advert. leaf at end. Original green embossed cloth, spine slightly rubbed, cover with small nick, otherwise a very fine copy.*

EUR 600.-

Uncommon first edition of this fine printed trade catalogue for microscopes of James Smith and Richard Beck, a nephew of J. J. Lister. Smith, Beck & Beck was a renowned British optical company based in London. James Smith began making microscopes in the 1820's and established his own business in 1829. He then went on to form a partnership with Richard Beck (1827-1866) in 1847, and was later joined by Beck's brother, Joseph (1828 - 1891), when the name of the company was changed to Smith, Beck & Beck, employing 40 men, and 35 boys and girls. The firm went on to become the foremost nineteenth-century makers of microscope, receiving the councils medal for microscopic optics in 1847 and again in 1855 receiving the microscopic prize in Paris Exposition.



# Binocular Vision

HANCKE, Johannes (praes.);  
Caspar Neumann (def.)

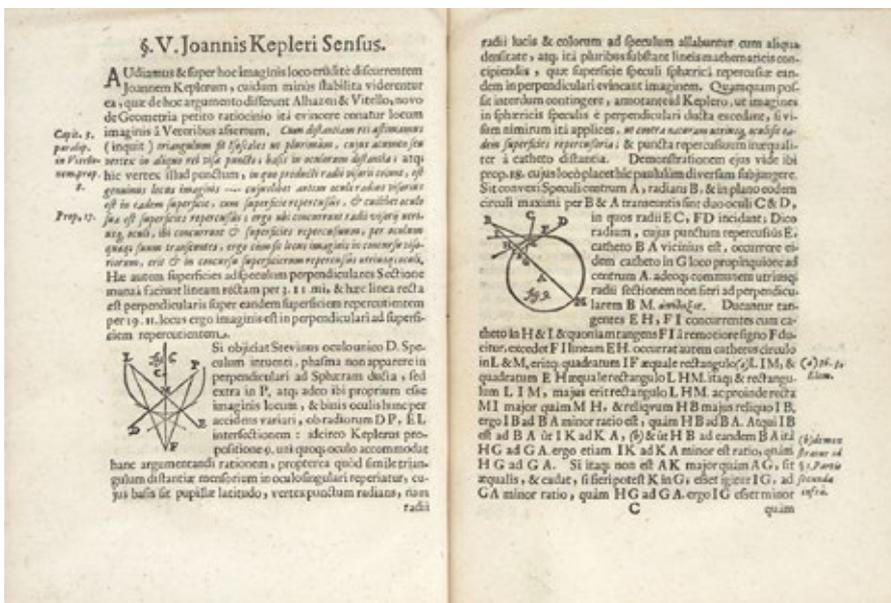
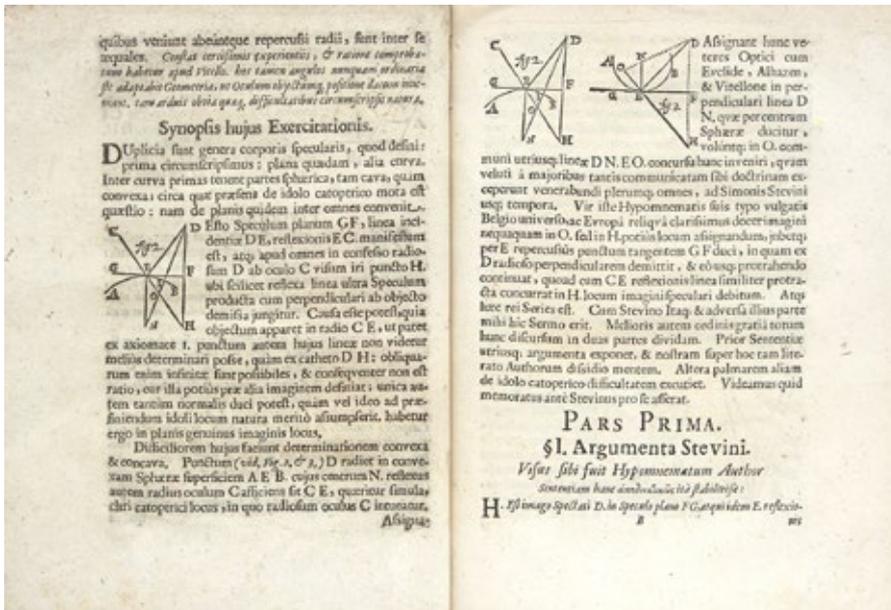


*Exercitatio de Idolo speculi, in Almo Caesareo Regioq; Collegio Societatis Jesu Vratislaviae .... direttore, praeside ac instructore Joanne Hancke ... Defendit, propugnavit atq. demonstravit Casparus Neuman. - Vratislaviae (Wroclaw; Breslau): in Haeredum Baumannianorum Typographia exprimebat Johannes Güntherus Roererus, (1685). 4to (203 x 160 mm) 29 leaves with numerous technical & geometrical text-woodcuts. (A4-G4, H1). Later paper-card boards period style.*

EUR 2.400,-

Exceedingly rare Jesuit work on catoptrics, discussing the works of Stevin, Kepler, Vitello, and Alhazen and written with the German clergyman Caspar (or Kaspar) Neumann (1648-1715) who had a special scientific interest in mortality rates. Johannes Hancke (1644-1713) was a German Jesuit professor of philosophy and mathematics, who joined the Jesuit order in 1664. He studied theology and natural philosophy from 1670 to 1674 at the universities of Wroclaw (Breslau) and Prague and published his dissertation: *Theses Mathematicae* in 1676. He later taught mathematics and philosophy in Prague, Olomouc and at the University of Wroclaw (Breslau). Hancke defended Balthasar Conrad's (1599-1660) position in an earlier debate between Conrad and Marci of Kronland on optics and the rainbow. Marci performed already the important experiment with monochromatic rays, the later 'experimentum crucis' of Isaac Newton. Marci preceded Isaac Newton in his belief that Light is not changed into colors except by a certain refraction in a dense medium; and that the divers species of colors are the products of refraction (Westfall, *The Development of Newton's Theory of Color*, in: *ISIS*, Vol. 53 (1962) pp. 339-358).

Kepler's 1604 *Optics* (*Ad Vitellionem Paralipomena*) proposed among many other things a new way of locating the place of the image under reflection or refraction. He rejected the "perspectivist" method that had been used through antiquity and the Middle Ages, whereby the image was located on the perpendicular between the object and the mirror (the "cathetus"). Kepler faulted the method for requiring a metaphysical commitment to the action of final causes in optics: the notion that the image was at that place because it was best or appropriate for it to be there, and for no other discernible reason. Kepler's new theory relied on binocular vision and depth perception to determine the location of the image. No final causes were required, and he showed that the image would in general not be found on the cathetus. According to modern scholarship, Kepler's theory was part of his revolutionary transformation of the science of optics, and his abandonment of perspectivist optics; as a consequence, the theory of binocular vision is also thought to be original with him. Simon Stevin developed much the same theory at the same time as Kepler and, it seems, independently of either Benedetti or Kepler. Hancke's book is written in this tradition. - VD17 14:634987B; Pogg. I, 1010.- KVK: Dresden (incptl., 21 leaves); Berlin, Rome, Budapest. no copy in OCLC (USA), COPAC (UK), not in Switzerland.



## With Charles Lyell on Geological Tour



### HARTUNG, Georg.

*Geologische Beschreibung der Inseln Madeira und Porto Santo. Mit dem systematischen Verzeichnisse der fossilen Reste dieser Inseln und der Azoren von Karl Mayer. – Leipzig, Wilhelm Engelmann, 1864. 4to (245 x 155 mm) X, 298 pp., (2), with 17 (9 fold.) lithogr. plates and maps. Contemporary half calf with gilt title on spine, and cloth on covers, marbled edges. Title and a few pages resp. all plates with private blind stamp (outside image), first pages a bit waterstained, but better than normal copy, without major stockings as often.*

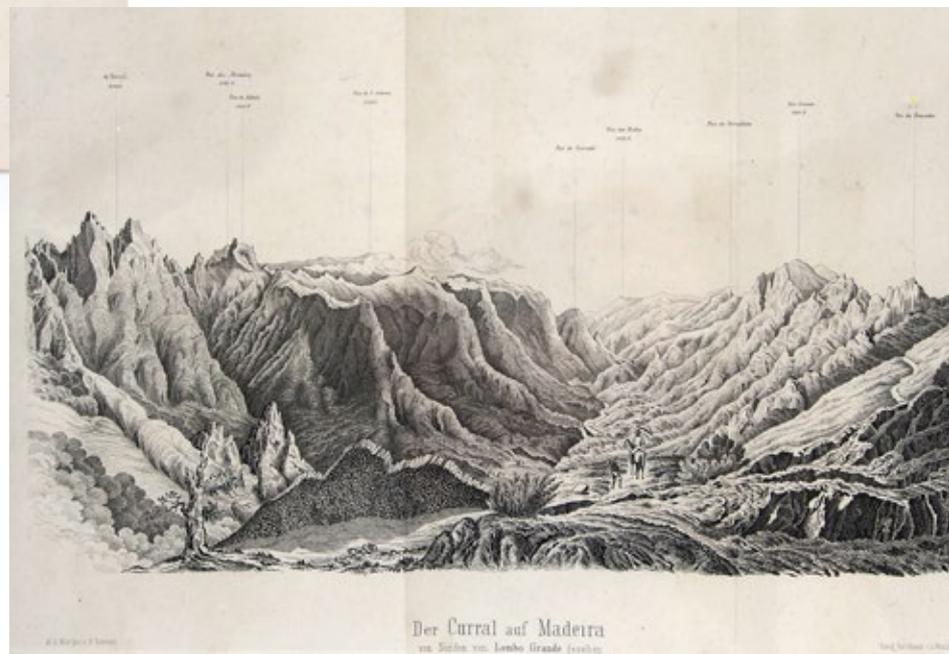
EUR 1.400.-

First edition of Hartung's fine work on the geology of Madeira, which he explored with Charles Lyell.

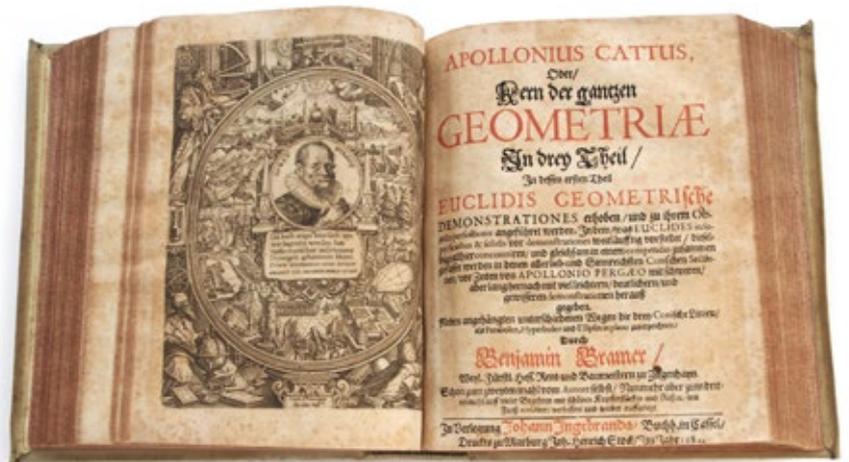
The German geologist Georg Hartung (1821–1891) is best known for several books and articles about the islands of Macaronesia, especially the Azores and the Canary Islands. In 1853 and 1854, he was living in Funchal, on the Portuguese island of Madeira. During this time Charles Lyell visited the archipelago to carry out the fieldwork that led the famous British geologist to write *On the Geology of Some Parts of Madeira*, published in the *Quarterly Journal* in 1854, and to make abundant references to the geology, morphology, paleontology and living flora and fauna of the islands in the sixth edition of the *Elements of Geology* (1865) and in the 1868 edition of the *Principles of Geology*. Lyell was accompanied by Hartung during the visit to Madeira and to the Canary Islands. Hartung left on him a deep and lasting influence, so that Lyell wrote that his German colleague had 'proved a most active fellow - labourer'. Lyell liked to talk to young geologists from whom he felt 'old stagers' had much to learn, and that was probably the case with Hartung. In 1864, Hartung published *Geologische Beschreibung der*

*Inseln Madeira und Porto Santo* on the geology of Madeira and Porto Santo that was the result of his ideas and field observations made from 1850 to 1854. Hartung's work on these archipelagos was important from both a geological and a historical point of view, and he became involved in the discussion of Leopold von Buch's 'upheaval' and Charles Lyell's 'upbuilding' theories.

Throughout his life, Charles Lyell travelled extensively, always as a keen observer. He viewed the Earth's geological history as continuous with and subject to the same processes of change as at present. Leopold von Buch's theory of craters of elevation contradicted Lyell's view of Earth history. Thus Lyell travelled to Madeira and the Canary Islands in 1853 to see von Buch's evidence. Lyell found the islands formed by a long series of volcanic eruptions, not by the single explosive upheaval that von Buch had described. Nevertheless, Lyell still accepted Léonce Élie de Beaumont's claim that lava flows could not form compact rock on steep slopes. In 1855, Lyell learned from Eilhard Mitscherlich that on Stromboli contemporary steeply inclined lava flows were forming solid rock. In 1857, Lyell went to Sicily where unmistakable evidence contradicted Élie de Beaumont. In the walls of the Valle del Bove, steeply inclined layers of lava were intersected by dykes that pointed towards a former centre of eruption at Trifoglietto, later buried by volcanic rocks emitted from the present centre of eruption at the summit of Etna, proving that the Valle del Bove could not have originated as a crater of elevation. – Lit.: Heinsius XIV/1, 516 (reproduziert im GV LVI, 269). L. G. Wilson. The geological travels of Sir Charles Lyell in Madeira and the Canary Islands, 1853–1854; in: *Geological Society, London, Special Publications*, no. 287 (2007), pp. 207–228 and M. S. Pinto, A. Bouheiry. The German geologist Georg Hartung (1821–1891) and the geology of the Azores and Madeira islands. (the same), pp. 229–238



## Peep Box & Instruments for Accurate Geometric Drawings



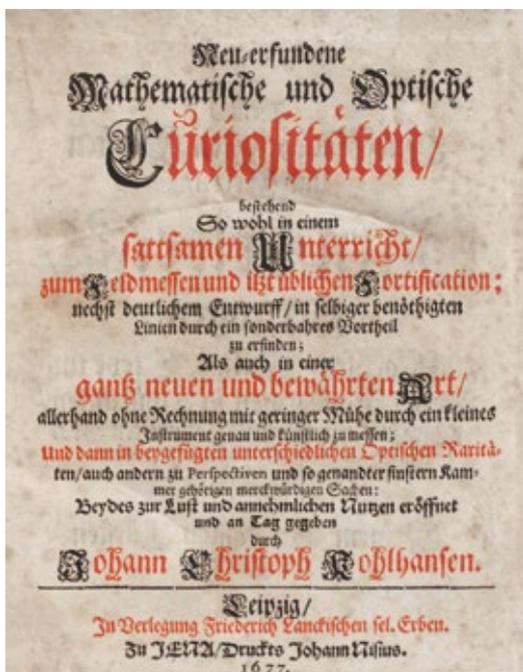
### KOHLHANS, Johann Christoph

*Neu-erfundene mathematische und optische Curiositäten, bestehend so wohl in einem sattsamen Unterricht ... ; nechst deutlichem Entwurff in selbiger benöthigten Linien durch ein sonderbahres Vortheil zu erfinden; als auch in einer gantz neuen und bewährten Art, allerhand ohne Rechnung mit geringer Mühe durch ein kleines Instrument genau und künstlich zu messen; und dann in beygefügeten unterschiedlichen Optischen Raritäten und andern zu Perspectiven und so genandter finstern Kammer gehörigen merckwürdigen Sachen ...* Leipzig: Friederich Lanckisch Erben; Jena: Johann Nisius, 1677. Quarto (196 x 158 mm) (16), 320 pp., (4) with 25 double page engraved plates, title printed in red and black. Brown-spotted throughout due to paper quality

### (bound with) BRAMER, Benjamin.

*Apollonius Cattus, oder Kern der gantzen Geometriae in drey Theil. In dessen ersten Theil Euclidis Geometrische demonstrationes erhoben, und zu ihrem objecto perfectionis angefüret werden... De sectione cylindri... Anhang eines Berichts von M. Johsten Bürgi Geometrischen Triangular Instrument, zu gar leicht kurtzen, und doch gewissen Land und Feldmessen... 3 volumes in 1. - Kassel: Johann Ingebrand; Marburg: Johann Heinrich Stock, 1684. (14), 102 pp.; (2), 61 pp., (1); (8), 22 pp., (2) with engraved frontispiece in vol.1, 30 plates in vol.2 (25 double-page or folding), and 21 in vol. 3. Old vellum, modern folding cloth box, text spotted and browned.*

EUR 5.500.-



Rare first edition of a work that discusses surveying, surveying instruments, optics, particularly a sort of the camera obscura or pinhole camera (called Peep-Box or Guckkasten) and telescopes. Kohlhans devised two very complex sectors for use as an aid in surveying and fortification problems. The sectors are noteworthy as they contain not only the usual types of scales, but also have built-in protractors, plane and diagonal scales. In order to get all the scales on a sector, Kohlhans had to create them with wide legs. He also has to use judicious positioning of the scales, e.g. with the shorter scales engraved near the outer edge. Further included are a description of the Camera obscura, constructions or devices that make use of the pinhole image principle within a box, tent or room.

Camerae obscurae with a lens in the opening have been used since the second half of the 16th century and became popular as an aid for drawing and painting. The camera obscura box was developed further into the photographic camera in the first half of the 19th century when camera obscura boxes were used to expose light-sensitive materials to the projected image. The camera obscura was used as a means to study eclipses, without the risk of damaging the eyes by looking into the sun directly. As a drawing aid, the camera obscura allowed tracing the projected image to produce a highly accurate representation, especially appreciated as an easy way to achieve a proper graphical perspective. The

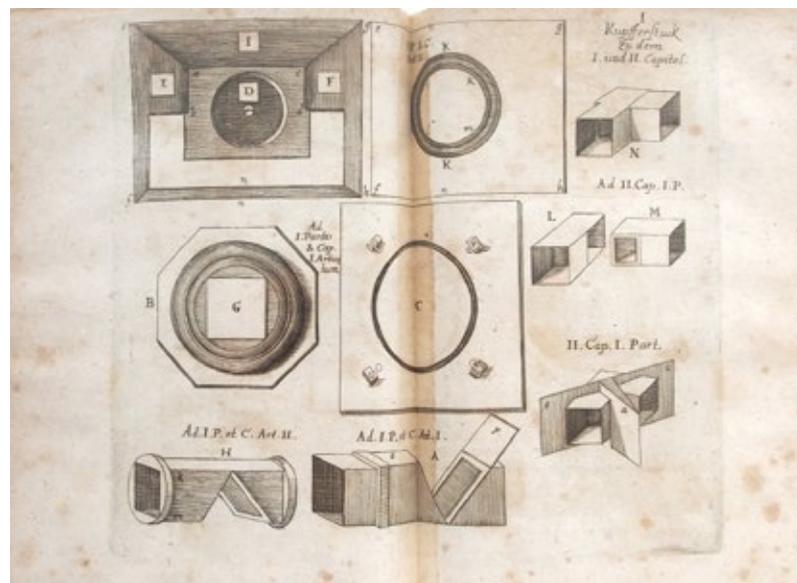
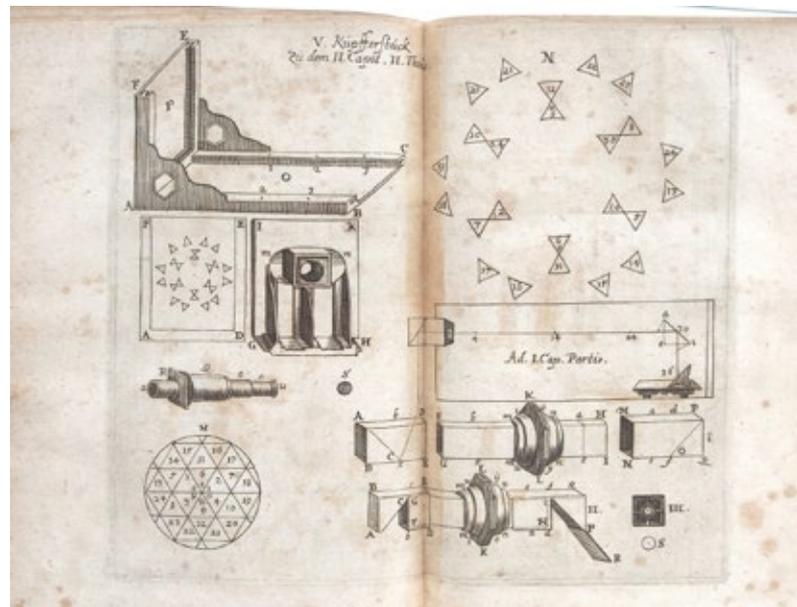
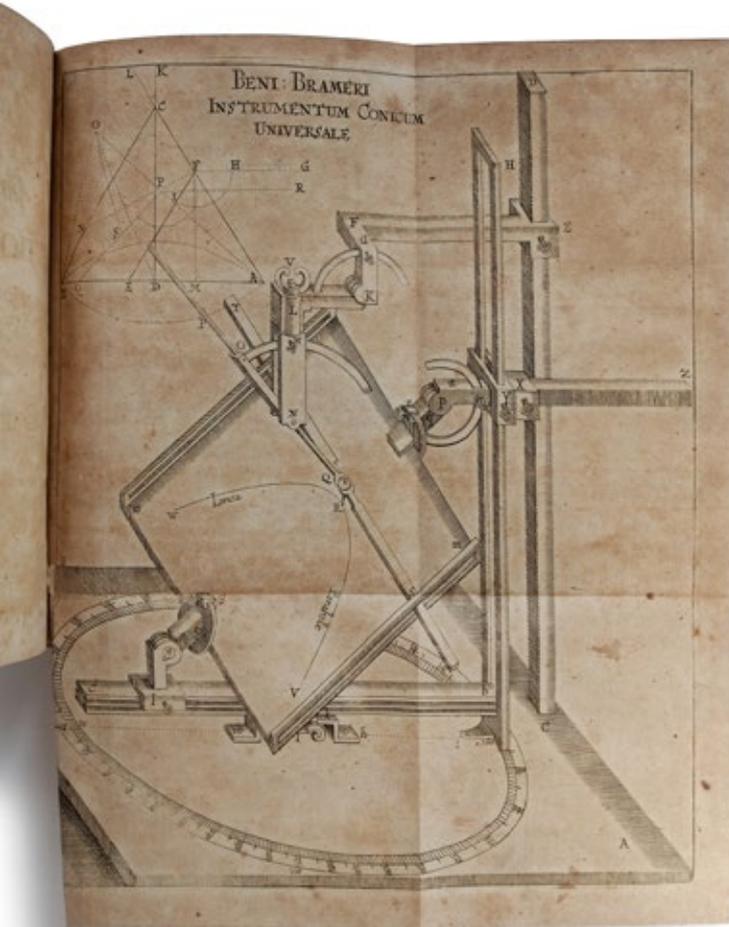
earliest use of the term ‚camera obscura‘ is found in the 1604 book *Ad Vitellionem Paralipomena* by German mathematician and astronomer Johannes Kepler. Kepler discovered the working of the camera obscura by recreating its principle with a book replacing a shining body and sending threads from its edges through a many-cornered aperture in a table onto the floor where the threads recreated the shape of the book. He also realized that images are ‚painted‘ inverted and reversed on the retina of the eye and figured that this is somehow corrected by the brain. In 1607 Kepler studied the sun in his camera obscura and noticed a sunspot, but he thought it was Mercury transiting the sun. In 1611 Frisian/German astronomer Johannes Fabricius studied sunspots with a camera obscura, after realizing looking at the sun directly with the telescope could damage their eyes. They are thought to have combined the telescope and the camera obscura into camera obscura telescope. From 1612 to at least 1630 Christoph Scheiner would keep on studying sunspots and constructing new telescopic solar projection systems. He called these ‚Heliotropii Telioscopici‘, later contracted to helioscope. For his helioscope studies Scheiner built a box around the viewing/projecting end of the telescope, which can be seen as the oldest known version of a box-type camera obscura. Scheiner also made a portable camera obscura. In his 1613 book *Opticorum Libri Sex* Belgian Jesuit mathematician, physicist and architect Francois d’Aguilon described how some charlatans cheated people out of their money by claiming they knew necromancy and would raise the specters of the devil from hell to show them to the audience inside a dark room. The image of an assistant with a devil’s mask was projected through a lens into the dark room, scaring the uneducated spectators. Dutch inventor Cornelius Drebbel is thought to have constructed a box-type camera obscura which corrected the inversion of the projected image. In 1622 he sold one to the Dutch poet, composer and diplomat Constantijn Huygens who used it to paint and recommended it to his artist friends.

Johann Christoph Kahlhans was born on 16 July 1604 in Neustadt an der Haide. Trained at a high school in Coburg, he moved in 1620 to the University of Jena and received in 1627 the degree of a master. In 1633 he was hired as a professor of mathematics at Casimirianum Coburg, where he later also taught Hebrew. However, he had to leave the city

in 1642 because of the Thirty Years War and became a teacher at the Gymnasium in Göttingen. There he was responsible for Greek studies. In 1653 he returned to Coburg as headmaster and associate professor, where he died on 9 September 1677 at the age of 73 years.

This is the first complete edition of Bramer’s work, in three parts. The first part was first published in 1634, the second in 1647 and the important third part with 21 new plates in this edition for the first time.

After the death of his father in 1591, Benjamin Bramer was taken care of by his sister, who was married to the clock and instrument maker Joost (Jobst) Bürgi. Bramer spent five years with Bürgi at the imperial court in Prague, returning to Kassel in 1604. In this work Bramer (ca. 1588 - 1650) continues his unusual acknowledgement of the work of his predecessors, particularly Bürgi, whose portrait appears in the frontispiece. Leon Battista Alberti (1435), Albrecht Dürer (1525) and Bürgi (1604) had each investigated the problem on how to create an instrument that would allow one to produce accurate geometric perspective drawings. Bramer continued this tradition by developing his own set of instruments, particularly one to draw conic sections. The device was evidently an improvement on one devised by Christoph Scheiner. - ADB XVI, 447; BBKL, IV, 305-06. Provenance: Alfred Schmid (bookplate); Jonathan Hill, New York, 1983, Cat. 15, item 98, Tomash Collection Tomash & Williams K64; B226, B229; VD17 3:3022221D; VD17 23:277121R



## With Visit to Maria Sibylla Merian



### UFFENBACH, Zacharias Conrad von.

*Merkwürdige Reisen durch Niedersachsen Holland und Engelland. Erster (-Dritter) Theil. Mit Kupfern. 3 parts bound in 3 vol. - Frankfurt und Leipzig, no publisher 1753 (vol. I) (and) Ulm, Johann Friederich Gaum, 1753-1754 (vol. II and III). Engr. Portrait-front. and (16) pages with engraved title-vignette with an interior view of a studiolo by J. A. Friedrich after G. E. Nilson, CLXXXVI, 544, (2), pages with a large woodcut head- and tail-piece, one large text woodcut, 27 folded engraved and numbered plates with numerous illustrations numbered I to XXXIII (with supplemental illustrations XIIIa, XIVa and XXXIIIa); (2) with allegorical woodcut title vignette, 604 pages with large woodcut head- and tail-piece, 9 folded engraved plates partly numbered 28-32 with numerous illustrations numbered XXXIV to XLV; engraved front. (a repeat of illustration XIX), (2), with repeated woodcut title vignette (= without 5 leaves 'Vorrede' and index of engravings; which were never bound into this copy), 756, (36) pages, 15 folded engraved plates with numerous illustrations numbered I-XXII. All illustrations are by and after Johann Friedrich von Uffenbach, his younger brother. Cont. uniform vellum. All edges green (198 x 125 mm). Spine of part II with tiny round worm hole. Slightly soiled.*

EUR 3.600.-



First and only edition. In 1702 he undertook his first journey to Dresden and Freiberg, studying art in Dresden and the mining industry in Freiberg. Further travels lead him to Saxony, Thuringia, and the Mark Brandenburg. Every travel he made was meticulously prepared using local sources and his vast library. He entered into correspondence with members of the scholarly world throughout the places he wanted to visit, introducing himself and his fields of interest like cabinets of curiosities, private and public libraries, numismatical and art collections, scientific developments in a variety of fields, anatomical theatre, architecture and landscape parks but also technological improvements, instruments and all sorts of other curiosities. For each travel he compiled a manuscript guide book for himself writing down every place and object of interest, every institution or person (scholars and booksellers) he wanted to visit or any other curiosity which seemed worth visiting to him. In 1705 he travelled to the Netherlands and brought home new acquisitions of books, manuscripts and coins; from another trip in 1709-11 to northern Germany, Holland, and England, he brought home 4.000 books, so that he now counted no fewer than 12.000 volumes in his private library. In 1718 he made his last trip to Belgium. He was almost all the time accompanied by his younger brother Johann Friedrich von Uffenbach (1687-1769), who made most of the illustrations for the printed work. Frontispiece in vol. I reinforced in gutter, title-page and the following leaf of vol. II remargined in lower part and in gutter, a few tiny and faint waterstains in places, some light browning to margins of a few plates. The plates with artefacts, geometrical instruments, natural history objects and other exhibition pieces from various cabinets of curiosity, a smoking automaton etc. Apart from the 'Vorrede' in the third volume which had obviously never been bound in a complete, clean and wide margined copy.- Gwinner, Kunst und Künstler in Frankfurt a. M. Frankf. 1862, p. 263. ADB XXXIX, pp. 135-137.



## Invention of the ‚Rucksack‘?



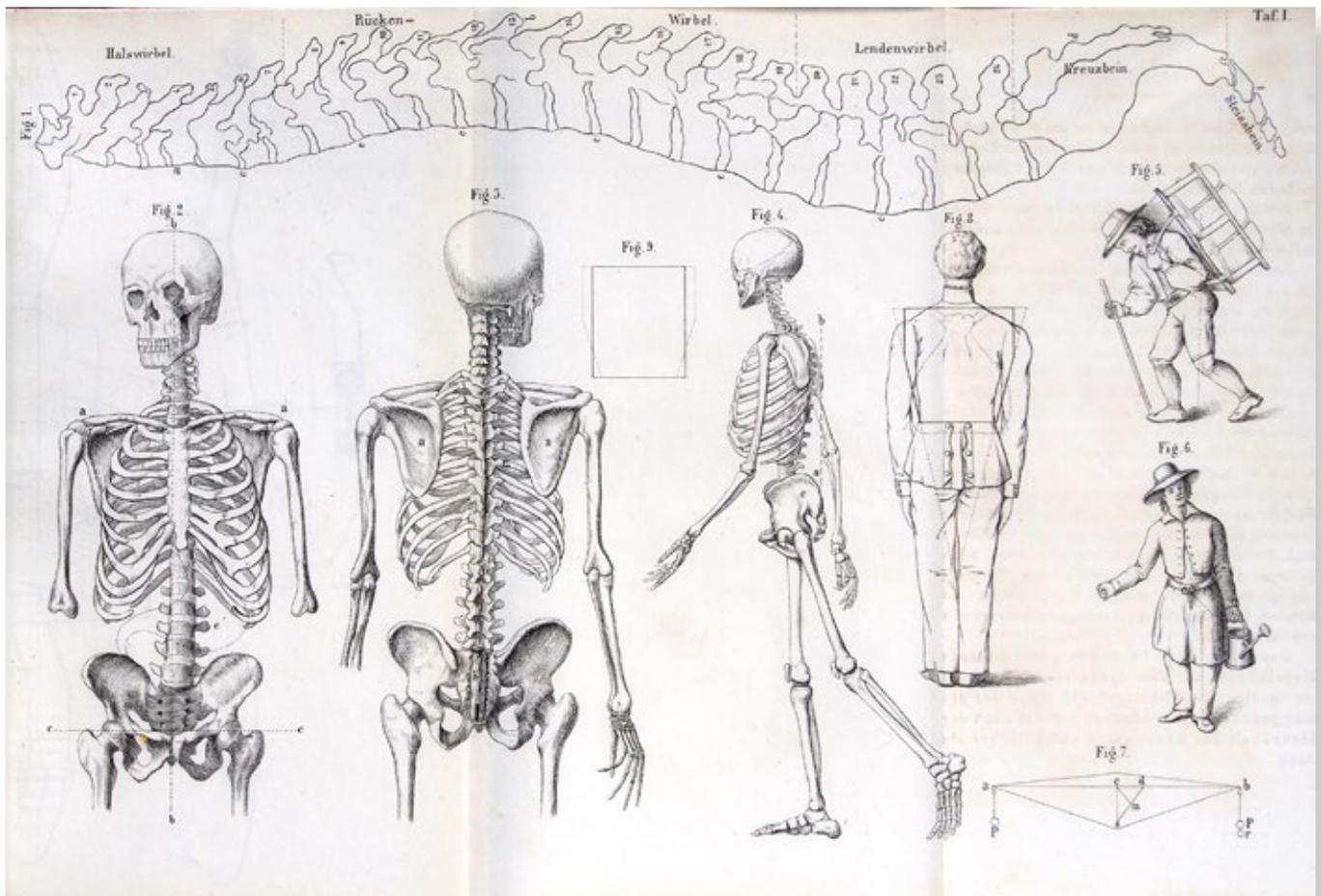
**SCHÖNHUEB, Anton J. J., Freiherr von.**

*Theorie des Tragens mit besonderer Berücksichtigung des Infanterie-Gepäckes. Mit 2 Figuren-Tafeln. - München: G. Franz, 1860. 8vo. (206 x 127 mm) IV, 56 pp., with two fold. plates. Green cloth, gilt ornaments on covers, gilt edges, very fine and clean copy.*

EUR 450.-

Rare work on the theory of the load-bearing equipment of soldiers, commonly known today as backpack or Rucksack by using Weber's *Mechanik der menschlichen Gehwerkzeuge* of 1836, the most important contemporary study of the physiology of motion and locomotion. (G & M 604)

The Weber brother's work in physiology marked the beginning of a new era of physico-mathematical study. The *Mechanik* contains an anatomical discussions of the joints used in walking and running, measurements made on living subjects, and a mathematical theory relating the length and duration of a step to anatomical parameters. Among the other results, the work corrected misconceptions about posture and recommended its conclusions to the attention to artists. The first step towards the modern backpack came from a man named Henry Merriam. His design fused the two most common designs of the era: the wood frame and the soft canvas rucksack. He called his design a knapsack and had it patented in 1878. His design, while imperfect and uncomfortable, showed the flaws of the bags of the day. They were either too stiff or too soft and both caused back and shoulder pain. Merriam hoped that, by using sheet metal to keep the bag away from the body, he could reduce some of this strain. Further work has to be done.



# "Wolfman"

## Oil Painting

*An unsigned oil painting of a „Wolfman“, a portrait of a man with hypertrichosis, with hair in face. Oil on canvas, over a wooden frame, without frame, probably mid to late 19th century. (English / Continental School) Size: ca. 500 x 400 mm unsigned. Backside on the frame Earl Julio (?) Schlumberger with pencil and further notes.*

EUR 4.800.-

Unusual subject of a painting from the 19th century, probably painted for a wandering medical show or for a private medical museum to show the strange and very rare dermatological occurrence of hypertrichosis, an abnormal amount of hair growth over the body. Probably not painted after an original case, but designed for educational purposes.



The two distinct types of hypertrichosis are generalized hypertrichosis, which occurs over the entire body, and localized hypertrichosis, which is restricted to a certain area. Hypertrichosis can be either congenital (present at birth) or acquired later in life. The excess growth of hair occurs in areas of the skin with the exception of androgen-dependent hair of the pubic area, face, and axillary regions. Several circus sideshow performers in the 19th and early 20th centuries, such as Julia Pastrana, had hypertrichosis. Many of them worked as freaks and were promoted as having distinct human and animal traits. Congenital forms of hypertrichosis are rare. Only 50 cases of congenital hypertrichosis lanuginosa have been recorded since the Middle Ages, and fewer than 100 cases of congenital generalized hypertrichosis have been documented in scientific publications and by the media. People with hair often found jobs as circus performers, making the best of their unusual appearance. Fedor Jeftichew (Jo-Jo the Dog-faced Man), Stephan Bibrowski (Lionel the Lion-faced Man), Jesus „Chuy“ Aceves (Wolfman), Annie Jones (the bearded woman) and Alice Elizabeth Doherty (The Minnesota Woolly Girl) all had hypertrichosis. Extensive hypertrichosis carries an emotional burden and can cause cosmetic embarrassment; however, some people attempt no treatments because they say it defines who they are.- Provenance: Property of the Brugsch family/ Berlin; unknown Heritage.

# Physics in the Bible



## REYHER, Samuel

*Mathesis mosaica, sive loca pentateuchi mathematica mathematice explicata, cum appendice aliorum S. Script. Iocorum mathematicorum.* – Kiel, Reumann, 1679. Quarto (185 x 150 mm) ff. 4, pp. 808 with one fold. engraved plate (pp. 631), one full-page woodcut plate (after pp. 388) and numerous text woodcuts. Contemporary vellum, handwritten title on spine. Unknown Ex Libris on inner front cover. Fine copy.

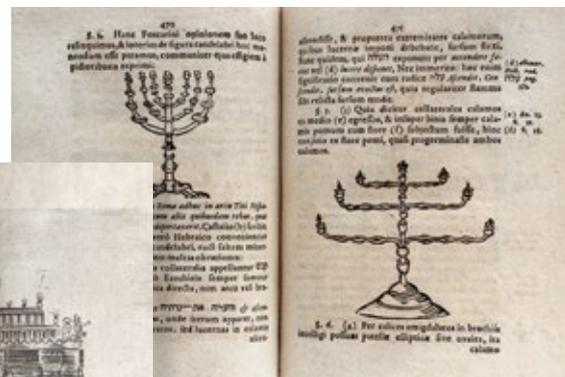
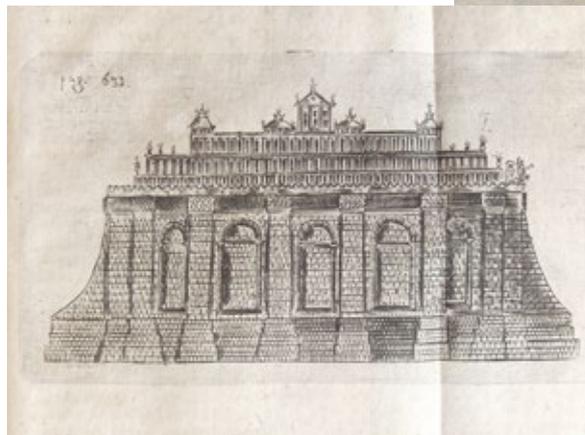
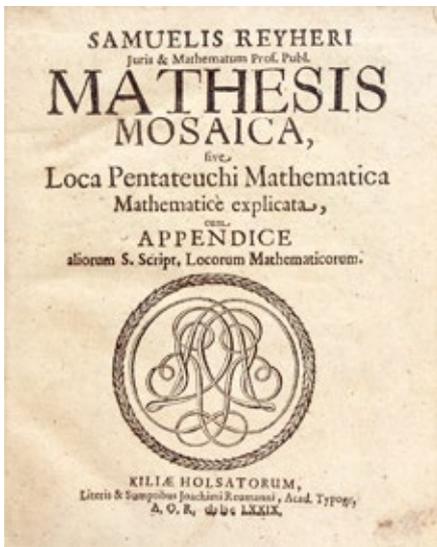
EUR 2.800.-

Very rare first edition of this complex baroque natural philosophy explaining natural phenomena which occur in the bible with „modern“ scientific spirit; part of the texts had been published before in small dissertations written under the name of his students at Kiel University.

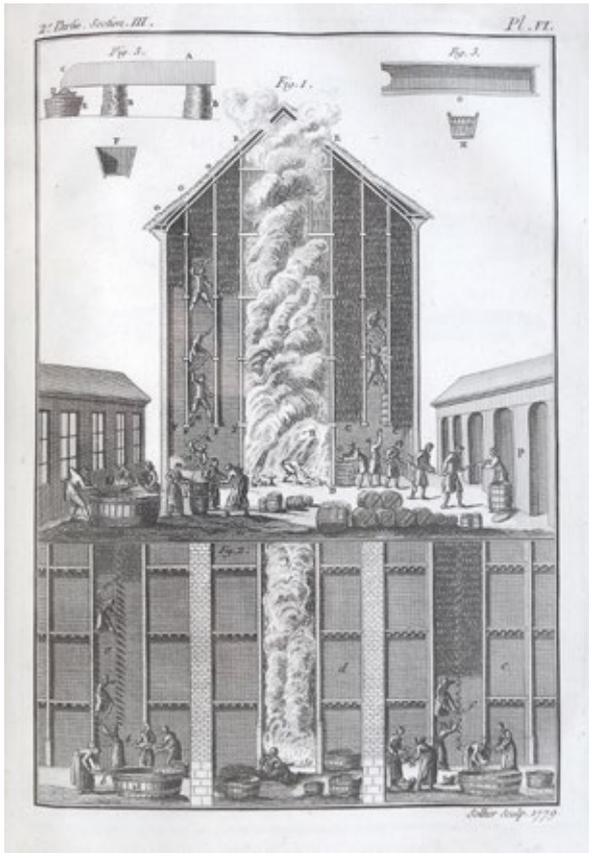
Samuel Reyher (1635–1714) was the first professor of mathematics at the Univ. of Kiel who taught there from 1665 until 1714. Reyher was a polymath of baroque character, who left behind complex pieces of work. He donated numerous manuscripts to the studies of Law and Universal History. As a natural scientist, he dealt with astronomical, meteorological and oceanographic experiments, among others; he established an observatory and constructed a Camera Obscura. He became well-known as a specialist in military architecture. He was a friend of Leibniz and member of the Berlin Academy of Sciences. Although Reyher has been a professor of mathematics since 1665, he also lectures in law since that time. The Duke of Gotha (his former student) appointed him to the State Council of Saxony in 1682. At the request of his students, he organized numerous private workshops in addition to the compulsory lectures and built and repaired with them his own instruments. From the beginning Reyher also gave public and private lectures on astronomy where he used Gassendi's Institutiones astronomicae and N. Mercator's Institutiones astronomicae (London 1676) and based his lectures on Nicolaus Copernicus heliocentric view. From 1667, Reyher held his „astronomical performances“ with instruments donated by Heinrich von Qualen to the public, which became increasingly popular in Kiel and even the ducal family attended. For the practical demonstration of optical effects he set up a camera obscura in 1667 with which he performed several times per semester. In the course of this correspondence with Leibniz, he was asked to make meteorological observations in Kiel for several months. From then on, he measured air pressure, temperature, and humidity several times a day and described the occultation of the sky, continuing these observations until the end of his life. Along

with the series of measurements made by the Landgrave of Hesse (a student of Galileo), Reyher's notes are the oldest weather records in Germany and confirm the occurrence of a „little ice age“ at the end of the 17th century. In addition, Reyher made the first marine studies, for example on the salinity of the water, and was engaged in the geodetic survey of the harbor of Kiel.

“So sind der 'Mathesis mosaica . . . , Kiliae 1679, 808 Seiten in 4° , zahlreiche Disputationen einverleibt, welche sich auf die verschiedenartigsten Dinge beziehen. Dies sonderbare Werk, welches noch im folgenden Jahrhundert manchen ähnlichen Schriften als Fundgrube diente, entsprach der damaligen Zeitrichtung, die Wissenschaften durch den Nachweis ihres usus in theologia zu verherrlichen. Auf Grundlage von Bibeltexten ließen sich wissenschaftliche Kenntnisse verbreiten und durch die Hinzufügung mancher Curiosa die Aufmerksamkeit fesseln. Loca mathematica waren dabei alle Stellen, die, wenn auch nur entfernt, eine Beziehung zur Mathematik in ihrem weitesten Sinne haben konnten. So kommen von den juristischen, dem Werke einverleibten Disputationen vor: die schon erwähnte 'De iure primogeniorum', dann 'De mappa geographica Palestinae', 'De columnis templi Salomonici', 'De aeneo Salomonis mari' u.s.w. Bei der Erwähnung des ersten Regenbogens wird die Cartesische Theorie des Regenbogens vorgetragen. Zu der in das Buch eingefügten Disputation 'De diluivio Noachico' wird auf die Angabe der Dauer vom 17. bis 27. Tage des zweiten Monats hingewiesen, doch ließ sich Reyher hierbei, wie Weyer bemerkt, die merkwürdige Beziehung entgehen, daß diese Dauer dem Unterschiede der Tage des Sonnenjahres und Mondjahres entspricht. Bei den Mauern Jericho's wird das Mitklingen von Tönen abgehandelt und dergl. mehr“ (ADB XXVIII, 354 ff.). – Poggendorff II, 617; Kantor III, 524; M. Büttner. Samuel Reyher und die Wandlungen . . . Sudhoff's Archiv LXIII (1979), 239-260.



## All Arts & Trades of the Enlightenment incl. Mining and Fishing



**BERTRAND, Jean Élie. (ed.)**

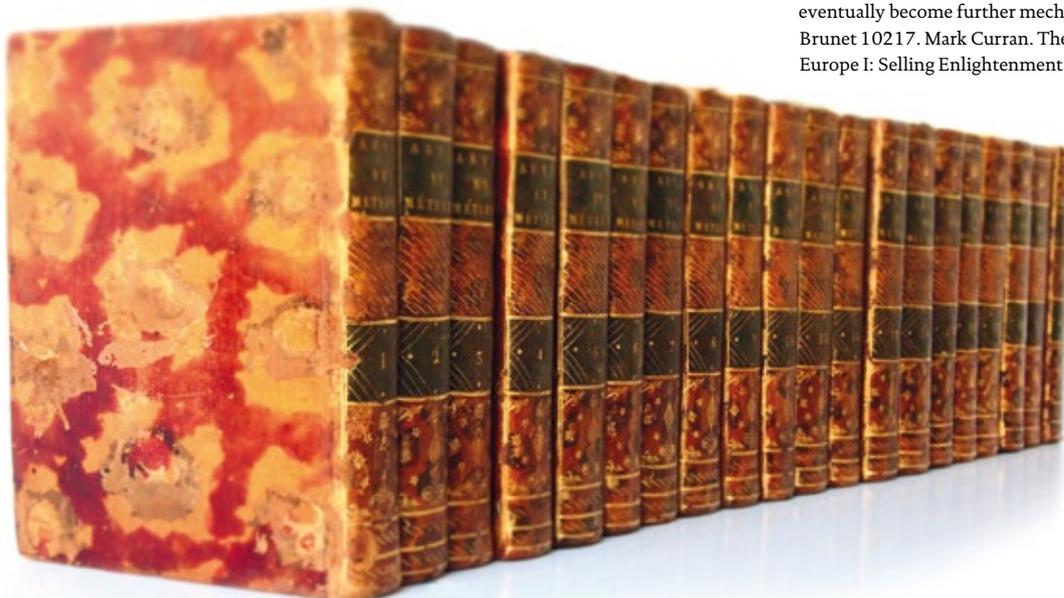
*Description des arts et métiers, faites ou approuvées par Messieurs de l'Académie Royale des Sciences de Paris ... Nouvelle édition ... publiée par J. E. Bertrand. 20 Vols. - à Neuchâtel: dans l'Imprimerie de la Société typographique, 1771 - (à Paris: chez Callixte Volland), an VII (1799). Quarto (255 x 195 mm) Contemporary mottled calf, morocco lettering piece, gilt spine in compartments, yellow edges, minor worming, slight rubbing, minor defects, overall a fine and complete set in uniform first binding.*

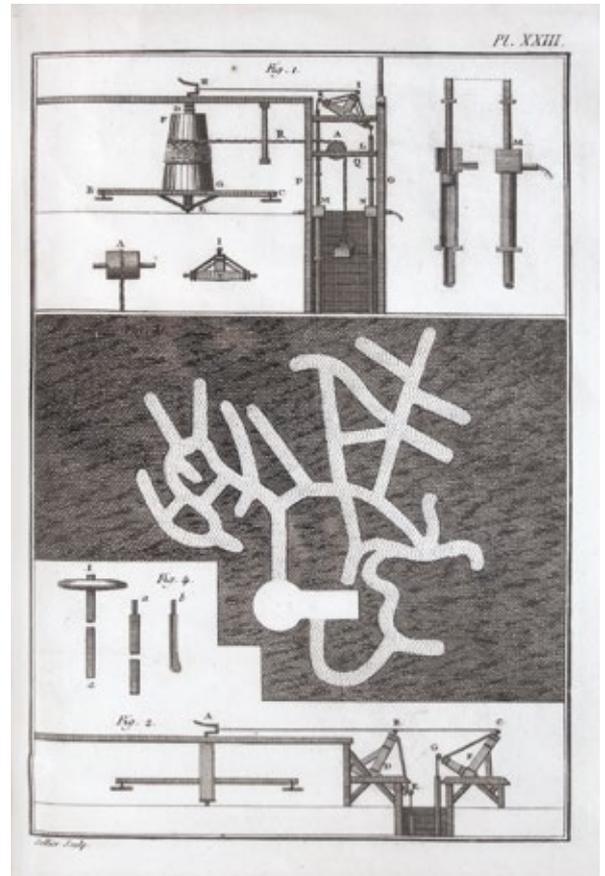
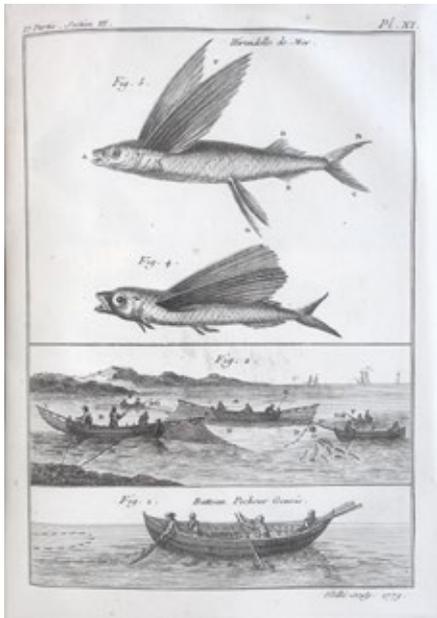
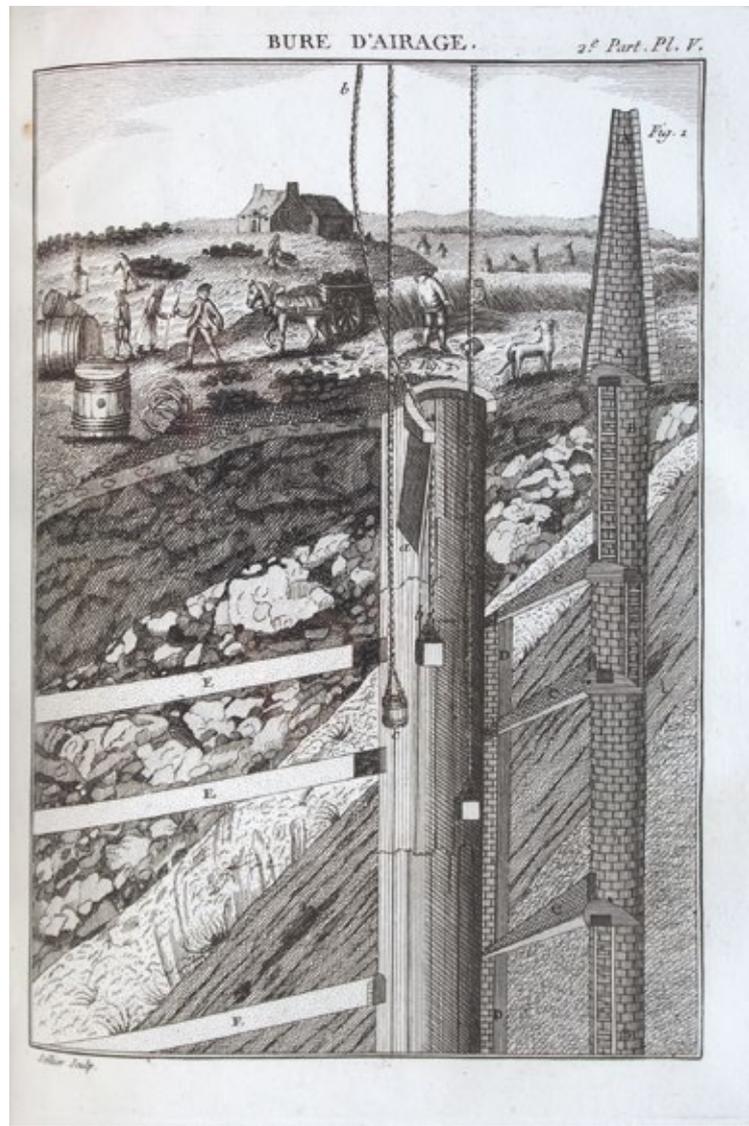
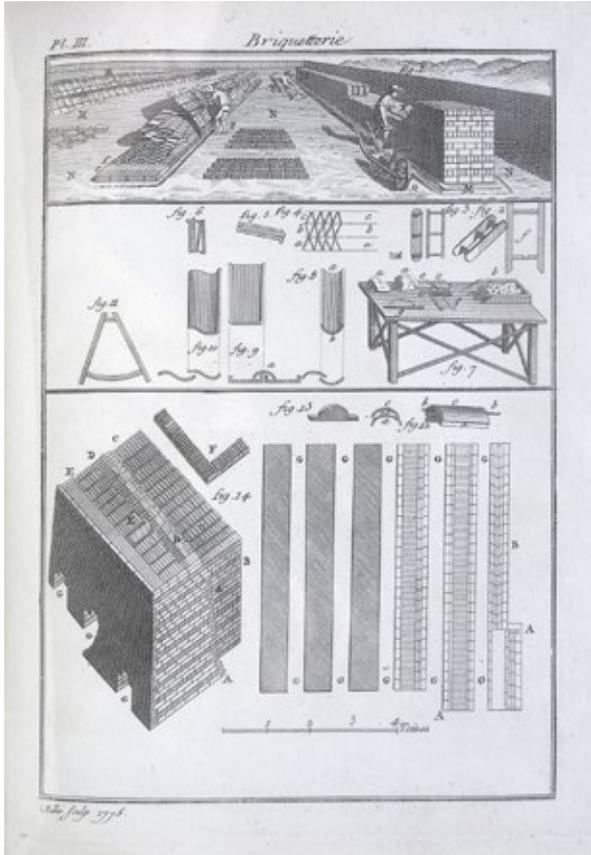
EUR 14.000.-

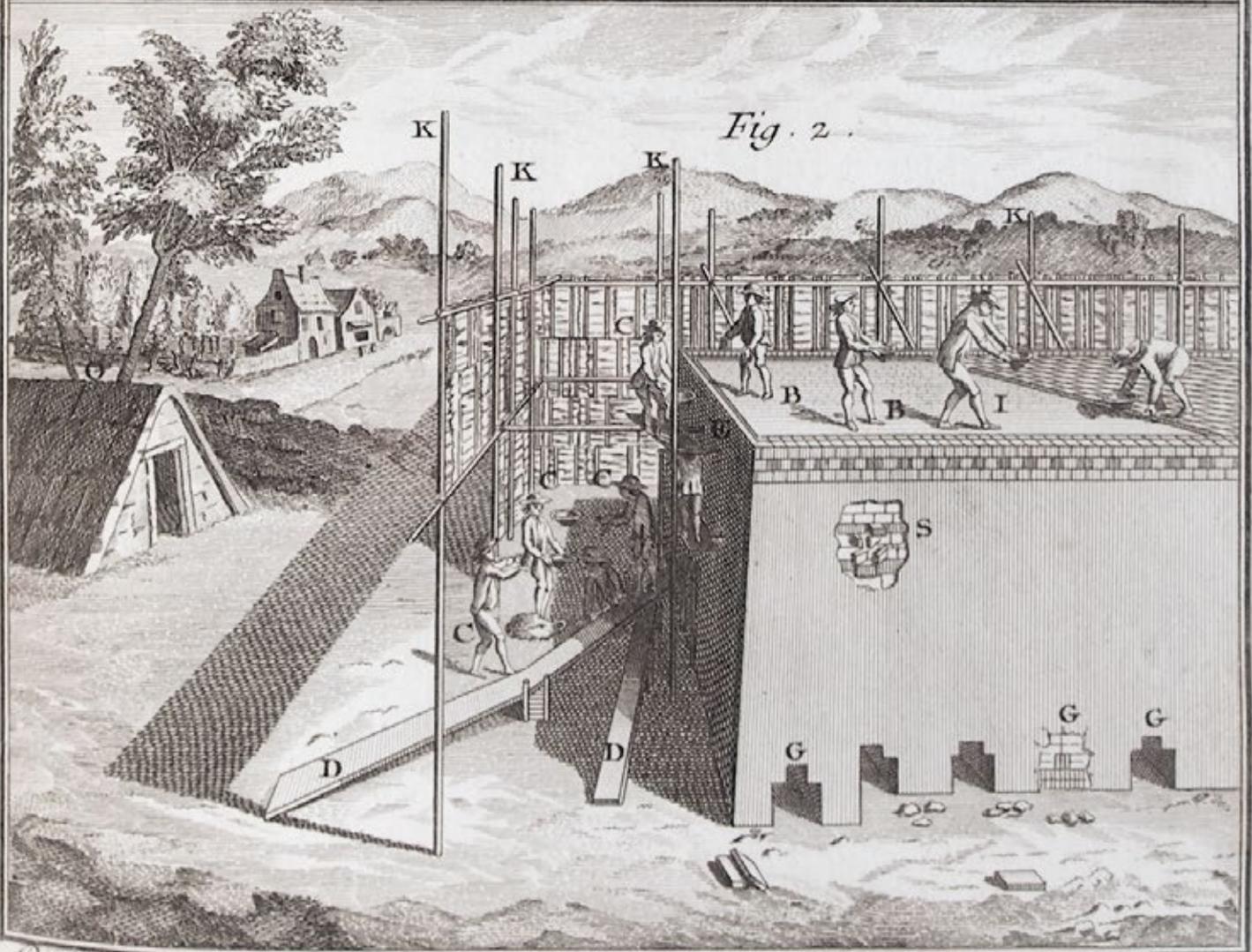
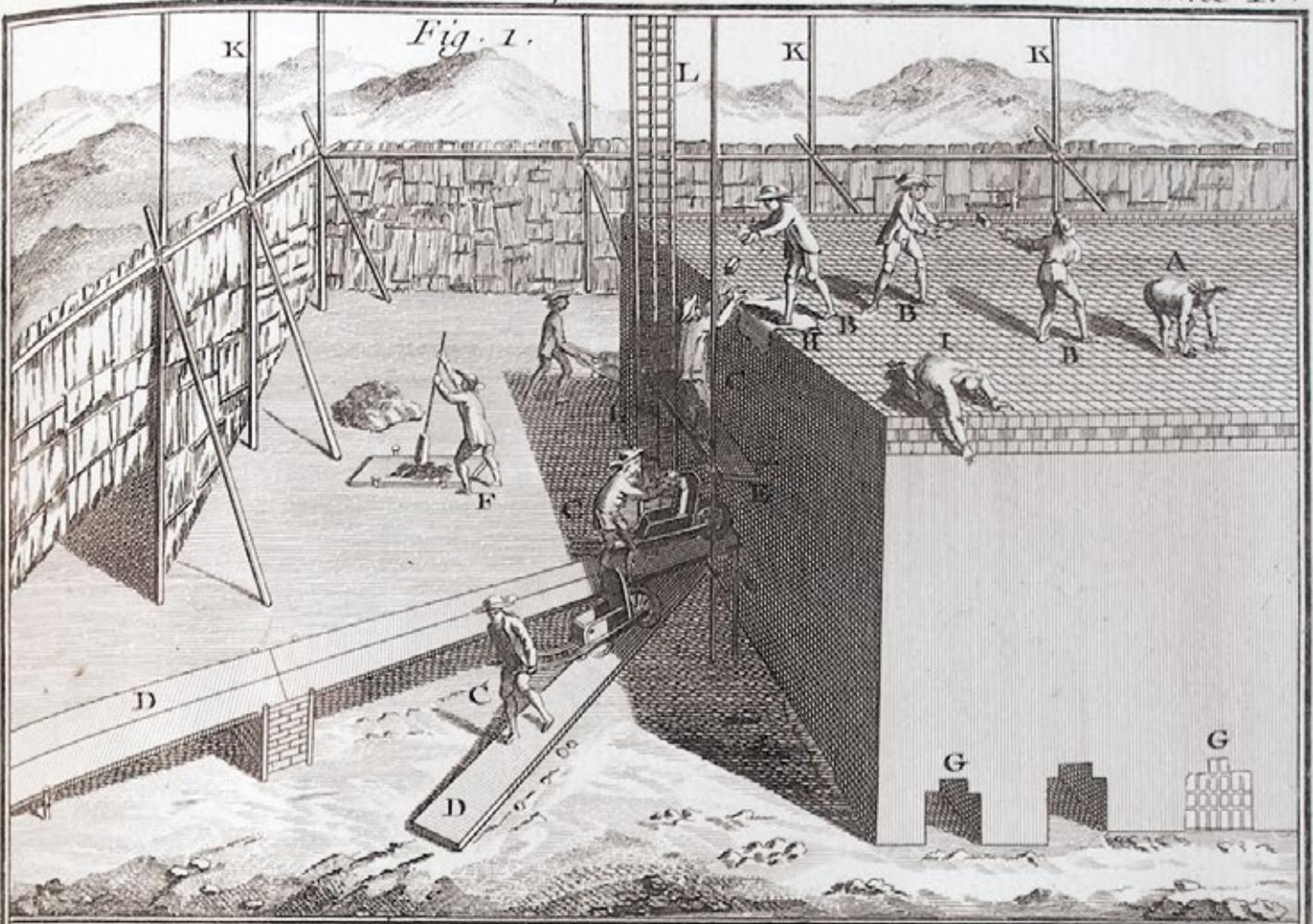
Very rare uniformly bound and complete set of the new revised edition in quarto of the „Descriptions of the Arts and Trades, made under the direction of the gentlemen of the Royal Academy of Sciences”, a collection of books on crafts that was published by the Royal Academy of Sciences of Paris between 1761 and 1788. This is here a new revised edition in smaller format edited by Elie Bertrand and probably prepared for printing by Charles Joseph Panckoucke, with the very rare last volume on book-printing (often missing) and

the plates reduced in size with a pantometer from the original edition. For this edition, Bertrand extended the text of the Parisian original up to 40% by translating articles from the augmented German edition and adding his own copious scholarly notes. The volumes are well-illustrated, with precise engravings by Jean Elie Bertrand (1737–1779) a noted typographer from Neuchâtel, where the printing was done. Like Diderot's Encyclopedie, the Arts et métiers is one of the greatest productions of the French Enlightenment, and a benchmark in social and scientific history. In 1749 French scientists René Antoine Ferchault de Reaumur and Henri Louis Duhamel du Monceau issued the first volume of Descriptions des arts et métiers faites ou approuvées par Messieurs de l'Académie royale des Sciences from Paris.

This series was the most important and the largest work on the mechanical and industrial arts of eighteenth century France, and one of the earliest projects of its kind undertaken in any country. Although encyclopedic in scope, the work was not conceived in parallel to Diderot and d'Alembert's Encyclopedie, but in response to the perceived function of the Académie royale des sciences. A statement was published in 1699 in Histoire, an organ of the Académie, that outlined the motives and aims behind a proposed Description des arts et métiers: “When this work is completed, it will be easy for each craft to compare the practices in vogue in France with those pursued in other countries; and from this comparison, the French and the inhabitants of these foreign lands will profit equally” (quoted in Cole and Watts, p. 7). With articles on Building construction, Clothing incl. Hair-Dressing, Shipbuilding, Fishing, Woodworking, Pipe-organ making, Metal working, Turning and lathe work, Scientific-instrument making, Flour milling, Baking and sugar refining, Paper-making and bookbinding, Tanning and soap-making, Wine and vineyards, Cutlery and surgical instrument making, Mining and metallurgy, Porcelain and pottery manufacture, Painting, Textile manufacture Each article had sections on materials, tools and apparatus, processes and methods, and illustrations of the métier. The wide range of crafts and industries covered nearly every aspect of French industrial and artisan life: coal-mining, fishing, textile manufacture, carpentry and cabinet-making, masonry, glass-blowing, ceramics, candle- and soap-making, barbering and wig-making, paper-making and bookbinding, iron- and tin-smithing, among other fields. Although the work was very much a separate enterprise, the Arts et métiers inspired many articles in the Encyclopédie, and can be said to complement the latter work. Both were essential to any well-balanced library in France and abroad. Though it was written by the elite rather than the artisan class, the combination of the best scientific minds and the best practical minds of the era produced an invaluable reference work and an unparalleled social record of the artisan classes, and recorded for posterity manufacturing methods that would eventually become further mechanized in the Industrial Revolution.- Brunet 10217. Mark Curran. The French Book Trade in Enlightenment Europe I: Selling Enlightenment pp. 23.







# Hydraulics Teaching Models

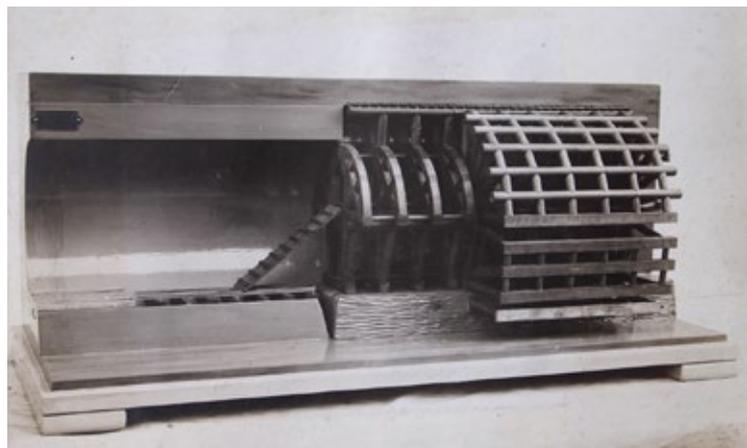
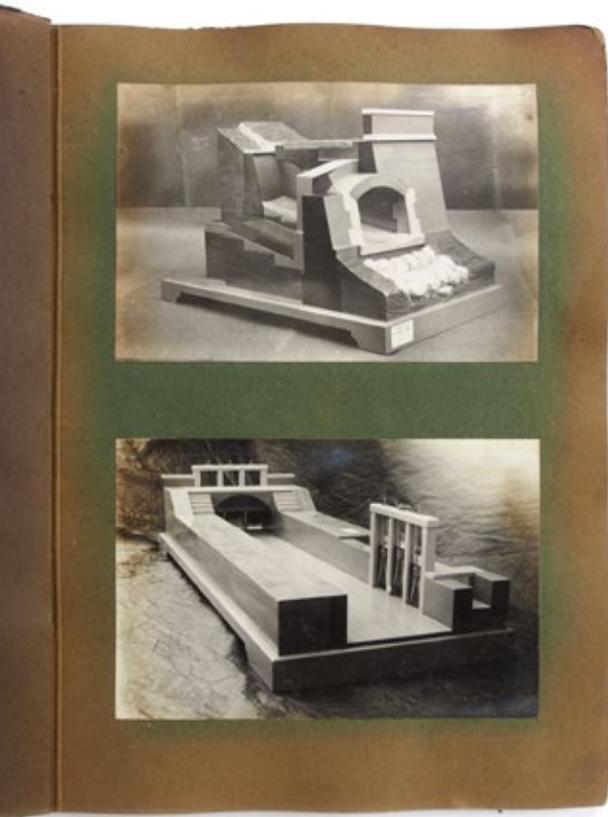
## (Engineering School Models)

*Privately arranged album with 70 mounted original photographs mounted on 12 boards (recto/ verso) showing models of different structures, constructions, canals, sluices, et al. for engineering and hydraulic lectures at an university or higher technical school. (no place, date but Torino, ca. 1890) Folio (310 x 225 mm) Size of the photographs from 35 x 110 to 295 x 170 mm, mostly around 160 x 110 mm, some photographs are silvered, a few with small surface defects, overall fine.*

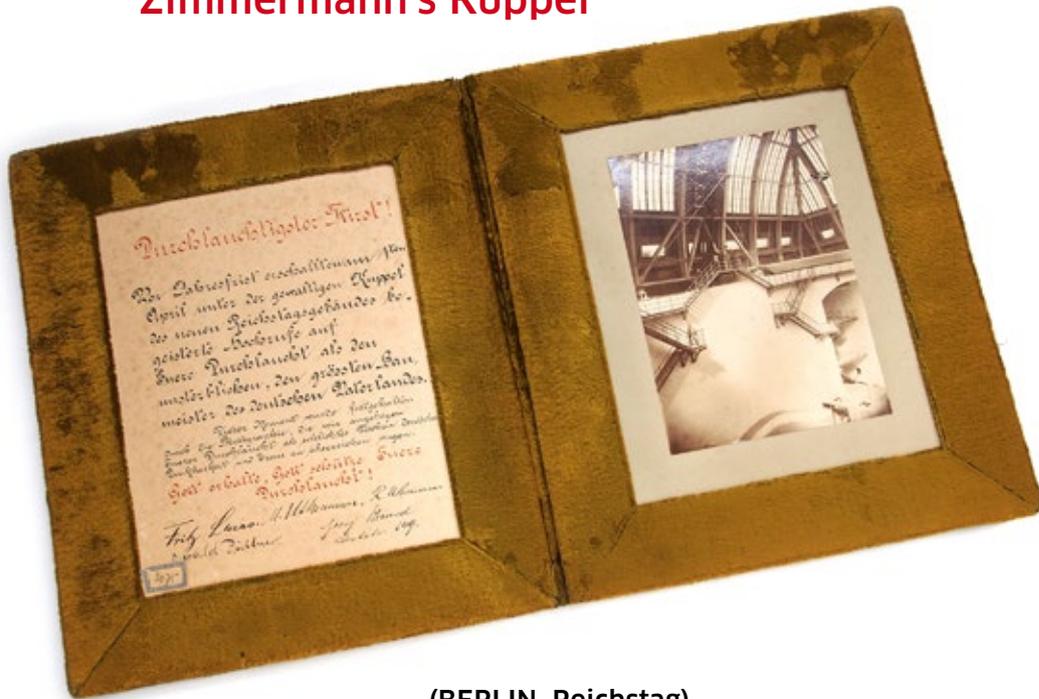
EUR 800.-

In Italy, in almost all the historic engineering institutions active before the Second World War one can find collections of educational mechanisms with pieces both built by international and local manufacturers. At the Museum of Engines and Mechanisms of the University of Palermo ([museomotori.unipa.it](http://museomotori.unipa.it)) are preserved more than one hundred didactical models, in metal or wood, which illustrate elementary machines, mechanisms, transmission components, and various steam engine types (Monastero & Genchi 2016). The pieces were built by either German or Italian manufacturers e.g., the Schröder Company of Darmstadt, other specialized companies, or even local craftsmen under direct supervision of Prof. Elia Ovazza (1852-1928). At the Politecnico di Milano, there is a collection of 40 pieces made by the Società di Incoraggiamento Arti e Mestieri (SIAM) in the 1920s and 1930s, and widely used by Prof. Ottorino Sesini and his successors.

One of the first to establish these sort of educational models was the mining expert and scientist Christopher Polhammar (1661–1751) better known as Christopher Polhem who made significant contributions to the economic and industrial development of Sweden. Christopher Polhem felt that a technical laboratory would be an important part of future engineering education. For this reason, he established the Laboratorium Mechanicum in 1697. The collection of wooden models, called mechanical alphabet, was used for educational purposes, to demonstrate simple motion conversion principles and illustrate the machine components that every engineer should know.- Moon, F. C. (2007). The Machines of Leonardo Da Vinci and Franz Reuleaux. Kinematics of Machines from the Renaissance to the 20th Century. History in Mechanism and Machine Science Vol. 2



## Zimmermann's Kuppel



### (BERLIN, Reichstag)

Berlin Reichstag building. Inside view into the old iron & glass dome of the building, erected in 1894. Photography by unknown photographer. (Berlin Reichstagsgebäude. Blick in das Innere der alten Kuppel des Reichstagsgebäudes in Berlin. Fotografie). (Berlin around 1895). image-size: 170 x 120 mm. with handwritten dedication by Oswald Büttner, Georg Kreuzsch (Kantstr. 149), Fritz Lucas and others facing the photography. In green velvet folder (300 x 255 mm). Fine.

EUR 600.-

Very rare and remarkable interior view of the original dome of the Reichstag building, completed in 1894, with staffage of people, which shows the enormous dimensions of the building. Present to Bismarck's 80th birthday. The dedication page is signed by Oswald Büttner, Georg Kreuzsch (Kantstr. 149), Fritz Lucas and M. u. R. Uthemann.



During the construction of the Reichstag, the dome became a particular problem. Through various objections, the architect Wallot had been forced to move it from its central position above the plenary hall to the western entrance hall. According to this plan, the structure was now erected by the Berlin stonemasonry firm Zeidler & Wimmel.

The further the construction progressed, the more the architect became convinced that the forced change had to be reversed. In tough negotiations, he obtained approval for this. In the meantime, however, the load-bearing walls around the plenum had already been erected - too weak for the planned stone dome, as all calculations showed. It was not until the civil engineer Hermann Zimmermann, who had been entrusted with the task in 1889, found a solution: He reduced the height of the dome from 85 to just under 75 meters and proposed a relatively light, technically sophisticated construction made of steel and glass. The dome thus created in a roundabout way provided the plenary hall with natural light and gave the parliament building the desired dignified finishing touch; moreover, it was regarded as a landmark for the efficiency of German engineers.

Wilhelm II, who had been in office as emperor since 1888, initially still had a fairly positive attitude toward the Reichstag building. He also supported Wallot in the question of where the dome should be placed, although he found it a nuisance in principle - because he saw in it a symbol of the claims of the unloved parliament and because it was higher than the dome of the Berlin City Palace with its 67 meters. From around 1892, the emperor's increasing dislike of the building became clear; he called it the „pinnacle of tastelessness“ and a „completely unfortunate creation“ and unofficially reviled it as the „imperial monkey house.“

He developed a clear personal aversion to Wallot, presumably because Wallot had spontaneously refused him a request for changes. He refused the architect several awards for which he had been nominated. He informed his confidant Philipp zu Eulenburg by letter that he had succeeded in insulting Wallot several times in personal conversation.

128.

129.



# ANTIQUARIAT Michael Kühn

Erdmannstraße 11

10827 Berlin · Germany

Telefon +49 · (0)30 · 86 39 69 34

mail@antiquariat-kuehn.de

www.antiquariat-kuehn.de

130.

