The International California Rare Book Fair
Oakland Februar 2019

FAIR LIST

Antiquariat Michael Kühn
Erdmannstrasse 11 ; 10827 Berlin ; Germany
www.kuehn-books.de
phone: +49 30 86 39 69 34
mobile: +49 170 7744060
kuehn.rarebooks@arcor.de

VAT: DE 812539755

images on request !

Mechanical clocks

BARGONI, Carlo.
Gli scampi a riposo, paragonati agli scampi a retrocendimento. Trattato meccanico sopra gli orologj. Traduzione dal Francese con vale annotazioni di Carlo Bargoni umiliata al merito insigne del nobile Signor Marchese Cesare Pellegrini.- Verona: Dionigi Ramanzini, 1796. 8° (195 x 135 mm) 124 pp. with three fold. engraved plates showing wheels, gears and clock's mechanism. Contemporary decorated card boards. Fine & fresh copy. $ 3.800.-

Exceedingly rare book on mechanical clocks, pretending to be a translation from the french with printed annotations by the author, but maybe an original work and the author tried to charm the Napoleonic french troops by calling this a translation from a french work. The otherwise unknown author seems to be a clock-maker of Cremona who made a copy of the astronomical clock of the Torrazzo of Cremona built by Francesco and Giovan Battista Divizioli between 1583 and 1588. This copy could be seen at Casa Bargoni. Pietro Maisen (1866) called this clock book here: „Opera importante e rara per gli studiosi di orologeria". The author published also in Verona: Difetti dell' Orologio Regolato.- KVK: we could trace no copy in libraries (?).

Kepler's son in law - star maps

BARTSCH, Jacob.
Planisphaerium stellatum seu vice - globus coelestis in plano delineatus. In quomodo tam sidera praecipua, fixa pariter … Cui adiectae sunt ephemerides. V. planetarum ab Anno MDCLXII. ad MDCLXXXVI ... Opera et studio. Andreae Goldmayeri ... Nürnberg, Paul Fürst, (1661). 4° (201 x 160 mm). 21 Bll., 148 (e.g. 152) pp.; 72 Bll., 5 Bll., with seven fold. tables, 9 (7 fold.) engraved plates, with engraved frontispiece by M. V. Sommer. Contemporary blind stamped pigskin over wooden boards, green edges, two clasps, little browned, spotted, frontispiece at lower edges with small waterstain, title with erased name, inner cover and first pages in white margins with wormtrack, one plate defective without loss, overall an excellent copy. $ 6.000.-

Later edition of his description of the planisphere and how to use it in astronomical observations, with the ephemerides of Andreas Goldmayer, and with the **three star maps often missing.** The work begins with a long preface, citing scientists & astronomers with horoscopes of Johannes Schöner and Jo-hannes Werner, mentioning also the death of Dürer, then begins Bartsch's work, from pp. 121 Andreas Goldmayer's work begins: „Praxis compendiosa Tabularum astronomicarum et problematum… Ephemerides solaris perpetua, Catalogus fixarum, … from pp. 153 we have Laurentius Eichstädt's Ephemerides solaris, from pp. 189 we have Andreas Goldmayers Stellarum inerrantium … juxta Tychonis, Brahe, Johannis Keppleri & Christian Severin…, from pp. 297 we have Cyprianum Leovitium's Tabula positionum, „Bartsch's book Usus Astronomicus Planisphaerii Stellati ('Astronomical Use of the Stellar Planisphere'), published in 1624, introduced six new constellations invented by Petrus Plancius to a wider audience, much as Johann Bayer's Uranometria had done for the 12 southern constellations of Keyser and de Houtman two decades earlier. In both cases, the novel constellations had first appeared on globes, which inevitably had only a limited circulation. Printed charts could be produced in far greater numbers than globes and hence were more widely seen. As a result Bartsch, like Bayer before him, was often incorrectly credited with inven-ting the new constellations he depicted. In reality, neither Bayer nor Bartsch invented any constellations; they simply transmitted the inventions of others to a wider audience. Bartsch's book (really a manual of practical astronomy) included three fold-out star charts: a north polar planisphere (left) and two equatorial strips extending to declination 55° south. There was no south polar chart. Ac-cording to the Smithsonian historian Deborah Jean Warner in her book The Sky Explored, Bartsch plotted 1,111 stars on his charts,

about two-thirds the number on Bayer's much larger atlas. Jakob Bartsch or Jacobus Bartschius (c. 1600 – 1633), german astronomer who was married to Kepler's daughter. He was born in Lauban (Luban) in Lusatia and was taught how to use the astrolabe by Sarcephalus (Christopher Hauptfleisch), a librarian in Wroclaw. He also studied astronomy and medicine at Strasbourg University. In 1624 Bartsch published a book titled Usus astrono-micus planisphaerii stellati containing in a few copies star charts that depicted six new constellations introduced around 1613 by Petrus Plancius on a celestial globe published by Pieter van den Keere. These six new constellations were Camelopardalis, Gallus, Jordanis, Monoceros (which he called Unicornu), Tigris and Vespa. He also mentioned but did not depict Rhombus, a separate invention by Isaac Habrecht II.. Bartsch was often wrongly credited with having invented these figures. Bartsch married Johannes Kepler's daughter Susanna on 12 March 1630 and helped Kepler with his calculations. After Kepler's death in 1630, Bartsch edited Kepler's posthumous work Som-nium. He also helped gather money from Kepler's estate for his widow. Bartsch died in Lauban in 1633.- Caspar 423 ff.; DG 12.4725; Doppelmayr 101 f.; Houzeau/L. 15252.; Zinner, Astronom. Instr. 245; nicht bei Honeyman u. Pogg.

a clock for the german chancellor

BECKER, Gustav.

Manuscript birthday address from the clock manufactuer Gustav Becker to Otto von Bismarck's 70th birthday. Glückwunschadresse des Uhrenfabrikanten Gustav Becker zu Bismarcks 70. Geburtstag. Handschrift auf Papier. Freiburg/Schlesien 1885. Folio (675 x 430 mm). 1 leave with original drawing in ink pen and watercolor by F. Kiefhaber (signed) mounted on wood. One leave (480 x 295 mm) with handwritten dedication and printed text. Contemporary blue velvet portfolio (700 x 450 mm) with mounted monogram. Fine.

$ 4.800.-

The important watchmaker and clock manufacturer Gustav Becker from Freiburg in Lower Silesia dedicated in 1885 a jubilee clock (with working number 500,000) to Bismarck on occassion of his 70th birthday. This magnificent floor clock with lavishly decorated, monumental housing in the style of historicism, is still located today in the Bismarck Museum in Schönhausen.
This address / sheet shows the clock in beautiful, large-format watercolor painting, with five-line dedication in the lower edge. The attached dedication letter to Bismarck was written by Gustav Becker's son Richard, as Gustav Becker was seriously ill at the time. He died on 14 September 1885. The attached printed sheet gives an explanation of the clock. Gustav Eduard Becker (1819-1885) was one of the better quality, best-known clockmakers from the mid to late 19th cent.. He was trained as a clockmaker in Germany and Austria and opened in 1850 a workshop in Freiburg/ Silesia. Initially, Becker struggled with untrained help, but won the „Medaille d'Or" for design at the 1852 Silesia Trade Exposition. This award gave him the recognition that he needed to attract skilled craftsmen to his workshops. Numerous awards and certifications followed, from trade expositions as far-flung as Australia (Sydney, Melbourne) and as close to home as Vienna. He was very adept at leveraging this new-found notoriety to the benefit of his business enterprise. In 1854 he received large orders from the British Royal Mail, and the Silesian Telegraphy Centre. After the orders, he received a fortune from the Duke of Martibore, and with this money he could pay enough to make clock cases for train stations. In the 1860s, he began to create the Classical Gustav Becker clocks. Starting from fairly simple clocks, the clocks became complex and very ornamental, and sales rose to a peak in 1875, with over 300,000 clock orders. Until 1880 and the introduction of the spring driven mechanism, almost all of Gustav Becker's clocks were weight driven Regulator wall clocks. Gustav Becker clocks are known for their quality workmanship. During the 1880s, the Black Forest clockmakers began competing with Becker, with good quality, less-expensive models. A well-known type of Black Forest clock is the Cuckoo clock. With the decline of sales, Becker stopped selling complex clocks, and returned to making more simple designsThe Junghans Company absorbed Becker, Lenzkirch, Hamburg American, etc. into a clock company that continues in business to this day.

first examples of color-printing
of microscopical subjects

BLEULAND, Jan.

Icones anatomico - physiologicae partium corporis humani et animalium, quae in descriptione Musei Academiae Rheno-Trajectinae inveniuntur. 2 Fasc. in 1.- Trajecti ad Rhenum (Utrecht): ex Officina Joh. Altheer, 1826 (- 1827). Quarto (257 x 220 mm) VIII, 24 pp., (2, Prospectus), 6 color printed plates; pp. 25-55, (1, blank), plates 7-12 (12 plates with 35 figures). Modern half calf period style. Little used and unfresh inside, title and two pages stamped in white margins, else fine. $ 5.000.-

First edition of this description of a few specimen from his anatomical museum with color-printed plates.
„Exceptional for their time and original in art, drawing and color - these pictures are the most interesting, which have come to us to face." (Goldschmid)
This is the first of a series of Bleuland's anatomical monographs describing specimens of his collection, illustrated with his **pioneering method of tissue fixing and dyeing and color-printing**. These are among the first such illustrations, and established the basis of histological illustration. Bleuland perfected a technique of injecting tissue structures with fixatives and dyes to reveal anatomical details, especially under magnification. His plates, mostly drawn

by I. van der Jagt and engraved by I. Kobell, are remarkable for their precision in depicting microscopic detail. Goldschmid considered them pieces of exemplary printing, unusual in subject and make-up for the period. They are probably the **first examples of color-printing of microscopical subjects**. Bleuland (1756-1838) was professor of anatomy, surgery, and obstetrics at Harderwyck and later Utrecht. He prepared more than two thousand anatomical specimens, which were bought in 1825 by King William I of Holland for the University of Utrecht.- Goldschmid, Entwicklung und Bibliographie der pathologisch-anatomischen Abbildung 121.
„Die technisch interessante Sammlung, schon von Cruveilhier bewundert, die uns leider nur in einem unvollständigen Exemplar der Göttinger Bibliothek vorgelegen hat, zeigt farbige Radierung(en) von tierischen Organen, durchweg unbezeichnet, lassen z.T. einen doppelten Plattenrand deutlich erkennen. Die Technik ist Aquatinta und illuminierte Radierung, die verwendeten Farben sind ziegelrot, bläulich-grün und gelb; auf 11 und 12 auch hellblau und grau (offenbar mit der Hand aufgetragen). Die Abbildungen machen einen ungewöhnlich lebendigen und frischen Eindruck. Auf Tafel 6 findet sich die mikroskopische Abbildung einer „pluma branchialis". Einzelne der interessanten Tafeln erwecken vollkommen den Eindruck von (orientalischen !) kolorierten Handzeichnungen. … Außergewöhnlich für ihre Zeit und originell in Technik, Zeichnung und Farbe gehören diese Abbildungen zu den interessantesten, welche uns zu Gesicht gekommen sind." (Goldschmid 121); Engelmann wrongly with 13 plates.
Note: The Dutch National Library collates as Goldschmid does and corresponds to our copy; some other libraries like Cambridge, Glasgow, Oxford collate: 93 pages, 24 plates; Harvard collates: VIII, 51, [57]-76, [85]-133, [1], [25]-55 pages 36 plates (some color). We think that two different works are here mixed up. Our work is complete with 2 fasc., but later in 1828 Bleuland published Otium academicum which has our work slightly different reprinted probably using the old stock of our publication as part of vol. one. The second volume of Otium is in six fasc. with each 4 plates.

Museum of Fishes

BLOCH, Marcus Elieser.

D. Marcus Elieser Bloch's, … Oeconomische Naturgeschichte der Fische Deutschlands. Erster bis Dritter Theil.- Berlin: auf Kosten des Verfassers und in Commission bei dem Buchhändler Hr. Hesse, 1782, 1783 and 1784. Quarto (280 x 215 mm) (8), (6), 258 pp.; (8), 192 pp.; (8), 234 pp. with three engraved title-vignette by Bodenehr & J. C. W. Rosenberg. (and) D. Marcus Elieser Bloch's … Naturgeschichte der ausländischen Fische … Erster bis neunter Theil. Berlin: auf Kosten des Verfassers und in Commission in der Buchhandlung der Realschule, 1785, 1786, 1787 (ab Vierter Theil: Berlin: bey den Akademischen Kunsthändlern J. Morino & Comp., 1790, 1791, 1792, 1793, 1794) (ab Neunter Theil: Berlin: im Verlage der Morinoschen Kunsthandlung, 1795) Quarto (245 x 220 mm) (8), 136 pp.; (8), 160 pp.; X, (4), 146 pp.; X, (2), 128 pp.; (8), 152 pp.; (6), 126 pp.; X, (2), 144 pp.; (6), 174 pp.; (4), 192 pp. 12 parts text in 4 vols. and atlas with plates in 4 Vols. Plate volumes with engraved titles and 432 engraved plates of fish, printed in black, bistre and green and coloured by hand. Contemporary blue paper-covered boards (glacé paper card boards), with two labels, binding dated 1827 in the last vol., rubbed and soiled, one vol. bound to style, some plates with middle fold (due to sending of the plates ?). A few plates short cut as the text. Otherwise a fine, complete copy.

$ 80.000.-

First edition, complete, always rare in complete state with around six auction records in the last 20 years for a complete set. Marcus Eliser Bloch's Allgemeine Naturgeschichte der Fische (1782 - 1795) is one of the most impressive early attempts to represent fish from all over the world accurately and handsomely. This encyclopedic effort was highly esteemed by contemporaries and remained a classic in ichthyology well into the nineteenth century. The work consists of two parts: the Oekonomische Naturgeschichte der Fische Deutschlands, which attempted to unite descriptions of local (chiefly German) fish which had been published in separate and smaller volumes, and the Naturgeschichte der auslaendischen Fische, a repertoire of foreign and exotic fish. The second volume, which classified and described species of fish which Bloch had never seen, relied on information provided by others. The descriptions of American species were reproduced from the work of Father Plumier, a French missionary. Although partly derivative, Bloch's work became the most comprehensive book on ichthyology then in existence. Drawn by Johann Friedrich August Krueger and engraved by Ludwig Schmidt, two Berlin artists, the plates are unmatched in the delicate beauty and fine quality of their drawings, their copper etchings, and their hand-coloring.- Nissen, ZBI 415; Nissen, Schöne Fisch-bücher 22; Thieme/ Becker XXI, 600 u. XXIX, 14; Brunet I, 975. Schlenker 73.1; Wood, 244; Provenance: Hartung & Karl, 12.5.1987 to Hans Dedi (20th. cent.); early stamp by Paessler (?).
A copy in the internet with three missing title-pages is priced EUR 125.000.- ($ 150.000.-)

Very rare first edition of Brahe's main work, the 'renewal of astronomy'
Franz Xaver von Zach's copy

BRAHE, Tycho [with Johannes KEPLER].

Astronomiae instauratae progymnasmata. Quorum haec prima pars de restitutione motuum solis et lunae stellarumque inerrantium tractat. Et praeterea de admiranda nova stella anno 1572 exorta luculenter agit. Typis inchoata Uraniburgi Daniae. Absoluta Pragae Bohemiae, 1602. 4to, pp. [xvi], 9-112; 1-28; 113-256; ff.

257-272; pp. 273-822 [recte 820] [12, index and errata], with numerous woodcuts in the text, including 5 full-page illustrations of instruments, a full-page star chart, and the illustration of the new star in Cassiopeia; two leaves (5F1–2) with old brown-stain and some early minor paper restoration affecting a few letters; otherwise an exceptionally clean and attractive copy in contemporary vellum, overlapping fore-edges; stamped in gilt on upper board 'G M S' and dated '1605', labelled in ink on spine, edges gauffered and stained blue.

$ 72.000.-

The rare first edition of Tycho Brahe's most important work and 'the foundation on which Kepler, and later Newton, built their astronomical systems' (Sparrow).
The bulk was printed at Brahe's observatory on the island of Hven but left unfinished; it was **completed by Kepler** in Prague. This work, a consequence of the new star of 1572, established the observational and theoretical techniques which initiated the era of modern scientific astronomy. The number and accuracy of Brahe's observations provided the evidence for verifying the helio-centric theory and for Kepler's deduction of his three laws of planetary motion.
'The star of 1572 and the comets observed at Hven had cleared the way for the restoration of astronomy by helping to destroy old prejudices; and Tycho therefore resolved to write a great work on these recent phenomena which should embody all results of his observations in any way bearing on them. The first volume he devoted to the new star, but as corrected star places which were necessary for the reduction of the observations of 1572–73 involved researches on the motion of the sun, on refraction, precession, &c. the volume gradually assumed greater proportions than was originally contemplated, and was never quite finished in Tycho's lifetime. On account of the wider scope of its contents he gave it the title Astronomiae Instauratae Progymnasmata, or Introduction to the New Astronomy, a title which marks the work as paving the way for the new planetary theory and tables which Tycho had hoped to prepare, but which it fell to Kepler's lot to work out in a very different manner from that contemplated by Tycho ...
'[The new star] roused to unwearied exertions a great astronomer, it caused him to renew astronomy in all its branches by showing the world how little it knew about the heavens. His work became the foundation on which Kepler and Newton built their glorious edifices, and the star of Cassiopeia started astronomical science on the brilliant career which it has pursued ever since, and swept away the mist that obscured the true system of the world' (J.L.E. Dreyer, Tycho Brahe, 1890, pp. 162-63 and 196).
'Tycho Brahe provides locations of 777 stars with far greater accuracy than previously achieved and details his observations of the 1572 nova in his posthumous Astronomiae instauratae progymnasmata, edited by Johannes Kepler. The work also contains estimates of the diameters of the sun, the moon, the planets, and the supernova, plus revisions to the theory of solar motions and significant advances in the theory of lunar motions' (Parkinson Breakthroughs p. 58).
This work was composed and printed over a period of several years from 1588 on at Brahe's private press on the island of Hven (Uraniburg), but at the time of his death in 1601 was still unfinished, as the imprint makes clear. It was completed by Kepler, who added the Appendix (pp. 817-822), index, and presumably the extensive list of errata, and was published in 1602, as above, but very few copies were distributed.
The undistributed stock was acquired by the Frankfurt publisher Tampach, who reissued the work in 1610. There are at least two different issues of this 1610 edition. According to Dreyer, Tampach reprinted the first twelve leaves, comprising title, dedication by Brahe's heirs to Rudolph II, privilege, and the first four leaves of Brahe's text with errata corrected. However, there is also an issue in which only the first four leaves (title and dedication) are reprinted. The errata of the first four text leaves of text have not been corrected (whereas in other copies examined they are, in accordance with Dreyer).
Provenance: inscriptions, partially effaced in the early seventeenth century, recording its purchase in Leipzig for 71/4 thaler; presentation inscription from Theophilus Cöler to Georgius Schultz, Leipzig, 16 Aug. 1633' on title; some short manuscript annotations to text in the hand of one of the above; ownership stamp of the Austrian astronomer and director of the Gotha observatory Franz Xaver von Zach (1754–1832); ex-libris 'Ex coll. J.R.K.' on rear pastedown; interestingly, this stamp also appears in a copy of the first edition of Karl Marx, Das Kapital (1867), recently on the market; Hartung und Karl, Munich, Auktion 1 (1972), no. 327. - Caspar 15; Parkinson p. 58; Sparrow 30; Zinner 4262.

100 years BAUHAUS - modern women

BRANDT, Marianne.

bauhausfotos. 10 originalfotografien. Herausgegeben von Sabine Hartmann und Karsten Hintz für die Bauhaus- Archiv- GmbH.- Berlin: Bauhaus-Archiv, 1993. Folio [460 x 355 mm] Original cloth folder with 10 mounted photographs (gelatin silver prints) [235 x 175 mm] after original negatives mounted within passe-partout.

$ 4.500.-

One of **only 30 copies** [this: 24] for sale / V for archival reasons. Ten photographs by Marianne Brandt were chosen from 150 negatives given to the Bauhaus Archiv, Berlin by the estate of Marian-ne Brandt. The Photographs of the early 1930's were skillfully reproduced from the original glass negatives in possession of the Bauhaus Archiv. Marianne Brandt (1893 – 1983) is remembered as a pioneering photographer. She created experimental still-life compositions, but it is her series of self-portraits which are particularly striking. These often represent her as a strong and independent

New Woman of the Bauhaus; other images show her face and body distorted across the curved and mirrored surfaces of metal balls, creating a blended image of herself and her primary medium at the Bauhaus.

red dye

BREYNE, Johann Philipp.

Joannis Philippi Breynii, … Historia naturalis Cocci Radicum Tinctorii quod Polonicum vulgo audit; Praemissis quibusdam coccum in genere et in specie coccum ex ilice, quod grana kermes et alterum Americanum, quod Conchinilla Hispanis dicitur spectantibus. Cum figuris coloribus na-tivis pictis.- Gedani: sumptibus auctoris (at the author); Cornelium a Beughem, 1731. Quarto (245 x 195 mm) 6 Bll., 22 pp., (2) with two engraved plates (one hand colored, one plain), signed F. B. (unusual) and Pet. Böse. Contemporary paper card boards. Broad margins & fine. $ 3.000.-

The first major treatise about the polish cochineal (insect), including the results of his research on its physiology and life cycle and its use in the production of red dye.

Johann Philipp Breyne (1680 - 1764), a fellow of the Royal Society, was an eminent german botanist, paleontologist, zoologist and entomologist. He had a successful medical practice in his native city of Danzig and was an important natural history collector, friend of Sloane and Petiver, having his Cabinet near that of another collector, Jacob Theodor Klein. Tsar Peter visited his Cabinet in 1716. In 1765 his Cabinet was sold at auction. The Auction sale catalog itemizing the extensive natural history collections of Breyne. It was compiled by Johann Gottfried Barthelsen, and lists all manner of native specimens, including minerals and fossils found around Breyne's native city of Danzig.

The earliest known scientific study on the Polish cochineal is found in the Herbarz Polski (Polish Herbal) by Marcin of Urzedow (1595), where it was described as "small red seeds" that grow under plant roots, be-coming "ripe" in April and from which a little "bug" emerges in June. The first scientific comments by non-Polish authors, were written by Segerius (1670) and von Bernitz (1672). Polish cochineal (Porphyrophora polonica), also known as Polish carmine scales, is a scale insect formerly used to produce a crimson dye of the same name, colloquially known as "Saint John's blood". The larvae of P. polonica are sessile parasites living on the roots of various herbs (especially those of the perennial knawel), growing on the sandy soils of Central Europe and other parts of Eurasia. Before the development of aniline, alizarin, and other synthetic dyes, the insect was of great economic importance, although its use was in decline after the introduction of Mexican cochineal to Europe in the 16th century. Ancient slavs developed a method of obtaining red dye from the larvae of the Polish cochineal. Despite the labor-intensive process of harvesting the cochineal and a relatively modest yield, the dye continued to be a highly sought-after commodity and a popular alternative to kermes throughout the Middle Ages until it was superseded in the 16th century. Polish cochineal was widely traded in Europe during the Middle Ages and the Renaissance. In the 15th and 16th centuries, along with grain, timber, and salt, it was one of Poland's chief exports, mainly to southern Germany and northern Italy as well as to France, England, the Ottoman Empire, and Armenia. In Poland, the cochineal trade was mostly monopolized by Jewish merchants, who bought the dye from peasants in Red Ruthenia and other regions of Poland and Lithuania. The merchants shipped the dye to major Polish cities to wholesalers in Breslau (Wroclaw), Nuremberg, Frankfurt, Augsburg and Venice. The advent of cheaper Mexican cochineal led to an abrupt slump in the Polish cochineal trade, and the 1540s saw a steep decline in quantities of the red dye exported from Poland. In 1547, Polish cochineal disappeared from the Poznań customs registry; a Vol-hynian clerk noted in 1566 that the dye no longer paid in Gdańsk. Perennial knawel plantations were replaced with cereal fields or pastures for raising cattle. Polish cochineal, which until then was mostly an export product, continued to be used locally by the peasants who collected it; it was employed not only for dyeing fabric but also as a vodka colorant, an ingredient in folk medicine, or even for decorative coloring of horses' tails.

a post-Galilean manuscript course
absorbing the new astronomy

CALCAGNI, Girolamo, attr.

Della fabrica del mondo ouero cosmografia. Trattato, nel quale si discorre di tute le parti compo-nente questa gran machina con brevità e facilità in modo de Dialogo. [Manuscript on paper in Italian & Latin]. [Italy, possibly Ferrara, c. 1643]. 4to (185 x 140 mm), c. 155 leaves in brown and red ink, including 15 leaves of tables, with a decorative armorial device on title-page, and numerous diagrams in the text, some with ink wash; the title soiled, damp-stained, and strengthened with a paper strip on verso at inner margin; the final, blank leaves, partly damp-stained and soiled; otherwise overall very well preserved; rebound in the 20th-century in vellum-backed board. $ 26.000.-

A highly interesting and finely illustrated astronomical treatise in dialogue form in the immediate post-Galilean period, discussing and absorbing the new astronomy.

Still largely unstudied, this is the earlier of two recorded versions of this text, the other originally stemming from the collection of the noted historian of science and Galileo expert, Stillman Drake, and now held at the Fisher library, Toronto.

Possibly compiled for private instruction, and highly likely inspired by Galileo's Dialogo, this extensive manual employs two interlocutors, a Pellegrino Cantelli, and Girolamo Calcagni, whose arms are found on the title-page.

Leading through from the elemental to complex astronomy, the treatise - apparently compiled the year after Galileo's death in 1642 - frequently cites, then questions and challenges the teachings of the ancients, whilst cautiously presented and phrased: 'L'opinione e la dottrina de moderni astrologi e piu conforme al vero, e l'isperienza (sic) stessa mostra il contrario di quello che hanno insegnato gli antichi. Dicemo dunq[ue] che in realtá non sono distinti i cieli, si che ciascuno pianeta conosca il suo, ma non ci e altro che un cielo solo …' (folio 7, recto).
The third dialogue of the first part carefully treats the motion of the earth, first discussing the question of a revolutionary motion, then the possibility of rotation: '… Questo prova che la terra non si muova con movimento retto accostandosi o discostandosi dal cielo, ma non prova che non si possa movere circolarmente …' (Girolamo on folio 10). Whilst arguments in favour are always refuted, the purpose of the questioning tone appears clear.
A number of dialogues discuss geographical questions and details, and a table provides longitudinal and latitudinal data on various European cities. Folios 40-44 provide brief information on distances and sizes of various countries, kingdoms, and islands, including Sumatra, Borneo, the Philippines, the Moluccas, Japan, Cuba, and Hispaniola.
Following a 7 page index to this first part there is another group of dialogues concerning astronomical questions such as parallax, as well as astrological questions, illustrated with a number of finely executed diagrams, some in ink wash. Folio 74 recto includes a reference to the existence of moving sun-spots; the verso of the leaf mentions the telescope, and refers to Kepler. There are discussions of solar eclipses, the epicycles of the various planets and, from folios 96 to 102, a dialogue on comets and cometary theory, including the important question whether comets are sublunary phenomena or not. The final dialogues are on the stars, the milky way, the constellations, and astrology.
A famous center of study, Calcagni's Ferrarese roots (see provenance, below) may well have influenced the forward looking, inquisitive tone displayed in the presentation of these dialogues. Galileo's provocative Dialogo was published in 1632; he was tried by the Inquisition the following year. The Jesuit, Melchior Inchofer's Tractatus syllepticus - a theological refutation of the heliocentric theory -, immediately followed the trial of 1633. Galileo was to remain under house arrest until his death in 1642.
As mentioned before, the passages concerning the 'moderns' contained in this manuscript are cautiously phrased, and all of the side-notes found in the margins refer to the traditional model only. Galileo is nowhere mentioned.
Our manuscript appears to form the basis of another, later version of this text, originally in the collection of the noted historian of science and Galileo expert Stillman Drake, and now preserved at the Thomas Fisher Library, Toronto. Written in the same hand, the neater Fisher manuscript shows some changes to the text, and was possibly intended to form the basis of a printed version.
Provenance: contemporary armorial device on title page of the Calcagni family of Ferrara in the province of Emilia-Romagna, one of the most thriving centers of Italian Renaissance culture - the place where Copernicus earned his degree in Canon Law, and Paracelsus his degree in medicine -, inscribed 'Comitis Hieronymus Calcanei' beneath the escutcheon, presumably the Girolamo Calcagni of the text, and maybe the same Girolamo Calcagni recorded as the purchaser in 1610 of the Castello di Montecastagneto in the same province; later ownership inscription (partly washed away) in Latin, signed 'Marsilii Antonii' and dated 1725 below; an addendum, in the same hand as the text, to one of the blank leaves at the end of the manuscript and dated 20 February 1643, lists two publications that may have been of particular interest to the author: Regiomontanus' De cometis of 1472 and Girolamo Sirtori's Telescopium of 1618, the first published work on telescopes.

landmark writing in mathematics

CAUCHY, Augustin Louis.

Cours d' Analyse de l' École Royale Polytechnique. 1re partie: Analyse algébrique.- Paris, DeBure freres, 1821. (210 x 140 mm). (4), XIV, (2), 576 pp. Contemporary black half calf, gilt lettering on spine, marbled edges, rubbed and soiled, some browning and spotting, but overall a fine copy. $ 3.000.-

First edition of a seminal and landmark work in western mathematics which laid out a theory of limits, and upon its basis constructed the basic theory of real-variable functions and the convergence of infinite series. The Cours covered limits and continuity, functions and infinite series. No more parts published.
"The first comprehensive theory of complex numbers is found in Cauchy's Cours d'analyse of 1821 which forcefully impressed his contemporaries. N. H. Abel called the work "an excellent work which should be read by every analyst who loves mathematical rigor". (DSB III, 35 & 137).
Augustin- Louis Cauchy (1789-1859) was a French mathematician. He studied at and graduated from the École Polytechnique and then spent his career as a professor there. In 1821, Cauchy wrote Cours d'Analyse for his students. During his lifetime he was a prolific author, producing five textbooks. However, his most influential textbook was his Cours d'Analyse because it established rigorous foundations for calculus. In this book, Cauchy used series and sequences extensively to prove his results, introduced the δ–ε $\delta - \varepsilon$ (delta-epsilon) notation, and provided the definitions used today for function, limit, and derivative.- Grattan- Guinness (ed.) Landmark writings in western mathematics, 1640-1940, no. 25: pp. 341-353; Cajori 368/369; Pogg. I, 399; Krieg, MNE I, 132; DSB III, 137. En Francais dans le texte 231 : "C'est dans ses cours d'analyse de l'Ecole Polytechnique, publiés en 1821, que Cauchy émet pour la première fois ses considérations sur les fonctions imaginaires. Il poursuivra cet énorme travail jusqu'en 1850... Les conséquences qui vont être dégagées des recherches de Cauchy sur les fonctions de variables complexes sont énormes, tant pour la mécanique que pour l'astronomie. Elles sont la base de toutes les méthodes pour l'exposition du calcul infinitésimal... En instituant aux séries le système de convergence, il prend dans ce domaine la première place, devant Euler, Bernoulli et Leibniz..."

Provenance: Victor von Zeipel (1823-1893), Professor at Uppsala University; Oswald Weigel Antiquariat; Svante Arrhenius.

(unpublished) West African manuscript flora

CHEW C. W.

A Hundred West-African Flowers and Fruits. C. W. Chew, del. 2 Vols.- (Africa (?)1940 - 1941, 1940 - 1952) Imperial Folio (505 x 380 mm) Contemporary calf, marbled endpapers. Each volume with separate title page, inner cover of vol. one with map and sheets with content. The artist or botanist first drew 200 plants (each vol. with 100 species) as indexed on the inner-front cover and then, over the years, added 98 watercolors (35 in vol. I. and 53 in Vol. II). The water colors were made from 1940 to 1952. Each volume has a handwritten title page and each page or board having below the flower a legend type-scripted in English, identifying the plant and providing a precise comment on habitat et al. Typed indexes pasted to the front inner cover of each volume. In Volume II. are added a few dried specimen samples. $ 12.000.-

Unique copy, spectacular manuscript flora of West-African plants and flowers with 297 original water - colors (ink & water-color) partly mounted (sheets from a sketch book), partly on original bound sheets, all dated and signed or monogrammed (C. W. Chew). About the artist we do not find any further reference. The botanist *Wee-Lek Chew* (born 1932) who revised the Australian species in the genus Ficus for the Flora of Australia, might be a relative (son ?). The images are similar to style to the „Blumenbuch“ by Rudolf Koch, but further research on artist and specimens has to be made to value these painted Herbarium.
These flora was made when the exploration of African flora was still in its infancy.
For instance, at the same time, Kew Botanical Gardens started in 1948 a major project on the Flora of Tropical East Africa, dealing with all 12,500 wild plant species from Uganda, Kenya and Tanzania. It was first set up in 1948; the first parts were published in 1952; the final part will appear in early 2012. This *Flora of Tropical East Africa* (FTEA) is the largest regional tropical Flora ever completed, covering 12,500 species: some 3–4 percent of the World's Flora. What started off as a series of quick-and-ready treatments of small families soon came up against reality. It became clear that the larger families would take much more time, and it was realized that our knowledge and collecting coverage of the various East African habitats was very uneven. So a vigorous collecting program was set up to run parallel with, and in preparation for, the Flora writing, and gradually East Africa became one of the best collected regions on the African continent. Tropical Africa is home to some of the most important species-rich biodiversity regions in the world. From the second largest extent of continuous rain forest in the world, the Congo basin, to the Namib dessert, tropical Africa is a land of strong biodiversity contrasts. Yet today, it has already lost large amounts of its 'wilderness areas', i.e. areas where ecological and evolutionary processes are little affected by human disturbance. In addition, future climate change is expected to have important negative effects on sub-Saharan eco-systems, with an estimated 90% of species loosing part or most of their areas of suitable climate by 2085.

Early Solar Eclipse Photography

COFFIN, J[ohn] H[untington] C[rane] [ed.].

Reports of observations of the total eclipse of the sun, August 7, 1869, made by parties under the general direction of Professor J. H. C. Coffin.- [Washington]: published by authority of the secretary of the Navy, [1871-1885]. Quarto [300 x 240 mm] [2], II, 158 pages, numerous tables, 10 numb. plates in various techniques (3 chromolith.; 1 original photograph; 5 photogravures; 1 lithogr.). Publisher's cloth, gilt title to cover, spine ends damaged, spine with red handwriting (Solar ecplise 1869), else fine. $ 1.500.-

First edition of this report on the solar eclipse of 1869. The photograph, an albumen print (230 x 175 mm) in fine tonal ranges, captioned: „Solar Eclipse August 7th 1869 Burlington Iowa. Printed by James Cremer“. The photographs were made by Alfred Marshall Mayer (1836 – 1897), who in 1863/4 studied physics, mathematics, and physiology at the University of Paris, and on his return filled successively chairs in Pennsylvania College, Gettysburg, and Lehigh University, Bethlehem, from 1865 to 1870. At Lehigh, he was in charge of the department of astronomy, and superintended the erection of an observatory, from which he made a series of observations of Jupiter. He had charge of the expedition that was sent to Burlington, Iowa, under the auspices of the U.S. Nautical Almanac office to photograph the solar eclipse of 7 August 1869, and he made 41 perfect photographs. He used a Merz & Mähler telescope with 6.42 inch aperture and 9 feet focus, equatorially mounted driven by one of Fraunhofer's friction-governor clocks. The Sun's solar corona was first successfully imaged during the Solar eclipse of July 28, 1851 and later in 1860 by Warren de la Rue. Anyway this is still an early photograph of a solar eclipse.– not in Barchas Collection; not in Hockey (ed.) BEA. Lit.: Steven J. Dick. Sky and Ocean Joined: The U. S. Naval Observatory 1830 - 2000. (2007) pp. 75-76; 199-205; T. W. Webb. American Photographs of Total Solar Eclipse of August 7, 1869 in: Monthly Notices of the Royal Astronomical Society, Vol. 30, pp. 4-5.

only book with an original photograph of Charles Darwin

DARWIN, Charles.

Über die Entstehung der Arten im Thier- und Pflanzenreich durch natürliche Züchtung, oder Erhaltung der vervollkommneten Rassen im Kampfe um's Daseyn. Nach der dritten Englischen Auflage und mit neueren Zusätzen des Verfassers für diese deutsche Ausgabe aus dem Englischen übersetzt und mit Anmerkungen versehen von H. G. Bronn. Zweite verbesserte und sehr vermehrte Auflage.- Stuttgart: Schweizerbart, 1863. 8°. VIII, 551 pp., (1, blank) with 1 lithograph. plate & as frontispiece a photographic portrait of Darwin by Henry Maull (reproduced by Buchner). Contemporary gilt printed embossed cloth, name on front-fly (Heinrich Fowarger) $ 1.600.-

Second edition of the german translation of the „Origin of Species", notable for the only book in Charles Darwin's life-time to include an original photograph of him. The photograph is by Henry Maull and was probably made in 1857. Henry Maull received from Darwin the permission to distribute it in late 1862.
The photograph was produced after Maull's original by Carl Johann Sigmund Buchner (1821-1918) who worked as artist in Stuttgart and became photographer of the Württemberg Court in 1885 (Th./B. V, 180)
By 1853, Darwin's life as a naturalist was well established, and he was gaining in popularity thanks to his ac-count of his journey on the Beagle and his two volumes of Journal of Researches that resulted from that five- year voyage. The photographers Maull and Polyblank (later known as Maull and Fox) operated a studio in London and made at least four different exposures of Darwin between 1853 and 1857.
They took a now well-known photograph of Darwin in 1855 for their Literary and Scientific Portrait Club – a series of prints of notable Victorian men, sold on subscription. The photograph was taken about one year after Darwin started full-time work on his species theory. He was then around 45. A Darwin letter to J. D. Hooker on 27 May 1855 refers to a photograph: 'if I really have as bad an expression, as my photograph gives me, how I can have one single friend is surprising.' (The correspondence of Charles Darwin vol. 5, 339.)
While this image is notable as the first popular image of Darwin, the extent to which Darwin disliked it is also remarkable. Referring to the copy he had sent five years previously in his 1860 letter to Hooker, Darwin ex-claimed "for Heaven-sake oblige me & burn that now hanging up in your room. It makes me look atrociously wicked." One of the photographs was used as a frontispiece in the german edition of 1863 and as an engra-ved frontispiece for Francis Darwin's The life and letters of Charles Darwin (1887). The archives of Maull and Fox had been destroyed by fire, so the date is unsure.- Jonathan Smith. Charles Darwin and Victorian Visual Culture 217 ff.; Freeman 673; Carter-Muir 344; Volpi I, 352.

alchemy - unpublished manuscript

(D. P.)

L' alchimie moderne ou l'examen par les faits du fameux problème de la Pierre Philosophale. Ouvrage rempli d'expériences, d'observations, de découvertes physico - chimiques, curieuses et intéressantes. (no place, Paris ?), 1768. Manuscript in French, brown ink on strong paper, written in a very legible hand. There are some marginal manuscript notes in margins of text and a few slips of paper loosely inserted by another author of the 18th century and further by another hand of the 19th century (an alchemist who signed a note (pp. 159): "E. J. 1859 ". Quarto (248 x 190 mm). Wash-color frontispiece with the interiors of a chemical laboratory, (12), 3-321 [numbered 304] pp., 5 plates with original full-page pen- and ink wash-color drawings with added hand-coloring. Contemporary calf, gilt spine in compartments, red edges, title on spine: Alchimie moderne. Overall very fine. $ 20.000.-

Unpublished authorial 18th century manuscript on alchemy and on chemistry, finely illustrated with pen and wash-colour sketches on five plates. The whole text is roughly divided into two parts. Part one describes the experiments made by „D. P." and his friends during a year in the 1760's to produce gold resp. l'or potable after instructions described in an earlier work published in 1615 and in 1660 under the title: Brief traité de métaux by Gabriel Castaigne who dedicated the work to Marie de Medici. Part two is a translation with commentary of the work. „Since the reign of Henri IV the chemical physicians (Paracelsians) found protection and patronage at court. Prominent among those courtly chemical practitioners was the royal almoner Gabriel de Castaigne (or Catagne), a Franciscan friar and client of the Duc de Bellegarde. Castaigne was an outspoken advocate for the quintessential alchemical drug aurum potabile (l'or potable), a gold-infused cordial that he believed could „cure all ills". Many learned con-temporaries shared his enthusiasm. In 1611, Castaigne published an inflammatory pamphlet in defence of the drug, claiming that not only had the cordial been approved by the famed intellectuals of the medieval world - Thomas Aquinas, Albertus Magnus and Raymond Lull - but that its efficacy was also recognized by many contemporary experts and learned philosophers. Castaigne named only two of these learned contemporaries. One was the famed poet and churchman Beroald de Verville, the other was „le Sieur George Eglissem". In November 1611 the medical faculty of the university in Paris denounced Castaigne's book as a tissue of „lies and frauds" and set out to prosecute its author, but Castaigne continued to argue his case. Castaigne repeated this claim in his 1615 pamphlet Le Grand Mircale … in which he added Louis XIII. (who had been given a „small phial" of the drug) to the list of worthies, dead or alive who had approved the drug." (Alastair Bellany & Thomas Cogswell. The murder of King James I. pp. 95 ff.).
The author, a certain „D. P." gives the detailed diary of his experiments, conducted for more than a year in his laboratory. This laboratory is described at length in the beginning of the work. The frontispiece drawn by the author,

show his laboratory with instruments and his assistants or friends, including a woman. The next plate is the plan of this laboratory, the four others, which are colored, show the instruments: furnaces and chemical vessels. He did not manage to make gold, but learnt a lot: „how much my opinions have changed, how much my knowledge has increased [...] What has sustained my courage for nearly a year of hard work and considerable expenditure, was only that spirit of observation and discovery of which I was animated. Indeed, there was nothing more attractive than the compositions and decompositions that I was obliged to do and whose results always taught me something new. (… combien mes opinions ont changées, combien mes connaissances se sont accrues [...] Ce qui a soutenu mon courage pendant près d'un an de travail assidu et de dépenses assez considérables, n'était que cet esprit d'observation et de découverte dont j'étais animé. En effet il n'y avait rien de plus attrayant que les compositions et les décompositions que j'étais obligé de faire et dont les résultats m'apprenaient toujours quelque chose de nouveau)." After many and long experiments, the author considers: „The artificial production of gold is impossible or at least faces insurmountable difficulties (… la production artificielle de l'or comme impossible ou du moins d' une difficulté insurmontable)." Along the way, he acquired a great deal of knowledge in chemistry on the "mercurial principle, the nature of crystallizations, that of phosphorus, of ethers, of almost all the acids, […] (… principe mercuriel, la nature des cristallisations, celle du phosphore, des éthers, de presque tous les acides)." He writes that he is preparing a work whose title will be: „New search for the truth in the examination of nature." In an added sheet of paper (after the foreword), he quotes a sentence from Macquer's Dictionary of Chemistry: "Le service le plus essentiel que les alchymistes pouvaient rendre à la chymie, était d'exposer aussi clairement les expériences qui leur ont manqué, qu'ils ont décrit obscurément, celles qui selon eux leur avaient réussi. (= The most essential service that alchymists could render to chymie was to expose as clearly as possible the experiences they missed, which they obscurely described, those which according to them they had succeeded)." The author then writes: „C'est donc uniquement pour me conformer à cet avis, et dans la seule vue de me rendre utile au public que j'ai consenti à l'impression de cet ouvrage (= It is therefore only to comply with this opinion, and for the sole purpose of making myself useful to the public that I consented to the printing of this work." But this never happened; it didn't find a printer.
For his alchemical experiments & operations, he used an old manuscript, called 'Brief traité des métaux', which he reproduced at the end of the book with long commentaries. This treatise is attributed to Jean Sau-nier, according to a note from another 18th. century hand, stuck at the front-fly-leaf of the book. It was also published in the works of Gabriel de Castaigne (after 1562-ca. 1630) in 1615 and 1660 under the title: „Le grand miracle de la nature metallique". Castaigne was a cordelier and almoner of Louis XIII, „which for a cordelier was nearly as good as a bishoprick." (Ferguson I, 148 - 49). The note on the front-fly attributes the work to a Jean Sau(l)nier who wrote it in 1432 (and here edited by Castaigne). For the author this manuscript is: "ce qui distingue particulièrement l'ouvrage dont j'ai entrepris de parler, c'est une extrême bonne foi, une assez grande clarté, des manipulations exactes, des procédés savants et qui supposent chez l' auteur beaucoup de connaissance minéralogiques et métallurgiques, la plupart de ces procédés soutiennent parfaitement l'examen rigoureux de l'expérience. (… what distinguishes particularly the work I have begun to talk about is an extreme good faith, a great deal of clarity, exact manipulations, scholars and who assume in the author a lot of mineralogical and metallurgical knowledge, most of these processes perfectly support the rigorous examination of the experiment)." He added afterwards a dictionary of the chemical and alchemical terms and a table of contents.- Ferguson I, 148/49; Brüning 2040; Caillet 2059 (important for the adept of alche-my); Duveen 120; Debus. French Paracelsians 64; Schmieder 359 (all for Castaigne).

original drawings of iron ores from Trommler's mineral collection

DIETZSCH, Johann Christoph.

Two original drawings by Johann Christoph Dietzsch (Germany around 1763), probably after specimens in Christian Ernst Tromler's (1719-1788) mineral collection at Nayla maybe to be published in later parts of Schmidel's Erz Stuffen of 1752 - 1771, but actually not happened. One sheet with two figures or specimens and one sheet with three figures of probably two specimens. Sheet-size: 295 x 230 mm; image-size from 100 x 100 to 60 x 70 mm. Finely hand colored drawings highten with gum arabicum, and both signed by J. C. Dietzsch. Pencil lines show the intended engravers plate. $ 2.800.-

The drawings by Dietzsch show four specimens of iron ores from the mineral collection of Christian Ernst Trommler in Naila: „Drei Mineralstufen aus dem Bayreuthischen Gebirgen des Bergamtes Nayla, aus der Sammlung des Hochfürstl. Culmbachischen Bergmeisters Christian Ernst Trommler zu Nayla aus dem Jahre 1763 werden gezeigt: eine „Abbildung eines sehr schönen faserigten braunen Eisensteins mit einer Glaskopfschaale", „ein gar besonders glänzendes und fadenartiges Eisensteingewächs, so jetzo nicht leicht mehr gefunden wird", „ein besonderes Eisensteingewächs,…, daß seine Fasern oben auf ihren Spitzen, runde traubenförmige Kugeln haben,…". The drawings were not published in Casimir Christoph Schmidel's work: Erz Stuffen und Berg Arten mit Farben genau abgebildet (Freilich 480), but might be intended.
Schmidel's intention was to accurately portray minerals of economic importance in their "exact" colors, so that miners and prospectors could use it as a handbook and a guide to locate valuable ores. The noted engraver Johann Michael Seligmann was responsible for the majority of the fine copper plates which show various specimens of copper, lead, zinc, silver and gold ores. The text, written in both Latin and German, meticulously describes the physical properties and modes of occurrence of the figured specimens, thus anticipating the importance of external characteristics in mineralogy. The specimens shown on the plates are unfortunately not fine crystallized specimens, but typical examples

of valuable ores; therefore, one will be disappointed if too much is expected of the illustrations as mineral specimen depictions. They are, however, well executed pictures of ores samples. The *Berlinischer Sammlungen* review notice of *Fossilium Metalla et res Metallicas* indicates that sections containing 3 plates were to be issued every 2 months. Probably due to an insufficent number of subscribers however, the flow of new descriptions and plates became erratic, and with only twenty-eight plates distributed, eventually halted in 1765, although by this time, Schmidel's book was highly admired and much used as a practical tool. Yet, no new descriptions or plates appeared until after 1771. At this point, new sections were published until a total of forty-two plates were issued, then apparently publication again ceased, for copies with 42 plates are considered complete in the standard bibliographic references. Nevertheless, a very few copies exist with descriptions and four additional plates, thereby totaling 46 plates. Since the added plates do not identify their engraver or year of creation, it is assumed they were issued at some later time, and therefore not included in many copies. Dietzsch was responsible for a few illustrations, beside others. (Schuh online)

Johann Christoph Dietzsch (1710-1769) was a german artist, engraver and book illustrator from a family of Nürnberg artist. Between 1730 and his death in 1769 Dietzsch made drawings, watercolors, engravings and paintings with opaque colors, presenting mainly landscapes with rural staffage. Johann Christoph Dietzsch published several copperplate series, including a series of six large landscape etchings by Knorr, a series of 41 smaller sheets, which he published with the help of his brother Johann Albrecht, eleven sheets depicting the city of Nuremberg, and thirty sheets with artist portraits. As a watercolorist, Johann Christoph Dietzsch made flower and genre pieces in the Dutch style. The works of Johann Christoph Dietzsch were viewed and sought after in his time. Johann Christoph Dietzsch possessed a natural history, mineral and curiosity cabinet known in his time.

Abgebildet werden hier vier Eisenminerale aus der Sammlung von Christian Ernst Trommler: „Drei Mineralstufen aus dem Bayreuthischen Gebirgen des Bergamtes Nayla, aus der Sammlung des Hochfürstl. Culmbachischen Bergmeisters Christian Ernst Trommler zu Nayla aus dem Jahre 1763 werden gezeigt: eine „Abbildung eines sehr schönen faserigten braunen Eisensteins mit einer Glaskopfschaale“, „ein gar besonders glänzendes und fadenartiges Eisensteingewächs, so jetzo nicht leicht mehr gefunden wird“, „ein besonderes Eisensteingewächs,…, daß seine Fasern oben auf ihren Spitzen, runde traubenförmige Kugeln haben,…“.

Christian Ernst Trom(m)ler (1719-1788) war der Sohn des Christian Friedrich Trommler, welcher als Bergmeister aus Schneeberg in Sachsen 1717 von Bergdirektor Georg Gottfied Rücker in das Bergrevier Goldkronach geholt wurde. Von ihm stammt eine große handkolorierte Bergbaukarte aus dem Goldkronacher Revier. Im Naila'er Revier war zu dieser Zeit Johann Abraham Löwel Bergmeister. Chritian Ernst Trommler war erst in Sachsen - Weimarischen Diensten, davor wohl noch in Norwegen, Rußland anderen Ländern und "hat sowohl in der Grube als in der Hütte Faustarbeit getan". 1748 wurde er als Bergmeister für 200 Gulden jährlich für das Bergrevier Naila eingestellt. Nach dem Tode von Johann Abraham Löwel wurde er 1766 auch Bergrat, von 1762 bis 1772 hatte er das Naila'er und das Wunsiedler Bergamt zu leiten. 1795 wird in Hof ein Verzeichniß des Berg-Rath Tromlerischen Mineralien-Cabinets zu Naila in Baireuthischen gedruckt und wie folgt beschrieben: "Dieses Verzeichniß wurde zwar nur um deshalb gedruckt, um Liebhaber, da die Erben dieses Kabinet zu verkaufen wünschten, mit dem Inhalte deßelben bekannt zu machen, allein es verdient auch noch hier bey erfüllter Absicht einen Platz, da es von machen Mineralien unsers Landes bestimmt die Geburtsörter angiebt. Uebrigens hatte diese Sammlung leider ! wie es so oft der Fall zu seyn pflegt, nicht das glückliche Schicksaal, indem es in die Hände eines Mannes fiel, der, wie es mehrere Umstände bewießen haben, nicht sonderlich für das Studium der Mineralogie eingenommen seyn mußte.“ 1797 wird über die Sammlung wie folgt berichtet: Ein ansehnliches Naturalien Cabinet stehet noch in 8 Schränken zu Nayla, und kann von seinen Erben zu Hof einem Liebhaber käuflich überlassen werden. Es enthält nicht nur alle fast alle Mineralien des Landes, sondern auch die merkwürdigsten aus den vornehmsten Berggegenden anderer Länder.

Jupiter spots

DIVINI, Eustachio.

Lettera intorno alle macchie nuovamente scoperte nel mese di Luglio 1665. nel Pianeta di Giove con suoi cannocchiali. All'Ilustriss: Sig. Conte Carlo Antonio Manzini. Rome, Giacomo Dragondelli, 1666. 8vo. 109 pp. hole to upper blank portion of title expertly repaired; lower blank corner of one leaf renewed; some light browning and occasional foxing; a very good copy in recent vellum over boards. $ 8.000.-

First edition of Divini's extensive lettera containing his telescopic observations of Jupiter's spots, as well as descriptions of numerous telescopes of his making or invention, and with a letter to him appended here by the Belgian jesuit mathematician and astronomer Gilles-François de Gottignies, an opponent of Cassini. Eustachio Divini was one of the foremost makers of optical instruments in the seventeenth century (see King, The history of the telescope pp. 58-59). He 'was among the first to develop technology for the production of scientifically designed optical instruments. He established himself in Rome about 1646 as a maker of clocks and lenses ... During this same period he experimented with the construction of telescopes of long focus ... He experimented with the elimination of achromatic aberration in his lenses with some success. He had received some scientific training from Benedetto Castelli, one of Galileo's disciples' (DSB).

'[Jupiter's] "permanent spot", which may be identical with the present Great Red Spot, was first recognised by Giovanni Dominico Cassini in Italy in 1665. In fact its first sighting, on 1665 July 9 alongside the shadow of Ganymede, was by Cassini's friend and instrument maker (and Campani's rival), Eustachio Divini of Rome' (John H. Rogers, The Giant Planet Jupiter p. 6).

Besides Divini's reports on two different spots observed on the planet on July 9, 1665, by Cassini, Divini himself, Honoré Fabri, and several other guests at the home of Cesario (or Cesareo) Giori, uncle of the Roman cardinal Angelo Giori,

on Mount Sant' Onofrio, using a Divini telescope of 50 palms length, a rotational movement of the planet around its axis was established on the same occasion.
The remainder of the text is largely concerned with descriptions of a number of types of Divini telescopes, varying much in length and in lens combination, as well as Divini's invention of 'lenti duplicate', and with a number of letters from clients quoted in print in praise of his instruments, including from patrons such as the Grand Duke of Tuscany (who is known to have purchased telescopes from both Divini and Campani), and the Venetian cardinal Pietro Basadonna, and with the letters apparently quoted verbatim.
'From 1662 to 1665, there was another quarrel between Divini and Campani. Both worked in Rome, so some rivalry between them was inevitable. In those years, however, the rivalry became a hot dispute. Many "comparisons" were made between the instruments of these rivals, which Divini mentioned in his letter to Count Antonio Manzini (1666)' (Biographical Encyclopedia of Astronomers p. 302). The appendix of over 30 pages consists of a letter by Gilles-François de Gottignies in which the Jesuit scientist describes his own observations of Jupiter on July 9, 1665. Gottignies there also quotes a letter by Cassini in print to prove his priority in the discovery of the planet's rotation, as well as in the interpretation of the nature of the spots, and states Cassini to be in error. Sommervogel III 1624 2; OCLC locates copies two copies in the UK, at the British Library, and Whipple Museum, three for France, at the Bibliothèque Nationale, Paris-Mazarine, and Lyon, one for Germany, at the Zentrale Hochschulbibliothek, Lübeck, one for Switzerland, at Zurich, one for Denmark, at the Royal Library, and seven for the US, at the Smithsonian, Chicago, Oklahoma, Miami, Burndy, Huntington, and Wisconsin.

Ernst Brücke's copy

EHRENBERG, Christian G.

Die Infusionsthierchen als vollkommene Organismen. Ein Blick in das tiefere organische Leben der Natur. 2 volumes (text & atlas).- Leipzig, L. Voss, 1838. Folio (473 x 340 mm). xviii, (4), 547 pp., (1), with one engraved separate atlas-title and 64 hand-colored engraved plates. Contemporary green half cloth folder with ties and mounted original wrappers, uncut and unbound sheets as delivered before book binding. Ties missing. Ex Libris Ernst von Brücke. $ 4.800.-

Ehrenberg's most important work: "The Infusoria as Complete Organisms", an important and early publication on the now-obsolete class *infusoria* (minute aquatic creatures) by Ehrenberg, one of the leading experts on the subject: 'With the microscope he discovered single-celled fossils that built up geological strata; he gave exact descriptions of and discriminated among the shells and skeletons of freshwater and marine animals, thereby becoming the founder of micro-geology and micropaleontology in Germany' (DSB IV, 291).
First and only edition, the work is illustrated by finely-engraved and hand-coloured plates. The excellent plates are all after Ehrenberg's own drawings.
"Ehrenberg's great contribution to biology was his work on the infusoria, the results of which were published originally in a number of brief essays and afterwards in the important and splendid work entitled 'Die Infusionsthierchen' printed in 1838. The result of this and other works of his was that the number of known Infusoria was considerably increased, and their classification essentially advanced" (Nordenskiöld p. 427).
The german biologist, microscopist and scientific explorer Christian Gottfried Ehrenberg (1795 - 1876) was one of the founder of micro-paleontology - the study of fossil microorganisms.
Ehrenberg studied at the Univ. of Berlin (M.D., 1818) and was associated with the university throughout his career. He took part in a scientific expedition (1820–25) to Egypt, Libya, the Sudan, and the Red Sea under the auspices of the University and the Prussian Academy of Sciences. The expedition's only survivor, he collected about 34,000 animal and 46,000 plant specimens. With German explorer and naturalist Alexander von Humboldt, he participated in 1829 in an expedition, sponsored by Tsar Nicholas I. of Russia, to Central Asia and Siberia.
Ehrenberg identified and classified a number of terrestrial and marine plants, animals, and microorganisms collected on expeditions. He proved that fungi come from spores and demonstrated the sexual reproduction of molds and mushrooms. He was the first to study in detail the anatomy, habits, and life history of coral, and he identified planktonic microorganisms as the cause of bioluminescence in the sea. Ehrenberg discovered the microscopic fossil organism content of various geologic formations and noted that certain rock layers are composed of such single-cell fossils. Ehrenberg advanced the view that all animals, from the most minute to the largest, possess complete organ systems, such as muscles, sex organs, and stomachs; he believed his concept of "complete organisms" (later refuted by French biologist Felix Dujardin) disproved both the theory of spontaneous generation and the validity of the traditional arrangement of animals in a simple-to-complex series. Arguing that a single "ideal type" may be applied to all animals, he worked toward a comprehensive system of classification, in which he used social behaviour as an important criterion, but he placed humans apart from other animals on the basis of intelligence.
For nearly 30 years Ehrenberg examined samples of water, soil, sediment, blowing dust and rock and described thousands of new species, among them well-known flagellates such as Euglena, ciliates such as Paramecium aurelia and Paramecium caudatum, and many fossils, in nearly 400 scientific publications. He was particularly interested in a unicellular group of protists called diatoms, but he also studied, and named, many species of radiolaria and foraminifera. After his death in 1876, his collections of microscopic organisms were deposited in the Museum für Naturkunde at the University of Berlin. The "Ehrenberg Collection" includes 40,000 microscope preparations, 5,000 raw samples, 3,000 pencil and ink drawings, and nearly 1,000 letters of correspondence.- Provenance: Ex Libris Ernst

(von) Brücke, famous physiologist.- Garrison & Morton 111; Nissen ZBI, 1244; Brunet II, col. 954; Marc Ratcliff. The Emergence of the Systematics of Infusoria. In: *The Quest for the Invisible: Microscopy in the Enlightenment*. (2009)
Provenance: Ernst von Brücke (1819-1892), German physiologist who helped to introduce physical and chemical methods into medical research.

beautiful butterflies

ENGRAMELLE, Jacques- Louis- Florentin; Ernst (Jean- Jacques)

Papillons d' Europe, peints d'après nature (par J. J. Ernst). 8 Vols.- Paris: M. Delaguette, Impr.-Libraire, Basan & Poignant, Marchands d' Estampes, (1779)-1792. Gr.4to. (300 x 240 mm) (6), XXXIV, 206 pp., XII (last blank) with engraved colored title, engraved vignette and engr. dedication, plates 1-48 and 3 uncolored plates; (4), (2), pp. 208-344 (last leaf with additions), plates 49-84 and 8 Supplementary plates; (4), engraved colored title, X, 132 pp., plates numbered 85-122; 3 leaves incl. engraved title, 216 pp. (last blank), 1 leaf Errata; 2 leaves, 150 (wrongly 152) pp., 1 leaf: Avis, plates numbered 172- 210; 2 leaves, 176 pp., one leaf, plates numbered 211-257; 2 leaves, 173 pp., 1 leaf Errata, plates numb. 258-305; 1 Bl., 88 pp., plates numbered 306-326. Missing the last installment of vol. VIII (pp. 89-157) with 16 plates. Together with 3 (2 color.) engraved titles engraved dedication sheet and **334 (of 350)** color. engraved plates and 3 uncolored engraved plates after J. J. Ernst. Text partly browned, and partly spotted, else fine. Two sheets with small rust-hole in white borders. Fine copy in contemporary calf, gilt spine in compartments, red morocco label, ruled borders, fine rosé endpapers. $ 10.000.-

One of the most sumptuously produced French works on butterflies and moths.
Funded and sponsored by the collector Jean Baptiste Francois Gigot d' Orcy (1733-1793), Inspector of Mines, later Receiver General of Finances for the „généralité de Châlons", it described his collection of butterflies and that of the banker of Frankfurt, Johann Christian Gerning (1745—1802), who had collected more than 40.000 specimens from all over the world. Gigot d' Orcy's extensive collection of minerals was acquired in 1825 on behalf of Yale College by Benjamin Silliman (1779 – 1864). In addition to his collection of minerals, d' Orcy had a fine cabinet of natural history specimens, including some of the butterflies featured in Engramelle's book. The text was composed by the friar, musician and entomologist Jacques- Louis- Florentin Engramelle (1734-1814) and was illustrated, among others, by the naturalist painter Jean-Jacques Ernst, who was also a collector of butterflies. Sold almost exclusively by subscription, it was printed in only 350 copies and its publication was spread over more than 10 years, from 1779 to 1792. Most copies lacks therefore something. Here with the rare 8 supplement plates with 84 fig. from 1793 which were never distributed. The subscriptions list mentions the King of France, members of the Royal Family, the King of Spain and Sweden, as well as a great number of notables and scientists such as the Bomare, Buchoz, Faujas de Saint-Fond, Duc d' Aumont and Comte de Buffon. The entire publication consists of 8 volumes, comprising a total of 350 colored plates with about 3000 specimens. Ernst is mentioned as illustrator, however, from 1785, it was Maria Eleonora Hochecker (1761 - 1834) who prepared most of the plates after specimens from Gerning's collection. But there are also mentioned the names of Fossier, Kraul, Zell, Dovillers below the plates. The plates are superbly hand colored and belong to the very best made in the field of entomological illustration. The first fascicle was published in 1779, before the French Revolution, the last in 1793, the year of the Terror.- Nissen, ZBI 1300; Horn/Sch. 6051; Cobres 392, 64: »Ein kostbares Werk«.
Supplement plates: Sup. Cl. Ire (supplement, classe I), beautifully hand colored engraving 1-5, 7-9 with 84 figures. numbered n, m: 172 a-d, f-i bis; 173e; 174 a-d bis; 178 i, k-l; 186 i, k (2x), l; 187 a-d bis and gg, hh, ii, kk; 194 i; 195 a-f bis; 201 k; 207 h; 208 c-f; 215 d; 217 h; 218 h-i; 228 c-e; 237 a-b bis; 242 a-d bis; 256 d; 245 i,k; 246 m; 258 a-c bis; 261 g; 262 a-d bis; 254 c-e; 257 bis; 263 a-b bis; 276 h-i; 278 a-c bis; 280 a-c bis; all engraved by A. Schmidt and painted by M. Hochecker. In 1788 the publishers had announced their intention of issuing another volume. In 1792 and 1793 the subscription notice was repeated. However, because of events at the time, in particular the French Revolution, it is unlikely this project was completed. One day, just after World War I (1914-1918), Mr. R. Homberg discovered some butterfly plates in the window of a secondhand bookstore. After research, these turned out to be the missing plates of volume 9 which was never completed or distributed to subscribers who were for the most part guillotined or exiled. There are eight different plates each in numbers from 169 to 280. See the article by R. Homberg in "The Journal of the Society for the Bibliography of Natural History" Vol. III, Part I, p. 28-33 (1953). Lydie Rigout: About the "unknown" plates of Ernst & Engramelle: Papillons d'Europe, in: The Bulletin of the Amateur Entomologist's Society, Number 439 (December 2001), pp. 247; Horn-Schenkling, 6051; Nissen ZBI, 1300.

'I don't want orange trees,
I want something that others don't have'

[ESQHI, Mohammad, gardener and assumed author].

[Ottoman Turkish:] Tulip Calendar. [Istanbul?, c. 1800]. 4to, ff. [16], manuscript on glazed paper, executed in a beautiful, small nashkī script; opening page with a panel of finely-worked illumination in colours and gold; title inset in red ink; all pages within a four-line border in red, black, and gilt; finely preserved in its slim, contemporary binding of red morocco boards; a large leopard-speckled paper panel inset on covers within a

silver (oxidized) ornamental scroll; the binding a little worn at head and tail of spine; old European (?) shelf-label to lower cover; end-papers mauve or mauve-speckled opposite lightly pink paste-downs. $ 18.000.-

SCARCE Seasonal calendar for the planting of tulips in Turkey by a named author, seemingly a personal gardener under and to Sultan Selim iii.
The 26-page calendar lists the varieties of tulips in red, and their colours, qualities, sizes, etc., in black ink, and by alphabetical order. Written a long time after Europe's *Tulipomania* of the seventeenth century, which ended in bankrupting a large number of investors, with single bulbs of certain specimens, such as the striped *Semper Augustus*, having been traded for extraordinary sums until the collapse of the scheme. This manuscript is rare testimony to the appreciation of this particular flower in its place of origin around the end of the eighteenth century.
A very rare planting calendar for the wonderful, much sought after tulip, written during the reign of the enlightened Sultan Selim iii. (1761-1808), known for his reform-mindedness, his associations outside the boundaries of the Ottoman Empire, and his endeavours to modernize and reform his state. The son of the equally progressive Sultan Mustafa iii. and Mihrişah Sultan, Selim was fond of literature, poetry and calligraphy, a great lover of music and one of the best composers in the Ottoman classical music tradition.
In fact, it was during Selim III's reign that the court first experimented with a foreign head-gardener to redesign its imperial gardens in the capital. Later on, Mahmud II's restoration of a majority of the novel offices that Selim had instituted would also extend to the reactivation of this post. Baron von Herbert, the Austrian internuncio to Selim's court, had imported a gardener from Rastatt by the name of Jacob Ensle (d. 1832) in 1794, who was fortunate enough to be residing with his stepbrother, the distinguished naturalist Franz Boos (1753–1832), botanical gardener and menagerie director of the Schönbrunn Palace in Vienna, during von Herbert's recruitment efforts. Ensle, who appears to have led many a late-eighteenth-century European traveller through the doors of the Topkapi's new sections, while maintaining relative anonymity as 'M. Jacques from Rastadt' in their accounts, himself left a narrative of his time in the Ottoman court. In it, he boasts that 'through the skilful leveraging of a connection [he] managed to achieve an assignment as the chief-gardener of the Bostandji [der Obergärtners der Bostandgi's] in the palace,' and notes that Selim III's mild regime allowed a Christian to fill this post. Ensle also contributed to the gardens in Selim's Besiktas Palace and Eyüp. At Topkapi, he worked on a set of terraced spaces reserved for Selim and for the women's quarters, and as per the sultan's request, instituted the 'French and Dutch conventions ["Sitte"]' rather than the picturesque landscapes that Europeans had begun to install in their own estates.
This calendar might be related to the Dutch conventional garden.
While tulips had probably been cultivated in Asia from the tenth century, they did not come to the attention of the West until the sixteenth century, when Western diplomats to the Ottoman court observed and reported on them. They were rapidly introduced into Europe and became a frenzied commodity during Tulip mania. Tulips were frequently depicted in Dutch Golden Age paintings, and have become associated with the Netherlands, the major producer for world markets, ever since. In the seventeenth century Netherlands, during the time of the Tulip mania, an infection of tulip bulbs by the tulip breaking virus created variegated patterns in the tulip flowers that were much admired and valued. In Turkey the tulips was valued high. Sultan Ahmet iii. maintained famous tulip gardens in the summer highland pastures *Yayla* above the town of Manisa. They seem to have consisted of wild tulips. However, from the 14 tulip species known from Turkey, only four are considered to be of local origin, so wild tulips from Iran and Central Asia may have been brought into Turkey during the Seljuk and especially Ottoman periods. Sultan Ahmet as Selim iii. also imported domestic tulip bulbs from the Netherlands. This is a wonderful little manuscript: a Sultan's gardener's planting calendar – and on a most singular topic; finely produced and calligraphed, and in its original binding.
I have not come across any other example before, and certainly not one concerned with this particular flower, *The flower of Turkey.- Provenance*: line 9 of the second leaf provides the name of 'Mohammad Eshqi' or 'Ashqi' (here: 'shiqi') as that of the gardener, followed by a statement on line 4 of leaf 3 that the calendar was written or compiled during the reign of Sultan Selim III. Judging by the little library shelf mark pasted onto the rear board of the binding, the manuscript eventually appears to have possibly become part of a European collection in the 19th-century.

the first published account of sunspot observations & the sun rotating

FABRICIUS, Johann.

De Maculis in Sole observatis, et apparente earum cum Sole conversione; Narratio cui Adjecta est de modo eductionis specierum visibilium dubitatio. Wittemberg, Lorenz Seuberlich for Johannes Borner the elder and Elias Rhefeld of Leipzig 1611. 4to, ff. [22]; lightly browned, a number of contemporary annotations in ink (some cropped); a fine copy in marbled wrappers. $ 35.000.-

Extremely rare first edition of the first ever published work on sunspots, its publication preceding both Scheiner's and Galileo's, as noted already by Kepler and Simon Mayr at the time.
Fabricius describes the spots as adhering to or imbedded in the surface of the sun whilst rotating with it, in stark contrast to the later publications by Scheiner, who interpreted the maculae as solar satellites, and to Galileo, who interpreted them as 'clouds' on the surface of the sun. Kepler himself had observed a sunspot in 1607 using a camera obscura, interpreting the phenomenon as mercury transiting the sun.

'Johann Fabricius was one of the first astronomers to observe sunspots with a telescope, and was the first person to publish an account of his observations. Fabricius was the eldest son of the famed astronomer, astrologer, and Lutheran Pastor David Fabricius (1564 - 1617), who was a friend of Johannes Kepler and correspondent of Tycho Brahe, Willem Blaeu, Simon Mayr and others. Jo-hann first studied medicine, mathematics, and astronomy at the University of Helmstedt in 1605, and then enrolled at Wittenberg University the following year. In December 1609 he moved on to Leiden University, where he matriculated as a student of medicine, but was eventually awarded a Magister Philosophiae degree in September 1611. While in Leiden, sometime near the end of 1610, Fabricius acquired one or more telescopes, which he brought home to his father's house in Osteel, East Frisia [northwest Germany].
'Already well aware of the astronomical potential of the telescope from Galileo Galilei's Sidereus Nuncius, the father-and-son team began telescopic observations, on the lookout for something new. Johann first noticed sunspots at sunrise on 9 March 1611 … and for many weeks following was engaged with his father in daily observations whenever the weather permitted. Most of their observations were carried out via the camera obscura technique, which consists of forming a projected image of the Sun through a pinhole opening into a suitably darkened room. They had first observed the Sun directly through the telescope, a harrowing experience that Johann later related in his Narratio.
"Having adjusted the telescope, we allowed the sun's rays to enter it, at first from the edge only, gradually approaching the center, until our eyes were accustomed to the force of the rays and we could observe the whole body of the sun. We then saw more distinctly and surely the things I have described [sunspots]. Meanwhile, clouds interfered, and also the sun hastening to the meridian destroyed our hopes of longer observations, for indeed it was to be feared that an indiscreet examination of a lower sun would cause great injury to the eyes, for even the weaker rays of the setting or rising sun of the inflame the eye with a strange redness, which may last for two days, not without affecting the appearance of objects."
In his Narratio [which was sold at the Frankfurt Book Fair in autumn 1611,] Fabricius correctly identified the spots as belonging to the Sun. On the basis of the varying shape and apparent speed of these spots as they move across the solar disk, he also correctly interpreted his observations as indicating an axial rotation of the Sun. Fabricius was already aware of the latter idea being a theoretical possibility, from the writings of his father's friend Kepler, who in his 1609 Astronomia Nova had postulated solar rotation as the magnetically mediated motive force responsible for planetary orbital motion.
'Practically nothing is known of the final 5 years of Fabricius' life [he died on March 19, 1616]. In a few surviving letters to Kepler, he affirmed his dedication to astronomy, and announced a method for weather prognostication of unprecedented reliability. Following his death, and that of his father, the young Fabricius was rapidly eclipsed in the priority controversy then flaring between Galilei and the Jesuit Christoph Scheiner over the discovery of sunspots. In their writings, both Kepler and Simon Mayr attempted to establish Fabricius' precedence on the topic, but to no avail.
'It was only in 1723, following the discovery of a copy of his 1611 pamphlet, that Fabricius' remarkable deductions regarding sunspots and solar rotation were once again brought to the attention of the astronomical world' (Paul Charbonneau in BEA I, 353/54). Folio 10 of Fabricius' Narratio includes an early note regarding the invention of the telescope and its wonderful magnifying abilities: 'Notum est, quae nuper Batavis inventae sint perspicillae, quae res etiam procul dissitas incredibile magnitudine cum admirabili lineamentoru[m] & colorum distinctione nobis repraesentant intuendas.' The final six leaves of the tract contain Fabricius' highly original ponderings on the nature of light and shadow, showing him well acquainted with Kepler's recent publications on optics.
Whilst copies of Fabricius' tract are held by several institutional (see below), it is of extreme rarity, and with no copy recorded at auction in many decades.
VD17 23:237090L; KVK locates copies at München, Augsburg, Staatsbibliothek Berlin (lost in the war), Mannheim, Tübingen, Erfurt, Herzog August Bibliothek, Wolfenbüttel, and Leipzig; there also is a copy in Switzerland, at ETH Zürich; COPAC locates copies at the British Library, Oxford; Cambridge, the Wellcome Library, Southampton, and the National Library Scotland; OCLC locates three copies in North America, at Tulane University, Yale, and Oklahoma.

color dyes

FERNANDEZ, Luis.

Tratado Instructivo, y Práctico sobre el Arte de la Tintura: Reglas Experimentadas y Metódicas para tintar Sedas, Lanas, Hilos de todas clases, y Esparto en rama.- Madrid: En la Imprenta de Blas Roman, 1778. Folio (286 x 196 mm) XXX, 250 pp. (Sign.: A-B2, C-4, d-f2, g-P1, A-3Q2, 3R1.) Illustrated with **13 full-page** copperplates, including the final large folding copperplate. $ 3.000.-

First Edition. A Spanish manual for the dyeing of fabrics in the textile industry in late eighteenth-century Madrid. The text discusses in precise detail the treatment of silks, wools, and yarns; the preparing of the textiles; and the steps in the progression of dying- **with in-depth instructions given for the methods and natural pigments** required to achieve the proper hue and density for a desired color. The copper-plates demonstrate the principal operations used at the Madrid Royal Factory for dying fabrics, with workers engaged in the specifics of dying, and the equipment needed to execute the coloring process. The final large folding copperplate depicts the layout of the factory floor with all the steps being performed. Don Luis Fernandez, born in Toledo and a resident of Valencia, became a master dyer (Maestro Tintorero) in Madrid and was appointed Director of La Real Fabrica (the Royal Factory).- No copies at auction as listed in ABPC. Palau Dulcet V, 296, 87929. BL STC 18th-C. Spanish F45; not in Einaudi & Goldsmiths; Bibliotheca Tinctoria 371 ("An 18th-century Spanish theoretical and practical handbook on dyeing, among the first printed there"); EROMM 20050302. Neben den bekannten Rohstoffen wird ausführlich auch über die "Caesalpinia echinata" berichtet,

die als "Palo de Brasil" und "Palo de Campeche" in die Geschichte der Farbindustrie eingehen sollten. Sie kommt aus den Künstenregionen der brasilienischen Kolonien und gehört zu den wichtigsten Färberpflanzen. Es wird über die Tintenherstellung berichtet, die Destillation des Bleichmittels Eau de Javel (Javelwasser), die Funktion von Laugen und Säuren sowie die Gewinnung des teuren Indigo, das aus der Indigofera aus den ostindischen Kolonien und dem tropischen Afrika stammt. Mehrere Kapitel widmen sich der Frage, wo die Rohstoffe für die Farben zu finden sind.- COPAC: V & A Libraries, Madrid.

Buffon condensed

(FERRI, Giovanni or Ferry de Saint Constant, Jean Luc).

Buffons Geist, oder Kern seiner Naturgeschichte. Aus dem Französischen des Herrn M****.- St. Petersburg, bey Johann Zacharias Logan, 1783. 8° (185 x 105 mm) (24), 264 pp. Contemporary half calf, morocco lettering piece, red edges, fine copy. A contemporary ink note on front-fly. $ 1.200.-

Very rare work on Buffon's ‚Histoire Naturelle' by Jean Luc (Giovanni) Ferri (Ferry) de Saint-Constant (1755 - 1830) translated from the french by the geologist and mineralogist Benedict Franz Johann von Hermann (1755 - 1815), although Holzmann/Bohatta II, 5680 cite him as author and not Ferri. But this is most probably a translation of Ferri's Genie de Buffon, although similar works were published by Malherbe and others. The first part is on man and ethnic groups, the second part is on specific mammals and philosophical questions like „style". The *Histoire Naturelle, générale et particulière, avec la description du Cabinet du Roi* written between 1749–1804 by the Comte de Buffon cover what was known of the "natural sciences" at the time, including what would now be called material science, physics, chemistry and technology as well as the natural history of animals. The *Histoire Naturelle* had a distinctly mixed reception in the eighteenth century. Wealthy homes in both England and France purchased copies, but Buffon was criticized by some priests for suggesting that the earth was more than 6,000 years old and that mountains had arisen in geological time.- VD18 12572322-001; Barbier, II, 6982 (french ed.); KVK: Freiburg, Stabi München, Jena, Göttingen; OCLC: only Santa Barbara.

FORTIS, Alberto.

Della Valle Vulcanico-Marina Di Roncà Nel Teritorio Veronese, Memoria Orittografica. Del Sig. Abate Fortis, … In Venezia: Nella Stamperia di Carlo Palese, 1778. 4° (300 x 210 mm) LXX pp., [2 blanks] with engraved title vignette and 4 double - page engraved plates. 18th cent. paper wrappers, first pages dust-soiled, else fine and clean, probably an uncut copy wide wide margins. $ 4.500.-

„Very scarce" (Schuh online) first edition: concerns the geology and mineralogy of Italy with fine engravings by Jac. Leonardis, sculp. and Anton Biasini, Cajet. Scabari, del. showing basaltic formations, shells and paleontological findings. The title of this work includes the unusual and rare word "orittografica," from the Greek oryctographia, literally "writing about digging," and refers to a combined interest in geology and paleontology. It is, in fact, an essay on the natural history of the volcanic valley of Ronca near Verona, including a discussion of the geology and fossils found in the valley. It is printed with some very fine etchings on fold-out plates. The first plate shows fossil sea-shells, the remainder showing dramatic formations of volcanic rock and the natural scenery around them.
The Veneto region of Italy includes the cities of Venice, Padua, Vicenza, and Verona and extends northward into the pre-Alps. The fact that much of this area consists of volcanic rock and soil seems to have been first noticed in 1760 by Giovanni Arduino (1714-1795). In 1766 Desmarest toured the Veneto, fresh from a visit to Vesuvius and the Phlegraen Fields, and he noticed basalts in areas such as the Alpine Valley east of Verona and the Euganean hills southwest of Padua. But it was not until the 1770s, after Desmarest had published his work on the Auvergne, that the basalts of the Veneto were described and illustrated in widely available publications by John Strange and Alberto Fortis.
Alberto Fortis was a disciple of Giovanni Arduino, who had been the first to notice the evidence of volcanism in the Veneto. Fortis explored the area thoroughly in the 1760s, and he even accompanied Nicolas Desmarest when he toured the area in 1766 and noticed the basalt formations in the Ronca valley and the Alpone valley, between Verona and Vicenza. But it was not until 1778, when he was trying to obtain the professorship at Padua made vacant by the death of Arduino's, that Fortis published a rather lavish book on the geology of area around Verona. Fortis had no doubt the the basalt of the Veneto was the result of volcanic activity. But he also found abundant layers of marine sand-stone and clay above and below the basalt. Fortis came to believe that basalt originated as marine clay and was transformed into basalt by volcanic activity. There were no fossils in the basalt because the fossils had been burned out by the volcanic fire.
Alberto Fortis (1741 - 1803) was a Catholic clergyman, naturalist, bibliophile, and much-published author. He lived first in Rome, then later after many travels, he eventually became a librarian in Bologna. Fortis was a member of the Societé Italiana and the Academy at Padua and corresponded widely throughout Europe.- Ward & Carozzi, Geology Emerging, 850.

fish fossils

GAZOLA, Count Giovanni Battista (Giovambattista)

Lettere recentemente pubblicate sui pesci fossili Veronesi con annotazioni inedite agli estratti delle medesime (di Fortis).- Verona: dalla stamperia Ramanzini, 1794. Quarto (212 x 140 mm) 187 pp., (1) with six folding

engraved plates (incl. one printed in black & brown) and three more engraved plates showing basalt formations near Bolca privately bound with. Contemporary Carta rustica, handwritten title on spine, exceptionally fine & clean copy. $ 4.500.-

Very rare work on the fossils fishes of the Bolca Lagerstätten edited by the collector Count Giovanni Battista Gazola (1757-1834) with descriptions by Alberto Fortis (1741-1803).
The first documented report of a fossil from the Bolca Lagerstätten dates back to the 16th century, and notes material belonging to the ambassador of the Holy Roman Empire to the Venetian Republic (Mattioli 1550). Nearly a century later, the first illustration of a fossil from Bolca appeared in a catalogue of the collection of the Veronese apothecary Francesco Calceolari (Ceruti & Chiocco 1622). Bolca fossils and their origin were extensively debated during the 18th century. It is also at this time that large collections were amassed by noblemen in Verona, including Vincenzo Bozza, Ottavio Canossa and Giovanni Battista Gazola. By the end of 1791, Gazola's own museum contained over a thousand well - preserved fossil fishes, plus numerous plants and invertebrates. The abbot Giovanni Serafino Volta studied the Bozza collection and assigned most of the fishes to modern tropical species in his lavishly illustrated catalogue (Volta 1796–1809).
The revolutionary armies of Napoleon confiscated about 600 fossils from the Gazola collection during the occupation of Verona in 1797. Subsequently transported to Paris, these specimens were studied by de Blainville (1818) for an account in Nouveau Dictionnaire d' Histoire naturelle, and later by Louis Agassiz, who reviewed Volta's identifications (Agassiz 1835) and provided further descriptions in his monumental Recherches sur les Poissons fossiles (Agassiz 1833–1844). The first detailed analysis of the fossil plants from Bolca was provided by Abramo Bartolomeo Massalongo in a series of monographic studies in the 1850's and further improved and expanded by Meschinelli & Squinabol (1892).
The most extensive collections of fossils from the Bolca Lagerstätten remain in Italy, particularly in Verona and Padua. Large collections outside Italy, such as those in Paris, have interesting histories. Fossils at the Naturhistorisches Museum, Vienna, were presented by Massalongo to Emperor Franz Joseph I following an assassination attempt in 1853; material at the Natural History Museum, London, derives largely from the purchased collections of William Willoughby Cole and Sir Philip de Malpas Grey Egerton in the late 1800s. Fossils from Pesciara–Monte Postale are otherwise found in numerous smaller collections throughout the world, often tracing their origins to early 'cabinets of curiosities'. The village of Bolca lies on the eastern part of Monti Lessini not far from Verona, northern Italy. Several productive sites characterized by contrasting fossils are known from the Bolca region and are collectively known as 'Monte Bolca' in older literature although no such place exists. The most famous representative is Pesciara, which has been exploited since the mid-16th century and yields exquisitely preserved marine fishes, plants and soft-bodied invertebrates. It is joined by Monte Postale, located nearby and also famous for marine fishes and plants. These two localities are the source of most fossils from the Bolca area in museums, and have yielded over 100 000 exceptionally preserved fossils. The added plates showing basalt formations at Vestenanova might be from the Guida di Verona of Da Persico (1821) and from the „Museo Lapidario" of Maffei (1795).- Dean I, 443 (1794.1) (6 plates); Lit.: Jean Gaudant. Brève histoire de la collection Gazola de poissons fossiles éocènes du Monte Bolca (Italie) conservée au Muséum national d'Histoire naturelle, Paris. Geodiversitas 33 (2011), pp. 637-647.

Photographs of Nice - Observatory

GILETTA, Jean (photogr.)

Universite de Paris. L' Observatoire de Nice. Foundation Raphael Bischoffsheim. F. Giletta, Nice. (Cover title) L' Observatoire de Nice. Portfolio with twelve mounted photographs by F. Giletta, phot. (Nice, 1911) Folio (400 x 500 mm) 12 mounted photographs, all titled in print on heavy paper. Image size: 215 x 280 mm. In cloth portfolio, heavily rubbed and soiled. Boards stocked, else fine. A few photographs silvered. $ 2.800.-

Fine and exceedingly rare photographic portfolio showing the building of the Nice Observatory and its instruments. The observatory was founded in 1879, by the banker Raphael Bischoffsheim. The architect was Charles Garnier, and Gustave Eiffel designed the main dome. The 77cm (30 inch) refractor telescope made by Henry and Gautier became operational around 1886–1887, was the largest in a privately funded observatory, and the first at such high altitude (325 m or 1,066 ft above sea level). It was slightly bigger in aperture, several metres longer, and located at a higher altitude than the new (1895) 76 cm (30 in) telescope at Pulkovo observatory (Russian Empire), and the 68 cm (27 in) at Vienna Observatory (completed in the early 1880s). In the records for the largest refracting telescopes all three were outperformed by the 91 cm (36 in) refractor installed at the Lick Observatory at 1,283 m altitude in 1889.
Jean Gilletta (1856 Levens – 1933), born Jean-Baptiste Gilletta and whose name is sometimes spelled Jean Giletta, was a French photographer who was active in Nice, France and founded a company producing postcards in 1897. He was a student of Jean Auguste Theodore Walburg de Bray and travelled extensively throughout the south east of France – often on a tricycle – to take over 10,000 iconic shots of its landscapes, architecture and subjects from the end of the Second Empire to the 1930's. The images of the portfolio are: Le personnel scientifique (18. Febr. 1911), Pavillon du Petit Meridien, Le Grand Cercle Meridien, Pavillon du Grand Meridien, L' Equatorial Coudé, Le petit Equatorial, La petite Coupole, Le Grand Equatorial, La Grande Coupole, La Bibliotheque, la bibliotheque et la direction, L' entree.

minerals, fossils, botany & paper making

GUETTARD, [Jean Etienne].

Memoires sur differentes parties des sciences et arts. Par … 5 Vols.- Paris, Laurent Prault, and Eugene Onfroy; Ph. D. Pierre (from Vol. IV), 1768 - 1783. Quarto (265 x 205 mm) [2], cxxvi, 439 pp.; (2; errata) and [18] fold. engraved plates; [4], lxxxv, (1, errata), 530 pp. with LXXI fold. engraved plates; [4], 544 pp.; [2] Bll., (2, avertissement), 687 pp.; [2] Bll., 446 pp., (1, errata) with [167] engraved plates. Contemporary calf, gilt spine in compartments. In general fine and broad margined copy. $ 12.000.-

Very rare complete set, often missing vol. 4-5. The "Memoires" are mainly devoted to mineralogical, geo-logical and paleontological subjects regarding the geography of rocks, rock formations, mines and minerals, and fossils, including reports concerning Guettard's discovery of the French kaolin deposits, weathering of mountains, fossil records, description and classification of several corals, sponges and especially tube-shaped bivalvia. 28 taxa are described here for the first time. But there are also important essays on paper-making and Chinese porcelain. The 256 engraved plates are by Jean Robert and published here for the first time. With the financial support of his patrons and the Academy, Guettard accumulated not only specimens of rocks, crystals, fossils and mineral specimens, but a large archive of drawings and engravings of many of the-se objects which he witnessed in his own travels or collected in the field. The French geologist and mineralogist was also the first to survey and map the geologic features of France and to study the exposed bedrock of the Paris Basin. The keeper of the Duc d' Orléans's natural history collection, he was the first to identify several fossil species from and to suspect the volcanic origin of mountains in central France.
Jean-Etienne Guettard (1715-1786) came from a modest background, trained in Paris as a botanist and a doctor, and divided his professional life between working for wealthy collectors and pursuing his own scientific work in botany, mineralogy, and related areas of natural history. Over a long career, he observed, described, and collected minerals and fossils in extensive travels across Europe, contributing to an ambitious mineralogical atlas.
„While studying medicine in the 1740's, Guettard lived in the household of René-Antoine de Réaumur, a powerful figure in the Paris scientific circles and proprietor of one of the largest natural history collections in Paris at the time. The collection grew continually for decades, through the influx of objects arriving from distant correspondents as well as those collected locally. As a curatorial assistant to this enterprise, and as a collector and observer in his own right, Guettard's work was essential to the life of Reaumur's collection. In turn, Reaumur's patronage paved the way for the young man's appointment to the Academie des sciences in 1743. … After leaving Reaumur's household, Guettard shifted his attention increasingly to mineralogy, and especially the geography of mineral distribution. … Although neither fashionable nor wealthy, Guettard became intimately familiar with the natural history cabinets of the capital's (Paris) elite, through his connections first to Reaumur and then to the Duke of Orleans. At his death, the duke left his valuable collection of naturalia to Guettard, but the latter ceded it to his patron's son Louis-Philippe, the new duke, in exchange for a stipend and lodgings in the Palais Royal. Guettard continued as a curator of the collection with the freedom to leave Paris on long geological expeditions from time to time." (Mary Terrall; in: Adiana Craciun (ed.) The material cultures of Enlightenment Arts and Sciences. 2016. pp. 25 ff.)
DSB V, 579; Schuh 2021 (only 3 vols..): "Very rare"; not Schuh online; Roller/Goodman I, 491; Ferchl 204; not in Sinkaskas; Pogg. I, 973; Pritzel 3631; Quérard III, 514; not in Honeyman and Norman; Brunet, 4354; France littéraire, I, 278.

Alaska & Aleutian islands

GUTMANN, Rudolph Ritter von.

Meine Jagdexpedition im Jahre 1909. Als Manuskript gedruckt. Wien, 1912. Quarto (315 x 245 mm) 2 Bl., 32 (recte 30) pp. with one map and 87 heliogravures after photographs mounted on boards. Contemporary half calf (signed by "Ferdinand Bakala Wien") title on spine, gilt spine in compartments, gilt edges. Fine copy. $ 4.000.-

Exceedingly rare, **privately printed**, „big game" expedition to Northern Russia.
Beginning in Vancouver, Juneau, at the coast to Alaska, Aleutian islands, Bering Sea, Kamchatka the travel ended in Sibiria where he (they) travelled back to Vienna. The wonderful heliogravures after photographs by the author depict life in these seldom photographed region before the outbreak of World War I.
Rudolf von Gutmann (1857-1966) of Vienna was a Jewish industrialist who built up a renowned art collection in the early 20th century. On the night of the Anschluss, or the incorporation of Austria into Nazi Germany (March 13, 1938), Gutmann and his wife Marianne fled to Czechoslovakia, eventually making their way to Canada (Victoria). The art collection was left behind, confiscated by Nazi authorities, and stored in the Neue Burg Central Depot, Vienna. This print is recorded in the 1939 inventory of the confiscated Gutmann collection, no. 762. The collection was removed at a later date to the abandoned salt mines at Alt Aussee.
At the death of his father, Wilhelm von Gutmann (1826-1895), he was only 15 years old. Therefore, his half-brother, Max von Gutmann (1857-1930), was used as his guardian. In addition to shares in the company "Gebrüder Gutmann", Rudolf von Gutmann inherited major industrial sites and the Palais Gutmann in Vienna.
After reaching the age of majority, he could dispose of his assets and acquired in 1904 the estate Kalwang. There he built a large villa as a hunting lodge and a smaller villa as a guest house. With his half-brother Max, Rudolf von Gutmann now owned around 50,000 hectares of land. Rudolf von Gutmann was a personally liable partner and managing director of the banking house Gebrüder Gutmann, founded in 1922.

The plates numbered 1-88 and A / B; the numbers 10, 17 and 33 were deleted. The photogravures were made by Münchner Graphischen Gesellschaft Pick und Co.. We could locate two copies in libraries: Stabi Berlin (as ours); ÖNB Wien (calling for 90 plates; probably not mentioning the deleted numbers)

fossils

HARENBERG, Johann Christoph.

Encrinvs Sev Lilivm Lapidevm. Pro Specimine Lithologiae In Postervm Plenivs Elaborandae Et Ad Modvm Demonstrationis Genvinae, Quantvm Fieri Potest, Revocandae. (no place; but Wolfenbüttel, 1729). small Quarto. (200 x 165 mm) 24 pp., (2) with one folding plate [bound with] **Harenberg, Johann Christoph.** Ad virum... Franciscum Ernestum Bruckmannum, med doct. ... epistola lithologica.- Wolffenbuttelae (Wolffenbüttel), anno 1729. 4 Bll. / leaves. Wrappers. $ 1.400.-

Very rare first complete description of the fossil crinoid Encrinus, first announced unpublished in Acta Eruditorum of 1727. The columnals of Encrinus liliiformis were among the first crinoid remains described in the scientific literature. Georg Agricola in his De natura fossilium (1546) introduced the name (stone lily) for Chladocrinus columnals from the lias of Hildesheim. A hundred years later, Friedrich Lachmund illustrated columnals, cups and cup elements (Pentagonus) as well as a fragmentary crown, the arms of which he compared to chicken legs in his „Oryctographia Hildesheim-ensis“ (1669), a work that strongly influenced Leibniz in his geo-theoretical ideas. Misinterpreting Agricola, Lachmund transferred the name Encrinus to these fossils. From that time onward, the name Encrinus became attached to this common and earliest recognized crinoid crown. The complete animal was correctly reconstructed by Johann Christoph Harenberg in 1729. Before the introduction of binominal scientific nomenclature Harenberg's Lilium lapideum (stone lily) was the most common name of the fossil. Other 18th century authors explained them as vertebrae of sea animals, marine plants, corals or parts of ‚Jew Stones' (sea urchins) in their discussion of the possibility of „living fossils“. Johann Christoph Harenberg (1696-1774), theologian, orientalist, historian, school director in Gandersheim and from 1735 general inspector of all schools in the duchy of Brunswick, from 1745 prof. at the university there. Member of the Berlin Academy of Sciences. The letter by Harenberg to the famous collector and mineralogist Franz Ernst Brückmann (1697-1753) on questions of fossils and natural philosophy might belong to the work, but also cited as published sepa-rately The plate and the explication of the plate are bound after.- NDB 7, 671.; COPAC: Imperial College; Univ. Edinburgh; BL London; Bristol OCLC: Bizzell Memorial; Field Museum

the most beautiful crab book

HERBST, Johann Friedrich Wilhelm.

Versuch über die Naturgeschichte der Krabben und Krebse nebst einer systematischen Beschreibung ihrer verschiedenen Arten. 3 text- and 2 plate vols. in 5.- (Zürich), Berlin and Stralsund, bey Gottlieb August Lange, 1790 - 1803. Quarto (280 x 230 mm) and atlas in oblong-fol. (285 x 460 mm). (2), 274 pp., (2) (pp. III/IV bound after); VIII, 225 pp., (1); (2), 66 pp.; (2), 46 pp.; (2), 54 pp. With engraved portrait, 2 engraved title vignettes and one engraved text vignette, with 58 of 62 hand-colored engraved plates, partly folding (Plates 47-58 bound with text vol. 3 and folded), lacking the last installment (49 pp. with four plates). Some foxing and browning to text, slight spotting to plates. Few plates somewhat trimmed as always, partly within image, few plate numbers trimmed. Bound in contemporary calf, spines gilt, text volume 3 in half-calf probably bought after binding of the first two volumes; overall some minor worming to bindings. Fine & clean copy albeit. $ 19.000.-

First full survey of crustaceans, beautifully hand colored at the time.
Exceedingly rare in complete form at the market. The last complete copy at german auction was in 2003, and in 1988 was a near complete copy (as here) at auction, otherwise always missing in larger parts and/or uncolored. No copies recorded on ABPC until a copy in 2007 appeared. Our copy missing the last installment as noted above. Ersch/Gruber cites 46 plates only (as the first four volumes here), indicating that complete copies were already unobtainable at that time. Johann Friedrich Wilhelm Herbst (1743 – 1807) was a German entomologist and naturalist from Petershagen (near Minden; south of Bremen) where his father was superintendent. He had his early education in Berlin and afterwards served as a chaplain in the Prussian army. His marriage in Berlin, 1770, with Euphrosyne Luise Sophie (1742–1805), daughter of the Prussian *Hofrat* Libert Waldschmidt seems to have been childless. He rose in ecclesiastical rank through several churches in Berlin, attaining the position of archdeacon. „In den Jahren seiner vollen Kraft war er neben Spalding einer der geachtetsten und beliebtesten Kanzelredner Berlins.“ (Ersch/Gruber). In 1789 he travelled to France, the Dutch Republic, Denmark and Switzerland to study other collections and to improve his knowledge in natural history. He was the joint editor, with Carl Gustav Jablonsky, of *Naturgeschichte der in- und ausländischen Insekten* (1785–1806, 10 volumes), which was one of the first attempts at a complete survey of the order coleoptera. Herbst's *Naturgeschichte der Krabben und Krebse*, released in installments, was the first full survey of crustaceans. Agassiz (1853) listed twenty-eight papers by Herbst between 1780 and 1806 mostly on insects. Herbst collections which he obtained with the help of several of his confreres at the Society of Friends of Natural history were deposited in the Berlin Museum of Natural History along with Bloch's collection of fishes. „Sein Kabinett von Insekten, seine Sammlung von Krabben und

Krebsen waren ausgezeichnet. … Seine Korrespondenz war sehr ausgebreitet und erstreckte sich bis nach Ostindien." (Ersch/Gruber) Herbst's other works included *Anleitung zur Kenntnis der Insekten* (1784–86), *Einleitung zur Kenntnis der Würmer* (1787–88) and *Natursystem der ungeflügelten Insekten* (Classification of the unwinged insects) (1797–1800).- Nissen, ZBI 1896; K. Sakai, 1999. J. F. W. Herbst-collection of decapod Crustacea of the Berlin Zoological Museum, with remarks on certain species. in: Naturalists, Publications of Tokushima Biological Laboratory, Shikoku University 6: 1–45: as noted by Sakai, Herbst treated all species as belonging to the genus Cancer, but during the ensuing two hundred years the vast majority of these species were reassigned to other genera. Sakai was quite correct in stating that his review of the Herbst collection revealed nomenclatorial problems.

with a translation of Newton's letter to Bentley

HOHENTHAL, Peter Graf von. (ed.)

Oeconomisch - Physicalische Abhandlungen. (Herausgegeben von Peter Graf von Hohenthal). 20 parts / Hefte in 5 Vols.- Leipzig, Jacobi, 1751 - 1755. 8° (180 x 115 mm). ca. 1000 pp. with 5 engraved title - vignettes. Contemporary half calf, gilt spine in compartments, morocco lettering piece, rubbed and soiled, but fine set. Title with library stamps. eslse fine. $ 2.600.-

Scarce journal with economic, physical and natural historical essays, partly original and partly translation from international journals and also reviews of books published, like DuHamel. La physique des arbres.
Some essays being book-long works on a specific theme: on dwarf, trees, silk trade, bees, fishes, insects, economical & ecological themes, like: Georg Friedrich Möller. Der Bau der Pflanzen aus ihrem Wachsthum erleutert (135 pp.), Johann G. Orth. Anleitung wie an dem Steigen und Fallen des Thermometri Florentini die Beständigkeit und Unbeständigkeit des Wetters, … (around 100 pp.), Gottfried August Hoffmann. Beytrag zur Verbesserung des Wachsthums des wilden Holzes, Versuch vom Hopfen, G. A. Hoffmann. Von der Gährung, Betrachtung der Viehseuche, Gedanken von der Abänderung des Erdbodens und der Landes-Art (65 pp.), Naturgeschichte der Tauben (pp. 65-160), Physicalisch-oeconomische Betrachtung der Krebse (pp. 257-377), Ch. A. Hoffmann. über die Abänderung der Welt, Gedanken von dem Feig der Fische, Betrachtung der Spureyer, Betrachtung der Viehseuche, Geographische Beschreibung der Gegend um Torgau, DuHamel und Buffon Untersuchungen von der Ursache, warum die holzigten Lagen von der Gestalt des Zirkels abweichen, Betrachtung der Schnecken (pp. 765-860), Betrachtung der Bienen (pp. 861-1032), Gottfried August Hoffmann. Abhandlung von der oeconomischen Erfahrung und von den Schlüssen der Erfahrung, Naturgeschichte der Heringe, Von dem Zustande der englischen Bergwerke, Von dem Indigo, Von den gekünstelten Muscheln, und den Arten, sie zu polieren, Von der Libella in Pensylvanien, Von den Absichten der Insekten, Andreas Plummer. Anmerkungen über chymische Auflösungen und Praecipitationen, G. A. Hoffmann. Von der Dauer des Lebens, Cartheuser. Abhandlung vom Sodasalze, **Isaac Newton. Schreiben an D. Richard Bentley (III, 406-413),** Nutzen der Seereisen in der Heilungskunst, Vermeidung der metallischen Ansteckung bey der Bereitung und Aufbehaltung der Speisen, John Mitchell. Zubereitung, Nutzen, Arten der Potasche, Succou. Physische Abhandlung der Erdbeben, Von den giftigen Ausdünstungen aus der Erde und dergleichen Lüften und Wassern, Vom indianischen Scorpion, Von den Spinnen, Anmerkungen zur Naturgeschichte der Provinzen von England, Filhot. Von der Ursache des Rosts der Metalle, Neuenhahn. Versuche und Erfahrungen von der Farbe der Edelgesteine, Francis Home. Vorstellung des Ackerbaus nach den Gründen der Chymie; Krünitz (transl.). Untersuchung der Frage, ob die Anzahl der Menschen zu sehr wachse ? , Neuenhahn. Von Zwergen, ob jemals dergleichen gewesen seyn; DuHamel. Von einigen Krankheiten der Bäume; Unterricht von dem Bau der Maulbeerbäume; Palteau. Hölzerne Bienenstöcke, Chymische Untersuchung des Bleichens der Leinewand, Neuenhahn. Prüfung einer neu erfundenen blauen Farbe, ohne Waidt und Indig, Redi. Sendschreiben an den Pater (Athanasius) Kircher worinn sonderbare Nachrichten von merkwürdigen physikalischen Sachen mitgetheilt werden, Dodart. Von den Kornzapfen, Vom Gehör der Fische, Beschreibung eines elektrischen Klaviers, Von der Richtung der Stämme und Wurzeln und von der Wendung der Theile der Pflanzen. Hoos. Beschreibung einer Wassertrompete, Fournier. Nachricht von einem entzündlichen Wasser, Le Cointe. Nachricht von einem Gold führenden Strome, Nuguet. Von der Ursache des Unterschieds der Farbe, Monti. Von den schädlichen Wirkungen des Toxicodendron, Monti. Abhandlung vom gegrabenen Holze, als Steinkohlen, dem Bernstein und Bergöl, Von den Eigenschaften des Kobelts, Schmidt. Abhandlung von der Spanischen Sode, Ursprung der Salzquellen, Johann Peter Eberhard. Farbe der Luft, Johann Theodor Eller. Versuche, das Blut und andere flüssige Körper viele Jahre lang ohne Fäulniss zu erhalten, Limbourg. Einfluß der Luft auf die Gewächse, Vandelli. Vom Schießpulver, Fortpflanzung des Hollunderbaums, Johann Conrad Siegfried. Vom lebendigen Kalch.- Güntz II, 192; vgl. Kirchner 3195 u. Humpert 4473 (beide Leipzig, Comptoir für Litteratur, 1747 - 1763). Selten so vollständiges Exemplar der von P. v. Hohenthal gesammelten landwirtschaftlichen Abhandlungen.

the man who gave us precise time

HUYGENS, Christiaan.

Horologium oscillatorium, sive de motu pendulorum ad horologia aptato demonstrationes geome-tricae.- Paris: F. Muguet, 1673. Folio (310 x 205 mm) (14), 161 pp., (1) Contemporary calf, rubbed and soiled, title on spine, red sprinkled edges, old name erased on title, else very fine and unusual fresh copy.

$ 30.000.-

First edition of the first modern book in which a physical problem is idealized by a set of parameters then analyzed mathematically. It is one of the few seminal works of applied mathematics.
„The Horologium oscillatorium“ (the pendulum clock) is a superb tapestry woven from the three strands of the science of Chritiaan Huygens (1629-1695): mathematics, mechanics, and technology.
Bentley liked the typography so much that he took it as a model for the Principa of Newton (*„Pray look on Huygenius de Oscillatione which is a book very masterly printed“*).
„The first attempt at applying a general dynamical principle to fluid motion occurred in Daniel Bernoulli's Hydrodynamica of 1738. The principle was the conservation of live forces, expressed in terms of Huygens' pendulum paradigm. … The basic principle on which Daniel Bernoulli based his hydrodynamics was what he called „the equality of potential ascent and actual descent“ which was grounded on Christiaan Huygens' study of the center of oscillation of a compound pendulum in the celebrated Horologium oscillatorium of 1673.“ (Darrigol. Worlds of Flow, 3/4)
„**Three great works laid the foundation of modern mechanics: Galilei's "Discourses on Two New Sciences"(1638), Huygens's "Horologium Oscillatorium"(1673), and Newton's "Philosophiae Naturalis Principia Mathematica"(1687).** Of these, the second is certainly the least well known, … Yet it is more rigorous in the treatment of its subject–matter, more strictly mathematical in style than the others, and it certainly deserves more recognition than has ever been conceded to it. From Huygens's original intention to publish a work on the construction and scientific principles of his pendulum clock (employing a cycloidal pendulum), the work grew and grew over a period of about fifteen years, and finally issued forth in 1673 with much accumulated around its central theme. Unlike most of Huygens's other writings, the work is singularly free from all Cartesian influences. Huygens himself hoped that it would be in direct line with the great work of Galilei, and his hopes were not disappointed. Newton wrote to Oldenburg, the indefatigable secretary of the Royal Society, of his "great satisfaction" with the work, and said he found it "full of very subtile and usefull speculations very worthy of ye Author". Newton especially admired Huygens's mathematical style, and considered him "the most elegant writer of modern times". (Bell, 1941)
The book is divided into five parts, where the first part contains the descriptions of clock designs, while the rest of the book is devoted to the analysis of pendulum motion and a theory of curves. In the second part of the book, Huygens states three hypotheses on the motion of bodies. They are essentially the law of inertia and the law of composition of "motion". He then uses these three rules to re-derive Galileo's original study of falling bodies, based on clearer logical framework. He then studies constrained fall, obtaining the solution to the tautochrone problem as given by a cycloid curve and not a circle as Galileo had conceived. In the third part of the book, he outlines a theory of evolutes and rectification of curves. The fourth part of the book is concerned with the study of the center of oscillation. The derivations of propositions in this part is based on a single assumption: that the center of gravity of heavy objects cannot lift itself, which Huygens used as a virtual work principle. In the process, Huygens obtained solutions to dynamical problems such as the period of an oscillating simple pendulum as well as a compound pendulum, center of oscillation and its inter-changeability with the pivot point, and the concept of moment of inertia. The last part of the book gives propositions regarding bodies in uniform circular motion, without proof, and states the laws of centrifugal force for uniform circular motion. In 1666 Huygens became one of the founding members of the French Academy of Sciences, which granted him a pension larger than that of any other member and an apartment in its building. Apart from occasional visits to Holland, he lived from 1666 to 1681 in Paris, where he made the acquaintance of the German mathematician and philosopher Gottfried Wilhelm Leibniz, with whom he remained on friendly terms for the rest of his life. The major event of Huygens' years in Paris was the publication in 1673 of his Horologium. That brilliant work contained a theory on the mathematics of curvatures, as well as complete solutions to such problems of dynamics as the derivation of the formula for the time of oscillation of the simple pendulum, the oscillation of a body about a stationary axis, and the laws of central force for uniform circular motion.
Bromley 460: "*possibly the most important item of a horological bibliography*."; Sotheran 2064; Dibner 145; Norman Coll. 543; Thorndike VII, 628; PMM 154; Horblit 53; DSB VI, 597: „*His opus magnum*“.

Kepler on comets
a remarkable work
with some of his findings considered equivalent to the modern theory of tail formation, Kepler's de cometis furthermore opened a new chapter in physical astronomy

KEPLER, Johannes.
De Cometis libelli tres. I. Astronomicus, theoremata continens de motu cometarum ... II. Physicus, continens Physiologiam Cometarum novam … III. Astrologicus, de significationibus Cometarum Annorum 1607. & 1618.- Augsburg, Andreas Aperger, 1619 [-20]. 4to, pp. [viii], 138, [2, blank]; with two folding woodcut diagrams and five folding letterpress tables (two in duplicate, see below); one diagram with an old tape repair; glazed yellow thumb markers to title and sectional titles; void of the usual heavy browning; a very good copy, with some uncut leaves, in 18th-century style calf-backed boards; stamp of the 'K[öniglich K[aiserliche] Universitätsbibliothek, Vienna' to several leaves, including versos of most tables, and with their duplicate or release stamp superimposed. $ 35.000.-

First edition of one of Kepler's rarest works, his remarkable publication on the comets of 1607 and 1618.

‘The appearance of a bright comet in 1618 turned Kepler’s attention to these objects, which he considered in De cometis libelli tres (1619). Reflecting on their ephemeral nature, he proposed a strictly rectilinear trajectory, which appeared more complex because of the Earth’s motion. Besides the comet of 1618 he discussed in detail the comet of 1607; these latter observations were of special interest to Edmond Halley, who, at the end of the century, showed its periodic nature [henceforth it was known as Halley’s comet].
‘The comet of 1618 aroused a considerable controversy among Italian astronomers including Galileo, and Kepler entered the fray in 1625 with his Hyperastices, a polemical defence of Tycho’s comet theories against the Aristotelian views expressed by Scipione Chiaramonti in his Antitycho. In the appendix, Kepler took Galileo to task for some of his erroneous views on comets, and he drew Galileo’s attention to the fact that the phases of Venus could be as easily explained in the Tychonic system as in the Copernican’ (R. Taton & C. Wilson, editors, Planetary astronomy from the Renaissance to the rise of astrophysics, p. 71).
‘[Kepler’s work] on comets is remarkable because Kepler – following Tycho Brahe but differing, for example from Galileo – no longer considers the comets as atmospheric exhalations, but rather as celestial bodies; why he did not ascribe to them straight line orbits is difficult to understand. The problem of the comet played later on a particular role in the Galileo trial, but also for Kepler himself, since an Italian circle of Jesuits which had adopted the Brahe-Kepler views was sharply attacked by Galileo … Remarkable, too, are Kepler’s considerations about the origin of cometary tails, which usually point away from the Sun. The rays from the Sun expel matter of the Corpus (we say cometary head) and illuminate it’ (Walther Gerlach in Kepler, Four Hundred Years, p. 79).
‘[Kepler] assumed that the head of a comet is a globe of transparent nebula-like matter which is denser than the surrounding ether, but is not solid and indissoluble. When the sun’s rays pass through the head they expel a stream or effluvium of the nebulous matter of the head in the opposite direction. This stream, which obviously is denser than the pure ether, reflects the sun’s rays and becomes visible as the tail of the comet. Evidently, the matter of the head is gradually consumed and the head finally dies out, or as Kepler stated “the tail represents the death of the head.”
‘Kepler’s theory is almost equivalent to the modern theory of tail formation, which was developed after the theoretical discovery and experimental verification of the pressure of light. Although this modern theory has been mentioned in almost all writings related to Kepler’s theory of comets, a very important aspect of his theory has not been discussed adequately. The theory, due to its novel approach in treating celestial phenomena, opened a new chapter in physical astronomy.
‘Kepler’s theory of comets, on the one hand, explained the formation and change of the tails based on mechanical interaction of celestial bodies, and on the other hand, it acknowledged a kind of matter circulation (or re-distribution) in the heavens. Later, modified versions of these concepts formed the foundation of Newton’s theory of comets’ (Tofigh Haidarzadeh, A History of Physical Theories of Comets, From Aristotle to Whipple, pp. 65-66).
As mentioned above two of the folding letterpress tables (those to pages 44 and 72) are bound in twice.
Provenance: relatively unusually the two large folding diagrams carry manuscript notes with instruc-tions to the binder in black ink to the outer and inner margins respectively. The much more exten-sive one to the outer margin of the first reads: ‘diese figur gehört auch zwischen 36 und 37: doch muss nicht [the ‘nicht’ crossed out] hinder die andre eben diese seite, und nicht die lincke, fest gemacht werden’. Scanned on-line versions taken from other copies of this work apparently do not contain similar notes.- Caspar 60; Zinner 4739; Parkinson, Breakthroughs p. 69.

research on sound & acoustics

KIRCHER, Athanasius

Phonurgia nova sive conjugium mechanico - physicum artis & naturae paranympha phonosophia concinnatum quâ universa sonorum natura, proprietas, vires effectuúmq[ue] prodigiosorum causoe, novâ & multiplici experimentorum exhibitione enucleantur; …- Campidonae (= Kempten): Rudolph Dreherr 1673. Folio. (345 x 210 mm) 21 Bll., 229 pp., 8 Bll. with half-title, engraved additional title, engraved vignette on title and engraved portrait of Leopold I by G. A. Wolfgang, 2 engraved plates, 17 engraved text illustrations and numerous woodcut text illustrations and diagrams, with final blank. Vellum somewhat soiled, handwritten title on spine, blue edges, little worming to cover and spine, and inner hinges, little marginal water-staining on a few pages, without ties, inside clean and fresh. Very good copy. $ 7.000.-

First edition of Kircher's outstanding work on acoustics and music, the first European book devoted entirely to acoustics, which treats at length of the echo, laws of acoustics, and of instruments. It presents a re-markable compilation of knowledge, gathered from many contemporary experiments in acoustics and the advances in the construction of musical instruments. The work was, in part, Kircher's reponse to Sir Samuel Morland (1625–1695), a fellow of the Royal Society of London, who claimed to have invented the megaphone. It was subsequently translated into German under the title Neue Hall- und Ton-Kunst (Nördlingen: Friderich Schults, 1684). In the 17th Century many physicists, mathematicians and musicians dealt with the experiences of harmony, music, and sound propagation in enclosed interior spaces. Among them, Athanasius Kircher was one of the most influential researchers of his time. Born in Geisa, Thüringia (Germany), he became a Jesuit in 1608 and spent a large part of his life in Rome, where he died in 1680. During his lifetime, he wrote several books spanning a wide range of topics, including sound, music, and acoustics. One of these, the Phonurgia Nova, which means " a new method of sound production", published in 1673, was almost ignored for hundreds of years and has only recently been rediscovered. Phonurgia Nova consists of two different books, the Phonosophia nova and the Phonosophia anacamptica. The former deals with the influence of music on human beings whereas the latter analyses sound propagation in enclosed spaces. In this paper, the Authors present new achievements regarding some of the

apparatuses that Kircher invented. Among all his marvelous sound machines, Kircher describes the tuba stentorophonica (the "loud trumpet"), the statua citofonica (the "talking statue"), the obiectum phonocampticum (the "phonocentric object"), the Ruota Cembalaria (the "sounding wheel"), the ancient Egyptian singing statue of Memnon, the Aeolian Harp, and the hydraulis (hydraulic organ). Some of these apparatuses were also recently realized by the Polish Pavilion during the Biennale of Venice in 2012, achieving a Special Mention from the international jury.- De Backer/ Sommervogel IV, 1068.31; Dünnhaupt 26; Eitner V, 370; Merrill 25; Pogg. I, 1259; Graesse IV, 22; RISM, BVI/1, 450; Hirsch V, 370; nicht bei Wolffheim.

privately published with fine provenance

KLENZE, Leo von.

Anweisung zur Architektur des christlichen Kultus. Mit Genehmigung des koen. Baier. Staatsministeriums des Innern herausgegeben ... Nebst XL Kupfern. München, no imprint 1822. Folio (435 x 305 mm). Engraved title by Unger after Klenze, with four panels with framed views of Bethlehem, the Calvary church and statues of Christ by Thorwadsen and Michelangelo. VI, 35 (1) pages, 38 engraved plates by Unger after Klenze. Contemporary red glazed boards, gilt label to spine. Spine richly gilt. Covers framed by gilt foliate borders. All edges gilt. Spine slightly darkened. Extremities worn. $ 6.900.-

Very rare privately published first edition, distributed only as a gift to a few people, here from the property of Bavarian Royals: very nice large paper copy from the library of the duke Max von Bayern (Tegernsee) with a four-page letter by Klenze, dated Munich 22. 7. 1824 to the duke describing the intention of the book: "... ein Werk zu übersenden, dessen Zweck die Beförderung der religiösen Kunst ist: eine von mir auf Veranlassung der Regierung verfasste Anweisung zur Architektur des christlichen Kultus. Der höchstwichtige und bis jetzt in ziemlicher Verworrenheit liegende Kunstzweig, welcher hier zum erstenmal in seinem ganzen Umfange behandelt erscheint ..."
This is the main theoretical architectural treatise by Klenze announcing his ideas of town planning and architecture (see Kruft) The plates with elevations and plans include several designs for small village churches, larger town churches, and cathedrals but also designs for tombs, burial vaults and grave - stones. An excellent copy with a remarkable provenance.- Kruft 693 and 348. Cf. Berlin catalogue 2065 (only the trade edition of 1834).

„why is the sky dark at night ?"

LOYS de CHESEAUX, Jean - Philippe.

Traité de la comète qui a paru en Decembre 1743 et en Janvier, Fevrier et Mars 1744: contenant outre les observations de l'auteur, celles qui ont été faites à Paris.- Lausanne et Geneve: Michel Bousquet, 1744. 8° (190 x 120 mm) (2), 308 pp. with 6 fold. engraved plates. Contemporary half calf, gilt spine in compartments, morocco label, upper spine with little defect, marbled endpapers, fine and fresh copy. $ 5.500.-

Rare first edition of his book on comets to include the de Cheseaux-Olbers paradox.
Jean - Philippe Loys d Cheseaux (1718-1751) was the grandson of the mathematician & philosopher Jean-Pierre de Crousaz, professor at the Academy of Lausanne and member of the Academie des Sciences in Paris. To acquaint himself with astronomy, Loys de Cheseaux, a wealthy Swiss landowner, installed an observatory on his father's lands at Cheseaux, seemingly well-equipped, having a pendulum clock, a quadrant made from brass and complete with sights capable of accurately measuring angles as small as 15 sec. of arc and a simple 14-feet refractor and a 2-feet Gregorian reflector. The observations that he made between 1736 and 1747 allowed him to prepare two manuscripts, including the „Traité de la comete" which was published in 1744. The „Nouvelles methodes" remained unpublished.
In his treatise on the comet, Loys de Cheseaux considers all of the observations he made of the comet C/1743 X1 seen from the late 1743 into 1744. He discusses both the instruments and the methods he used, and calculates an ephemeris for the comet. Three sets of observations are presented in the study: those made of the comet in Paris by Cesar Cassini de Thury, those recorded in Geneva by Jean-Louis Calandrini and those by Loys de Cheseaux. He also describes a method for determining the position, the size, and the form of the comet's tail. Calandrini held the first chair in mathematics at the Academy in Geneva along with Gabriel Cramer. At the end, there is a chapter „on the intensity of light, its propagation in the ether and on the distance of the fixed stars, from which Loys de Cheseaux concludes that either the number of stars is finite or it has to be assumed that interstellar space is filled with a light-absorbing fluid. This proposition forms the basis for the Loys de Cheseaux paradox (Olbers paradox).
It can be formulated as follows: Imagine the space surrounding us to be the superposition of spherical shells. In each of these supposed shells, a star is sending out quantities of light that, from our vantage point, varies inversely with the square of the distance. If space itself were infinite, then the sum of all these contributions would produce a sky that was brilliantly illuminated in all directions. However, this conclusion is plainly contradicted by what we observe in the night sky. This is the paradox of the dark night sky that was first recognized by Loys de Cheseaux. In Loys de Cheseaux's time, the Universe was believed to be static; its expansion and subsequent cooling remained unknown before the 20th century. The works of Loys de Cheseaux attracted the attention of the scientific community in his day, like Heinrich Olbers who raised again the question of his predecessor. He was offered the opportunity of directing the observatory in St. Petersbourg but declined the invitation. (Issac Benguigui) BEA I, 713-714 (Benguigui); Brüning 1668; Struve 38; Edward Harrison. Darkness at Night, pp. 80 ff. KVK: Dresden, Konstanz, Tübingen, Göttingen, Jena, Kiel; Berlin (Kriegsverlust); COPAC: Cambridge.

original manuscript on sun dials

LUCHINI, Domenico (fl. 1710 - died 1737).

'Practica compendiata, e facilessima per la costruzione degli orologi solari nelle aliezze del Polo Gr. 42.43.44.45 colle Tavole delle Latitudini e Longitudini per le hore italiane, babiloniche, ed astronomiche all uso oltramontano et antiche ò Ineguali s'insegna ancora la fabrica, ed uso dell' orologio universale portatile, detto equinoziale, come ancora ne i Quadranti, e Emisferi, e Riflessi. Di D. Domenico Luchini da Pesaro. 1730'. Apparently authorial manuscript with frequent cancellations, emendations and insertions, some on inserted slips. [Rome], 1730. Small Folio. Title, introductory letter and explanatory text on 141 pages, catalogue of cities with their latitudes on 5 pages, and series of 16 extensive tables for the calibration of Italian sundials and lunar dials at the different degrees of latitude, of azimuths and other astronomical measurements, on 370 pages, index, and figures of sundials eight pages. Altogether approximately 535 pages, variable sizes, approx. 275 x 200 mm. Contemporary leather-backed boards, rubbed & soiled, else fine. $ 4.500.-

Authorial manuscript, most probably an earlier version of his „Trattenimenti matematici i quali comprendono copiose tavole horarie per gli orologi a sole orizzontali, verticali, riflessi e portatili. Con le tavole de logaritmi di Don Domenico Luchini da Pesaro" published in Rome in 1730.

The author, a native of Pesaro, was a beneficed clergyman at St John Lateran in Rome, where he died in 1737. He published the work on sundials, Trattenimenti Matematici at Rome in the same year as the present work, a Tariffa overo pratica (Tomash L138, L139) and also contributed to the calendar of the Thesaurus sacrorum rituum (Rome, 1738). About the Tariffa M. R. Williams writes: „This small commercial arithmetic presupposes knowledge of addition and subtraction. It begins with multiplication and division and then treats elementary gauging and square and cube roots. Luchini then discusses some calendar problems. After a two-page table of squares and cubes of all integers from 2 to 100, Luchini deals with the areas of rectangles, triangles and circles. At the end he recommends a set of logarithm tables as being very useful."

A sundial is an instrument specifically designed for determining the hour of the day by projecting the sun's shadow or pinhole image on a set of hour lines. These hour lines can be marked on a flat surface (horizontal, vertical or arbitrarily inclined) or a curved surface (spherical, cylindrical or more complex). The shadow is usually cast by an upright or inclined gnomon (Greek: 'pole') but in some cases a small image of the sun is produced by a suitably located pinhole aperture (which is also termed the gnomon). In this respect a sundial has to be distinguished from the simple gnomon or the meridian line. The latter instruments only determine the exact hour of noon, or, if the meridian line is graduated with a calendar scale, the day of the year.

The history of the sundial reaches far back into antiquity and the earliest descriptions and examples date from the Egyptian Period (around 1500 B.C.). Also from ancient Greece and Rome numerous examples, large as well as pocket-sized, are preserved. Especially in the Islamic world the need for observing the daily prayer times, a number of which are mathematically defined by proscribed altitudes of the sun above the horizon, further stimulated the development of instruments for observing the time from the Sun's altitude. In medieval and early modern Europe the sundial was by far the most commonly used instrument for determining the time. From the 16th to the 18th century the steady flow of books and manuals on sundials and their use produced by mathematicians, astronomers and instrument makers attests to the popularity of this instrument and the great variety in its design and construction. Even the development of the mechanical clock from the 14th century onwards by no means made the sundial obsolete, despite improvements in the second half of the 17th century with the introduction of the pendulum and the balance-spring. Until far into the 19th century, an accurate sundial was essential for regularly checking and adjusting the rate of mechanical timekeepers.— Severino: Bibliography pp. 179; Tomash Library L138 & L139.

Archimedean Mirrors

MAGINI, Giovanni Antonio.

Briefve instruction, sur les apparences et admirables effects du miroir concave spherique. Com-posee en italien par Jean Anthoine Maginus, professeur es mathematiques a Bologne et traduite en francois par Jean Jacques Boyssier … A Paris, (no printer), 1620. Quarto (220 x 175 mm) 40 pp. with a few text woodcut illustrations. Floral paper wrappers (17th. cent.). Minor defaults, but a fine copy. Title with name or word in ink: Noah. $ 5.500.-

Exceedingly rare, and only french translation of Magini's book on the concave mirror from 1611, probably edited by Didier Henrion (15? - 1632) and translated by the Paris professor of mathematics, Jean Jacques Boyssier. Magini (1555-1617) was interested in mirrors, both in their theory, publishing a treatise on the theory of concave spherical mirrors, and in their practical manufacture. He presented large concave spheri-cal mirrors to Jacopo Boncompagni (son of Pope Gregory XIII and Prince of Sora), to Cardinal Alessandro Farnese (son Pier Luigi Farnese, Duke of Parma), and to the Holy Roman Emperor Rudolf II. The Duke of Mantua paid him a handsome sum for one of the mirrors but there was a long battle between Magini and Rudolf II since Magini felt he had been promised payment for the mirror which he did not receive.

Giovanni Antonio Magini's work on Archimedes' burning mirrors was also a question that interested Galileo his life time. The text was written at Galileo's request in order to facilitate the Grand Duke's purchase of Ma-gini's curved mirrors through the mediation of Galileo. In 1602 Magini had already resolved to publish Au-sonio's Theorica, though revisited, corrected and finally, significantly altered. Magini's and della Porta's books were among the most important theories on spherical mirrors being taught and discussed in Galileo's day. Mathematicians often considered della Porta's theory to be that of the ancients and Magini's the modern theory. Galileo opposed them with his view that the point at which a spherical mirror burns is variable, and dependent on the size of the sphere and of the portion of this sphere the mirror represents. He also added, finally, that the point of burning is not really a point at all, but rather a small area, certainly having noticed the effects of what nowadays is called spherical aberration. (Matteo Valleriani. Galileo Engineer. 2010. pp. 60 ff.)
Giovanni Antonio Magini (1555-1617) may not today be the most well-known figure from the history of sixteenth-century science, but in his own time he had a substantial and international reputation as a mathe-matical astronomer and astrologer. Magini was born in Padua in 1555, and obtained his degree in philo-sophy from the University of Bologna in 1579. He was appointed to the Professorship of Mathematics at the same place in 1587 following the death of Egnatio Danti. Magini was a very productive writer, with interests not only in mathematical sciences such as trigonometry and surveying but also in „miracula medica", „mysteria chimica" and „metoposcopy" (the art of predicting someone's personality from the pattern of lines on their forehead). He wrote a treatise on the latter, published by a certain G. B. Spontoni under the name of his father Ciro, which some mistakenly took to be a pseudonym of Magini himself. As an astro-nomer Magini did not accept the existing planetary theories, but devised his own, consisting of eleven rotating spheres, which he explained in the: Novæ cœlestium orbium theoricæ congruentes cum obser-vationibus N. Copernici (Venice, 1589). Magini's international stature is indicated by the appearance of an English description of his system in Thomas Blundeville's Theorique of the Seuen Planets (London, 1602). His astronomical work was not only mathematical however: he was also a strong defender of astro-logy. His De astrologica ratione, for example, published in Venice in 1607, concerns the use of astrology in me-dicine. Magini's interest in trigonometry, surveying and geography resulted in a commentary on Ptolemy's Geographia published in Cologne in 1596, as well as a treatise which dealt with the use of quadrants in surveying and astronomy, including details of calculations and measurements they could perform (De Planis Triangulis, Venice, 1592). Magini corresponded with many of the leading astronomers of his time, inclu-ding Tycho Brahe, Kepler, and Galileo, the last of whom Magini had successfully competed against for the Bologna chair. Magini's correspondence, edited in 1886 by Antonio Favaro, constitutes the major source of biographical information about him.- Lalande 180; Honeyman 642 (2nd work); Riccardi I(ii) 69. Eileen Reeves. Galileo's Glassworks. The telescope and the mirror. Harvard, 2008; Sven Dupre. Mathematical instruments and the ‚Theory of the Concave Spherical mirror': Galileo's Optics beyond art and science, in: Nuncius 15 (2000), 551-588; KVK: only Berlin, Göttingen; COPAC: BL London, Cambridge; OCLC (USA): Cornell, Univ. Los Angeles.

Anthropology of color

MAGNUS, Hugo.

Untersuchungen über den Farbensinn der Naturvölker. Mit einem chromo-lithographischen Fragebogen.- Jena: Gustav Fischer vormals Friedrich Mauke, 1880. 8° (225 x 140 mm) (4), 50 pp. Green embossed cloth, fine. A few private library marks, being the copy from Herzog Carl Theodor in Bayern (1839-1909) with the rare „Fragebogen" often missing. $ 900.-

First edition, rare with the „questionnaire" which is almost always missing.
The ophthalmologist Hugo Magnus (1842-1907) sent out more than 60 questionnaires (Fragebogen) to all five continents. He planned to compare color sense of ethic groups with little or no contact with society, whence he hoped to discover relations between color perception and its dependence on culture. In the semester of 1877-1878, ethnologist Eduard Pechuel-Loesche (Leipzig) prompted Magnus to start the project with support from the ethnological museum (Museum für Völkerkunde zu Leipzig). Magnus referred to Holmgren who was the first to carry out an investigation with ‚uncivilized people' (auf niederer Stufen der Civilisation stehender Völkerschaften) to gain insight into the relation between color sense and culture. For the questionnaire, Magnus chose the following colors, whose names correspond to nine of Berlin/Kay's 11 basic color terms: white, black, red, green, yellow, brown, purple, orange and gray, while omitting blue and pink. The questionnaire was distributed to and filled in with the help of missionaries, doctors, and overseas officers who had access to tribes.
In the second part of the 19th century, there was an international scientific controversy on the development, recognition and denomination of color terms, in which participated scholars, like William E. Gladstone, Lazarus Geiger, Grant Allen, Ernst Krause or Charles Darwin. Among the proponents of the theory that human color perception had developed gradually during the evolution of the human species was the German ophthalmologist Hugo Magnus, who formulated crucial suggestions concerning the relationship between the human capacity of perceiving different colors and the existing color terms in the languages of the world.- Lit.: Schöntag, Roger, Barbara Schäfer-Prieß. Color term research of Hugo Magnus; in: Robert E. MacLaury, et al. (eds.) Anthropology of Color: Interdisciplinary multilevel modeling (2007) pp. 107 ff.; Fischer II, 972.

(MAMMALS; Pencil drawings) 37 leaves of original pencil drawings with mammals and birds. Pencil on strong paper in size: 250 x 165 mm. The images in different size, like 220 x 130 to 110 x 185 mm. Some

images with notes in german. Most probably sketches for a children book on animals, some images with plate numbering. $ 2.000.-

Pencil drawings for an unknown german popular natural history book, which was never published, at least I didn't find the images. Some drawings seem to be inspired by works like Gould and are most probably made after 1860. A few images have a numbering and short annotations hard to read. The detailed and elaborate drawings show both the native fauna and the exotic wildlife. From the gerbil to the mole, the platypus, the anteater, the polar bear, the porcupine and the hippopotamus - many more creatures are to discover. On a few leaves the animals are only in a sketchy manner indicated like a preliminary drawing. Usually the animals appear in front of a shadowy landscape design, each animal coming with characteristic habitat. The leaves were rarely annotated with only minor notes related to the species shown. The drawings are from a skilled hand and show the exact observation of the draftsman. Further research to be done. I could not find the artist.
Die detailliert und mit größter Präzision ausgearbeiteten Zeichnungen zeigen sowohl die heimische Fauna als auch die exotische Tierwelt. Von der Wüstenspringmaus bis zum Maulwurf, über das Schnabeltier, den Eis- und Ameisen-bären, das Stachelschwein und das Nilpferd sind noch viele weitere Lebewesen zu entdecken. Auf wenigen Blättern sind die Tiere zum Teil nur in skizzenhafter Manier als Vorzeichnung angedeutet, meist erscheint um sie herum sowie im Hintergrund eine schemenhafte Landschaftsgestaltung des jeweils charakteristischen Lebensraums. Nur selten wurden die Blätter mit hs. Anmerkungen versehen, die sich auf die jeweilige Tierart beziehen. Leicht gebräunt und fingerfleckig, selten mit kleinen Braunfleckchen im Rand und mit kaum auffallenden Randeinrissen. Die vorliegenden Blätter stammen von einer geübten Hand und zeigen die genaue Beobachtungsgabe des Zeichners.

the complete anatomy of a perfect
if simple 16th-century north European vellum binding

MARZIO, Galeotto (MARTIUS Galeotti).

De homine libri duo. Georgi Merulae alexandrine in Galeotum annotationes. Cum indicibus utro-biq[ue] contentoru[m] & copiosissimis & certissimis. [Colophon:] Basle, Johann Froben, May, 1517. 4to, ff. [10], 133, [1]; title within a fine woodcut border by Hans Holbein, numerous fine woodcut initials, two over 9 lines; Froben's large woodcut device at end; a fine copy, bound in a stiff contemporary vellum sheet (see below). $ 5.500

First Froben edition, the first printing of the sixteenth century and the first printing outside Italy, of Marzio's work on human anatomy, beautifully produced and here preserved in a wonderful example of a strictly contemporary, ascetic vellum binding. Martius Galeotti (1442-1494) was an Italian astrologer, born in Narni, Umbria. He settled first in Boulogne and then went to Hungary after his religious views proved unpopular with the Catholic Church. In Hungary he became secretary to King Matthias Corvinus (Matthias I), and also tutor to the latter's son, Prince John. His work De jocose Dictis et Factis Regis Matthias Covirni further incurred the displeasure of the church and he was taken to Venice where he was imprisoned for a time. He was released following the intervention of Pope Sixtus IV, whose tutor he is said to have been at an earlier date. He subsequently returned to France where he became state-astrologer to King Louis XI.
De homine is arranged in the classic way, describing the various parts of the body from head to toe, and with discussions of various diseases interspersed. Besides references to authorities such as Cornelius Celsus and Pliny, most others are to classical poets including Plautus, Persius, Manilius, Lucretius, Horace and Vergil. Galen and Hippocrates are not generally named, but appear cumulatively as (auctores) ‚Graeci'.
Appended to Martius' work is a critical commentary by the Italian humanist and classical scholar Giorgio Merula (c. 1430–1494). The greater part of his life was spent in Venice and Milan, where he held a professorship and continued to teach until his death. While he was teaching at Venice, he was the subject of a personal polemic by Cornelio Vitelli, directed at his scholarship.
Merula produced the editio princeps of Plautus (1472), of the Scriptores rei rustica, Cato, Varro, Columella, Palladius (1472) and possibly of Martial (1471). He also published commentaries on portions of Cicero, on Ausonius, Juvenal, Curtius Rufus, and other classical authors
De homine was first printed in Italy around 1471 two further incunable editions followed. The first joint appearance of Martius' work with Merula's critical commentary appended was the Milan edition of 1490. Froben's, the first sixteenth century printing, appears to be the most influential. There were subsequent editions and commentaries.
Binding and provenance: bound in a thick vellum sheet, a generous section of the outer edges folded in; the vellum sheet attached to the book block via two strips of sinew and twirled across the spine; no front- or rear paste-downs, as per its original structure; the book block stitched across its back and onto three sets of thick cords over short vellum guards; the cords' loops equally exposed at the back, the whole allowing for perfect insight into the entire, original structure of the binding and the process of its making; smudged inscription to the first (of two) front fly-leaves; near-contemporary inscription 'Caspar von Escherlbach' at head of title below what appears to be a Latin motto; another inscription, with the surname partly erased and dated 1646 to the center of the title-page; a third early inscription ' Ex Supellectili Jo[ann]is Philippi Flachichierni (?), Sti Lubentij on f. 133 verso. Adams M 746; Hieronymus 239; VD 16 M1306; Wellcome I 4095.

electro - acupuncture

MAYERHAUSEN, G.

Polychrome Wandtafeln für den eletrotherapeutischen Unterricht. Die motorischen Reizstellen des Kopfes, Halses und der Extremitäten auf 5 Tafeln übersichtlich dargestellt von Dr. G. Mayerhau-sen, Specialarzt für Elektrotherapie.- Berlin: Fischer's Medicinische Buchhandlung, (1891) Imp.- Folio (700 x 450 mm) 5 partly colored plates on strong paper stock, three in size: 880 x 700 mm, two in size: 1330 x 700 mm in a half cloth folder. Dedication mounted on boards. $ 4.000.-

Exceedingly rare work: Polychrome wall panels for electrotherapeutic classes and offices, showing the motor trigger points of the head, neck and extremities. We found **only one copy in libraries** (University Basel).
Pain has been relieved by electricity since ancient times, at first by means of applying live electric fish to the tender part to cause numbness. But once frictional machines were found to produce electrostatic electricity (Benjamin Franklin; Leyden Jar) in the mid 18th century the use of living organisms was discontinued. By the late 18th century Galvani had rediscovered the fact that animals developed electricity spontaneously. Volta discovered a chemical means of producing electricity from the first form of battery or voltaic pile without recourse to animal tissues or frictional machines whose efficiency varied with atmospheric conditions. This discovery led to the medical use of direct current (Galvanism). Its ability to cause necrosis by electrolytic means was employed in the destruction of tumours. Galvanism was also applied to needles, hence the first form of electro-acupuncture pioneered by Berlioz and Sarlandiére (1825). For the first time the combination of electrotherapy and oriental ideas about needling were brought together. Furthermore these early experi-menters showed how stimulation of the nervous system brought profound relief from pain. In the early 19th century Faraday's work on the production of alternating currents and his understanding of electrolysis provided medicine with the escape that was required from the dangers of Galvanism. A variety of safer alter-nating and interrupted currents (Fara-dism) have been employed in electrotherapy ever since, particularly in the form of electroacupuncture, TENS (Transcu-taneous Electrical Stimulation) & Dorsal Column Stimulation. The popularity of electrotherapy fell during the early part of the 20th century as no one knew how its effects were obtained. Charcot, Babinski, and Freud still used static baths, sparks and faradization in the diagnosis and treatment of hysterical symptoms, although Freud later rejected electro-therapy stating (in An Autobiogra-phical Study) that any good results were entirely the result of suggestion.

Large paper copy - a work „prized by gamblers“

MOIVRE, Abraham de.

The Doctrine of Chances: or, a Method of Calculating the Probabilities of Events in Play. The second edition, Fuller, Clearer, and more Correct than the First. London: Printed for the Author, by H. Woodfall, 1738. Quarto (285 x 225 mm) xi, 259 pp. with wood-engraved title-vignette, ornaments and initials, engraved head & tail-piece, tables, some full-page, with blank leaf at end of preliminaries, occasional spotting, hole to lower margin of O3, a few leaves slightly shorter at foot. Contemporary calf, rubbed, label chipped, spine worn at head. $ 6.800.-

Second enlarged of Abraham De Moivre master-piece of probability theory.
The authors greatly improved edition and the last to be published during his life-time; a classical and groundbreaking work on probability. The first textbook for the calculus of probabilities, offering in this edition for the first time an approximation of the binomial by the normal distribution.
Important work on probability by a friend of Isaac Newton's, greatly expanded from the first edition of 1718 which was dedicated to Newton. De Moivre's work, already adumbrated in the Philosophical Transactions in 1711 with his De mensura sortis, was first published in 1718. This is the second and much improved edition with over 75 pages of new material. Mathematically, this is de Moivre's most important work and all editions were rated as „landmark writings in western mathematics.“.
„In the second edition of the Doctrines part of the material contained in the Annuities together with new material was incorporated. … In it he „developed a series of algebraic and analytic tools for theory of probability, like a ‚new algebra‘, the method of generating functions, or the theory of recurrent series for the solution of differential equations. In the Doctrine offered an introduction which contains the main concepts such as probability, conditional probability, expectation, dependent and independent events, the multiplication rule, and the binomial distribution.“ (Ivo Schneider)
"The 1718 first edition is essentially a gambler's manual... It does not contain Moivre's work on the normal approximation of the binomial probability distribution, which ranks as the most memorable of his discoveries; this discovery was first printed in its entirety in 1733 in a Latin pamphlet, which was later translated into English and incorporated, in successively expanded versions, in the second (1738) and third (1756) editions."
„In the later editions of his book, de Moivre included his unpublished result of 1733, which is the first statement of an approximation to the binomial distribution in terms of what we now call the normal or Gaussian function. This was the first method of finding the probability of the occurrence of an error of a given size when that error is expressed in terms of the variability of the distribution as a unit, and the first identification of the calculation of probable error. In addition, he applied these theories to gambling problems and acturial tables.“ Macclesfield sale 1422 (large paper copy); Norman 1529 (first edition); Kress 5546c

Comets

MONTANARI, Geminiano.

Copia di lettera scritta all' Illustrissimo signore Antonio Magliabechi, ... intorno alla nuova cometa apparsa quest' anno 1682. sotto i piedi dell' Orsa Maggiore ... In Padoua (Padova): per Pietro Maria Frambotto, 1682. Quarto (202 x 152 mm) 8 pp. with small engraving on title. Backstrip. $ 2.800.-

Rare work on the observation of a comet or meteor in 1682 which was also observed by Halley.
Geminiano Montanari (1633–1687) was a keen observer of comets and other celestial phenomena, as demonstrated by the observations he made of the meteor that crossed the sky of central Italy in 1676 or those of the comet of 1682, the same observed by Edmond Halley. He believed comets to be above the moon, pace the Aristotelians, because he was able to measure the parallax (with a telescope equipped with a micrometer) and the distance, confirming Tycho Brahe's and Cassini's observations. He mistakenly maintained that meteors are similar to lightning and that rocks sometimes found at impact sites are terrestrial in origin. (BEA II, 800 - 801).- Brüning 1544; Peddie NS, 166b; KVK: Weimar, Kiel, Hannover, Halle, Stabi Berlin (lost in war); Paris Observatory; Oxford, Warburg Inst.; only Cornell, Huntington.

Anthropozän

OLSEN, Ole Theodor.

Piscatorial Atlas of the North Sea, English and George's Channels [...] Illustrating the fishing ports, boats, gear, species of fish (how, where and when caught) and other information concerning fish and fisheries.- Grimsby & London: Taylor & Francis, 1883. Folio. (570 mm) 3 Bll. + 50 chromolithographed plates, blue publisher's cloth, gilt title on cover, a little faded and worn, rebacked. Contemporary book label of Walter Heape, probably the pioneering specialist in reproductive biology. $ 4.000.-

Rare atlas, a series of 50 lavishly chromolithographed charts recording the distribution – spawning grounds and abundance – of the major edible species of fish, shellfish and crustacea caught in the North Sea and off the coasts of the British Isles. There are insets showing the fish themselves, and the vessels and gear used to catch them, with a table of detailed information covering time of spawning, number of eggs, when and how caught, bait and food, size and weight, 'quality', when in season and other remarks, the product of a decade or more of reports and correspondence with British fishermen. The atlas was published under a joint London and Grimsby imprint, in the year of the International Fisheries Exhibition. KVK: Coburg; Stabi Berlin (lost); OCLC: some copies incl. Smithsonian, Harvard, et al.; only two copies held in Australian libraries.

Vesuv - Volcano

PIGONATI, Andrea.

Descrizione delle ultime eruzioni del Monte Vesuvio.- Napoli: Stamperia Simoniana, 1768. 8° (205 x 145 mm) (8), XXVIII, [3] folded leaves of plates (ill., maps) (Sign.: pi^4 A^8 B^6) with engraved title-vignette (bouquet of flowers), head- and tail-piece, initials, partly in different color-printing. Plates engraved by Giuseppe Alloja after Pigonati's designs. Old Wrappers. $ 1.500.-

First edition of his description of the important eruption in 1766 of the vulcan Vesuvio which attracted world-wide interest in Vulcans. Andrea Pigonati (1734 - 1790) was a Col. Lieutenant of the Engineering Staff of the Bourbon Army in Naples. In 1759, he was sent together with the military engineer Giuseppe Valenzuola by King Karl III. of Spain to Utica, as part of a project to populate the island. On returning from that study, he published an interesting work on this project in a very scientific & naturalistic style. In it he revealed a reformist positions that will characterize his later work. His interest was then addressed to the classical antiquities of Sicily. In a work he measured and described the ancient monuments of the island. Later he become director for the street & construction works in the Abruzzi (from Castel di Sangro to Sulmona).

Newtoniana

PINO, Domenico.

Esame del Newtoniano sistema intorno al moto della terra. Del sacerdote Domenico Pino, ex Domenicano Milanese. 3 Vols.- Como: Tip. di Pasquale Ostinelli, 1802. 8° (205 x 120 mm) XXIV, 10 Bll., 216 pp., 6 Bll. with one fold. plate with tav. I. + II.; 271 pp., (1); 264 pp., (2) Contemporary red morocco, two green morocco lettering pieces, gilt spine in compartments, fine gilt floral cover dentelles, gilt edges, printed on better blueish paper. Exceedingly fine copy. $ 4.000.-

Exceedingly rare, but late contribution to Newtonianism**,** a philosophical and scientific doctrine inspired by the beliefs and methods of natural philosopher Issac Newton. While Newton's influential contributions were primarily in physics and mathematics, his broad conception of the universe as being governed by rational and understandable laws laid the

foundation for many strands of Enlightenment thought. Newtonianism became an influential intellectual program that applied Newton's principles in many avenues of inquiry, laying the groundwork for modern science (both the natural and social sciences), in addition to influencing philosophy, political thought and theology. The author seems to be a relative to the General Domenico Pino (1760-1826) who was the Minister of War in the Italian Republic. The author here was a Dominican priest and Priore Del Convento Medesimo who also wrote on Leonardo da Vinci.- not in Babson Collection.

Max Planck - Quantum Theory

(PLANCK) Debschitz - Kunowski, Wanda Wilhelmine Auguste v. (photogr.)
Max Planck. Portrait. Signed photography of Max Planck, Berlin around 1925. Signed by the photographer and by the portrayer. Size of the image: 205 x 150 mm, mounted on boards (235 × 300 mm). Photographer Studio stamp on back side, framed. $ 3.500.–

Very rare photograph of Max Planck, originator of **Quantum Theory** by the Berlin photographer Wanda Debschitz Kunowski (1870-1935) who was known vor her portraits of Berlin society, incl. Albert Einstein, and Erich Mendelssohn, and architecture. From 1902 through 1914, she worked at the Debschitz School, first in the metal workshop (1902-1905) and later teaching photography (1905-1914). By 1921, she had opened her own photography studio in Berlin. Her work included nudes, and dancers, artists and scientists of Berlin Society of the 1920-1930's. Debschitz-Kunowski's vision was known to have differed with that of the photographer Cami Stone and Moholy-Nagy, in some of their collaborations.
Max Planck made many contributions to theoretical physics, but his fame rests primarily on his role as originator of the quantum theory. This theory revolutionized our understanding of atomic and subatomic processes, just as Albert Einstein's theory of relativity revolutionized our understanding of space and time. Together they constitute the fundamental theories of 20th-century physics. Both have forced man to revise some of his most cherished philosophical beliefs, and both have led to industrial and military applications that affect every aspect of modern life.
Planck was 42 years old in 1900 when he made the famous discovery that in 1918 won him the Nobel Prize for Physics and that brought him many other honors. It is not surprising that he subsequently made no discoveries of comparable importance. Nevertheless, he continued to contribute at a high level to various branches of optics, thermodynamics and statistical mechanics, physical chemistry, and other fields. He was also the first prominent physicist to champion Einstein's special theory of relativity (1905). "The velocity of light is to the Theory of Relativity," Planck remarked, "as the elementary quantum of action is to the Quantum Theory; it is its absolute core." In 1914 Planck and the physical chemist Walther Hermann Nernst succeeded in bringing Einstein to Berlin, and after the war, in 1919, arrangements were made for Max von Laue, Planck's favorite student, to come to Berlin as well. When Planck retired in 1928, another prominent theoretical physicist, Erwin Schrödinger, the originator of wave mechanics, was chosen as his successor. For a time, therefore, Berlin shone brilliantly as a centre of theoretical physics--until darkness enveloped it in January 1933 with the ascent of Adolf Hitler to power.In his later years, Planck devoted more and more of his writings to philosophical, aesthetic, and religious questions. Together with Einstein and Schrödinger, he remained adamantly opposed to the indeterministic, statistical worldview introduced by Bohr, Max Born, Werner Heisenberg, and others into physics after the advent of quantum mechanics in 1925-26. Such a view was not in harmony with Planck's deepest intuitions and beliefs. The physical universe, Planck argued, is an objective entity existing independently of man; the observer and the observed are not intimately coupled, as Bohr and his school would have it.

REGIOMONTANUS, Johannes.
In Ptolemaei magnam compositionem, quam Almagestum vocant, libri tredecim … In quibus universa doctrina de coelestibus motibus, magnitudinibus, eclipsibus & in epitomen redacta, proponitur.- Nürnberg: Johann Berg und Ulrich Neuber, 1550. Folio (300 x 210 mm) 116 Bll. / leaves with woodcut initials, diagrams, title in red & black, (Sign. A1-6, B1-6, … T1-8 incl. printer's wood-cut mark & last blank). Beside title, unusual clean copy, with no diagrams shaved or cut down (as often). Contemporary vellum using an earlier manuscript page, spine restore, rebacked & lacking ties. $ 6.000.-

Third edition of Regiomontanus & Peurbach's Epytome, an introduction into Ptolemy's Opus Magnum, first published in 1496 in Venice. Editor of this edition here was Erasmus Flock (1514 - 1568), a mathematician & medical doctor from Nuremberg, who received his education from Johannes Schöner (1471-1541) in Nurem-berg and Georg Joachim Rheticus (1514-1574) in Wittenberg. He succeeded Rheticus in Wittenberg as lec-turer of astronomy (1543-45) but decided to go back to his native town to be a medical doctor. We have two pamphlets on comets by him. Johannes Müller von Königsberg, called Regiomontanus, was arguably the most important astronomer of the fifteenth century. Born in the Franconian town of Königsberg in 1436, he was educated at the Universities of Leipzig and Vienna, and appointed to the Arts Faculty of the latter institution in 1457. Georg Peurbach or Peuerbach (1423-1461), Regiomontanus' astronomical mentor, was also a Master at Vienna, and the two men collaborated by, among other things, making observations together. On his deathbed, Peurbach charged Regiomontanus with completing an abridgement of Ptolemy's Syntaxis he had begun at the behest of Cardinal Johannes Bessarion. This work was finished by 1463, and printed as the Epitome of the Almagest in 1496; it was later used by such astronomers as Copernicus and Galileo. In Vienna, Regiomontanus had been an avid hunter, copyist, and reader of manuscripts on mathematical and astronomical subjects. After Peur-bach's death, he went with Bessarion to Rome, and accompanied him on various

travels around Italy. Association with the Cardinal, a native of Trebizond in Turkey and a great patron of humanist scholarship, gave Regiomontanus access to other texts, and the opportunity for him to become fluent in Greek. On several occasions, he was to forcefully express his opinion about the inadequacy of translations of Greek works, including Ptolemy's *Syntaxis* and *Geographia*. While in Bessarion's service, Regiomontanus constructed an astrolabe, composed works on trigonometry and the armillary sphere, lectured on the Islamic scholar al-Fargãnî at the University of Padua, wrote a critique of the *Theorica Planetarum* attributed to Gerard of Cremona, and continued to make his own observations. A letter from this period, sent to the astronomer Giovanni Bianchini (d. after 1468), contains Regiomontanus' analysis of all the ways in which current astronomical theory disagreed with the observed phenomena, and expressed the hope, repeated elsewhere, of a collaborative effort to restore the discipline. It is often said, and justly, that Regiomontanus set the agenda for the reform of astronomy to which Copernicus, Tycho Brahe and Kepler all contributed. When he moved to Nuremberg in 1471, Regiomontanus embarked, as part of his strategy for the reformation of astronomy, on a program of publication. The first work issued by his press was the *Theoricae novae planetarum* of his former master Georg Peurbach, which rapidly became one of the standard texts of university courses in astronomy. This was followed by the *Astronomica* of Marcus Manilius, his calendars in Latin and German for 1475-1531, and almanacs for 1485-1506. In 1474, he published a broadside trade list naming both the books he had already printed and those he still intended to produce. Works by Ptolemy, Euclid, Theon of Alexandria, Archimedes, and Witelo were among those listed, as were many new translations, commentaries and treatises by Regiomontanus himself. Regiomontanus' death in 1476 left the majority of his printing program un-finished. Subsequently, however, many of his own texts were produced through the efforts of later Nurem-berg astronomers, and in particular the partnership of the mathematician Johann Schöner (1477 - 1547) and the printer Johannes Petreius (1497-1580).- VD16 S6535, Adams R 284, Honeyman 2608, Houzeau/L 2261; STC 718; Zinner 1997; Macclesfield 1699 (under Ptolemy)

Early computer

RICCHINI, Paolo.

Su gli automi de' Signori padre e figlio Droz, elveti e su due recentissimi effalmatori che ora viaggiar fannosi per l'Italia a Pubblico-Prezzolata Mostra di se: Dissertazione archeologica con note critiche e spiegativa di Paolo Ricchini, Patrizio Vogherese, Membro della Romana Accademia d'Archeologia.- Voghera: Tip. Sormani. 1828. (175 x 110 mm) (2), 86, (2). Gray printed original wrappers, little spotted, else fine.

$ 3.400.-

First edition account of the Jacquet - Droz automata, precursors to modern robots and computers, known as the Writer, the Lady Musician, and the Draftsman - which were on tour in northern Italy at the time.
The Jaquet-Droz automata, among all the numerous automata built by the Jaquet-Droz family, refer to three doll automata built between 1768 and 1774 by Pierre Jaquet-Droz, his son Henri-Louis, and Jean-Frédéric Leschot: the musician, the draughtsman and the writer. They are considered to be among the remote ancestors of modern computers. The automata were designed and built as advertisement and entertainment toys designed to improve the sales of watches among the nobility of Europe in the 18th century. They were carried around, and lost at several points. The musician is modelled as a female organ player. The music is not recorded or played by a musical box: the doll plays a genuine, custom-built instrument by pressing the keys with her fingers. Movements of her chest show her "breathing", and she follows her fingers with her head and eyes. The automaton also makes some of the movements that a real player would do, such as balancing the torso. The draughtsman is modelled as a young child, and is capable of drawing four different images: a portrait of Louis XV, a royal couple, a dog with "*Mon toutou*" ("my doggy") written beside it, and a scene of Cupid driving a chariot pulled by a butterfly. The draughtsman works by using a system of cams that code the movements of the hand in two dimensions, plus one to lift the pencil. The automaton also moves on his chair, and he periodically blows on the pencil to remove dust. The writer is the most complex of the three automata. Using a system similar to the one used for the draughtsman for each letter, he is able to write any custom text up to 40 letters long. The text is coded on a wheel where characters are selected one by one. He uses a goose feather to write, which he inks from time to time, including a shake of the wrist to prevent ink from spilling. His eyes follow the text being written, and his head moves when he takes some ink.- KVK: no copy in Germany (?); BL London; Schweizerische Nationalbibl. Bern, Luzern, Neuchatel, Locle; Smithsonian, Getty Research, Stanford. not in Tomash Library.

first bright comet after 1618

ROCCAMORA, Gian Domenico.

Tractatvs, in quo examinantur, & soluuntur iuxta varietatem sententiarum probabilium omnia; quae spectant ad cometas; in quo agitur praesertim de eo, qui caepit observari hic circa medium mensis Decembris Anni 1664 compositus a Patre D. Ioanne Dominico Roccamora, Abbate Silvestrino ....- Romae: Apud Successorem Mascardi, [1668 -] 1670. 12° [145 x 80 mm] [20], 311 pp., [1] with one fold. woodcut plate between pp. 230 / 31 and full-page woodcut on 193. Contemporary vellum. Some browning, but a genuine copy.

$ 3.600.-

Very rare discussion on the comets of 1664; the author (died 1685) was prof. of philosophy and mathe-matics at Sapienza University in Rome and tried to reconcile Aristotelian theories with more modern aspects similar to Chiaramonti before him.
The controversy on comets dates back to Tycho Brahe almost a century earlier and concerned the location of comets, whether they travel in the celestial or terrestrial realms. When Tycho observed the 1577 comet from his observatory on the island of Hven, he hoped to determine its distance from Earth using parallax. … Because the comet displayed far less apparent movement against the background of the stars compared to the Moon, Tycho concluded that comets must be celestial objects. In 1619, following the appearance of another bright comet, Galileo in a dispute with Orazio Grassi, a Jesuit mathematician from the Collegio Romano and a supporter of Tycho's cometary claims, took the unusual position of denying Tycho's parallax observations, despite the support such observations could lend to Copernicanism. Rather than grant any credibility to Tychonic astronomy, which retained an Earth-centered cosmos, Galileo preferred to argue that comets were nothing more than illusions created by reflections of light on an accumulation of vapours just above the surface of the Earth. While Galileo refused to acknowledge the merits of Tycho's work with parallax, Scipione Chiaramonti, a prominent Italian philosopher and outspoken Aristotelian, also published lenghty criticisms of Tycho's observational methods and the Tychonic claims regarding the corruptibility of the heavens. In several publications during his career, Chiaramonti maintained a strict Ptolemaic and Aris-totelian world view and engaged in a campaign to deny the use of parallax in cometary observations. (Boschiero).- Brüning 1265; Rosenthal 3624; Riccardi I,2, 385; KVK: no copy in Germany & Switzerland; COPAC: BL London, Cambridge Special Coll.; OCLC: Oklahoma, Columbia, Toronto. L. Boschiero. Giovanni Borelli and the Comets of 1664-65; in: Journal of the History of Astronomy Vol. 40 (2009), 11-30.

Uranoscope

(ROUY, Carlo or Charles)

Descrizione dello Spettacolo Uranografico del Sig. Rouy, Prof. di Astronomia ossia Nozioni elementari di cosmografia intelligibili da tutte le classi di persone.- Milano: per Cairo e Compagno, 1808. 8° (145 x 225 mm) 32 pp. and one folding plate (360 x 340 mm) Blue wrappers, dog eared, otherwise quite fresh. Old annotations in ink cancelled on wrappers by the same hand. $ 2.400.-

Exceedingly rare pamphlet on an astronomical instrument (planetarium) invented by Charles Rouy. Probably the first edition, as we could trace only a later french edition (Panorama céleste, ou Description et usage du mécanisme uranograpique, 1817) called „deuxieme edition". The german author Fürst Pückler-Muskau visited a model during his travel to England & London: „Das ist eine sehr ingenieuse Maschine, um den Lauf der Planeten unsers Sonnen-Systems anschaulich zu machen. Ich mag nicht läugnen, daß ich nie vorher eine so klare Idee vom Grunde der Jahreszeiten, der Mondwechsel u.s.w. hatte, als nach einer Stunde, die ich hier verbrachte. Mündlich werde ich Dich näher davon unterrichten, ja, wenn Du 1200 Franken daran wenden willst, kannst Du eine Copie der ganzen Maschine im Kleinen erhalten, die in keiner ansehnlichen Bibliothek fehlen sollte." - KVK: no copy; COPAC: only BL London; OCLC: no copy ?

natural history collections visited

RUDOLPHI, Carl Asmund.

Bemerkungen aus dem Gebiet der Naturgeschichte, Medicin und Thierarzneykunde, auf einer Reise durch einen Theil von Deutschland, Holland und Frankreich, gesammelt von … Erster (und) Zweiter Theil. 2 Vols.- Berlin: bey Gottlieb August Lange, 1804. 8° (190 x 115 mm) VIII, 296 pp.; 1 Bl., 222 pp., XVI pp. Contemporary paper-card boards, two morocco lettering labels, red edges, little rubbed and soiled, else fine. $ 1.400.-

First edition of his travel account written in letter form. During his study trip to Holland and France shortly after the French Revolution, Rudolphi visited botanical gardens, natural history collections, anatomical collections and veterinary institutions, also scientists as Gall, Cuvier, Geoffroy Saint-Hilaire and others, with extensive register.
Karl Asmund Rudolphi (1771-1832) was born in Stockholm of German parents. He obtained a medical doctorate at the German University of Greifswald in Swedish Pomerania. He stayed for a time as professor of anatomy but joined the University of Berlin soon after its founding in 1813. He was a disciple of Cuvier in his treatment of descriptive and comparative anatomy. Rudolphi founded the Berlin Zoological Museum, which became one of the finest in the world. He was a zealous yet sensitive scientist, highly regarded by his pupils and colleagues. One pupil, Johannes Müller, was eventually Rudolphi's successor, himself with an array of pupils seldom equaled in science.
Rudolphi impacted three branches of biology. His significant microscopical studies of vertebrate intestinal tissues fixed his place in comparative anatomy and made him one of the first histologists. His series Grundriss der Physiologie from 1821 which dispelled considerable mythology around human physiology and anatomy, was probably his most important work. It was Rudolphi's third field, his pioneering work on parasites, that brought him, probably unknowingly fame. Rudolphi improved earlier works by Goeze. His work with intestinal worms so broadened and stabilized the field that all subsequent work is based on it.- BM Natural Hist. IV, 1761. Waller 10996 (only vol. 1); NDB XXII, 203.

Silk Road

SANTORINI, Giannantonio

Nuova macchina per la trattura della seta. Descritta per commissione di S.E. Il Signor Ministro dell' Interno del Regno d' Italia.- Milano: Stamperia Reale, 1809. 8° (220 x 140 mm) 136 pp. with five detailed, large fold. plates. Blue plain wrappers, little dog-eared, but fine and clean wide margined copy, nearly uncut. $ 1.800.-

Detailed description of a silk reeling machine invented by the silk entrepreneur Giannantonio Santorini (1754-1817) and shown on five detailed engraved fold. plates (around 500 x 300 mm) made by Stucchi.
Napoleon himself gave Santorini a prize and paid for the printing of the book, but also took over the patent and exploit the machine in Lyon, the capital of the spinning mills, in order to counteract the excessive power of the British in the sector. Giannantonio Santorini was born in Spilimbergo in 1754 into the rich family of Santorini, well-known of doctors, architects and notaries. He was a man of multifaceted ingenuity and an entrepreneur of the silk industry. He invented this silk reeling machine. The machines were driven by hydraulic power thanks to a device designed and built by Pietro Sarcinelli. Giannantonio died on June 28, 1817 of typhus. The Industrial Revolution changed much of Europe's silk industry. Due to innovations on spinning cotton, cotton became much cheaper to manufacture and therefore caused more expensive silk production to become less mainstream. New weaving technologies, however, increased the efficiency of production. Among these was the Jacquard loom, developed for silk embroidery. An epidemic of several silkworm diseases caused production to fall, especially in France, where the industry never recovered.- KVK: ETH Zürich; COPAC: only BL London; OCLC: only Getty Research Inst.; Stanford.

Electric light systems applied to military & marine

SAUTTER & LEMONNIER.

Applications de la lumiere electrique à l' Art militaire et la marine.- (Paris), 1879. Folio (520 x 400 mm). 30 ff. 10 large original albumin photographs (280 x 220 mm) and two smaller photographs (100 x 100 mm) depicting mobile searchlights, all mounted on grey cardboard. 10 full page & 5 double pages of technical diagrams, all mounted on grey cardboard. Contemporary full cloth folder with gilt lettering to spine and front cover. Title-page repaired at upper and lower left corner. Title-page also with traces of fold. 4 leaves with tears to the grey cardboard, only affecting one diagram. Photos and diagrams fine and clean. $ 5.500.-

Exceedingly rare commercial catalogue, being one of the earliest works on the military application of electric light and military use of electricity in general; published or better, given out to high rank customers by manu-facturer and distributor L. Sautter, Lemonnier & Cie primarily known for manufacturing lenses for light-houses (Constructeurs de Phares lenticuleurs et de Machines de Gramme). The present publication predates the famous 1884 Geneva conference, in which the use of electric light for military use was formally endorsed, by five years. World War I was the first major war to "benefit" from technological advances in electrical power.
The first searchlight with an optical lens made by Louis Sautter had illuminated the Champs-Elysées in honor of Napoléon III in 1867. It lit the whole upper terrace of the Arch de Triomphe and by the end of the century searchlights had become one of the major parts of Sautter's business. It was, however, not until the beginning of the 1880's many experiment, both theoretical and practical, were conducted in regard to military use of the so-called "mobile electric searchlight wagon" - a large mobile lantern to lit up the battlefield, both during battle and after to collect the dead and wounded.
"The chief problem with the mobile searchlight, apart from its unreliability, was its impractibility. It required regular terrain on which to move and a completely vanquished army, so as to ensure that the light was not destroyed by enemy rifle fire. Mundy [reporter] reported with enthusiasm that the French ministry of war had bought thirty-five of these machines from Sautter Lemonnier and that the German army had acquired its own version from Siemens; he considered the latter inferior because it was less mobile. The 1884 conference formally endorsed this innovative use of electric light and urged the appropriate military autho-rities to permit its use in future wars." (Hutchinson, Champions of Charity: War and the Rise of the Red Cross)
Paul Lemonnier, a civil engineer, became a partner in the already existing business of Sautter in 1870. The company then became known as Sautter, Lemonnier and Cie. The factory of Sautter and Lemonnier manufactured all of the various types of devices relating to lighthouses and to sound signals. Beginning in the 1860ies Sautter started the study of the use of electricity and the arc lamp for lighthouse illumination. When Lemonnier joined the firm they began to work closely with the Gramme and De Meritens companies who produced electrical generators and Sautter, Lemonnier sold the generators for use in lighthouses. Sautter would later take over production of the Gramme generator
In 1852, Louis Sautter (1825-1912) bought from Mr. Létourneau, the studio of Jean-Baptiste Soleil, his father- in- law, optician engineer who was the first to work with the Service of Lighthouses and Beacons with Fresnel who had his first lenticular headlights built. Former engineer of the Central School, Louis Sautter founded the company Sautter et Cie. The company then experienced a significant expansion, including the application of electric lighting to the headlights, such as that of La Hève in 1863. In 1867, he created the first electric light projector for the yacht of Napoleon III, the Queen Hortense. After the war of 1870, Louis Sautter joins Paul Lemonnier. The company evolves in 1883 in Company Sautter, Lemonnier and Co. They build the Zénobe Gramme machine, the first industrial direct current generator, and carry out ship lighting and long-distance lighting using the new electric generator. After 1881, Louis Sautter devoted himself to philanthropic and religious works. His son Gaston took over and associated the company

with the engineer Emile Harlé. The company evolves in Sautter Harlé and, finally, in Sautter-Harlé and Co. It specialized in lenticular headlights, electric motors, turbogeneration, projectors and repairs, its headquarters was located at 4, rue Paul Cézanne, in the 8th arrondissement of Paris, before to be reunited with its factory located at 20 avenue de Suffren, in the 15th arrondissement.

„the egg of Columbus“ (Gassendi)

SCHEINER, Christoph; Giulio Troili.

Prattica del parallelogrammo da disegnare, del P. Christoforo Scheiner della Compagnia die Giesù. Di nuovo data in luce da Giulio Troili alias Principe Pittore da Spilimberto.- Bologna: Giacomo Monti, 1653. 4° (178 x 134 mm). 24 pp. Engraved vignette of the arms of the dedicatee Ercole Mariscotti on title, 2 folding engraved plates, one woodcut diagram. Grey plain, modern boards. Fine. $ 3.300.-

Very rare version of Scheiner's book on the pantograph edited by il Paradosso; no copy of this edition in german libraries.

Christoph Scheiner (1573-1650), a jesuit priest, was thoroughly embedded in the Jesuit theological tradition with its strong emphasis on argumentative skills and close textual exegesis of the bible. Although he also mastered such verbal skills, he ventured far beyond this frame of reference to become a pioneer in several visual techniques within the drawing arts, astronomy, optics and anatomy. From 1603 he taught mathematics and Latin in the small town of Dillingen on the river Danube. It was there that he met an artist who gave him a glimpse at a device for copying drawings not only 1:1 but also on an enlarged or reduced scale. Even though the artist (Georgius) did not let Scheiner take a closer look at the device, Scheiner soon came up with his own ingenious solution. the so-called pantograph („everything-drawer“). Scheiner's published account of this device appeared as late as 1631, but news about it spread much faster in the tightly knit Jesuit order. The Paris natural philosopher Pierre Gassendi (1592-1655) enthusiastically called this simple and efficient instrument: „the egg of Columbus“. Having heard about Scheiner's invention, the abdicated Duke of Bavaria, Wilhelm V., invited Scheiner to Munich in 1603 in order to be instructed in the art of using this drafting aid. (Hentschel, Visual Culture 114/115)

This work is a translation by Giulio Troili (il Paradosso) (1613-1685) and also a truncated version of the latin edition published by Christoph Scheiner (1573-1650) under title: Pantographice in Rome in 1631. Similar editions were published in Padua 1637 and Verona 1652 (but all very rare): it concerns itself solely with the pantograph's use in art and engineering and contains none of the theoretical material found in the earlier version of Scheiner (1631). The earlier version describes the invention of the pantographice in 1603 and how it can be used in a wide variety of fields, from astronomy, through civil engineering and military work, to the fine arts. The work was accompanied by an extensive theoretical work on parallelograms in general which the translator Troili left out. Giulio Troili (1623-1685) also known as il Paradosso was one of the few 17th cent. italian painters to publish on perspective. He settled in Bologna around 1650 and specialized in perspective paintings. In his book on Scheiner, Troili illustrated how the pantograph can be used to enlarge and reduce a picture. In his example he chose a portrait, but it also could be used in engineering. There is a stamped cor-rection on page 3, line 8.- Tomash Library S 36; Andersen. The geometry of an Art (2007), pp. 381 - 385. KVK: in Germany only microfiches; COPAC: BL London, Cambridge (Verona 1652 ed.), Oxford Univ. has only microfiche; OCLC: Cloumbia, Michigan, Pennsylvania

high performance airship

SCHÜTTE - LANZ (Mannheim-Rheinau)

10 Jahre Luftschiffbau Schütte-Lanz, Mannheim - Rheinau, 1909 - 1919. Jubilee album with 23 original-photographs mounted to boards and titled. (no place or date given, 1919/1920) square folio (295 x 400 mm) one leaf title with text recto and verso, 23 paper boards with mounted albumin photographs (size: 140 x 95 mm to 240 x 170 mm to mostly 280 x 220 mm) Boards with titles below image, little rubbed and soiled, the photographs partly silvered at edges. Coming with a small album with photographic postcards and a few other postcards regarding Schütte- Lanz and a few technical Off-Prints from O. Lueger's Lexikon d. gesamten Technik. $ 6.200.-

Exceedingly rare photographic presentation album by the airship manufacturer Schütte-Lanz. With impressive large photographs of the airship interior & technical construction.

With handwritten dedication by the technical director Georg Christians to: „Fräulein Louise Bell, zum Andenken an die Zeiten der Luftschiffbauer 1915 - 1919 und zum Dank für Ihre opferwillige, freie Mitarbeit. (Heidelberg (?), den 13. Sept. 1920. G. Christians).

Schütte-Lanz is the name of a series of rigid airships designed and built by the Luftschiffbau Schütte- Lanz company from 1909 until 1917/19. One research and four passenger airships were planned for post-war use, but were never built. The Schütte-Lanz company was an early strong competitor of the more famous airships built by Ferdinand von Zeppelin. Although it is common for all rigid airships to be informally called zeppelins regardless of their manufacturer, this name technically only applies to those manufactured by the Zeppelin company.

When the Zeppelin LZ4 met with disaster at Echterdingen in 1908, Professor Johann Schütte started to consider the problems of airship design. He decided, with the co-operation of his students to develop his own scientifically designed, high performance airship. In partnership with Dr. Karl Lanz, an industrialist and wood products manufacturer he

started the Schütte-Lanz Luftschiffbau on 22 April 1909. The ships were successful at first, and introduced a number of highly successful innovations. Wood composites had a theoretical superiority as the structural material in airships up to a certain size. After that, the superiority of aluminium (and later duralumin) in tension was more important than the superiority of wood in compression.
Schütte-Lanz airships until 1918 were composed of wood and plywood glued together.
Moisture tended to degrade the integrity of the glued joints. Schütte-Lanz airships became structurally unstable when water entered the airship's imperfectly waterproofed envelope.
This tended to happen during wet weather operations, but also, more insidiously, in defective or damaged hangars. In response the company started work on a tubular aluminum-framed ship which was probably not completed.
Twenty-four Schütte-Lanz airships were designed before the end of the World War I, most of which the company was not paid for due to the collapse of the German Monarchy.
By the time the last eight ships were ready, most of them could not be operated due to the loss of trained crews. There are also political-economic factors to the failure of the company, which have yet to be fully researched. There is certainly evidence for a pro-Zeppelin lobby in the German military and government that wanted to exclude all other airship manufacturers, regardless of what superior technical innovations they proposed. In the postwar period, Professor Lanz designed a series of very large advanced airships for trans-Atlantic and trans-Pacific passenger operations, as well as proposals for the US Navy's rigid airships ZRS-4 and ZRS-5. However none of these were ever realized due to Allied objections. The Schütte-Lanz airship SL2 surpassed the contemporary Zeppelin airships in performance. It adopted the Zeppelin ring-girder construction method, but retained the streamlined shape and plywood construction of the SL1. The SL2 was also the most significant airship to date in that it laid down two vital design innovations that were copied in almost all subsequent rigid airships. The first was the cruciform tail plane, with a single pair of rudders and elevators. The second was the location of the engines in separate streamlined gondolas or cars. A third innovation, for war service, was the mounting of heavy machine guns for defense against attacking aircraft in each of the engine cars. SL2 was built between January and May 1914 and transferred to Austrian military control as the S.L.II. The SL2 was a perfect example why the advanced technology of Schütte-Lanz, and the advantages of wood in compression as opposed to tension allowed the Schütte-Lanz type of airship to be technically superior until a certain size had been reached.
KVK: no copies of this album found in libraries world wide.

Organ master

SERASSI, Giuseppe.

Descrizione ad osservazioni pel nuovo organo nelta chiesa posto del SS. Crocifisso dell' Annunziata di Como.- Como: presso Pasquale Ostinelli vicino al Liceo, 1808. 8° (205 x 120 mm) 3 leaves, XI, (1), 33 pp., (1, blank) Contemporary calf, gilt spine in compartments, gilt cover fleurons. Fine and clean copy. $ 1.200.-

Only edition, rare work on the famous organ of the Como Cathedral.
The two large organs occupying the end arcades were made in the early 17th century, first the one on the left, then the one on the right, and were inaugurated on the occasion of the festivities for Annunciation Day in 1650. The cases, which are the visible architectonic elements of the instruments, are Baroque in style. The wooden organ case consists of precious balustrades alternating with music-playing angels and of a classical portal crowned with a broken tympanum; the front pipes are grouped inside the portal. The two organs are similar in shape, it is the details which are different with 69 organ stops and 6.515 pipes. Over the centuries the instruments have undergone a number of changes thus adapting to the technical inno-vations introduced. In the 16th century, it was the Antegnatis, Baroque and Renaissance organ building masters, who held the scene; the right-hand organ was made by the Flemish Jesuit William Hermans in 1649; in 1808 it was the Serassis who worked on the organs.
The Serassi family was a famous dynasty of organ masters, originally from Como, active for six generations from 1720 to 1895. Their works are mainly located in Lombardy, Emilia-Romagna, Piedmont and Liguria. An important and genius organ producer, Giuseppe Serassi II. contributed to the art of building organs with original inventions (including an underground mechanical transmission that unites the organs placed in two opposing choirs, which he realized in Bergamo in S. Alessandro in 1781), and numerous improvements to the mechanics and to the transmission system. Another important work is the great organ of the Ducal Chapel of San Liborio in Colorno (Parma), with 2,898 pipes. The ideas of Giuseppe Serassi on the manu-facture of the organs and his historical-scholarly considerations about the manufacturers of the past, are the subject of different published works.- KVK: Stabi Berlin, Munich; not in COPAC or OCLC (only 20th cent. editions).

when the stars were colored

SMYTH, William Henry.

Sidereal Chromatics; being a re-print, with additions, from the „Bedford Cycle of celestial objects", and its „Hartwell Continuation", on the colours of multiple stars.- London: printed for private circulation by John Bowyer Nichols and Sons, 1864. (cover title: Colours of Double-Stars) 8° (265 x 170 mm) IX, 10-96 pp. with one hand-colored plate. Original blue publisher embossed cloth binding, author's presentation copy to J. W. Jeans, 1865 with Ex Libris of Smyth and Lee (?). Very fine. $ 2.000.-

First edition of William Henry Smyth's (1788-1865) classic work on the colours of stars.

Back in the 19th century, it was still possible to be confused about the nature of open clusters versus globular clusters, emission nebulae, reflection nebulae vs. galaxies. The visual evidence was generally inconclusive even in Parsons' Leviathan. Astrophotography completely eliminated any ambiguity in all but a very few cases, and today the categorical confusion is essentially zero. There are a number of physical reasons why star color cannot accurately display star temperature - extinction being a big one - and the huge range of color index values within each spectral category and that human visual perception is just not capable of accurately and reliably parsing point objects at very low luminance levels and very small separation under scotopic adaptation. It's made to see reflecting surfaces as luminance shapes in the dark and chromaticity under sunlight. The extreme conditions of astronomical observation produce all kinds of wackiness in astronomical color perception, of which complementary color contrast is only the best known. Smyth knew nothing of spectral classes and the "supposed" colors that go with each spectral class. Free from the shackles of the science, Smyth was at liberty to believe he saw lilac and green stars. Perhaps the most egregious example of impossible star color reported by the Admiral Smyth is Alpha Lyra (Vega) which Smyth dubbed „green" (which you probably see if you are using an achromat slightly defocused).
His Cycle of Celestial Objects has long been regarded as the patriarch of celestial observing guides, particularly the second volume, which was named The Bedford Catalogue after the site of Smyth's private observatory. What makes it so special is that it is the first true celestial Baedeker and not just another "cold" catalogue of mere numbers and data. Like the original Baedeker travel guidebooks of the last century, this work is full of colorful commentary on the highlights of the heavenly scene and heavily influenced several subsequent works of its type, even to the present day. In 1825 Smyth established a private observatory in Bedford, England, equipped with a 5.9-inch refractor telescope. He used this instrument to observe a variety of deep sky objects over the course of the 1830's, including double stars, star clusters and nebulae.

STAMKART, F(ranciscus) J(ohannes).
Zonsverduistering 15 Maart 1858. Kaart met bewegbaar figuur, benevens kort berigt. Amsterdam, H. W. Weijtingh (1858). 8 octavo pages letterpress text, one lithographed plate, ca 261 x 298 mm with a movable element. Together loosely contained in publisher's brown printed wrappers. Folio (310 x 300 mm). Wrapppers with short tears in folds, else fine. $ 2.200.-

Not in Houzeau-Lancaster. Cf. Nieuw Nederlandsch biografisch woordenboek I, 1487-1488. A fine copy of a mechanical paper instrument made by the Dutch astronomer Franciscus Johannes Stamkart (1802-1882) to follow the sun eclipse in the year 1858. A very scarce ephemeral item with only two copies traced on OCLC in Dutch libraries.

STILLING, Jacob.
Ueber das Sehen der Farbenblinden. Zweite Auflage. 2 Vols.- Kassel und Berlin, Th. Fischer, 1883. (230 x 150 mm). (4), 91 pp., (1); Folio (240 x 330 mm) (4), 8 chromolith. plates with 384 printed color samples. Original Wrappers and Atlas in blue paper-card with mounted original wrappers, plates loosely inserted. Fine. $ 2.000.-

Second edition, very rare with atlas incl. "Stilling's color table", which were pseudo-isochromatic charts used in diagnosis of color blindness. The first edition of 1880 had only 2 plates. Color blindness, also known as color vision deficiency, is the decreased ability to see color or differences in color. Simple tasks such as selecting ripe fruit, choosing clothing, and reading traffic lights can be more challenging. The first scientific paper on the subject of color blindness, Extraordinary facts relating to the vision of colors, was published by the English chemist John Dalton in 1798 after the realization of his own color blindness. Later it was discove-red that there are three types of cone cells and each type has a different sensitivity to light wavelengths. One type of cone perceives blue light, another perceives green and the third perceives red. When you look at an object, light enters your eye and stimulates the cone cells. Your brain then interprets the signals from the cones cells so that you can see the color of the object. The red, green and blue cones all work together allowing you to see the whole spectrum of colors.

STILLING, Jacob (Jakob).
Pseudo - isochromatische Tafeln für die Prüfung des Farbensinnes. Mit 8 Tafeln.- Kassel und Berlin: Verlag von Theodor Fischer, 1883. sm.folio (305 x 230 mm) (8) pp. and 8 chromolith. plates. Orig. Wrappers. (with:) Stilling, Jacob (Jakob). Beiträge zur Lehre von den Farbenempfindungen. Part IV. mit 5 Oeldrucktafeln.- Stuttgart: Ferdinand Enke, 1876-77. 11 pp. with 5 colored fold. plates $ 600.-

First edition of his Pseudo-isochromatic charts for diagnosing deficient color vision: Colored letters and later numbers printed on a colored background. To a color blind person, the letters will appear to be the same color as the background. Later Shinobu Ishihara developed a similar test which is still in use today (Ishihara test, 1917). Shinobu Ishihara studied existing tests and combined elements of the Stilling test with the concept of pseudo - isochromaticism to produce an improved, more accurate and easier to use test.
Jakob Stilling (1842-1915) was a German ophthalmologist and the son of the famous anatomist Benedikt Stilling (1810-1879). He studied in Göttingen, Marburg, Würzburg, Berlin, and Paris. He received his doctorate in 1865 and in

1867 settled in practice as an eye physician in his native city of Kassel. However, being attracted to ophthalmology, he received further education on this speciality in Paris, Berlin and Vienna, and eventually with Carlo Reymond in Torino. Following unsuccessful attempts to embark on a further academical career in Italy, he returned to Kassel to practice eye medicine. In 1880 he moved to Strassburg where he was habilitated for ophthalmology at the University, becoming titular professor in 1884. He remained in Strassburg until his death in 1915. In 1887 Stilling described an eye movement disorder that was to become known as "Stilling's syndrome". In 1877 he introduced "Stilling's colour table", which were pseudo-isochromatic charts used in diagnosis of color blindness. "Stilling war der Erste, der pseudo-isochromatische Tafeln (Stillingsche Tafeln) herstellte; er machte sich auch um die Pathologie der Kurzsichtigkeit (Stillingsche Theorie) sowie durch seine Arbeiten über Farbensinn, Farbenblindheit und Perimetrie verdient" (Fischer, pp. 1516). Provenance: Herzog Carl Theodor in Bayern (1839-1909).

STRÜMPELL, Adolf; Christfried JAKOB (ed.)

Neurologische Wandtafeln zum Gebrauch beim klinischen, anatomischen und physiologischen Unterricht.- München: Lehmann, 1897. Portfolio with 13 wall-charts with brain diagrams and neurological schemes. Plates 1-3,6-10 and 12-13 are 800 x 1100 mm large, the plates 4,5 and 11 are 1600 x 2200 mm double- size large. On each corner of each plate is a label with descriptive title. Publ. half-cloth portfolio rubbed and soiled, cover title label partly missing. Inside of the portfolio there is a water-stained, but the plates are not heavily effected. $ 7.000.-

Wall charts with Brain Diagrams utilized for teaching and instruction on the anatomy of the brain and its coordinating pieces. A collaborative work by the baltic german neurologist Ernst Adolf Gustav Gottfried von Strümpell (1853-1925) and the neuropathologist Christfried Jakob. This series of the neurologic charts or wall tables show mainly the representation of the brain and its coordinating pieces: like a schematic representation of the motor and sensory fibers; the segmental skin representation; the peripheral nerve representation; the arteries of the brain; the visual projection system in its entirety; the spinal segments in relation to the vertebrae, showing at the same time the muscles and reflex centers; the cell and myelin architecture of the cerebrum; the intra-uterine development of the brain; the myelin development of the brain and cord in a new-born infant, and the sympathetic innervation of the neck, chest and abdomen.

„It would be impossible to overestimate the value of these charts from a teaching standpoint. They make teaching easier. They are clearcut and large enough." (Review) Adolf Strümpell received his medical doctorate from the University of Leipzig, where he had as instructors Carl Wunderlich (1815-1877), Karl Thiersch (1822-1895) and Carl Ludwig (1816-1895). In 1883 he was an associate professor at Leipzig, and from 1886 to 1903 was a full professor at the Erlangen University, succeeding Wilhelm O. Leube (1842–1922) as director of the medical clinic. Afterwards he was a professor at the Universities of Wroclaw (from 1903), Vienna (from 1909) and Leipzig (from 1910), where in 1915 he was appointed rector. Along with French neurologist Pierre Marie, he is credited with identifying and diagnosing an arthritic spinal deformity that was to become known as the Marie–Strümpell disease. Together with French physician Maurice Lorrain, the eponymous Strümpell- Lorrain disease is named for an hereditary spastic paraplegia. Christfried (also Christian or Christofredo) Jakob (1866 - 1956), was a German-born neuropathologist who adopted Argentina as his country of vocation. He was a student of Strümpell. Rated by von Economo and Koskinas among the three most important pre-1925 cortical neuroanatomists, alongside Ramón y Cajal, Jakob is little known in the English literature. He has left an impressive record of publications, 30 richly illustrated monographs and 200 articles that span over a vast array of neurological themes, including cortical develop- ment and evolution, and the visceral brain.

bird eggs

THIENEMANN, Friedrich August Ludwig.

Systematische Darstellung der Fortpflanzung der Vögel Europa's mit Abbildung der Eier im Vereine mit Ludwig Brehm,… (and) Georg August Wilhelm Thienemann,… herausgegeben… . 5 parts in 1 vol.- Leipzig: Johann Ambrosius Barth, 1825 - 1838. Quarto (260 x 220 mm) (2), I-XII, 1-47 pp., (1), 1-76 pp., 1-96 pp., 1-54 pp. 1-67 pp. with 28 hand-colored engraved plates of eggs. Contemporary calf- backed boards, short tear to head of spine, plate 19 shorter, some spotting through the text. $ 3.000.-

First Edition of this rare Descriptions of the eggs and nidification of European birds, with hand-colored plates of many of the eggs. At least one new name is used. The work appeared in five parts although originally planned for six, with an additional general title (dated 1838).

Friedrich August Ludwig Thienemann (1793 – 1858) was a german physician and naturalist who graduated in 1819 and then travelled in Europe for two years, spending thirteen months in Iceland. He published a report on his travel in 1824-1827. In 1822, he moved to Leipzig, where he taught zoology in the university and he became curator of the natural history collections in Dresden (Kustos Naturaliensammlungen) in 1825. He was the founder of the ornithological journal *Rhea*, whose two numbers appeared in 1846 and in 1849. He is best remembered for his work in ornithology, in particular research involving avian reproduction. During his career, he amassed a collection of 2000 bird nests and 5000 eggs from 1200 species. With Christian Ludwig Brehm, he collaborated on "*Systematische Darstellung der Fortpflanzung der Vögel Europa's* …" (Systematic representation of the reproduction of birds of Europe with illustration of eggs). He later published his most famous work, titled "*Fortpflanzungsgeschichte der gesammten Vögel nach dem gegenwärtigen Standpunkte der Wissenschaft*" (Reproductive history of birds from a standpoint of current science), issued in ten parts from

1845 to 1856.- Anker 506; Nissen IVB 935; Zimmer, p. 631.- Provenance: Notaris Horst, Estate Baron Bransten, 17 February 1956.

WESSELY, Karl.
Stereoskopischer Atlas der äusseren Erkrankungen des Auges nach farbigen Photographien für Studium und ärztliche Fortbildung. Mit begleitendem Text von Karl Wessely. 4 parts.- München: J. F. Bergmann, 1930. square 8to. (190 x 125 mm) 8 pp., 4 pp., 4 pp., 4 pp. text and together 40 colored stereo-photographs. Original paper-card publ. portfolios with mounted printed title. Stereoscopes with text recto. All stamped by former private owner. $ 1.500.-

Forty impressive color photographs - a very rare & early stereoscopic atlas with color photographs of external eye diseases. The experiences of First World War Gas Combat on eyes inspired the author to publish this atlas. Six installments were intended, but only four published. The color photographs were made by the author on AGFA paper after an arrangement first used by Dr. Zabel. The color printed was made by H. Stürtz, Würzburg.
Karl Wessely (1874 - 1953) was a german jewish ophthalmologist. He had studied in Heidelberg with Gegenbaur, Kühne, Erb and Julius Hirschberg who won and inspired Wessely for ophthalmology. Even as a student Wessely wrote his first publication which was followed by 300 more during his life time. In 1913 he became after years of private praxis, Prof. of Ophthalmology first in Würzburg, then in Munich. The use of poison gas in World War I. demanded more and more ophthalmological help and Wessely experimented during the war incidentally at the Kaiser Wilhelm Institute for Physical Chemistry and Electrochemistry on drugs for eye protection in gas use. In 1935 he was retired by the Nazi's due to his jewish descendants; he survived the Nazi regime due to his conservative political attitude and Sauerbruch's protection.- COPAC: Royal College Surgeons; OCLC: New York Academy Medicine; Duke Univ; Chicago; Stanford.

Appendix - small items

Comets of 1664/65

(Anonym)
Nürnbergische Observation deß Neuen Cometens / das ist: Kurtze historische Erzehlung; deß im nechsten Monat Decembris vergangenen 1664. Jahrs erschienenen erschröcklichen Comet=Sterns wunderbaren weiten Lauffs, Veränderung und Ende. Wie solcher anzusehen und zu betrachten; auch was von solchen zu förchten und zu hoffen seyn möchte. Mit beygefügtem Kuppferstuck seines gantzen Lauffs. Nach Möglichkeit observirt und vorgestellet von Einem Cultore der christlichen Astrologiae.- Nürnberg: Bey Johann Andreas Endter und Wolfgang deß Jüngeren Seel. Erben, anno 1665. Quarto (190 x 155 mm) 36 pp. with one fold. engraved plate showing the phases of the comets in two hemispheres with star pictures. Backstrip. $ 2.600.-

Detailed professional observation of the comets of december 1664 & early 1665, describing the appearance day by day and describing their astrological importance on time.
In 1664 and 1665 two bright comets appeared, and between them occurred an eclipse of the Moon. Such a triple omen was unique. One can almost hear the collective intake of breath in anticipation of the unparalleled disasters that surely must follow. Lest anyone be uncertain about the meaning of these omens, John Gadbury, an English astrologer, thoughtfully interpreted them in his book of 1665, De Cometis: 'These Blazeing Starrs! Threaten the World with Famine, Plague, & Warrs,' he trumpeted. 'To Princes, Death: to Kingdoms, many Crises: to all Estates, inevitable Losses!' He can hardly have believed his luck when London was hit by the Black Death in 1665 followed by the Great Fire the year after. Unwittingly, he had demonstrated a fact that modern-day astrologers know well: the laws of chance ensure you can't be wrong all the time. While London suffered, in Danzig one of the greatest astronomers of the day, Johannes Hevelius, was watching the comets with scientific detachment. He published his observations in 1668 in a volume entitled *Cometographia* in which he theorized that comets are thrown out by the planets, notably Jupiter and Saturn, and move past the Sun on boomerang-shaped curves. Unlike boomerangs, though, they never came back.
VD17 23: 288122F; BM 8563.aaa.36; Brüning 1198; Bircher A1129 (showing title); KVK: Augsburg, Amberg, Dillingen, München, Erlangen-Nürnberg, Regensburg, Stuttgart, Erfurt, Wolfenbüttel, Marburg, Weimar; COPAC: BL London; OCLC: Newberry; Brigham Young; Houghton.

(Anonym)
Vernünftige und schriftmäßige Gedanken von Cometen, bey Gelegemheit des gegenwärtigen in diesem 1744. Jahr sichtbaren Cometens. (Nürnberg): Friedrich Wilhelm Geyer, 1744. Quarto (205 x 170 mm). 24 pp. with one folding plate. New marbled boards period style. $ 1.500.-

Rare pamphlet on the great comet of 1744, which is also known as Comet de Chéseaux or Comet Klinkenberg - Chéseaux. It was a spectacular comet that was observed during 1743 and 1744. It was discovered independently in late November 1743 by Jan de Munck, in the second week of December by Dirk Klinkenberg, and, four days later, by Jean-Philippe de Cheseaux. It became visible with the naked eye for several months in 1744 and displayed dramatic and

unusual effects in the sky. Its intrinsic brightness was the sixth highest in recorded history and this comet is noted especially for developing a 'fan' of six tails after reaching its perihelion. The tail structure was a puzzle to astronomers for many years. Although other comets had displayed multiple tails on occasion, the 1744 comet was unique by having six. It has been suggested that the 'fan' of tails was generated by as many as three active sources on the cometary nucleus, exposed in turn to solar radiation as the nucleus rotated. It also has been proposed that the tail phenomenon was a very prominent example of the „dust striae" seen in the tails of some comets (McNaught).
Anonyme Schrift über den großen Kometen von 1743/44 (Komet Klinkenberg), einen der hellsten des 18. Jahrhunderts. Die Kupfertafel zeigt den Lauf des Kometen im Sonnensystem.
Provenance: Aus der Sammlung des Nürnberger Hopfenhändlers und Magistratsrats Hans Hopf (1854 - 1918), mit seinem Stempel Titel verso. VD 18 12218588; Houzeau-L. 5834; Brüning 1703.

Aurora Borealis in 1622

BARTSCH, Jacob.
Himmlische Zeiterinnernde Wunder=Sonn=und Weck Uhr. Das ist: Kurtzer und Einfältiger, doch in der Naturkunst gegründeter Bericht. Von den NebenSonnen und Regenbogen, beydes in gemein und dann auch insoderheit von denen, welche man in den jetztlauffenden 1622. Jahr, den 25. Januar. am Tag Pauli Bekehrung allhier zu Strassburg gesehen …. Strassburg: bey Marx von der Heyden, am Kornmarckt, (1622). Quarto (185 x 140 mm) 55 pp., (1) Backstrip, title shaved at lower part and little shorter than book block, browning throughout. From a Sammelband. $ 3.600.-

Exceedingly rare pamphlet on a rainbow, aurora borealis or halo seen at Strassbourg in 1622 written by Kepler's son-in-law. Only around three copies in libraries world-wide. Jakob Bartsch (Bartschius) (c. 1600 – 1633) was a German astronomer and librarian in Wroclaw, taught by Sarcephalus (Christopher Hauptfleisch), how to use the astrolabe. He studied astronomy and medicine at the University of Strassbourg. Bartsch married Johannes Kepler's daughter Susanna on 12 March 1630 and helped Kepler with his calculations. After Kepler's death in 1630, Bartsch edited Kepler's posthumous work Somnium.- not in Brüning; VD17 23: 243398Y (only one copy).- KVK: HAB Wolfenbüttel, BL London, BNF Paris („Le soleil merveilleux. Notice sur les soleils multiples et sur l'arc-en-ciel, particulièrement sur ceux qui ont été vus à Strasbourg en 1622")

COBABUS, Michael; Michael Jordan (defend.)
Disputatio sphaerographica, De horizonte circulorum sphaerae principe quam spiritu sancto adjuvente … Rostochi (Rostock): typis Nicolai Kilii, 1639. sm.4° (178 x 143 mm) 8 Bll./leaves. with one geometrical text woodcut. Backstrip. Traces of use. $ 1.200.-

Exceedingly rare work on the horizon and different spheres by the mathematician Cobabus defended by a pupil (Michael Jordan) from the same town, Cobabus came from. Michael Cobabus (1610-1686) was professor of mathematics at Rostock University. From 1646 to 1654 he was director of the Rostock Higher School, before he became lecturer of mathematics at the University. 1653 he also received the professorship in theology at Greifswald University. He was three-times rector of the University Rostock (1658, 1672, 1675).- VD17 28:720877W (Only one entry). KVK: only Rostock, Paris Observatory. not in COPAC or OCLC.

solar eclipse in 1715

GAUPP, Johannes.
Ausführliche Beschreibung Der grossen Son[n]en Finsternuss welche Anno M. DCC. XV den 3. May vormittag in gantz Europa und zum Theil auch ausser demselbigen zu sehen seyn wird; und zwar: Theils nach ihrer allgemeinen Beschaffenheit auf dem gantzen Erdboden; Theils nach ihrer besondern Gestalt und Grösse an 64. auserlesenen Orten; aus dem calculo gezogen und daneben in deutlichen Figuren entworffen.- Augspurg: zu finden bey Caspar Brechenmacher, (approx. 1715) Quarto (192 x 152 mm) 24 pp. with two engraved fold. plates. Backstrip. Brown-spotted, last leaf with small old repair, little shortcut at upper border. $ 2.200.-

Scarce work on a solar eclipse observed in may, 1715 by the german protestant preacher Johannes Gaupp (1667-1738), who is mainly known as a keen astronomer and mathematician. He published various books on astronomical subjects and his most important publication was the Gnomonica mechanica universalis, dealing with the manufacture of sundials. This treatise on the sun eclipse of May, third 1715, which could be viewed in most parts of Europe, is enriched with two engravings: a map showing Europe and part of North America with the course of the sun ecplipse and a plate with the time line of the various coronas during the eclipse as could be viewed in 64 European places.- Zinner, Instrumente 319; Pogg. I, 853; Jöcher II, 888; not in Brüning, Kenney or Barchas Coll. KVK: Stabi München, Augsburg, Regensburg, Bonn; COPAC: NL Scotland; OCLC: only Houghton.

HIEBNER, Israel.

Practica Reformata, oder Rechtfundrter Astrologischer Tractat; Das ist: Newgegründete Verkündigung aller und jeden Zufälle, so wol an Gewitter als andern Welthändeln, Hoch- und nidrige Stands- Personen betreffende: auff das Jahr … M.DC.XXXXIX. und 1650. Nebenst fernerer Widerlegung und ausführlichem Beweiß / … insbesonderheit wider Marcum Freund, durch Israel Hiebnern….- Franckfurt: Anthoni (Anton) Humm, (around 1649/50) Quarto (180 x 145 mm) 70 pp., 1 Bl. with title engraving and two full-page text engraving. Backstrip in marbled paper. Title with two small holes in title, pages shaved close, touching or omitting last line with Signature and touching the printed annotations at right and left edges. $ 1.600.-

Unknown variant of this rare astrological work. Our variant different to: VD17 3:004166Q, here with printed text recto title.- KVK: Bamberg, Darmstadt, Braunschweig, Wolfenbüttel, Göttingen, Erfurt; COPAC: Wellcome; OCLC: no copy in USA.
Israel Hiebner (1619-1668), Astrologe und Kalenderschreiber von zweifelhaftem Ruf. Er studierte ab 1635 in Leipzig Jura und Medizin. 1640 wurde er als Stadtschreiber nach Pirna in der Nähe von Dresden berufen. 1643 wollte er sich zum Studium der Astronomie wieder an die Universität von Leipzig begeben, lernte aber auf dem Weg dorthin in Dresden den Arzt und Kalenderschreiber Rudolph Buchbach kennen, der ihn in die Astrologie einführte. 1644/45 scheint er sich im sächsischen Freiberg aufgehalten zu haben, denn hier erschien sein erstes Buch über den Einfluss des Mondes und des Saturns, hier soll auch sein erster Kalender für das Jahr 1646 herausgekommen sein. 1645 kam er nach Nürnberg, wo er mit seinen Prophezeiungen schnell großes Aufsehen erregte. Der Verleger Wolfgang Endter (1593-1659) zahlte ihm daraufhin für seinen Kalender die enorme Summe von 300 Gulden – andere Kalenderschreiber erhielten gerade einmal 50 Gulden. Da Hiebner entgegen einer klaren Abmachung im folgenden Jahr seine Kalender auch bei den Sternenverleger in Lüneburg herausbrachte, beendete Endter diese Geschäftsbeziehung. Hiebner musst im folgenden die Stadt verlassen, 1648 reiste er über Bamberg und Würzburg nach Hessen. In Frankfurt am Main konnte er seine Practica Reformata herausbringen. Im Mai 1649 scheint er sich in Kassel aufgehalten zu haben. Danach arbeitete er für die Fürstin von Eisenach, die ihm nach einem halben Jahr mit einem nicht gerade günstigen Zeugnis entließ. Ab 1650 scheint er mathematische Vorlesungen in Erfurt gehalten zu haben. 1653 befand sich Hiebner in Leipzig, wo er großspurige Prophezeiungen zur Sonnenfinsternis von 1654 von sich gab. Da nichts davon eintraf, konnte sich Hiebner in Deutschland nicht länger halten und wanderte aus. Zunächst scheint er sich nach Linz gewandt zu haben, denn dort erschien für das Jahr 1657 ein Kalender von ihm. Bis 1665 praktizierte er als Arzt in der slowakischen Stadt Presov. Danach findet man ihn in Hermannstadt in Sieben-bürgen, wo er wieder durch astrologische Prophezeiungen auffiel. Hier starb er im Juli 1668. Hiebner macht vor allem durch großspurige astrologische Prophezeiungen auf sich aufmerksam. Seine Kalender scheinen daraufhin einen großen Abgang gefunden zu haben, sonst hätte ihm Endter nie 300 Gulden für seinen Kalender bezahlt. Über seine Prophezeiungen war Hiebner in zahlreiche Streits verwickelt, der heftigste dürfte der mit dem Altdorfer Mathematikprofessor Abdias Trew (1597-1669) gewesen sein, der Hiebner unseriöse Methoden vorwarf. Hiebner beschimpfte Trew daraufhin als den „faulen Rechner von Altdorf". (Gaab)

Comets of 1664/65

KOHLHANS, Johann Christoph.

Cometa generalis cum speciali, oder Cometen= König, welcher 1664. und 1665. Jahr am Himmel erschienen und sich prächtig hat sehen lassen. Sambt dem darauf im 1665. Jahr folgenden Cometen und vermuthlich Ersten Special= Vortrab Der am Endes des Merzen und Anfang des Aprilis sich auch als ein Held und thriumphirender Sieges-Fürst unsern Augen vorgestellet… Nürnberg: gedruckt und zu finden bey Wolff Eberhard Felßeckern, (without year; 1665) Quarto (186 x 147 mm) 16 Bll. with one text engraving, nearly full page of a star map. Backstrip. $ 2.200.-

One of two different variants from the same year. Johann Christoph Kohlhans 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.- Brüning 1171; Hohenemser 294; Bircher A1088 (see title-page); VD17 23:287598Q.
KVK: HAB, Bamberg, Erlangen, Dillingen, München, Stuttgart; COPAC: BL London; OCLC: Madison-Wisc.; other variant: Toronto, Yale.

Comet of 1682

MONTANARI, Geminiano.

Copia di lettera scritta all' Illustrissimo signore Antonio Magliabechi, ... intorno alla nuova cometa apparsa quest' anno 1682. sotto i piedi dell' Orsa Maggiore ... In Padoua (Padova): per Pietro Maria Frambotto, 1682. Quarto (202 x 152 mm) 8 pp. with a small title engraving on lower title. Backstrip. $ 2.800.-

Rare work on the observation of a comet or meteor in 1682 which was also observed by Halley.
Geminiano Montanari (1633–1687) was a keen observer of comets and other celestial phenomena, as demonstrated by the observations he made of the meteor that crossed the sky of central Italy in 1676 or those of the comet of 1682, the same observed by Edmond Halley. He believed comets to be above the moon, pace the Aristotelians, because he was able to measure the parallax (with a telescope equipped with a micrometer) and the distance, confirming Tycho Brahe's and Cassini's observations. He mistakenly maintained that meteors are similar to lightning and that rocks sometimes found at impact sites are terrestrial in origin. (BEA II, 800 - 801).- Brüning 1544; Peddie NS, 166b
KVK: Weimar, Kiel, Hannover, Halle, Stabi Berlin (lost in war); Paris Observatory; Oxford, Warburg Inst.; only Cornell, Huntington.

PEGEL Magnus; Johannes Fabricius.

Aphorismi Thesium selectarum De Corporibus Mundi totius primariis, universalibus, maximis, pulcherrimis. derivati ex Astronomia, Geometria, Arithmetica, Optica,… in Academia Rostochiensi disputatione: authore & ex mandato Praeside … Respondebit Johannes Fabricius, Finno. … Rostochii (Rostock): Praelo Reusneriano, (17. April) 1605. Quarto (180 x 145 mm) 16 Bll. Backstrip. Fine. $ 4.200.-

Exceedingly rare work by Magnus Pegel on spacial homogeneity, vacuum, and partial geo-heliocentrism, defended by Johannes Fabricius (probably not the famous astronomer Johannes Fabricius ?). All theses tackle astronomy and natural philosophy.
The publication reveal very original natural views: „All of these theses are revealing of a radically anti-Aristotelian world view that has elements in common with Bruno's speculations (anti-Aristotelianism, vitalism, physical vacuum, principle of cosmological homogeneity, and space infinity) and Tycho Brahe (the fluidity of heaven and, to some extent, geo-heliocentrism)." (Omedeo)
Magnus Pegel (or Pegelius or Pegelow) (1547 – 1619) was a german doctor and mathematician. Pegel was born in Rostock in Pomerania/ Germany and was one of the first authors to write (in 1604) about the theory of blood transfusions. In Rostock he taught mathematics and astrology, 1579 he was appointed professor of mathematics to Helmstedt. In 1581 he returned to Rostock and was appointed here in 1591 as a full professor of mathematics. Pegel established early contacts with exceptional scholars of his time such as Tycho Brahe or Jost Bürgi. In 1593 he was granted the imperial privilege to protect parts of his works. In 1605, together with Tycho Brahe and Johannes Kepler, he became the counselor of Emperor Rudolf II in Prague. In 1611 he returned to Rostock, lived there impoverished and took in 1615 a teaching assignment of the Duke of Pomerania Philip II in Szczecin. Pegel is considered the father of blood transfusion, dealt with intravenous injection (Chirurgia infusoria) and developed a forceps. Throughout his life, Pegel struggled for an experiment-based mechanic. In 1604 he published his time-daring work Thesaurus rerum selectarum magnarum, dignarum, utilium, marinus, pro genere humane. In this he commented on various futuristic sounding projects at the time and described the theoretical requirements in the construction of airships, submarines, ship bridges, automatic firearms, water features and bath ovens as well as a memory art. He already represented the idea of an evolution of the species.- VD17 23:641846C (only Wolfenbüttel, no other copy in OCLC)
Lit.: Pietro Daniel Omodeo. Sixteenth century Professors of Mathematics at the german university of Helmstedt. A Case Study on Renaissance Scholarly Work and Networks (2011; MPIWG Preprints 417)

wondrous silken blue „rainfall"

PRAETORIUS, Johann.

Sacra filamenta Divae Virginis oder oder Naunburgsche Plumerant- farbene Faden, das ist unerhörtes Prodigium. Von der Hoch=blauen Seide, so bey Laucha umbständen erwogen und außgedeutet nebenst der praemittirte Historische und divininatorische Erzehlung aller andern wunderseltzamen Regen, davon man Nachricht bey irgend einen Scribenten antrifft. Auctore M. Johanne Praetorio… Hall in Sachsen: gedruckt bey Melchior Oelschlegeln, 1665. Quarto (185 x 139 mm) 28 Bll. Backstrip. From a Sammelband, ink note on title „53". $ 2.400.-

Exceedingly rare work on a wondrous blue rain fall written by Johannes Praetorius (latinization of Hans Schultz; 1630 - 1680) a German writer and historian. Praetorius attended school in Salzwedel and at the Gymnasium in Halle (Saale), then enrolled at the University of Leipzig, where he studied the natural sciences and obtained the Magister degree in 1653. He remained affiliated with the University until his death, studying texts at the Paulinum. Praetorius occasionally gave lectures, but spent the bulk of his time writing and compiling literary works, including compendia of fairy tales and legends. He is well known for collecting folk tales of the Rübezahl. He also wrote large natural philosophical compendiums.- Brüning, Kometen 1214 (collation wrong); Hayn 84; Dünnhaupt V,3168.29; Faber du Faur 752;
KVK: Stabi München, Erlangen, Stabi Berlin (27 Bll.); Halle, Wolfenbüttel, Hannover, ETH Zürich; BNF Paris; COPAC: BL London; OCLC: Yale; Univ. Regina; Roesch Library, Dayton.

Comets of 1664/65

THEOPHILUS, Christianus (pseud.)

Cometen-Propheten; Ein kutzer doch ausführlicher Bericht von der Comet=Sternen Natur und Würckung; samt einer Erzehlung Aller Cometen und ihrer Geschichten soviel deren von Anfang der Welt her in Historien auff= gezeichnet worden und was jederzeit darauf erfolget: … beschrieben von Christianum Theophilum… Nürnberg: gedruckt bey Wolf Eberhard Felßeckern, im Jahr 1665. Quarto (190 x 154 mm) 19 Bll. with engraved frontispiece. Later Backstrip. Browning throughout due to paper. Honest copy.

$ 2.200.-

Rare work on the comets of 1664 & 1665 by an unknown author. The work is attributed to Thomas Bartholin by a library. Thomas Bartholin (1616-1680) (?), a Danish physician, mathematician and theologian who is best known for his work in the discovery of the lymphatic system in humans and for his advancements of the theory of refrigeration anesthesia, being the first to describe it scientifically.
If one of the Bartholin's is responsible for this work than - I would think - it must be Erasmus Bartholin who observed the comets of 1664 and 1665, and made other astronomical observations, publishing his descriptions of these events in *De cometis anni 1664 et 1665 opusculum* (1665).
In November 1664, a comet appeared in the European skies; by early March 1665, it had disappeared, but, at this very moment, another comet appeared, which stayed among the stars until mid-April. Observations of these two comets were made all over Europe, and even beyond. The sixteen sixties marked the beginning of the war between Jesuits and Cartesians that was to enflame learned France until the late nineties at least, they were also the period of gestation for the future Académie des sciences, and, finally, it is also during these years that French elites began to discredit systematically the practice of astrology as a popular superstition.- Hohenemser 299; Brüning 1237; Bircher A1171 (see title-page) VD17 23:287726Q; KVK: MPIWG; Augsburg, München, Regensburg, Erfurt, Stuttgart, Berlin, Bamberg, Amberg. COPAC: BL London, NL Scotland; OCLC: Yale, Columbia, Cornell, Wisconsin, Oklahoma.

WEIGEL, Erhard.

Libram Praeside Viro Ampliss. & Excellentiss. Dn. Erhardo Weigelio Mathes. Prof. Publ. Alumnorumque Ducalium inspectore Dn. Hospite ac Praeceptore observanter colendo Expendendam publice proponit Vitus Christianus Gebhardi, Brunsvicensis. Autor. Ad diem Januarii MDCLXIX.- Jenae: typis Werterianis, (1669) Quarto (180 x 145 mm) 12 Bll. with one engraved plate. Marbled backstrip. Old annotations in ink.

$ 1.600.-

One of three variants, here with separate engraved plate which is in the other variants the title engraving. The engraving show a pair of scales.
Erhard Weigel (1625-1699) war ein deutscher Mathematiker, Astronom, Pädagoge, Philosoph und Erfinder. Weigel promovierte 1652 in Leipzig bei Philipp Müller. 1653 wurde er Professor der Mathematik an der Universität Jena. Neben seiner dortigen Lehrtätigkeit beaufsichtigte er 1660 den Neubau des Jenaer Schlosses. 1661 wurde er zum Oberbaudirektor ernannt. 1688 erhielt er den Titel eines Kaiserlichen Rates. Weigel beteiligte sich auch an den organisatorischen Aufgaben der Jenaer Hochschule So war er Dekan der philosophischen Fakultät und in den Sommersemestern 1657, 1675, 1695 Rektor. Ab 1684 verwirklichte er seine pädagogischen Ansichten in einer Kunst- und Tugendschule, die in seinem Haus untergebracht war. In seinen späten Jahren bemühte er sich um eine Vereinheitlichung des Kalenderwesens. 1696–1697 reiste er nach Dänemark und Schweden, um diese protestantischen Länder auch für seine Kalenderreform zu gewinnen. Mit einem ausgeprägten Sinn für praktische Anwendungen entwickelte und konstruierte Weigel zahlreiche Vorrichtungen, Apparate und Modelle. Darunter befanden sich aus heutiger Sicht wohl etliche recht ausgefallene technische Spielereien, aber auch einige durchaus nützliche Geräte, Hilfsmittel und Instrumente.- VD17 39:166816A (Erfurt, Wolfenbüttel, Göttingen); not in COPAC or OCLC (USA).