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„Linnaeus of the algae“

Agardh, Carl Adolph.

Icones Algarum Europaeorum / Représentation d' Algues européennes suivie de celle des espèces exotiques les plus remarquables récemment découvertes publiée par C. A. Agardh.- Leipsic. Leopold Voss, éditeur ... 1828 - 1835. gr. 8° (226 x 145 mm) 47 leaves, 40 engraved plates drawn by C. F. Lundberg and engraved by Fr. Schnorr. Uncut & unopened sheets with original wrapper of the first installment bound in. Contemporary green plain half cloth, label removed from spine. Else fine. \$ 2.800.-

Rare first edition, published from 1828 to 1835, of an important work on European algae. From 1812 he was professor at the University of Lund (Southern Sweden), before in 1835 he was offered the bishopric of the Karlstad diocese in western Sweden, which he accepted, and thereupon gave up writing on botany. Carl Adolph Agardh's (1785-1859) fame is based on his contributions to the taxonomy of algae, but his scientific interests covered a far wider area. In Sweden, where Linnaeus had been active until 1778, as well as abroad, knowledge of algae and their classification was still rudimentary at the beginning of the nineteenth century. Linnaeus had divided the algae known to him into three families (*Fucus*, *Ulva*, *Conferva*), and after his death botanists continued to incorporate new forms into the same groups. In 1812 the French botanist Lamouroux took an important step toward a more comprehensive and natural differentiation, especially among the red algae. But a new understanding of the relationships existing within the larger groups of algae was first presented in Agardh's *Synopsis algarum Scandinaviae* (1817). Although it dealt basically with only one limited regional flora, the introduction presented an entirely new systematic survey of everything then considered algae. Agardh's broad outline became the *Species algarum* (1821-1828), which was never finished, and the more concentrated *Systema algarum* (1824), which summarized the state of algology at that time with precise groupings and clearly defined descriptions. In these works, with a collection of illustrations, he presented theories that are still considered nodal points in the development of algology. He achieved eminence partly through fieldwork, but he acquired a thorough knowledge of the literature and an extensive knowledge of various collections (among others, the herbaria of algae in Paris, which he examined in 1820-1821). It was not until 1827 that he undertook an extensive field trip to the north shore of the Adriatic Sea, where he became familiar with the little-known algal flora. Although Agardh is remembered mainly as an algologist, he took an active part in contemporary discussions of the natural system of plant classification.

sewers network in Paris in expressive quality

Alphand, Adolphe (ed.)

Les Travaux de Paris. 1789-1889 / sous la direction de M. A. Alphand par les soins de M. Huet, M. Humblot, M. Bechmann, M. Fauve, M. F. de Mallevoue.- Paris: Imprimerie nationale, 1889. Folio (680 x 455 mm) 16 Bll. Contemporary boards, spine little weak, inside fine. \$ 3.500.-

Rare atlas on the development of water-supply and public engineering works in Paris between 1789 - 1889. The plates (1:16.000) describe the various stages of development of water supply and sewers network, a development which was to a large extent the work of the Second Empire, which built hundreds of kilometers of underground galleries in a few decades. The famous work of Eugene Belgrand on the „travaux souterrains de Paris“ lack the expressive quality of Alphand's series of maps.

„On these maps, the city appeared as an organic tissue permeated by pipes and sewers, like a giant brain irrigated by arteries and veins. The visual analogy was not fortuitous, for one of the ambitions of nineteenth-century urban

networking was to conciliate two objectives: modernize the city according to the principles of mechanical efficiency, while retaining its organic and picturesque character, a picturesque character especially pronounced in the medieval districts.“ (Picon 144)

Jean-Charles Adolphe Alphand (1817 - 1891) was a French engineer of the Corps of Bridges and Roads. Born in Grenoble, Alphand entered the École Polytechnique in 1835 and continued his engineering studies at the prestigious École des ponts et chaussées in 1837. He began his career as an engineer in the coastal city of Bordeaux, working on improvements to the port, railways, and other infrastructure. It was in Bordeaux that Alphand met and earned the trust of Baron Haussmann, who was the Prefect of the Gironde province. In 1854, the year after Haussmann was promoted to the powerful role of Prefect of the Seine (Paris) by Napoleon III., Haussmann hired Alphand as chief engineer of the Bois de Boulogne, a role which soon expanded into director of the newly formed parks department (Service des Promenades et Plantations), and later into an all-around director of public works.

Under Napoléon III, Alphand participated in the renovation of Paris directed by Baron Haussmann between 1852 and 1870, in the company of another engineer Eugene Belgrand and the landscape architect Jean-Pierre Barillet - Deschamps. He created walks, parks and gardens designed to embellish and sanitize Paris. He also remodeled the Bois de Vincennes and Bois de Boulogne. After the retirement of Baron Haussmann, his successor, Léon Say, entrusted to Alphand the position of Director of Public Works of Paris. Under this title, Alphand continued Haussmann's works. Alphand also became the Director of Water Works after the death of Eugène Belgrand in 1878.- Lit.: Antoine Picon. Nineteenth-century urban cartography and the scientific ideal: the case of Paris; in: *Osiris* 18 (2003), 135 ff.

on silk- worms & mulberry trees

(anon.) Deutliche Anweisung, wie sich bey Anziehung derer weissen Maulbeerbäume, sowol blos durch Saamen, als durch Saamen, als durch deren Pflanzung und Fortsetzung allenthalben zu verhalten; ingleichen, was bey Zucht und Wartung der Seidenwürmer vornämlich zu beobachten und wie die Seide zu zubereiten. Zu eines jeden Unterricht öffentlich mitgetheilet. Im Jahr 1754. (without place or printer; maybe Dresden). 64 pp. Uncut printers sheet. (with) (anon.) Kurtz-gefaßte aufrichtige Unterweisung, welchergestalt im Abwickeln verschiedener Seyden-Arten zu mehrerer Vollkommenheit zu gelangen. (without date, place or printer; Dresden (?), 1770). Sheets, uncut, browning. \$ 1.500.-

I.) Anonymously published introduction to mulberry trees, silkworms and silk industry. An identical title was published in Dresden in 1770 (see Anna Amalia Bibl. Weimar).- KVK: Dresden, Leipzig, Halle, Göttingen, Erlangen-Nürnberg, München; outside Germany: Basel, Kobenhavn, Paris. II.) KVK: only Anna Amalia Bibl. Weimar (dating 1770)

manuscript on birds

(Arnim, ? von; attributed; manuscript on birds)

Vögel in Beschreibungen und Abbildungen nach dem XII. vollständigen Natursystem des Ritters Carl von Linné und nach der ausführlichen Erklärung des Herrn Prof. Phil: Ludw: Stadius Müller mit 657 Abbildungen in mehr als 254 Tafeln von Tafel 446 bis 695 aus den vortrefflichen Werken des Herrn von Büffon, Edwards, Seeligmann, Bertuch u.a. und nach der Natur. 3. und letzter Band welcher die fünfte und sechste Ordnung Gallina u. Passer enthält nebst Zusätzen oder Supplement (handwritten title). Manuscript in german language in legible hand in pen and brown ink, written recto and verso, dated below the images from 1771 - 1806. (Germany, dated 1806). Quarto (220 x 170 mm) Title, pp. 5-273 [= 274], 278-397 pp. with 215 (of around 254 ?) leaves with drawings in pen and wash color. Later half calf period style. Lacking probably 40 hand-drawn plates as called for on the title. \$ 10.500.-

Fine manuscript on birds with exquisite watercolor drawings, very colorful and with fine to extreme details. Only the third and last part of this unique manuscript on ornithology survived. The text is based on Houttuyn / Ph. L. S. Müller's translation of Linnaeus *Systema naturae* (*Des Ritters Carl von Linné vollständiges Natursystem*, 1773 - 1776) which in its original has only 28 engravings of birds. The contents of which is paraphrased, summarized, or literally copied. The author might be a member of the „von Arnim“ family, as written in pencil on title.

The drawings are based on the Houttuyn / Müller edition of Linnaeus, Buffon, Edwards, Seligmann, Bertuch, Borowski and others, but a large number of the images are drawn from life (as stated on the title and below image: "nach der Natur“ also often dated). At the bottom of each drawing is given the source of the image(s), and in the case of the drawings from life, the months and year of the drawing (i.e. the preliminary sketch / drawing) is mentioned - some as early as 1771. Maybe the manuscript of a publication that never was published.

The original text: Philipp Ludwig Stadius Müller (1725 – 1776) was a german zoologist, a professor of natural science at Erlangen University. Between 1773 and 1776, he published a German translation of Linnaeus' *Natursystem*. The supplement in 1776 contained the first scientific classification for a number of species, including the dugong, guanaco, potto, tricolored heron, umbrella cockatoo, red-vented cockatoo, and the enigmatic hoatzin. He was also an entomologist. He had studied theology and philosophy from 1741 to 1744 in Jena and was from 1745 preacher of the Lutheran community in Amersfoort. In 1749 he followed a call to Leeuwarden. Because of allegations that he sympathized with Balthasar Bekker he broke in 1754 with the church. Stadius Müller accepted a call to the University of Erlangen, where he lectured on logic, metaphysics, rhetoric, politics, Dutch language, economics and natural sciences

such as botany, herbal medicine and geography. His continuing contacts in the Netherlands made it possible to set up a natural history cabinet. Maarten Houttuyn or Houttuijn (1720 – 1798) was a dutch naturalist, born in Hoorn. He studied medicine in Leiden and moved to Amsterdam in 1753. He published many books on natural history. His areas of interest encompassed Pteridophytes, Bryophytes and Spermatophytes. He was the co-writer of the volumes 2, 3, 4 and 5 of *Nederlandsche Vogelen*. his fame as a cabinet owner and author on natural sciences, cooperating with men of scientific fame to whom he referred in his publications and/or with whom he corresponded, like J. Baster, J.F. Martinet, C. Nozeman, J. le Francq van Berkhey (Arpots, 1990: 251, letters from Houttuyn in Gemeentearchief Leiden, coll. LfvB) and A. Vosmaer (letters from Houttuyn in Universiteitsbibliotheek Leiden, BPL 246), and in Sweden C. Thunberg (letters from Houttuyn in Wijnands, 1990: 77-95), to name but a few. It may be added that, already at the beginning of his career, the famous zoologist Petrus Camper (Visser, 1985) referred to Houttuyn as “the astute physician Houttuyn, as experienced in Medicine as in the required languages” (Camper, 1756). His election as a member of “Het Zeeuwsch Genootschap der Wetenschappen” in Vlissingen (= Flushing) in 1775, and of “De Hollandsche Maatschappij der Weetenschappen” in Haarlem in 1780, may be regarded as proof of his renown as a respected scientist. Although he did not attend many meetings in Flushing, possibly none, probably due to the considerable distance, he was a regular correspondent (Minutes and letters in Arch. Koninkl. Zeeuws Genootsch. Wetensch.). He was particularly in contact with Leendert Bomme, a well-known naturalist, who actually had proposed Houttuyn as a member of the society (see p. 25). He contributed papers on zoology (reviewed further on), botanical and mineralogical subjects (see List of publications). In 1786, at the age of 66, he still proposed two subjects (fig. 2) for the annual scientific contest of the society, of which one, on the epidemiology of smallpox, was taken up in 1788 and published in 1792. The following plates (“mehr als 254”) are present: from 447 up to and incl. 695 (593 present as a and b); lacking are numbers: 446, 461-463, 479, 493-497, 578, 579, 584, 633, 641-649, 673, 682-693; lacks pp. 274-277 (in the *Zusätze*); plate 454 with thumb smear affecting the image of the turkey; plate 562 trifle stained and with marginal tear closed with sellotape on verso; a few plates yellowed, otherwise the plates in fine condition, apart from occasional spots.- not in Gebhardt. Ornithologen Mitteleuropas.

**the famously rare Medici Press printing, based on a florentine manuscript,
of the epitome of all precedent development, the final codification of all graeco-arabic
medicine**

Avicenna [Abū ‘Alī al-Husayn ibn ‘Abdallāh IBN SĪNĀ].

[Arabice:] Liber canonis. Libri quinque canonis medicinae.’ Rome, Typographia Medicea, 1593. Three parts in one vol., Folio, pp. [xii, with Arabic title], 610, [2, blank], 268, [63]; here bound, as sometimes, without Avicenna’s compendium of logic, metaphysics, and philosophy, al-Najat; small restored hole to lower inner margin of title, minimally affecting typographical border; two small restored holes to final leaf; both these leaves a little stained; a little browned throughout, only occasionally heavier; an exceptionally clean and very crisp copy in late 18th-century Italian calf, gilt; finely rebacked with most of the original spine preserved, lower compartment expertly renewed; early inscription on title washed away. \$ 98.000.-

First edition and with the exception of a couple of tiny repairs to the title and final leaf a wonderful copy, void of the extensive repairs or restorations commonly encountered in this first arabic printing of avicenna’s canon of medicine. The Canon (al-Qānūn or ‘Code of laws’) of Avicenna (980-1037) ‘is a compendium of Greek and Muslim medical knowledge of Avicenna’s time, co-ordinating the teachings of Galen, Hippocrates and Aristotle. It superseded all previous works – even the great medical encyclopaedia of Rhazes – and in its Latin translation became the authoritative book in all universities ... The Canon was translated into Hebrew (1491), the first Arabic printing appeared in 1593, and there were many editions of and commentaries on, the Latin translation by Gerardus of Cremona (1114-1187). Through these printings Avicenna’s work transmitted to the West ideas of the great Greek writers and also introduced ideas of his own which in some respects superseded them’ (Printing and the Mind of Man). The Arabic edition ‘was printed under the auspices of Cardinal de’Medici from Arabic fonts designed by the French typographer Robert Granjon’ (Norman).

‘Ibn Sina divided his Canon of Medicine into five books. The first book – the only one to have been translated into English – concerns basic medical and physiological principles as well as anatomy, regimen and general therapeutic procedures. The second book is on medical substances, arranged alphabetically, following an essay on their general properties. The third book concerns the diagnosis and treatment of diseases specific to one part of the body, while the fourth covers conditions not specific to one bodily part, such as poisonous bites and obesity. The final, fifth, book is a formulary of compound remedies’ (M. Nasser, A. Tibi, and E. Savage-Smith, ‘Ibn Sina’s Canon of Medicine: 11th century rules for assessing the effects of drugs’ in *J R Soc Med*, 2009).

As described above, this copy contains the complete Canon, and is here bound without the collection of philosophical and metaphysical treatises, al-Najat. The imprimatur of the Typographia Medicea being located at the end of the index to Avicenna’s Liber canonis, it suggests the al-Najat, which commonly follows, to be a late addition or an afterthought. Whether the composition of this copy represents an early issue or is due to the publishers’ choosing regarding the make-up of the volume, which included issues with either a Latin or Arabic title-page depending on the intended market, the al-Najat is usually found bound in last when present. A further reason for its occasional absence maybe due to a rather interesting fact pointed out by Schnurrer, who provides a rare and more thorough or thoughtful

bibliographical reference on this particular Medici Press production. Schnurrer notes a marker found in the margins of the last four pages to the al-Najat, in which the Medici Press's editor points out passages 'repugnant' to the Catholic faith contained in the work: 'Pagine postremis quatuor passim signum aliquod positum est in margine: quid significet, declarat notatio editoris scripta in fine, nimirum, signo isto notari dicta Catholicae fidei repugnantia' (Schnurrer, Bibliotheca Arabica, p. 450).

The fine state of preservation of this copy shows no signs of an earlier presence of these independent tracts. The Arabic edition of Euclid from the same press is equally known in variant printings, with some copies comprising twelve, some thirteen books, and again with either a Latin or an Arabic title (see Thomas-Stanford, Early Editions of Euclid's Elements p. 17). The copy preserved at the American University of Beirut is bound exactly as here.

Provenance: the rear free end-paper with the note 'De Raritate Oper[a]. Vid[e]. Clement Bibliotheq. Historiq. (sic) T. II. p. 284' (i.e. David Clément, Bibliothèque curieuse, historique et critique, ou Catalogue raisonné de livres difficiles à trouver, Göttingen, Hannover and Leipzig, 1750-60) in a late 18th-century hand. This appreciation finds further expression in the label adorning the second compartment of the spine, reading 'Extr[ema] Rarit[as]', a highly unusual feature not generally seen on a relatively old binding.

Although a number of copies of the Medici Press Avicenna are recorded in institutions, many are seriously defective and the work is extremely rare on the market. - Adams A 2322 (with the al-Najat); Bibliothèque Nationale, Inventaire des Livres Imprimés Arabes, 1514-1959, p. 415; Durling 376 (no proper collation provided); Garrison and Morton 44 (without collation); Index Aureliensis 110.626; LeFanu, Notable Medical Books p. 53 (a copy with a Latin title page); Norman 1951 (with the al-Najat); Schnurrer, Bibliotheca Arabica 393 (with a complete collation); not in the Wellcome catalogue.

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. \$ 7.000.-

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 Johannes 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 Goldmayer's Stellarum inerrantium ... juxta Tychoonis, Brahe, Johannis Kepleri & Christiani Severini... from pp. 297 we have Cyprianus 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 inventing 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. According 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 Wrocław. He also studied astronomy and medicine at Strasbourg University. In 1624 Bartsch published a book titled Usus astronomicus 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 Somnium. 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.; Zimmer, Astronom. Instr. 245; nicht bei Honeyman u. Pogg.

a clock for the German chancellor

Becker, Gustav.

Manuscript birthday address from the clock manufacturer Gustav Becker to Otto von Bismarck's 70th birthday. Glückwunschartikel des Uhrenfabrikanten Gustav Becker zu Bismarcks 70. Geburtstag. Handschrift auf Papier. Freiburg/Schlesien 1885. Folio (675 x 430 mm). 1 leaf with original drawing in ink pen and watercolor by F. Kiefhaber (signed) mounted on wood. One leaf (480 x 295 mm) with handwritten dedication and printed text. Contemporary blue velvet portfolio (700 x 450 mm) with mounted monogram. Fine. Blaue Samtmappe, Vorderdeckel mit montiertem und bekröntem Monogramm aus Metall. \$ 4.200.-

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 occasion 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 designs. The Junghans Company absorbed Becker, Lenzkirch, Hamburg American, etc. into a clock company that continues in business to this day.

early travel to Syria, Turkey, Palestine & Egypt

Billerbeg (Billerbeck), Franz von.

Epistola continens Hodoeporicon navigationis ex Constantinopoli in Syriam, Palaestinam et Aegyptum: et Montem Sinai &c. item de Persico Bello & circumcissione Mahometis filii Imp. Turcici, aliisque rebus Constantinopoli superiore aestate actis. [Rostock, Stephan Möllemann ?], 1583. Kl.-4to (190 x 150 mm). [8] Bl. [= Sign.: A - B4]. Contemporary (maybe little later) marbled wrappers. \$ 10.000.-

Editio princeps of this important travel account from the Ottoman empire in the years 1580-1582. Anonymously printed most probably on the press of Stephan Moellemann in Rostock. The anonymous author was Franz or Franciscus de Billerbeg, born into a noble family in Pomerania, well educated and skilled in history. Dated 1 October 1582 he dedicated his text to his former preceptor, the Lutheran professor and historian David Chytraeus (1530-1600) at Rostock, an important researcher of the Eastern churches. To him Billerbeg already had sent his first epistolary dispatch of 9 July 1581 which he had written in Constantinople. Printed as 'Epistola Constantinopoli, recens scripta, de praesenti Turcici Imperii statu' in 1582 it contains the traveller's description of the most important personalities of the Ottoman empire and their war with Persia. Here, as the highlight of his two year stay with the Ottomans, Billerbeg reports the long travel to Syria, Palestine, and Egypt. He was only the second Lutheran - after Salomon Schweigger whom he had met in Constantinople shortly before Schweigger travelled home to Germany - who undertook such a journey to the Near East. Between 1 September 1581 and 23 April 1582 Billerbeg travelled the Dardanelles Strait to Chios, Ephes, Rhodes and via Cyprus to Tripoli. Then he visited Damascus, the Judea and Samaria area, Jerusalem and the Gaza. Through the Egyptian desert he reached Mount Sinai and Cairo and finally Alexandria, from where he shipped back to Constantinople. He arrived in time to become an eyewitness of the magnificent festival held on the occasion of the circumcision of the crown prince, Mehmet. The description of the festivity ends the account. In August 1582 Billerbeg left Constantinople and travelled through Bulgaria, Serbia and Hungary to Vienna where he died in 1587. The two subtle vignettes at the end were - in contrast to the title vignette and the initial which were also used by Jacob Lucius Jacob the elder - belonged to the press of Stephan Möllemann (Latinized Myliander) who printed in Rostock during fifty years until 1610. In 1579 Lucius became printer of the university in Helmstedt and it is likely that the octavo edition of Billerbeg's text was printed by him. Further single Latin editions appeared in 1586, 1589 and 1597. But the 'Epistola continens Hodoeporicon' was additionally included in the second volume of Johannes Lonicer's 'Chronicorum Turcorum' of 1584 and in Michael Neander's 'Orbis terrae partium succincta explicatio' of 1586. A German edition followed in 1584 (Neue Schiffart) and an English translation was printed at London in 1584 (Most rare and strange discourses, of Amurathe the Turkish emperor that nowe is). A excellent copy with wide margins of this rarity (most libraries have only the 11 pages much smaller printing).- VD 16 (Online Kat.), ZV-2037 (beide Ex. mit 11 Bl.);

Yerasimos, *Les voyageurs dans l' empire Ottoman* (1991), 338; Röhrich, *Bibliotheca Geographica Palaestinae*, S. 209; vgl. Göllner 1801 (nur Ausgabe v. 1586); D. Benga; David Chytraeus als Erforscher und Wiederentdecker der Ostkirchen (2006), S. 163ff. Nicht in Blackmer und Atabey.

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. \$ 5.500.-

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.

the 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. (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) Quarto (245 x 220 mm) With 432 hand-colored numbered engraved plates, heightened with silver and gum arabic. USD 70.000.-

First edition, a complete set with all plates, always rare with around six auction records in the last 20 years for a complete copy. Marcus Elieser 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.- Nissen, *ZBI* 415; Nissen, *Schöne Fischbücher* 22; Thieme/ Becker *XXI*, 600 u. *XXIX*, 14; Brunet *I*, 975. Provenance: Hartung & Karl, 12.5.1987; Hans Dedi (20th. cent.); early stamp Paessler (?).

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] 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 Marianne 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 Breyneii, ... *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 nativis pictis.*- Gedani: sumptibus auctoris (at the author); Cornelium a Beughem, 1731. Quarto (245 x 195 mm) 6 Bl., 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, becoming "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.

the world of animals

Buffon, George Louis Leclerc, Comte de.

Histoire Naturelle, générale et particulière, avec la description du Cabinet du Roi ... (Oeuvres complètes). 30 vols. Paris: L'Imprimerie Royale, 1774 - 1789. Quarto (250 x 187 mm) with engraved portrait, 4 maps (2 folding) and 896 engraved plates (a few folding), some volumes with half-titles, occasional spotting and browning. Contemporary French half calf, spines gilt with all over lattice pattern tooling and red and green morocco labels, rubbed, one cover torn with loss to upper cover, else a handsome set. \$ 7.000.-

A handsome set of the second quarto 'Imprimerie Royale' edition, with all the text Buffon has written, but without the posthumously published *Poissons* (5 vols.) and the *Cétacées* by Lacepede and without some of Daubenton's anatomical text. The original edition of the *Histoire Naturelle* by Buffon comprised 36 volumes in quarto, divided into the following series: *Histoire de la Terre et de l'Homme*, *Quadrupèdes*, *Oiseaux*, *Minéraux*, *Suppléments*. Buffon edited 35 volumes in his lifetime. Soon after his death, the fifth and final volume of *l'Histoire des minéraux* appeared in 1788 at the

Imprimerie des Bâtiments du Roi. The seventh and final volume of *Suppléments* by Buffon was published posthumously in 1789 through Lacépède's hands. Lacépède continued the part of the *Histoire Naturelle* which dealt with animals. A few months before Buffon's death, in 1788, Lacépède published, as a continuation, the first volume of his *Histoire des Reptiles*, on egg-laying quadrupeds. The next year, he wrote a second volume on snakes, published during the French Revolution. Between 1798 and 1803, he brought out the volume *Histoire des Poissons*. Lacépède made use of the notes and collections left by Commerson (1727–1773). He wrote *Histoire des Cétacés* which was printed in 1804. At that point, the *Histoire Naturelle*, by Buffon and Lacépède, thus contained 44 quarto volumes forming the definitive edition. Another edition in quarto format (here) was printed by the Imprimerie royale in 36 volumes (1774 – 1804). It consisted of 28 volumes by Buffon, and 8 volumes by Lacépède (only two vols. present here). The part containing anatomical articles by Louis Jean - Marie Daubenton was dropped. The supplements were merged into the relevant articles in the main volumes. Our set comprises: *Théorie de la terre*; *Histoire de l' homme*; *Epoques de la nature*; *Quadrupèdes*, *Oiseaux*; *Minéraux*; *Ovipares et serpents*. Although the collation of this edition is uncertain, the set appears to lack (as nearly always) the 5 maps included in *Minéraux*.

The *Natural History, General and Particular, with a Description of the King's Cabinet* is an encyclopedic collection written between 1749–1804 by the Comte de Buffon (1707-1788), and continued in eight more volumes after his death by his colleagues, led by Bernard Germain de Lapepède. The books 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. He worked on it for some 50 years, initially at Montbard in his office in the Tour Saint-Louis, then in his library at Petit Fontenet. The work includes all the knowledge available in his time on the "natural sciences", a broad term that includes disciplines which today would be called material science, physics, chemistry and technology. Buffon notes the morphological similarities between men and apes, although he considered apes completely devoid of the ability to think, differentiating them sharply from human beings. Buffon's attention to internal anatomy made him an early comparative anatomist. „L'intérieur, dans les êtres vivants, est le fond du dessin de la nature", he wrote in his *Quadrupèdes*, "the interior, in living things, is the foundation of nature's design." The *Histoire Naturelle*, which was meant to address the whole of natural history, actually covers only minerals, birds, and the quadrupeds among animals. It is accompanied by some discourses and a theory of the earth by way of introduction, and by supplements including an elegantly written account of the epochs of nature. The *Suppléments* cover a wide range of topics; for example, in (*Suppléments* IV), there is a *Discours sur le style* (*Dis-course on Style*) and an *Essai d'arithmétique morale* (essay on *Moral Arithmetic*). Louis Jean-Marie Daubenton assisted Buffon on the quadrupeds; Philippe Gueneau de Montbeillard worked on the birds. They were joined, from 1767, by B. Faujas de Saint-Fond, the abbot Gabriel Bexon and Sonnini de Manoncourt. The whole descriptive and anatomical part of *l' Histoire des Quadrupèdes* was the work of Daubenton and Jean-Claude Mertrud. Buffon attached much importance to the illustrations; Jacques de Seve illustrated the quadrupeds and Francois-Nicolas Martinet illustrated the birds. Nearly 2000 plates adorn the work, representing animals with care given both to aesthetics and anatomical accuracy, with dreamlike and mythological settings. *L' Histoire Naturelle* met immense success, almost as great as the *Encyclopedie* by Diderot, which came out in the same period. The first three volumes of *L' Histoire Naturelle, générale et particulière, avec la description du cabinet du Roi* were reprinted three times in six weeks.- Brunet I 1376-7; Nissen ZBI 672.

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 Français 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 typescripted 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. \$ 10.000.-

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 desert, 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 losing part or most of their areas of suitable climate by 2085.

paper instrument

Copp, Johannes / Bornmann, Zacharias.

Astrolabium sampt einem kurtzen Unterrichts, wie man solch Instrument brauchen sol, nicht allein den Erzten, sondern auch den Bawmeistern, Bergleuten, Büchssenmeistern, und andern, so sich der Astronomischen und Geometrischen Kunst gebrauchen. Erstlich Anno 1525 aus dem Latein inns Deutsche gebracht. Jetzo aber auff's neue uberschen und gebessert durch Z. Bornman, Jlluministen zu Bresslaw. Bresslaw (Breslau): Johann Scharffenberg, 1584. Quarto (205 x 160 mm). 45 nn. leaves (Bll.) with 5 folding engraved plates. Modern vellum period style, fine. \$ 5.000.-

First edition of Zacharias Bornmann (1500-1599) revision of Johannes Copp's Astrolabium, first published in 1525. Johannes Copp von Raumenthal, also known as Johan Copp (ca. 1487 - died before 1563) came from a southern German nobility family. He worked as physician at Joachimsthal, Vienna University and at the Imperial Court in Prague (under Ferdinand I.) and was asked by Gustav Vasa in 1555 to become his personal physician. He was summoned by Gustav Vasa to Sweden. He served as a kind of mediator of the king and the dukes. Copp seems to have been a well-educated person for his time. Zacharias Bornmann is also known through his published star atlas: *Astra* (1596). An astrolabe (al-Asturlāb) is an elaborate inclinometer, historically used by astronomers and navigators to measure the inclined position in the sky of a celestial body, day or night. It can thus be used to identify stars or planets, to determine local latitude given local time (and vice versa), to survey, or to triangulate. It was used in classical antiquity, the Islamic Golden Age, the European Middle Ages, and the Renaissance for all these purposes. The astrolabe is effective for determining latitude on land or calm seas, although it is less reliable on the heaving deck of a ship in rough seas. Zweite Ausgabe, die erste in der Bearbeitung von Z. Bornmann. Johannes Copp (1487-1563) war Arzt in Joachimsthal u. wurde von Ferdinand I. zum Königl. Arzt in Prag ernannt. 1524 verfasste er eine lateinische Schrift über das Astrolab, die er selbst übersetzte und 1525 erstmals veröffentlichte. Auf Betreiben von Zacharias Bornmann wurde die Schrift 1584 neu aufgelegt und von ihm erweitert.- VD 16, B 6731; IA 144.404; Adams C 2605; Zinner, Literatur 3132 u. Instrumente 282; Houzeau-L. 3259.

only edition with a photograph of Darwin

Darwin, Charles.

Über die Entstehung der Arten im Thier- und Pflanzenreich durch natürliche Züchtung, oder Erhaltung der vervollkommenen 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 lifetime 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 account 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 exclaimed “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 engraved 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 - 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. \$ 17.000.-

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 contemporaries 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 alchimistes pouvaient rendre à la chimie, 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 alchemists 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 métallique“. 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 Trommler's (1719-1788) mineral collection at Nayla maybe to be published in later parts of Schmidel's *Erz Stufen* 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. \$ 2.400.-

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 Stufen 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 insufficient 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 Gottfried 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. Christian 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 Trommlerischen Mineralien-Cabinet zu Naila in Baireuthischen gedruckt und wie folgt beschrieben: "Dieses Verzeichniß wurde zwar nur um deshalb gedruckt, um Liebhaber, da die Erben dieses Cabinet 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 Dragonelli, 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 Domenico 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.

water wheels

Eiselen, Johann Christoph.

Beytrag zur Anwendung des Wassers auf unterschlächtige, sogenannte Kropfräder, und deren besseren Einrichtung selbst. (Erstes und) Zweites Heft. 2 parts in 1.- Berlin, W. Vieweg, 1800 - 1801. 8° (193 x 114 mm). 48 pp.; (2), 68 pp. with two fold. engraved plates by S. Halle. Contemporary half calf, marbled boards, morocco label, rubbed and soiled, stamped on title, title with name: "C. d. N. junior". \$ 1.500.-

Only edition, a very rare work on water wheels especially breast-shot waterwheels. Johann Christoph Eiselen (1752-1816) was mining director especially of the Prussian iron works. Part one describes the modernization of a crushing mill through the construction of a new water wheel to improve the output. Part two describes another new water wheel in another company in Prussia (Zehdenick) and beside practical annotations he offers some useful theoretical work & calculations. Among the uses of water wheel technology included the fulling of cloth, rice husking, paper-making, and pulping of sugar cane. The usual method of adapting water wheels for such purposes was to extend the axle and fit cams to it. The cams caused trip-hammers to be raised and then released to fall on the material. Water wheels were also used to pump water (the water wheels on London Bridge). Eiselen also wrote books on peat.- Engelmann pp. 87; Ersch, Lit. der Mathematik... Sp. 816, Nr. 3036; ADB V, 763 and Hamberger/Meusel II, pp. 184 u. XVII, pp. 492; not in Rouse, HWH; not in Roberts/ Trent. COPAC/ OCLC: only Cambridge & Chicago (citing only one plate with 5 fig.)

Entomologische Hefte enthaltend Beiträge zur weitem Kenntniss und Aufklärung der Insektengeschichte. Eine Vorarbeit zu einer künftigen Faune des Departements vom Donnersberge und den angrenzenden Gegenden der Departemente von der Saar, und von Rhein und Mosel. (parts 1-2 in 1 Vol.) Frankfurt, Esslinger, 1803. 8°. (200 x 120 mm). XVI, 119 pp.; 130 pp., 2 Bll. with 3 hand-colored plates by J. Sturm. Half-cloth binding around 1850 with lettered spine, faded, marbled edges, little spotted, else fine. \$ 1.900.-

Rare entomological journal resp. book on a local entomological fauna, all what was published. With contributions by J. J. Hoffmann, J. D. W. Koch, P. Wilbrand, J. Müller and J. M. Linz. The plates by Jacob Sturm show beetles of the genus *Hister unicolor*, *Haltica* and *Dorcatoma*.- Nissen, ZBI 4644.

trying to understand: the whale

Eschricht, Daniel Frederik.

Zoologisch- anatomisch- physiologische Untersuchungen über die nordischen Wallthiere. Erster Theil (= all publ.).- Leipzig: Voss 1849. Folio (380 x 280 mm) XVI, 205 pp. with 15 lithographed plates and 48 text-woodcuts. Contemporary green half cloth volume, rubbed and soiled, outer hinges weak. Unopened, uncut. Still fine. \$ 2.000.-

First edition of a **pioneering study** on cetaceans (whales).

Approximately 2,300 years ago, Aristotle carefully took notes on cetaceans while traveling on boats with fishermen in the Aegean Sea. In his History of animals, Aristotle was careful enough to distinguish between the baleen whales and toothed whales, a taxonomical separation still used today. His achievement was remarkable for its time, because even today it is very difficult to estimate the life-span of advanced marine animals. After Aristotle's death, much of the knowledge he had gained about cetaceans was lost, only to be re-discovered during the Renaissance. Many of the early studies were based on dead specimens and myth. The little information that was gathered was usually length, and a rough outer body anatomy. Because these animals live in water their entire lives, early scientists did not have the technology to go study these animals further. It was not until the 16th century that things would begin to change. Then

cetaceans would be proved to be mammals rather than fish. Not until 1758, when Swedish botanist Carl Linnaeus (1707–1778) published the tenth edition of *Systema Naturae*, were they seen as mammals. Only decades later, French zoologist Georges Cuvier (1769–1832) described the animals as mammals without any hind legs. Skeletons were assembled and displayed in the first natural history museums, and on a closer look and comparisons with other extinct animal fossils led zoologists to conclude that cetaceans came from a family of ancient land mammals. Between the 16th–20th century, much of our information on cetaceans came from whalers. Whalers were the most knowledgeable about the animals, but their information was regarding migration routes and outer anatomy, and only little information of behavior. During the 1960s, people began studying the animals intensively, often in dedicated research institutes. The Danish zoologist, physiologist and anatomist Daniel Frederik Eschricht (1798 – 1863) was known as the authority on whales. He was born in Copenhagen, and studied medicine at Frederiks Hospital, graduating in 1822. He was a student of Francois Magendie in Paris from 1824-1825, composing a thesis on cranial nerves, after which he studied with the most prominent European naturalists including Georges Cuvier. He joined the University of Copenhagen in 1829, becoming Professor of Anatomy and Physiology in 1836.

'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 skillful 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 educationis specierum visibilium dubitatio. Wittenberg, 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 intuentas.' 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.

fishes of the Russian Sea

(Fishes of the USSR; deutsch: Die Fischreichtümer der UdSSR). no date, no place. (Moscow, 1957).

Original gilt printed cloth folder. With 230 plates printed in color title in Russian and lat. Inner front cover with handwritten dedication to the Icelandic minister of fisheries, dated Reykjavik 1957. \$ 2.900.-

Very unusual, technically astonishingly expensive publication, not least in view of the just ended World War II that was devastating for the Russian economy. With a handwritten dedication by a multi-faceted Soviet delegation to the Icelandic Minister of Fisheries and Trade, Lúdvik Jóseþsson (1914-94), who held this post during the first two out of three cod wars (1956-58 & 1971-74). Jóseþsson was a key Icelandic player of the Cod Wars at the time, stating during the 1970s that „the basis for our independence is economic independence“.

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 dyeing- **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 dyeing fabrics, with workers engaged in the specifics of dyeing, 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 Tinc-toria 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.

geological wall-maps for education

Fraas, Oscar.

Geologische Wandtafeln. Die 4 Welten - Alter in geologischen Profilen und Landschaften, nebst übersichtlichen Hilfstabellen zum Studium der Geognosie von Dr. Oscar Fraas, Professor und Conservator am Kgl. Naturalien-cabinet zu Stuttgart.- Ravensburg: Eugen Ulmer, 1871. 8° (205 x 145 mm) (2), 45 pp. text and a publ. folder in half cloth (380 x 600 mm) with printed title on cover to include IV color printed leaves (735 x 580 mm). Fine. \$ 2.400.-

Rare complete set. First edition of Fraas' geological wall maps with text. A second edition of 1880 included a fifth map to paleontology which is not included in this first edition here. The Prospectus (2 Bll.) is included. as the later published text to the fifth map. Oscar Friedrich von Fraas (1824 - 1897) was a German clergyman, paleontologist and geologist. He was also deeply interested in natural sciences, and while a theology student at Tübingen was influenced by geologist Friedrich August von Quenstedt. In 1847 he travelled to Paris, where he attended lectures given by Alcide d'Orbigny and Jean-Baptiste Élie de Beaumont. In 1854 he was named curator of the department of mineralogy and paleontology at the Royal Württemberg museum of natural history in Stuttgart, where he greatly added to its collections of swabian fossil batrachians, reptiles and mammals. With Karl Deffner (1817 - 1877), he conducted a geological survey of Württemberg. In addition to his geological and paleontological studies of Württemberg, he conducted scientific investigations of the Middle East, based on travels to the region in 1864-65 and 1875. As a result of his Middle Eastern travels in Egypt, Syria and Lebanon, he published the two part *Aus dem Orient* (1867, 1878).- Henze II, 273.

water engineering

Gudme, Andreas Caspar.

Handbuch der theoretischen und praktischen Wasserbaukunst. 3 parts in 4 vols.- Berlin: Rucker, 1827 - 1829. 8°. (210 x 120 mm) X, 447 pp., (2); VI, 312 pp., (1); IV, 284 pp.; IV, 404 pp. Engraved plates in a separate atlas (255 x 320 mm) containing 64 (17, 18, 5, 24) engraved plates to all parts. Contemporary half calf, gilt spine in compartments, morocco lettering piece, titles stamped by a military library, else fine. \$ 2.800.-

Very rare („von größter Seltenheit“) work by the royal danish land inspector & engineer: a comprehensive treatise on all aspects of hydraulic engineering. Andreas Kaspar Gudme (1771-1835) presents various possibilities for water architecture on the copper plates. This includes, in particular, bridge construction, but also the construction of pumps and the transport on water. In addition, the construction of tunnels below water is discussed and the water supply of cities. He was born on a small island, began to study theology, before he changed to engineering and worked for 29 years as land & sea inspector in Southern Denmark (now Northern Germany). He travelled into Germany, Austria and Switzerland to review the state of rural economy and hydraulic engineering in those countries. On his return home to Kiel he composed several works on his experience.- KVK: Berlin, Braunschweig, Hannover, Oldenburg, Schwerin, Dresden, Stuttgart, Kiel; COPAC: BL London; OCLC: only Smithsonian, Oklahoma, Iowa (Rouse Collection); Biogr. Univ. VIII, 77; Engelmann 129; Rouse, HWH 287.

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 these 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: Adriana 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.

the most beautiful cra(p)b 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. \$ 18.000.-

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.

Hilbert, David.

Mathematische Probleme, in: *Nachrichten der Königl. Gesellschaft zur Wissenschaften zu Göttingen, Mathematisch - physikalische Klasse* 3 (1900).- Berlin: Weidmann, 1900. 8° (245 x 180 mm) pp. 253-297 (= whole issue: 399 pp, (92), 1 plate). Contemporary half calf, title on spine, fine copy. Ownership inscription of Max (von) Laue on front-fly. \$ 2.500.-

Original edition, first printing of the famous paper. A fine **association copy** of the Journal issue, being from the German physicist & nobel prize-winner **Max von Laue**, who had studied in Göttingen at that time.

First edition of Hilbert's famous and enormously influential address to the International Congress of Mathematicians at Paris in 1900 in which he set forth a list of twenty-three problems that he predicted would be of central importance to the advance of mathematics in the twentieth century.

“Hilbert's problems came in four groups. In the first group were six foundational ones, starting with an analysis of the real numbers using Cantorian set theory, and including a call for axioms for arithmetic, and the challenge to axiomatize physics. The next six drew on his study of (algebraic) number theory, and culminated with his revival of Kronecker's *Jugendtraum*, and the third set of six were a mixed bag of algebraic and geometric problems covering a variety of topics. In the last group were five problems in analysis – the direction that Hilbert's own interests were going. He asked for a proof that suitably smooth elliptic partial differential equations have the type of solutions that physical intuition (and many a German physics textbook) suggest, even though it had been known since the 1870s that the general problem of that kind does not. He made a specific proposal for advancing the general theory of the calculus of variations” (Gray). OOC 320 (*Göttingen Nachrichten* issue); *Landmark Writings in Western Mathematics, 1640 - 1940* no. 57; Hook & Norman, *Origins of Cyberspace* (2002) no. 320; I. Grattan-Guinness, 'A sideways look at Hilbert's twenty-three problems of 1900,' *Notices of the American Mathematical Society* (2000), pp. 752-7; J. Gray, 'The Hilbert problems 1900-2000,' *European Mathematical Society Newsletter* 36 (2000), pp. 10-13.

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. else fine. \$ 2.400.-

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 Wachstum 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 Wachstums 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-oconomische 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 oconomischen 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 Leinwand, 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.

**Sammelband of two important Immanuel Kant first editions,
from the library of Heinrich Wilhelm von Gerstenberg
with his detailed annotations throughout**

Kant, Immanuel.

Critik der Urtheilskraft. Berlin und Libau, Lagarde und Friedrich, 1790 [bound with] KANT, I. Ueber eine Entdeckung nach der alle neue Critik der reinen Vernunft durch eine ältere entbehrlich gemacht werden soll. Königsberg, Friedrich Nicolovius, 1790. Erste Ausgaben. 8vo (193 x 117 mm). LVIII, 476, (1); 126 S. Zeitgenössischer Pappband, berieben. Sauber und fleckenfrei. Provenienz/Provenance: Heinrich Wih. v. Gerstenberg (1737-1823); Stempel "Bibliothek der Breklumer Mission" auf dem Titelblatt. Ein Schreiben des "Zentrums für Mission und Ökumene ... Breklum" liegt bei, in dem klargestellt wird, dass keine Ansprüche auf das Exemplar erhoben werden. \$ 30.000.-

Durchgehend mit Anmerkungen von Heinrich Wilhelm von Gerstenberg (1737 Tondern - 1823 Altona). Die umfangreiche Bibliothek Gerstenbergs wurde im Oktober 1824 in Altona versteigert. Die Royal Library in Kopenhagen scheint als einzige Bibliothek ein Exemplar des Auktionskataloges zu besitzen. Auf dem Titelblatt dieses Kataloges ist gesondert angegeben, daß in der Auktion "von No. 1522 bis 1677 eine Sammlung derjenigen [Werke]" versteigert wird, "die von dem gelehrten Herrn Besitzer der Bibliothek mit eigenhändig am Rande beigeschriebenen Zusätzen und merkwürdigen Anmerkungen bereichert sind." Unter der Nr. 1575 ist der vorliegende Sammelband dort verzeichnet. Gerstenberg: Dramatiker (Ugolino, 1769), Lyriker (Tändeleven, 1759, "zählt zu den bedeutendsten literarischen Zeugnissen des deutsche Rokoko" (KLL)), Literaturkritiker und -theoretiker, formulierte als Erster wesentliche Momente des Geniebegriffs, gilt als Entdecker Shakespeares für die deutsche Literatur (14. - 18. Brief der Briefe über

die Merkwürdigkeiten der Litteratur, 1766/70). 1806 wurde er durch die Vermittlung Jacobis Mitglied der bayerischen Akademie der Wissenschaften, 1815 Ehrendoktor der Universität Kiel. 1786 ließ sich Gerstenberg in Altona nieder. Von der Mitte der 80er Jahre bis zu seinem Tod hat er sich dann im wesentlichen mit der Philosophie Kants und ihren Kritikern auseinandergesetzt. Unter den annotierten Exemplaren, die im erwähnten Auktionskatalog verzeichnet sind, ist Kant der am häufigsten vertretene Autor; unter den zeitgenössischen Philosophen sind Fries, Kiesewetter, Schelling, Fichte, Herder, Reinhold, Jacobi, Bouterwerk, Jakob, Schultz, Hume, Home von ihm durchgearbeitet und mit beigeschriebenen Zusätzen und merkwürdigen Anmerkungen bereichert. Von seinen philosophischen Arbeiten hat Gerstenberg nur zwei, beide ohne Angabe des Autors, veröffentlicht: Die Theorie der Kategorien, entwickelt und erläutert (1795), und Gemeinschaftliches Princip der theoretischen und praktischen Philosophie (1802), (Adickes, German Kantian Bibliography, 1375 u. 1376). Seine übrigen philosophischen Entwürfe, Notizen, Vorarbeiten zu weiteren Werken hat er vernichtet. Umso interessanter dürften Exemplare wie das vorliegende sein, wo die umfangreichen handschriftlichen Zusätze Gerstenbergs seine philosophischen Überlegungen zu rekonstruieren ermöglichen.

“German poet and critic ... In the course of his long life Gerstenberg passed through many phases of his nation's literature. He began as an imitator of the Anacreontic school (Tändeleien, 1759); then wrote, in imitation of Gleim, Kriegslieder eines dänischen Grenadiers (1762); with his Gedicht eines Skalden (1766) he joined the group of "bards" led by Klopstock. His Ariadne auf Naxos (1767) is the best cantata of the 18th century; he translated Beaumont and Fletcher's Maid's Tragedy (1767), and helped to usher in the Sturm und Drang period with a gruesome but powerful tragedy, Ugolino (1768). But he did even better service to the new literary movement with his Briefe über die Merkwürdigkeiten der Literatur (1766-70), in which the critical principles of the Sturm und Drang - and especially its enthusiasm for Shakespeare - were first definitely formulated. In later life Gerstenberg lost touch with literature, and occupied himself mainly with Kant's philosophy.” (Encyclopedia Britannica, 1911)

Please see sample illustrations on the next few pages.

hydraulics

Karsten, Wenceslaus Johann Gustav.

Abhandlung über die vortheilhafteste Anordnung der Feuersprützen. Nebst noch einer Abhandlung über die allgemeine Theorie von der Bewegung des Wassers in Gefäßen und Röhren.- Greifswald, A. F. Röse, 1773. 4to (225 x 175 mm). (10), (2), 215 pp. with 5 folding engraved plates. Contemporary paper card boards, old library label on spine, spine sun faded, title stamped as well as all plates recto. But a fine copy. EUR 1.900.-

Price-winning essay by the Danish Academy of Sciences on fluids mechanics & dynamics and fire engines.

The book discusses the mathematical theory on the optimum arrangement of jet-engines, an important topic in the 18th century where complete cities often were destroyed by fires and in the second part is devoted to the Archimedean screw, one of the pumping machineries that were mainly used for drainage of water from swamps. Hydraulics is here treated in Bernoullian terms based on Karsten's excellent relations to Euler.

Wenceslaus Johann Gustav Karsten (1732 – 1787) was a German mathematician. Karsten went in 1754 to Rostock to study for his doctorate, and he was appointed there as a privatdozent. Aepinus had not yet left Rostock to Berlin when Karsten took up his post and was able to advise him about teaching. He also introduced Karsten to Euler and the two exchanged a series of letters (38 in all) between 1758 and 1765. Realising that his chances of a professorial appointment at Rostock were small, Karsten applied for various positions. His financial situation at this time was extremely difficult. However his luck changed when the professor of logic at Rostock died leaving a professorial vacancy. Karsten was appointed as professor at the University of Rostock in 1758 but the university suffered problems a couple of years later as a result of a dispute between the city of Rostock and Duke Friedrich of Mecklenburg. The Duke split the university into two parts, one to remain in Rostock, the other to be set up in Bützow, about 25 km south of Rostock, and named the Friedrichs University of Bützow. Karsten was transferred to Bützow where he was rector of the university for a semester in 1765 and again in 1768-69. This was a difficult period in Mecklenburg since the Seven Years' War, which involved all the major powers of Europe, had been fought from 1756 to 1763 and it had left the region very impoverished. This meant that Karsten had to teach in a university in which, certainly at first, there was no library and not even lecture rooms. Karsten had to teach classes of students in his own home. In 1765 Karsten was involved in the publication of Euler's *Theoria motus corporum rigidorum*. He wrote an important article in 1768 *Von den Logarithmen vermeinter Grössen* in which he discussed logarithms of negative and imaginary numbers, giving a geometric interpretation of logarithms of complex numbers as hyperbolic sectors, based on the similarity of the equations of the circle and of the equilateral hyperbola. Karsten was appointed to the University of Halle in 1778 to fill the chair which was left vacant on the death of Segner in October of the previous year. Karsten filled this position until his death in 1787. Kant used Karsten's books for his lecture on physics.- Poggendorff I, 1225; Rouse, Historic Writings Hydraulics 191; not in Roberts/Trent; Hager (ed.) Hydraulicians in Europe 1800-2000, II, 1103; OCLC cites copies at Linda Hall, NY Public, Iowa (Rouse copy)

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 instructions to the binder in black ink to the outer and inner margins respectively. The much more extensive 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, proprietates, vires effectuumque prodigiosorum causae, novae & multiplici experimentorum exhibitione enucleantur; instrumentorum acusticorum, machinarumque ad naturae prototypum adaptandarum, tum ad sonos ad remotissima spatia propagandos, tum in abditis domorum recessibus per occultioris ingenii machinamenta clam palamve sermocinandi modus & ratio traditur, tum denique in bellorum tumultibus singularis hujusmodi organorum usus, & praxis per novam phonologiam describitur.- 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 waterstaining 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 response 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, Thuringia (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 anacampctica*. 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 phonocampcticum (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 Wolfheim.

Peep Box & instruments for accurate geometric drawings

Kohlhans, Johann Christoph (1604-1677).

Neu-erfundene mathematische und optische Curiositäten, bestehend so wohl in einem sattsamen Unterricht ...; nechst deutlichem Entwurff in selbiger benöthigten Linien durch ein sonderbahres Vortheil zu erfinden; als auch in einer ganz neuen und bewährten Art, allerhand ohne Rechnung mit geringer Mühe durch ein kleines Instrument genau und künstlich zu messen; und dann in beygefügtten unterschiedlichen Optischen Raritäten und andern zu Perspectiven und so genandter finstern Kammer gehörigen merckwürdigen Sachen ... Leipzig: Friederich Lanckisch Erben; Jena: Johann Nisius, 1677. Quarto (196 x 158 mm) (16), 320 pp., (4) with 25 double page engraved plates, title printed in red and black. Brown-spotted throughout due to paper quality (**bound with**) **Bramer, Benjamin** (1588-1648/1649). Apollonius Cattus, oder Kern der gantzen Geometriae in drey Theil. In dessen ersten Theil Euclidis Geometrische demonstrationes erhoben, und zu ihrem objecto perfectionis angefüret werden... De sectione cylindri... Anhang eines Berichts von M. Johsten Bürgi Geometrischen Triangular Instru-ment, zu gar leicht kurtzen, und doch gewissen Land und Feldmessen... 3 volumes in 1.- Kassel: Johann Ingebrand; Marburg: Johann Heinrich Stock, 1684. (14), 102 pp.; (2), 61 pp., (1); (8), 22 pp., (2) with engraved frontispiece in vol.1, 30 plates in vol.2 (25 double-page or folding), and 21 in vol. 3. Old vellum, modern folding cloth box, text spotted and browned. \$ 6.800.-

First edition. This work discusses surveying and optics, particularly a sort of the camera obscura (Peep-Box; Guckkasten) and telescopes. Kohlhans devised two very complex sectors for use as an aid in surveying and fortification problems. The sectors are noteworthy as they contain not only the usual types of scales, but also have built-in protractors, plane and diagonal scales. In order to get all the scales on a sector, Kohlhans had to create them with wide legs. He also has to use judicious positioning of the scales, e.g. with the shorter scales engraved near the outer edge.

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.

Die erste nachweisbare Beschreibung im deutschen Sprachraum des Guck-Kastens lieferte 1677 der Coburger Mathematikprofessor Johann Christoph Kohlhans (1604-1677) in Neu-erfundene Mathematische und Optische Curiositäten. Ihm war auch bekannt, daß der Strahlengang im Guckkasten umgekehrt zu dem in der Camera obscura verlief. Es sollte noch einige Jahre dauern, bis das Gerät populär wurde. Es setzte sich erst zu Beginn des 18. Jahrhunderts durch. Kohlhans beschreibt hier einen „Raritätenkasten“ (Guckkasten; Peep-Box; Boite optique; rare kiek): ein Schau- und Betrachtungsgerät, das einen voyeuristischen Blick in sein Inneres erlaubt. Durch die lupenartige Linse im Kastenloch sieht das Auge Ansichten - Abbilder der Welt -, die naturgetreu gezeichnet sind und nicht, wie bei der Camera obscura, durch Lichteinwirkung auf die gegenüberliegende Wand geworfen werden; denn irgendwann ist es

den Menschen eingefallen, von der Linse her in eine Camera obscura hinein zu gucken. Durch das Einsetzen des Vergrößerungsglases und der geringen Entfernung zum Bild in einem dunklen Umfeld ergibt sich eine verstärkte räumliche Wirkung. Erste Formen der Guckkästen entstanden zur Zeit der Renaissance, einer Zeit, in der auch die Gesetze der Zentralperspektive erkannt wurden. Der eigentliche Guckkasteneffekt ergab sich erst durch die Art, wie die Guckkastenblätter gezeichnet waren. Beim Hineinsehen eröffneten sich dem Betrachter perspektivische Ausblicke von bislang unbekannter Tiefe. Professionelle Vorführer zogen mit solchen Kästen durch die Lande und lockten das Publikum an. Gegen Entgelt wurde der Blick auf die ‚Raritäten‘ freigegeben und, um das visuelle Erlebnis noch wirkungsvoller zu gestalten, durch ergänzende Kommentare des Guckkästners zusätzlich dramatisiert. Der Guckkasten war ein Informationsverbreiter mit hohem Unterhaltungswert, der auch auf Jahr- und Volksmärkten zum Einsatz kam. In wohlhabenderen Kreisen etablierte sich der Guckkasten außerdem als pädagogisches Spielzeug oder als Hilfsmittel zur Erkundung ferner Welten. Die seltsame Mischung aus Magischem und Realem bescherte dem Guckkasten eine nachhaltige Popularität. (Neckes)

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

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

early medical educational & zoological film

[Education Film Album].

Arnold **Kühnemann** Film. Aus unserer Produktion (from our Production).- [Berlin]: (Arnold Kühnemann-Film), [late 1920's]. Folio (340 x 500 mm) With around 500 mounted original photographs (90 x 120 mm), a few larger (190 x 230 mm) on 50 sheets of heavy paper boards. Original gilt printed full leather album with gilt edges. Light sunning to front, occasional wear. Cockling to mounts, prints in excellent condition with the exception of a few which has some silver-mirroring to the edges. Overall in fine to excellent condition.

\$ 4.500.-

A fine unique photography album by the film producer Arnold Kühnemann Film from the late 1920's showing their film production in selection. Arnold Kühnemann (Königswusterhausen near Berlin) specialized in producing scientific, educational and instructional films between 1922 and 1935, mostly for the agri-culture and veterinary industries. He was a learned farmer and veterinary, and a founding member of the Zoological Society of Germany, and owner of a fur farm near Berlin. He was active in film politics as „Verbandsvorsitzender“ also after 1933, but committed suicide due to the film politics of the Nazi (see Hans Nachtsheim, 1951). However as a conservative he supported the new film politics under the Nazi and also seems to have produced a sort of propaganda film like „Kamerad Pferd ist krank. Ein Film von der Betreuung des Pferdes im Heere“ (1942). Filmportal.de list only films until 1935. This album commemorates different films from his production, dated in „filmportal.de“ from 1922 to 1926: „Die Gangarten des Pferdes“ (different horse paces); „Wie ein Schaf geboren wird“ (birth of a sheep); „Vom Hamster“ (On the hamster); Zwanzig Jahre Kulturarbeit auf Domäne Friedeburg“, „Das Münsterland“ (Münster region); „Westfalens rotbuntes Niederungsvieh“ (German Red Pied), „Das Karakulschaf“ (Qarakul); „Warm-blutgestüt Klein Luckow“ (stud farm Klein Luckow), „Die ansteckende Blutarmut und ihre Bekämpfung“ (Anaemia and veterinary medicine); „Die Schafräude und ihre Bekämpfung“ (Scabies); „Wie ein Pferd beschlagen wird“ (how to hoof a horseshoe); „Was der Floh erzählt“ (flea), „Wanzen“ (bugs); „Von den Läusen und ihrer Bekämpfung“ (how to fight against lice), „Kaltblutgestüt Schloss Löbnitz“ (horse breeding at Castle Löbnitz); Gestüt Tornow (horse breeding at Tornow), ... „Schafzüchter der Provinz Brandenburg“, „Die deutsche Krankenversicherung“ (german health care). The film on the birth of a sheep was not allowed for children to look at, only in school or with a scientific adviser. A similar album on one of Kühnemann's films: Wut (rabies) was offered by an english colleague.

famous early steel bridge

Lentze, Johann Carl Wilhelm.

Die im Bau begriffenen Brücken über die Weichsel bei Dirschau und über die Nagat bei Marienburg. Entworfen und in der Ausführung geleitet von Lentze. Herausgegeben von dem Königlichen Ministerium für Handel, Gewerbe und öffentlichen Arbeiten.- Berlin: Ernst & Korn, 1855. oblong Elephant. folio (650 x 800 mm) (4) pp. text & 19 lithographed plates (of which four are tinted). Contemporary half calf, morocco lettering piece on cover, fine.

\$ 6.000.-

Description of a true milestone in the development of civil engineering, the first iron tubular (box) bridge in Germany and the largest beam-type bridge in continental Europe then, inspired by Stephenson's Britannia - Bridge and built between 1850 to 1857.

Whereas the first railway bridges in Germany were built of timber and stone, the River Weichsel (Vistula) crossing at Dirschau (Tczew) represents a departure because it was the first iron railway bridge with six spans each of 131 m. Carl Lentze (1801-1883), chief engineer of the Wisla (Vistula) Bridge and former water engineer at the Rhine Dept., undertook two study trips to Great Britain where he visited several construction sites including the sites of the Britannia Bridge in Wales and a lattice bridge construction site in Ireland. He also read reports of the wooden lattice bridges then being built in the United States. After he completed his research, Lentze decided to use a lattice truss design instead of the wrought iron tubular design of the Britannia. This would lower both the weight and wind drag of the bridge. As opposed to Stephenson, Lentze used a lighter truss construction, which better resists wind forces. The superstructure was formed of three two-span space trusses with parallel chords and a dense system of diagonal members. The distances between the axes of the piers are 6 x 130,88 m. The total length of the bridge is 785,28 m. The structural system of the girders was formed of a dense riveted truss of flat bars. The supports, adorned with towers, were made of stone and designed by the famous German architect Friedrich August Stüler. The foundation was also made of stone and protected by steel sheet pile walls. Railway engineer Rudolf Eduard Schinz (1812-1855), in charge of the technical office, was responsible for setting up the building site complete with plant and machinery for erecting the iron superstructure. The result was, when opened on October 12, 1857, the Bridge at Tczew became the first long span beam bridge on the European mainland.- Lit.: Kurrer. The History of the Theory of Structures: From Arch Analysis to Computational ... 2.4.6.; Handbook of International Bridge Engineering (2004), 599.

first western eyewitness to birds of paradise

Lesson, (Rene Primevere)

Histoire naturelle des oiseaux-mouches (**with:**) Histoire naturelle des colibris, suivie d' un supplément a l'histoire naturelle des oiseaux mouches (**with:**) Les trochilidées ou les colibris et les oiseaux- mouches (**with:**) Histoire naturelle des oiseaux de paradis et des épimaques. 4 vols.- Paris, Arthus Bertrand, 1829-1835. Small Quarto (229 x 144 mm) xlvii, 223 with 86 color-printed engraved plates finished by hand; x, 196 pp. with 66 color-printed engraved plates finished by hand; iv, xliii, 171 pp. with 66 color-printed engraved plates finished by hand; viii, 34 pp., [2], 248 pp. with 43 color-printed engraved plates finished by hand. Uniformly bound in nineteenth century red morocco, sides with ornate roll-tool borders, stylized floral cornerpieces and floral centrepieces, spines gilt with repeated floral pattern in 3 compartments, white watered silk end-papers, half-titles, spotting to text leaves, some plates with varying degrees of oxidization or browning. \$ 6.500.-

A HANDSOMELY BOUND SET of FIRST EDITIONS of LESSON'S monographs on the humming-birds and birds of paradise from tropical Central & South America, Moluccas and New Guinea with excellent plates by Pretre, Oudart and Bévalet, among the best French natural history artists of their time.

Wood calls them: „fundamental and well-known classic treatise on humming-birds“.

Some of the first specimens of the birds of paradise to reach Europe, offered by New Guineans as gifts to Western kings, arrived in Spain in 1522 aboard one of Magellan's ships. It was rumored that these extraordinary birds came from the heavenly realms, where they soared through paradise without wings and never touched the earth. (The legend may have originated in the fact that wings and feet were often trimmed from trade skins.) That is why they were given the scientific name *apoda* by Linnaeus, which means "footless."

The sight of the birds in the wild amazed early travelers: "My gun remained idle in my hand as I was too astonished to shoot," admitted naturalist René Lesson, who visited New Guinea in 1824 and brought back the first eyewitness account. "It was like a meteor whose body, cutting through the air, leaves a long trail of light." Their names bespeak the wonder they inspired: superb bird, magnificent bird, splendid bird.

René Primevère Lesson (1794–1849), French surgeon, naturalist, ornithologist, and herpetologist, entered the Naval Medical School in Rochefort at the age of sixteen. He served in the French Navy during the Napoleonic Wars, rising to the post of second surgeon on the *Regulus* before embarking as pharmacist and botanist on Duperrey's round-the-world voyage of *La Coquille* between 1822 and 1825. On the voyage he was responsible for collecting natural history specimens with his fellow surgeon Prosper Garnot and officer Dumont d'Urville. Lesson's account of the voyage contains scientific details and also several vocabularies and grammatical analyses, particularly of the Maori language but also of languages of New South Wales. The illustrations include plates of views, Indigenous objects and tools, as well as coastal profiles and hand-colored plates of the kangaroo, kiwi, possum, platypus, wombat, and several birds of paradise (Lesson is said to have been the first naturalist to see live birds of paradise in the Moluccas and New Guinea). The *Coquille* visited Sydney in 1824, remaining there from 17th January to 20th March. Bungaree visited Duperrey; Lesson described their encounters in some detail. Lesson and Dumont d'Urville travelled over the Blue Mountains to Bathurst, Lesson reporting that 'we climbed a high eminence where the road formerly passed, for today it winds on the mountain side taking an easy grade. M. d'Urville and I climbed this old road with difficulty and we enjoyed the view of enormous precipices, deep chasms, in short the ruins of nature, which impressed us deeply. On this wind-beaten height stand rocks of various shapes. One of them bore the epitaph of a young man who died there in 1822, and whose still fresh grave will make me call this mount Mount Sepulchre.' On returning to Paris, Lesson spent seven years preparing the

vertebrate zoological section of the official account of the expedition, *Voyage autour du monde sur La Coquille* (1826–39). During this time he also produced *Manuel d' Ornithologie* (1828), *Traité d' Ornithologie* (1831), *Centurie Zoologique* (1830–32) and *Illustrations de Zoologie* (1832–35). He also compiled several monographs on hummingbirds and one book on birds of paradise as well as describing many new species of amphibians and reptiles. His experience as a ship's surgeon resulted in his two-volume *Manuel d'Histoire Naturelle Médicale et de Pharmacologie* (1833), intended as a handbook for all naval surgeons. In 1839 he became Chief Pharmacist for the Navy at Rochefort „Particularly significant was his work in ornithology, especially his writings on hummingbirds and birds of paradise“ (DSB).- Anker 291, 293, 294, 296; Nissen IVB 547-550; Wood 433; Fine Bird Books 90; Provenance: Dr Baumann, Utrecht, 1954.

Tsar Peter's instrument maker

Leutmann, Johann Georg.

Instrumenta Meteorognosiae Inservientia, I. Thermoscopia, II. Baroscopia; III. Hygroskopium; IV. Anemometrum, V. Plagoscopium, VI. Hyetometrum, quorum constructio in plurimis correctata ...- Wittenberg: Sumptibus B. Godofr. Zimmermanni, 1725. 8vo (168 x 105 mm). 14 Bll. incl. frontispiece, 175 pp., (1) with mezzotint frontispiece, title printed in red and black, head-pieces, tables, 16 engraved plates, partly folding. Contemporary half vellum, rubbed & chipped, some browning, but a fine copy in original binding. \$ 3.500.-

First edition, rare book on instruments, especially for meteorology. Johann Georg Leutmann (Leitmann) (1667 - 1736), a learned and versatile glass cutter & instrument maker from Wittenberg, was one of the academics from Germany, who worked at the St. Petersburg Academy of Sciences. After completing his studies at Wittenberg University, he worked as a pastor in nearby Dabrun, where he set up his own mechanical workshop. At that time he wrote a book on the basics of heating technology and demanded an effective heating system with the lowest possible consumption of fuels. Also in 1718, his book on watches appeared, which aroused the interest of tsar Peter I who invited Leitmann to St. Petersburg in 1726. He became Professor of Mechanics and Optics at the Academy of Sciences there. He devoted himself to the construction of various apparatuses and instruments like measuring instruments, pumps, microscopes, binoculars and rifles.- VD18 11412674 (Note; the plates are numbered I-XI, but Va-f and VI.a+b. Plate III is bound later as listed in binder's report).- COPAC: BL London, Royal Society; OCLC: Harvard, National Oceanic; Madison, Wisc.; Vancouver.

Kirch's or Newton's Comet

Lips(en), Friedrich Gustav.

Ohnvorgreifliche Gedancken / über den im Monath Novemb(er). und Decemb(er). An(no). 1680. /und 1681. im Jenner erschienenen/ Cometen / nebenst vier erörterten Fragen über das Vorgestellte / Bedencken von Cometen; / zum andernmahl vermehrter herauß gegeben von / Friedrich Lipsen/ des Rotenburg. / Gymnasii Rectore.- Rotenburg ob der Tauber: druckts und verlegt Friedrich Gustav Lipß, 1681. Quarto (204 x 163 mm) 4 Bll. (8 unnumbered pages) with woodcut on title, showing the comet strait above Rothenburg ob der Tauber. Backstrip. \$ 2.800.-

Exceedingly rare, revised edition of a pamphlet on the comet of 1680 and on the comet of 1681. The author was director of Rothenburg ob der Tauber higher school. There are two variants published in 1680 (on the comet of 1680) and all three editions have a different title woodcut.

The „Great Comet of 1680 has the distinction of being the first comet discovered by telescope. The comet was discovered by Gottfried Kirch on 14 November 1680, new style, and became one of the brightest comets of the 17th century – reputedly visible even in daytime – and was noted for its spectacularly long tail. Aside from its brilliance, it is probably most noted for being used by Isaac Newton to test and verify Kepler's laws. This is actually ironic considering John Flamsteed was the first to propose that the two bright comets of 1680/1681 were the same comet, one travelling inbound to the Sun and the other outbound, and Newton originally disputed this. Newton later changed his mind, however, and then, with Halley's help, purloined some of Flamsteed's data to indeed verify this was the case without giving Flamsteed credit.- VD17 12: 641538V; Brüning 1318 (1680 ed.); Houzeau - Lancaster 5770; Robinson no. 33; Z&K XXXI, 851; KVK: Erlangen, München; OCLC: only NYP; COPAC: only National Library Scotland.

„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 de 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-foot refractor and a 2-foot 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. Petersburg 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.

(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 periodic law- an extremely rare annotated copy

Mendeleev, Dmitry Ivanovich.

[in Cyrillic:] *Osnovy Khimii* [Principles of Chemistry].- St Petersburg, (Tovarishchestvo 'Obshchestvennaya Pol'za', for the author), 1869-71. 5 parts in 2 vols., 8vo, pp. [ii], [i-] iii [-iv, with the periodic table], 816; [iv], 951, [1], with a large folding table in vol. II and numerous wood-engraved illustrations in text; small restoration to inner margin of half title to volume II; the sheets of one gathering in the same volume fed askew through the press during the printing process, causing misalignment of the text on recto and verso with loss of pagination numerals and one headline on one leaf, and with a couple of words minimally shaved; the first leaf of text in volume I with a long tear (repaired); the fragile folding table laid down; a few spots or light stains; otherwise a very good copy in contemporary Russian calf-backed marbled boards, rebaked with the original spines laid down; corners and edges a little worn; red stamps 'Biblioteka A. P. Mikhnevich' at or towards the end of either volume; annotated in pencil throughout (see Provenance below). \$ 65.000.-

Very rare first edition - and extremely so annotated as here – of Mendeleev's path-breaking work containing the first appearance of the periodic table of the elements and 'a fundamental milestone in the literature of modern chemistry' (Neville).

'Mendeleev was a Russian chemist whose name will always be linked with his outstanding achievement, the development of the periodic table. He was the first chemist to understand that all elements are related members of a single ordered system. He converted what had hitherto been a highly fragmented and speculative branch of chemistry into a true, logical science ... 'According to Mendeleev the properties of the elements, as well as those of their compounds, are periodic functions of their atomic weights (relative atomic masses). In 1869, he stated that "the elements arranged according to the magnitude of atomic weights show a periodic change of properties" ... 'Mendeleev compiled the first true periodic table, listing all the 63 elements then known. Not all elements would "fit" properly using the atomic weights of the time, so he altered iridium from 76 to 114 (Modern value 114.8) and beryllium from 13.8 to 9.2 (modern value 9.013) ... Also, in order to make the table work Mendeleev had to leave gaps, and he predicted that further elements would eventually be discovered to fit them. These predictions provided the strongest endorsement of the periodic law ... 'Far-sighted though Mendeleev was, he had no notion that the periodic recurrences of similar properties in the list of elements reflect anything in the structure of their atoms. It was not until the 1920s that it was realized that the key parameter in the periodic system is not the atomic weight but the atomic number of the elements - a measure of the number of nuclear protons or electrons in the stable atom. Since then great progress has been made in explaining the periodic law in terms of the electronic structures of atoms and molecules' (Hutchinson Dictionary of Scientific Biography pp. 475-7). 'Mendeleev's work toward the Osnovy khimii thus led him to the periodic law, which he formulated in March 1869: "Elements placed according to the value of their atomic weights present a clear periodicity of properties". Mendeleev's first report of his discovery was "Opyt sistemy elementov, osnovannoy na ikh atomnom vese i khimicheskom skhodstve" ("Attempt at a System of Elements Based on their atomic weight and chemical affinity" (DSB).

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.

„Batavian drops“ and beyond

Montanari, Geminiano.

Lezione academica havuta nell' Academia di S.A. Reale in Torino il giorno 5 marzo 1678 dal dot-tore Geminiano Montanari modanese. sopra le controversie letterarie passate fra il dottissimo signore N.N. e lui. Aggiuntovi gl' Avvisi publicati in Torino dal medesimo sig. N.N. e le considerazioni dell'autore sopra i punti letterarij quivi contenuti.- Turin & Bologna: Manolesi, 1678. Quarto.(8), 46 pp., (2 blank) with one engraved plate. Contemporary cardboards, manuscript title on spine, pastedown in nicely colored paper. Manuscript initials on half title. \$ 3.900.-

Rare first edition, the last word in a long debate about capillarity with Donato Rossetti.

Montanari's text was written in the context of the dispute with Donato Rossetti (1633-1686), the author of the Avvisi, over the question of the weight of bodies and atmospheric pressure. Even though they both had embraced the Galilean physics, the two scientists were perched on contrasting positions. After ten years of constant disputes, the two finally decided to meet in Turin under the auspices of Maria Giovanna of Savoy (an italian „Merkel“ ?) to give public demonstration of their respective theories. The experiment, however, was not conclusive, and both scientists published the results and continued arguing their case.

„Around the middle of the 17th century a strange object - almost a toy - came to the attention of scientists. It came from Batavia and consisted of small drops „of glass or crystal of any paste or color, white, red, turquoise, or yellow“. They were made by dropping molten glass into cold or trepid water, taking care that the drops came out with a bulb and a thin tail, sometimes very long. On being removed from the water, some of these shattered at once; „others blow up shortly afterwards, others endure for some hours or some days, and others last for months.“ Francesco Redi, from whom these words are taken, tells of receiving a hoard „of those wrought at Hamburg“ from the Grand Duke of Tuscany. One drop promptly exploded. But the most interesting experiment consisted of breaking one of the drops near its end: then the whole drop shattered into pieces, some very small, some larger. The size of the pieces, Redi found, depended on the temperature and composition of the liquid in which the glass had been submerged. ... What could cause such curious

behavior? Of course, the 17th century knew too little to arrive at an adequate explanation of such a complex phenomenon. In this case, just as in others considered by Galileo, experimentation acquired an unusual role: rather than confirming hypotheses or establishing theories, it became the source of questions that animated speculation. Some of the explanations spilled over into fantasy. The hypotheses offered were completely erroneous, but they were fruitful. Sometimes the hypothesis was incorrect, but it led to unrecognized truths which would be confirmed by future experiments. This is what happened in the case of the Batavian drops and in the dispute between Donato Rossetti, Prof. of the University of Pisa and the Modenese astronomer & physician Geminiano Montanari about the causes of the phenomenon of capillary action and the existence of atoms. Rossetti immediately convinced himself that the consideration of the atomic structure of bodies would lead to a perfect clarification of the phenomenon of the batavian drops. Rossetti's central idea was that atoms have „poles“ which are the centers of fields of attractive or repulsive forces. He calls himself not an atomist, but a „polist“. Poles can explain anything, he believes: upon this principle Rossetti intends to base his atomistic interpretation of the phenomenon of light and heat and capillarity. (Benvenuto) Geminiano Montanari, on the other hand, also made observations on capillarity and other problems in statics, and suggested that the viscosity of a liquid depended on the shape of its molecules. In the period shortly after Galilei, experimentalists like Montanari were engaged in a battle against the more mystical views of Donato Rossetti. The Modenese astronomer & lens-maker Geminiano Montanari (1633 – 1687) was a proponent of the experimental approach to science. He is best known for his observation, made around 1667, that the second brightest star in the constellation of Perseus varied in brightness. Montanari graduated from the University of Salzburg. In 1662 or 1663 he moved to Bologna, where he drew an accurate map of the Moon using an ocular micrometer of his own making. In 1669 he succeeded Giovanni Cassini as astronomy teacher at the observatory of Panzano, near Modena. Montanari's observations of the great comet of 1680 are mentioned twice in the third volume of Newton's *Principia*. KVK: only Bonn, Hannover; COPAC: only Royal Society; OCLC: only Cornell (but with a Torino printer & only 14 pp.); Lit.: Alberto Vanzo. Experiment and speculation in seventeenth-century Italy: The case of Geminiano Montanari; in: *Studies in History and Philosophy of Science*, part A, vol. 56 (2016), 52-61. Edoardo Benvenuto. An introduction to the History of Structural Mechanics I, 209-217; Gomez Lopez. *Le passioni degli atomi* 1997. pp. 160-61; Riccardi II, 173.

Optics, Experiments & Wonder

Porta, Giovan Battista della.

Magiae naturalis libri XX. Naples: Orazio Salviani, 1589. 2° (291 x 206 mm). 8 Bll., 303 pp. Title within wide woodcut border, author's medallion portrait on title verso, 21 woodcut illustrations and diagrams in text, woodcut head- and tailpieces, and initials. Brown stain in inner upper corner of first gathering, affecting woodcut border on title, some browning and spotting. Contemporary vellum in patterned slip-case. Provenance: a few marginalia. \$ 6.000.-

Rare and best edition, the first complete edition.

The second enlarged version (now the complete text in twenty books),- an augmented version of a work first published in four books in 1558: „a storehouse of very miscellaneous lore“ (Partington).

„Galileo's main sources for optics were Ausonio's *Theorica speculi concavi* and della Porta's *Magiae naturalis* (1589) and *De refractione* (1593).“ (Valleriani 64)

The experimental research in optics (pp. 259-286) and other fields by the Italian natural philosopher Giovanni Battista Della Porta (1535?—1615) was undermined by his credulous preoccupation with magic and the miraculous. His major work is *Magia naturalis* (4 books, 1558; „Natural Magic“; 2nd ed., in 20 books, 1589), in which he treats the wonders and marvels of the natural world as phenomena underlain by a rational order that can be divined and manipulated by the natural philosopher through theoretical speculation and practical experiment. The work discusses such topics as demonology, magnetism, and the camera obscura (prototype of the camera), which made della Porta one of the pioneers in the use of the lens.

As Mortimer notes, the scrollwork title border in four parts, the upper piece containing Porta's device of a lynx, had been designed for Porta's *Phytognomica*, but 'it is probably its appearance in the *Magia* that provided the inspiration for the emblem of the Accademia dei Lincei ... The 1588 text was Della Porta's earliest published work, and the 1589 volume is essential to an understanding of Della Porta and the science of his day'.

„A large part of Porta's philosophical speculation is contained in the two versions of his *Magia naturalis* (1558, 1589), crystallized in the persona of the natural magus. Porta seeks to avoid all religious topics, as well as even the remotest hint of ceremonial magic; other than in the third book of Heinrich Cornelius Agrippa of Nettesheim's (1486–1535) *De occulta Philosophia*, for instance, there are no instructions for prayers, fasting, or invocations (Klaassen 2013). Porta's magic is thus less a way to improve one's own mind or to communicate with divine forces, and more a means to manipulate objects and human beings with crafty tricks. Porta developed this secular approach to magic in the face of ecclesiastical prosecution, for it seems that he was condemned for exercising ceremonial magic (Zambelli 2007). Porta's magus is a decidedly male figure who unites the physical dexterity of the trickster, the experience of the alchemist, the erudition of the humanist, the astrologer's command of mathematics, and the intuitive knowledge of the psychic medium in order to embody a superhuman, ideal man capable of manipulating everything and everybody. The magus must be talented, rich, educated, and hard-working; magic is the most noble part of philosophy for Porta. Instead of a priest or metaphysician in quest of the divine—as in Pico della Mirandola or John Dee—, Porta's magus is thus depicted as an artifex (a craftsman or mastermind) who knows how to manipulate the natural and occult properties of certain

bodies. Here, the attractive power a magnet exercises on iron is taken as a paradigm: the speculation is that all bodies have an inherent property to attract certain other bodies. According to Porta, these qualities are occult because their workings cannot be grasped by our intellect. Yet he infers that occult properties derive from formal, not material causes —partly because a very small quantity of matter often may have an enormous effect. Magic is therefore a specific science of natural objects (animals, herbs, stones), the servant or minister of nature. (Stanford Encyclopedia Philosophy).- Mortimer/Harvard Italian 400; Riccardi I(ii) 307; Partington II, 17; Wellcome I, 5184.

Manuscript - Geometry of War

Pithon (or Python), Joao Bento.

Descricao do novo pantómetro de arta e explicao das operacoens q(ue) com elle se podem fazer. ... Portuguese manuscript on paper. No date or place (Porto, Lisboa early 1750-1760's). 4to (210 x 170 mm). (5) leaves (3 blanks), 17 numb. leaves with manuscript text and 7 finely executed coloured wash-colour drawings with the instrument, its parts and function. \$ 9.500.-

A fine Portuguese manuscript on a newly designed instrument called 'pantómetro' by Jean Benoit Pithon (fl. 1755 - 1766) for the use in gunnery, dedicated to Joseph I. of Portugal. Pithon was commander of an artillery regiment in Porto (as mentioned on the title). In 1752 he participated in a cartographical expedition to the northern part of Brazil (Rio Iguacu) to establish the exact course of the new border between Portugal and Spain according to the treaty of 1750. Pithon's instrument combines 3 distinct devices in one. A gunner's quadrant, a sight and a gauging device. A very fine copy, the text in a professionally calligraphed script, with exceptionally fine watercolour drawings of the instrument.

Red Cross at International Trade Exhibition

(Red Cross; Photography).

Das Rothe Kreuz in der Wiener Weltausstellung 1873 dargestellt auf Anregung Ihrer Majestät der Kaiserin Augusta durch das Central- Comité zur Pflege verwundeter und erkrankter Krieger (printed cover title).- Wien, Verlag der concessionirten Wiener Photographen - Association, 1873. Square Imperial-Folio. (420 x 560 mm.) Portfolio with 58 vintage photographs (size: 200 x 250 mm and little smaller) pasted on 40 card boards, albumen prints with photographers signature, number and title within negative. All card boards with printed captions, titled and photographers address: Oscar Kramer. Original printer half cloth portfolio with printed title on cover. Traces of use. \$ 10.000.-

Probably the earliest photographic documentation regarding the work of the „Red Cross“, exhibited at the Viennese World Fair in 1873. Until the middle of the 19th century, there were no organized and/or well-established army nursing systems for casualties and no safe and protected institutions to accommodate and treat those who were wounded on the battlefield. A devout reformed Christian, the Swiss businessman Jean-Henri Dunant, in June 1859, traveled to Italy to meet French emperor Napoleon III. with the intention of discussing difficulties in conducting business in Algeria, at that time occupied by France. He arrived in the small town of Solferino on the evening of 24 June after the Battle of Solferino, an engagement in the Austro-Sardinian War. In a single day, about 40,000 soldiers on both sides died or were left wounded on the field. Jean-Henri Dunant was shocked by the terrible aftermath of the battle, the suffering of the wounded soldiers, and the near-total lack of medical attendance and basic care. He completely abandoned the original intent of his trip and for several days he devoted himself to helping with the treatment and care for the wounded. He took point in organizing an overwhelming level of relief assistance with the local villagers to aid without discrimination. Back in his home in Geneva, he decided to write a book entitled A Memory of Solferino (PMM 350; Norman 670; Garrison-M 2166; Grolier/Norman 73; Waller 2639; Heirs of Hippocrates, 1945; En Français dans le Texte 284) which he published using his own money in 1862. He sent copies of the book to leading political and military figures throughout Europe, and people he thought could help him make a change. In addition to penning a vivid description of his experiences in Solferino in 1859, he explicitly advocated the formation of national voluntary relief organizations to help nurse wounded soldiers in the case of war, an idea that was inspired by Christian teaching regarding social responsibility, as well as his experience after the battlefield of Solferino. In addition, he called for the development of an international treaty to guarantee the protection of medics and field hospitals for soldiers wounded on the battle-field. The wide interest generated by Dunant's book led in 1863 to the formation of a committee which later became the International Red Cross, and in 1864 to the establishment of the Geneva Convention. Dunant shared with Frédéric Passy the first Nobel Peace Prize in 1901.

The photographs show: View of the sanitary pavilion with military tents; Field pharmacy; Field operation table, Rescue stretcher, Transportable beds, Stretcher with frame for wagons; Wheels stretchers; Pushcart, mountain car; Dolly for wounded; Railway medical train, et al.

The Viennese Photographers Association was an organizational union of the Viennese companies Oscar Kraemer, M. Frankenstein & Comp., J. Löwy and György Klösz on the occasion of the Vienna World Fair in 1873. They employed the photographers Max Jaffé (1845-1939), Gustav Jägermayer and Philipp Georg von der Lippe. For stereo photographs Pierre Elénor Ernest Lamy and for the process of heliogravure / photogravure Johann Baptist Obernetter (1840 - 1887) was used. The recordings were made in cabinet format, in carte - de - visit format and partly in stereo format. These have been combined into trivets, Leporellos or bound albums in various designs and offered for sale in a private pavilion.

In another pavilion, the glass plates were developed in the wet collodion and further processed. The photographers had assistants who carried camera equipment and chemicals off-road and kept them ready. There were also retouchers and bookbinders. Around 50 people were used for the pictorial documentation. The total image production was about 2,200 images.- OCLC: Stabi Berlin (lost in war), Oldenburg (with lithographs (?) not photographs); Landesarchiv Baden-Württemberg; not in OCLC or COPAC.

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 Bl. / 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 Nuremberg and Georg Joachim Rheticus (1514-1574) in Wittenberg. He succeeded Rheticus in Wittenberg as lecturer 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 Peurbach'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-Fargānī 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 Nuremberg astronomers, and in particular the partnership of the mathematician Johann Schöner (1477 - 1547) and the printer Johannes Petreus (1497-1580).- VD16 S6535, Adams R 284, Honeyman 2608, Houzeau/L 2261; STC 718; Zinner 1997; Macclesfield 1699 (under Ptolemy)

comet of 1664

Richter, Johann (d.i. Praetorius, Johann)

Meridionalis Nuncius, Das ist Ein Wunderseltzamer Südischer Crinit= oder Comet= Stern / Welchen der Allmächtige und Getreue Gott im Reste des 1664. Jahrs nach Christi Geburt / vom Außgange Novembris biß in den Decembrem weit hinein / an Himmel gegen Mittage / nach Mitternacht in denen Morgenstunden / der untern Welt zur Warnung und Erleuchtung / angebrandt und hernieder gehänget hat: wie solcher von etlichen Jahren ... vom Herrn D. Tackio und Barth. Schimpfero &c zuvor verkündiget / und prognosticiret worden: nebst einem astrologischen und cabbalistischen judicio so wohl jenes südischen / als des allerneuesten Nordischen Cometens illustriret / Von Johanne Richtern / Astrophilo.- Leipzig: bey Christian Kirchner, (1664). Quarto (195 x 160 mm) 16 Bl. (last page blank) with engraving on title, showing the comet within star maps. Backstrip. Title engraving with small hole (paper flaw), title little shaved.

\$ 2.000.-

First edition of this pamphlet on the comet of 1664 with a detail description of the orbit of the comet. Johannes Praetorius (i.e., Hans Schultze 1630-1680) was a German poet, historian, and prolific compiler of curious legends and folklore. Erste Ausgabe, zweifelsfrei eine Schrift von Johann Praetorius, von ihm im „Iudicium Asteriae“ im selben Jahr als eigenes Werk erwähnt. Die Vielzahl der Kometenerscheinungen während der Türkenkriege resultierte in zahlreichen spekulativen Flugschriften. Allein für 1664 lassen sich über 100 (!) derartige Publikationen nachweisen (vgl. Dünnhaupt, Neue Kometen - böse Propheten, in Philobiblon 18 (1974), 112 - 118 mit Hinweisen auf weiterführende Literatur). Der genauen Beschreibung des Kometen ist hier eine Erörterung der Frage "ob Cometen können prognosticiret werden" vorangestellt. Das Druckjahr als Chronogram wiedergegeben.- Dünnhaupt 18; Kat. Wolfenbüttel A 3163 (Pseudonym nicht aufgelöst); VD17 3:011703A (ebenfalls ohne Auflösung des Pseudonyms); Bircher A1148; Brüning 1092 (unter Praetorius); Rosenthal 3623; Houzeau-L. 5737; Gundel, Naive 95.

with paper instrument

Ritter, Franz.

Instructio Instrumentalis Quadrantis Novi. Das ist: Beschreibung und Unterricht, eines neuen Quadranten, mit welchem man allerley Gebäu, Thürn, Höhe und Länge, ohn eigene Rechnung abzumessen, dessgleichen in den Graden der Gestirn- Höhe, die Minuten finden kan ... Auffß neu aufgelegt.- Nuremberg: P. Fürsten, n. d. [ca. 1660]. sm. Quarto (182 x 138 mm). 2 p.l., 12 pp. with one folding engraved plate. Title within ornamental type border. Attractive antique calf (minor worming at head), spine gilt, red morocco lettering piece on spine. \$ 5.500.-

First published in 1597, this is a description of the author's newly invented quadrant — depicted on the plate — which could be used by engineers for surveying. This plate is missing in most copies. It was an extremely successful text with at least five later editions. Franz Ritter (1579-1641), a native of Nuremberg, was an astronomer and innovative cartographer, famous for his "sundial" world map. He had studied under Johann Praetorius at the University of Altdorf. Ritter specialized in the design and manufacture of astrolabes, sundials, and other astronomical, horological and cartographical instruments. Fine copy.- VD17 23:277201H; Kiely, Surveying Instruments, pp. 165-80. Pilz, 600 Jahre Astronomie in Nürnberg, 263-65. Zinner, Instrumente, pp. 491-92.

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 manufacturer 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-Élysées 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 impracticability. 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 authorities 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.

Cryptography - before ENIGMA

Schott, Caspar; Johannes Trithemius.

Schola steganographica, in classes octo distributa, quibus, praeter alia multa, ac jucundissima, explicantur artificia nova, quae quilibet, scribendo epistolam qualibet de re, & quocumque idiomate, potest alteri absenti, eorumdem artificiorum conscio, arcanum animi sui conceptum, sine ulla secreti latentis suspitione manifestare; & scriptam ab aliis eadem arte, quacumque lingua, intelligere, & interpretari. Nürnberg, Jobst Hertz for Johann Andreas and Wolfgang Endter, 1665. Quarto (210 x 165 mm). XXXVI, including half-title and additional engraved title/frontispiece, 346 pp., [10], title in red and black, with engraved additional title/frontispiece, engraved arms on verso of letterpress title, 4 folding engraved plates of instruments, 4 folding engraved plates of tables, 3 folding letterpress tables, and 6 engravings in the text; some marginal spotting, two gatherings at end browned, a very attractive copy in contemporary vellum. Old annotations (with a Tabula combinatoria) to front free endpaper. **(bound with:)** Johannes Trithemius. Steganographia. Nunc tandem vindicata ... ubi coniurationes spirituum ex arabicis, hebraicis, chaldaicis & graecis spirituum nominibus conglobatae. Deinde solvuntur & exhibentur artificia nova steganographica auctore W. E. Heidel. Mainz, C. Küchler, 1676. 4to. 4 Bll, 394 (recte 396) pp., 2 Bll. \$ 4.000.-

Fine Sammelband on the art of cipher. First edition of Caspar Schott's treatise on cryptography. It is largely a compilation of cipher systems inspired by, or derived from, Athanasius Kircher, who had published his own Polygraphia on the subject two years earlier. Schott (1608-1666) was Kircher's chief disciple and advocate, and his publications are important supplements to those of his mentor. The work discusses different encrypting and deciphering systems, along with the mechanical instruments involved in some. Schott presents cryptographer's cases of his own invention, the 'Arca Glottotactica' and the 'Cistu-la Steganographica' and a 'Mensula Steganographica'. The cases resemble typographers' cases and work by creating permutations of different sets of substituted letters and numbers. There are various devices including rotary dials and encrypting clocks described and illustrated, and also a system of musical encryption, with musical scores printed in the text. There is further discussion of other methods of secret communication, including sign language and magnetic signalling. The final leaf of text lists various publications by, or edited by, Schott.- BL 17th-C German S1254; Sommervogel VIII 910 12; VD 17 3:006423R; Dünnhaupt 3820, 12.1; Caillet 10.007. II. First edition of Heidel's revision. Trithemius' most famous work, Steganographia (written around 1499; published in Frankfurt, 1606), was placed on the Index Librorum Prohibitorum in 1609 and removed in 1900. This book is in three volumes, and appears to be about magic—specifically, about using spirits to communicate over long distances. Since the publication of the decryption key to the first two volumes in 1606, they have been known to be actually concerned with cryptography and steganography. Until recently, the third volume was widely still believed to be solely about magic, but the "magical" formulae have now been shown to be covert texts for yet more cryptographic content. However, mentions of the magical work within the third book by such figures as Agrippa and John Dee still lend credence to the idea of a mystic-magical foundation concerning the third volume. Additionally, while Trithemius's steganographic methods can be established to be free of the need for angelic-astrological mediation, still left intact is an underlying theological motive for their contrivance. The preface to the Polygraphia equally establishes, the everyday practicability of cryptography was conceived by Trithemius as a "secular consequent of the ability of a soul specially empowered by God to reach, by magical means, from earth to Heaven". Robert Hooke suggested in the chapter Of Dr. Dee's Book of Spirits, that John Dee made use of Trithemian steganography, to conceal his communication with Queen Elizabeth I. Johannes Trithemius (1462 – 1516), born Johann Heidenberg, was a German Benedictine abbot and a polymath active in the German Renaissance as a lexicographer, chronicler, cryptographer and occultist. He had considerable influence on the development of early modern and modern occultism. His students included Heinrich Cornelius Agrippa and Paracelsus. Erste von Heidel besorgte Ausgabe, einer von zwei Drucken mit abweichender Verlagsangabe. Das bekannte, erstmals 1518 gedruckte Kompendium zur Verschlüsselung von Nachrichten, auch in die Bereiche der Mnemotechnik und trägerlosen Datenübermittlung ("modum nunciandi secreta sine verbis, sine scriptis, sine signis") einschlagend. Mit Vita des der Zauberei verdächtigten Abtes sowie ausführlichem Kommentar Heidel's unter Einbeziehung der Erörterungen Athanasius Kircher's und Caspar Schott's zum Thema.- VD 17 23:682444H;

Rosenthal 6103; Caillet 10856; see Dorbon 4961 and Thorndike IV, 524, n. 43 (both edition 1721) and Young 78 (unter Cuirot).

**beautifully executed engravings of fossil & living marine animals
that reveal the keen spirit of observation of the painter & the naturalist**

Scilla, Agostino.

De corporibus marinis lapidescentibus quae defossa reperiuntur. Addita dissertatione Fabii Columnae de glossopetris.- Rome: de Rubeis, 1747. Quarto (265 x 195 mm) (2), (8), 73 pp., (6) with engraved frontispiece and 30 engraved plates. Contemporary vellum with two morocco labels, overall fine and clean. \$ 2.400.-

First latin edition of one of this classics of geology, first published in Naples in 1670 under the title: „La vana speculazione disingannata dal senso“ in little smaller size and with Fabio Colonna's De glossopetris dissertatio of 1616 as appendix. Charles Lyell praised his work more than a century after Scilla's death. Be-sides being an artist known for his church frescos, Agostino Scilla was a pioneer in the study of fossils. His searches for them in Sicily and Malta led to the publication of this work which affirmed that they were not the product of fable but the remains of living creatures trapped in mud or soil that later turned into rock. Shells, coral and 'pescevacca' are the subject of particularly interesting descriptions. The supposedly magical objects called 'glossopetrae' or 'tongue stones' are correctly iden-tified as sharks' teeth.

„Scilla described with admirable clarity and critical sense the observations he had made on the fossiliferous sedimentary terrains of both shores of the Strait of Messina. (He) studied the zoological features of each fossil, comparing them with those of analogous living species“ (DSB).

Scilla likewise refuted the ideas of Maltese naturalist Giovanni Francesco Buonamico, who shared Athanasius Kircher's ideas that some fossils were formed as sports of nature. Scilla also uncovered the origin of glossopetrae, as did Niels Stensen a few years earlier. But whereas Stensen delved deeper into how rock layers formed, Scilla focused more closely on how fossils formed. Scilla was born in 1629, in Messina, Sicily. His father was a notary, and Scilla enjoyed good training from accomplished artists at an early age. When just a teenager, he went off to Rome and apprenticed for five years under a classical painter. But Scilla didn't live a continuously charmed life. His participation in a failed revolt against Spanish rule forced him into exile, so he wound up living in Turin and then Rome, where he had earlier received an education. His artistic training, as well as his long-term interest in coin collecting likely helped his studies of fossils. He had a practiced eye and gave considerable thought to how fossils formed. Scilla also brought his artistic ability to fossil depictions, often providing multiple views of the same kind of fossil. Naturalists in Tuscany, Sicily and Malta were enthusiastically debating the nature of fossils in Scilla's day, exchanging letters, specimens and explanations. The same problems that plagued many natu-ralists of the time were at work here. Fossils might be well preserved, but they didn't necessarily have living analogues, at least not in the same vicinity. Shark teeth might be common fossils, for example, but sharks in this region were relatively rare. Sand dollars and sea urchins were rare enough that naturalists couldn't compare echinoderm fossils to their modern counterparts. Scilla deserves admiration for the insights he reached despite these setbacks. That he rejected Kircher's notions of fossils as nature's big joke didn't mean that Scilla necessarily had a modern understanding of geology. He rejected the claim that God chan-ged snake tongues into glossopetrae because he didn't think that particular "miracle" had been sufficiently proven, but that didn't mean he rejected miracles altogether. Scilla believed that fossils were probably deposited by the Noachian flood, though he suggested there might have been a series of floods. This sus-picion was far from the findings of today's science, but the notion of a series of events brought Scilla closer than many of his contemporaries to understanding how fossils were formed and deposited in rocks. On the frontispiece of Scilla's book, Sense holds a fossil shell and gestures toward an outcrop of similar organisms to make the point. The fact that the fossils include a shark tooth and echinoid — easily recognizable fossils if well preserved — helps Sense's case. At that time, a few other sharp minds, including those of Stensen, John Ray and Robert Hooke, reached similar conclusions about the organic nature of fossils.- DSB XII, 256; Nissen ZBI 3780; Dean III, 341; Eales I, 765; Lit.: Marco Romano (2013). 'The vain speculation disillusioned by the sense': the Italian painter Agostino Scilla (1629–1700) called 'The Discoloured', and the correct interpretation of fossils as 'lithified organisms' that once lived in the sea, in: Historical Biology: An International Journal of Paleobiology.

(Stirn's Geheim - Camera; Photography)

„Photographien mit C. P. Stirn's patent. Photograph. Geheim - Camera“. square Octavo (115 x 175 mm) 6 gilt printed boards (110 x 170 mm) with each 6 circular 4 cm photographic images, together 48 small photographs. Leporello in red gilt printed original portfolio. \$ 1.100.-

A spy-cam. Advertisement or sample catalogue for a "buttonhole or concealed vest camera" known in Ger-many as C. P. Stirn's Geheim - Camera. Stirn's Concealed vest pocket camera, based on patents by R. D. Gray, was introduced in October 1886 and continued to about 1892. It consisted of a fine nickel plated or oxidized apparatus six inches round that carried 1 plate for 6 sharp instantaneous photos measuring 1 3/4 inch diameter. Ads claim that 13,000 were sold in two years, 15,000 in three years and 18,000 in 4 years. All sold by the sole agents, Stirn and Lyon of New York, and Rudolph Stirn in Berlin, Germany.

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. \$ 2.800.-

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.

comets

Zanotti, Eustachio; Petronio Matteucci.

Osservazioni sopra la cometa dell'anno MDCCXXXII (1742) fatte nella Specula dell' Istituto delle Scienze di Bologna nè mesi di Marzo, e Aprile da ... Bologna: nella Stamperia di Lelio dalla Volpe, Quarto (265 x 200 mm) 24 pp. with one fold. engraved plate by Gio. Fabri: „Viaggio apparente della Cometa osservata in Bologna l'anno 1742.“ Later Wrappers. Fresh. \$ 2.400.-

Uncommon description of the comet of 1742 by the versatile observer and director of Bologna observatory, Eustachio Zanotti (1709-1782). When Zanotti was appointed professor of astronomy at the Istituto delle Scienze in 1739 he could work with the modern instruments which were ordered by Manfredi in London and delivered in 1741: a mural quadrant with a radius of 1,2 m, a transit instrument with a focal length of 1 m, movable quadrant, and a small reflecting telescope built by Jonathan Sisson. Zanotti worked with his assistants Giovanni Angello Brunelli, who would later become mathematician to the king of Portugal, and Matteucci, conducting countless observations of the sun, moon, planets, and comets, and compiling a catalog of 446 stars, mostly in the zodiac.- BEA II, 1256-57; Brüning 1659; Riccardi I, 652.7; Pogg. II, 1394. KVK: Dt. Museum, BBAW, Kiel, Erfurt; COPAC: Cambridge; OCLC: Ohio State, Adler Planetarium, Kenneth Spencer, Oklahoma.

Zanotti, Eustachio.

La Cometa dell' anno MDCCXXXIX (1739) osservata nella Specula dell' Istituto delle Scienze di Bologna nè mesi di Maggio, Giugno, Luglio, e Agosto ... (Bologna: nella Stamperia di Lelio dalla Volpe, 1739. Quarto (260 x 200 mm) 28 pp. with one large fold. engraved plate (365 x 500 mm) by Ignatio Bergonzoni: „Viaggio apparente della cometa osservata in Bologna l' anno 1739“. Backstrip. \$ 2.400.-

First edition, description of the comet of 1739 observed with a telescope by Zanotti in Bologna.

Eustachio Zanotti (1709 - 1782), an engineer and astronomer from Bologna, was a pupil of Eustachio Manfredi (1674-1739). Assistant at the Bologna Observatory already at the age of twenty, he became its director at the death of his master, which took place in 1739. One of the most renowned astronomers of his time, Zanotti was a member of numerous Italian and foreign academies, among them the Royal Society of London and the Berlin Academy of Science. A prolific author, he conducted numerous observations on the Sun, the Moon, the planets and the comets. Among his books we may recall one of the first stellar catalogues based on modern principles, dating from 1750, and the three volumes of Bolognese Ephemeris com-piled starting from 1751 in collaboration with his assistants Petronio Matteucci and Gabriele Brunelli, as well as numerous studies in mathematics and hydraulic engineering. The 1761 Venus transit was observed in Bologna by Eustachio Zanotti, director of the Observatory, founded in 1726 in the building of newborn Academy of Sciences. The Observatory tower today hosts the Museo della Specola. Zanotti, member of the Academies of Berlin and London, was one of the most known European astronomers of his time. He published a large amount of observations of the Moon, the Sun and the Planets, he edited the Bologna Ephemerides from 1751 to 1764. He was a great hydraulic engineer and in 1778 he became the Secretary of the Istituto delle Scienze di Bologna.- Brüning 1644; Peddie NS, 166b. KVK: only Kiel; COPAC: BL London, Warburg Inst.; OCLC: Adler Planetarium; Univ. Wisconsin; Oklahoma, Huntington.

the world of machines & water automata

(Zeising, Heinrich)

Heinrich Zeising's *Theatrum Machinarum*, so in sechs Theil bestehend: in welchen gehandelt wird von vielerley künstlichen Machinis, eine schwere Last mit Vortheil zu bewegen, und dann von schönen Wasser-Künsten und Feuer-Sprützen, wie auch von künstlichen Mühl - Wercken, was Namen die haben mögen, samt der ... Von Spring- und Schöpf-Brunnen,... und etlichen Künsten das Wasser zu heben ... mehrentheils aus frembden Sprachen versetzt durch Hieronymum Megesirum ... (engraved title: *Theatrum machinarum* Ester Theil, in welchem vilerley künstliche Machinae in unterschiedlichen Kupferstücken zu sehen sindt, durch welche jeglicher schwerer last mit vortheil kan bewegt, erhoben, gezogen und gefüret werden. Deneben eigentlicher erklerung einer jeden kupfferplatten in sonderheit Auch mit vorgehenden gründlichen b(e)richt von wag und gewicht...) 6 parts with separate titles in one vol.- Leipzig: in Verlegung Friederich Lanckischens Erben, 1708. square Quarto (160 x 190 mm) [31] Bll., 159 pp., (1) with 25 engraved plates; 4 Bll., 79 pp., (1) with 25 engraved plates; (2) Bll., 89 pp., [1] Bl. with 26 engraved plates; 8 Bll., 83 pp., (1) with 28 engr. plates; 3 Bll., 102 pp., [1] Bl. with 24 engr. plates; 1 Bl., 82 pp. with 20 engraved plates.

Contemporary calf, rubbed and soiled, some plates creased, overall a bit browned due to paper-quality.

\$ 10.000.-

First german „*Theatrum Machinarum*“ which later was copied by Georg Andreas Böckler as „*Theatrum Machinarum Novum*“ (1661). Last edition of a heterogenous german machine book (*Theatrum Machinarum*), compiled by various authors from various sources, first published at Henning Grosse in Leipzig in 1607-1614 and reprinted in 1673 by Lanckisch in Leipzig, from which it was republished here again. Then publication faded.

The first three volumes are bibliographically attributed to the Leipzig mechanic and architect Heinrich (Henricus) Zeising (died 1610 ?) of whom we have not really any information; he played a decisive role in the introduction of the art of tearing and art of engraving in Leipzig (Mauersberger, 78). However, Vols. 2 (1610) & 3 (1612) appeared posthumously and were completed by the publisher Henning Grosse the Younger (Henning Grosius, Henningus Grossius Junior) (1582 - 1622) from material left by Zeising. In the preface to Vol. II, dated August 1610, Grosse already speaks about his beloved friend and that he published this volume from his legacy and it will all what would be published. Volume 3 is a compilation maybe with the inclusion of Zeising's estate. Hieronymus Megiser (Megisius, Megisserus) (about 1554 - around 1618), historian and philologist, was responsible for volumes 4 to 6. He was a versatile school and university teacher and prolific writer who was in contact with the scholars of his time. The entire work: *Theatrum Machinarum* has no foreign language model, but contains engravings mostly from older machine books such as those by Besson, Ramelli or Zonca. As already Theodor Beck in 1899 noted, at least 92 of the 145 engravings are copied after older or other works. In the first volume, Zeising explicitly says that the engravings are his own contribution, but one could also find copied images from Besson (see no. 8 & 21). Most of the engravings of the first volume, he signed on the plate, usually with "H Z fec.". Almost without exception, the publisher marks the engravings with his abbreviation (H G, H Gross Jun). The second and third volumes lack the artist's signatures. Grosse describes the first three parts as "partly brought together by Herr Heinrich Zeising, partly by myself, but most of all from foreign languages & transposed into our german language" (Vol. 4, Vorrede). From the beginning of the fourth volume, Megiser appears as a translator. The first volume is on theory and history of the machine often after Vitruv and Hermann Walter Ryff (Rivius) with its physical foundations: 19 machines are shown and described, mainly lifting and loading machines, which work with levers, winches, gears; often they are integrated into urban or rural working contexts. The theatrical scenes, often landscape idylls with machine and operating personnel, appear as moving. In general, movement in the *Theatrum Machinarum* literature stands for machine functioning: water flows, people and animals move, mill wheels turn, chimneys smoke. The last part of the first volume is on Cardano. Volume 2 contains everything on beautiful water arts, the water by wheels, pumps et al. Wells, mills, fire-engines and pumps are depicted and explained - among them a *Perpetua mobilia*, where a „movement alone has to be served“ so that "the water will rise from itself". Volume 3 is on mills, Volume 4 treats all sorts of beautiful machinae as screws, drills, and working machines - especially presses, lathes and load cranes. Volume 5 presents funny Machinae such as fountains and water automatons, "entertainment technique" used in the baroque garden art. Volume 6 turns to machines used in agriculture, civil engineering, hydraulic engineering and heavy machinery, which can lift loads, press, push. Here are very different machines such as a roasting turner (engr. No. 14, 15) (from Zonca) and Agostino Ramelli's well-known reading or bookwheel.- Lit.: Klaus Mauersberger: Heinrich Zeising's „*Theatrum machinarum*“ – das bekannteste Werk der älteren maschinentechnischen Literatur in Deutschland, in: *Wissenschaftliche Zeitschrift der Technischen Universität Dresden* 42 (1993), H. 4, pp. 75-78; Jutta Bacher: *Das Theatrum machinarum. Eine Schaubühne zwischen Nutzen und Vergnügen*, in: Hans Holländer (Hg.): *Erkenntnis – Erfindung – Konstruktion. Studien zur Bildgeschichte von Naturwissenschaft und Technik vom 16. bis zum 19. Jahrhundert*. Berlin 2000, S. 509-518; *Bibl. Dt. Mus. Libri rari* 309; *Ornamentstichsammlg.* Berlin 1773 - 1774 (earlier editions); *Macclesfield Library* 2162 (first edition, but only vol. 4-6); not in Roberts/Trent or Rouse, HWH.