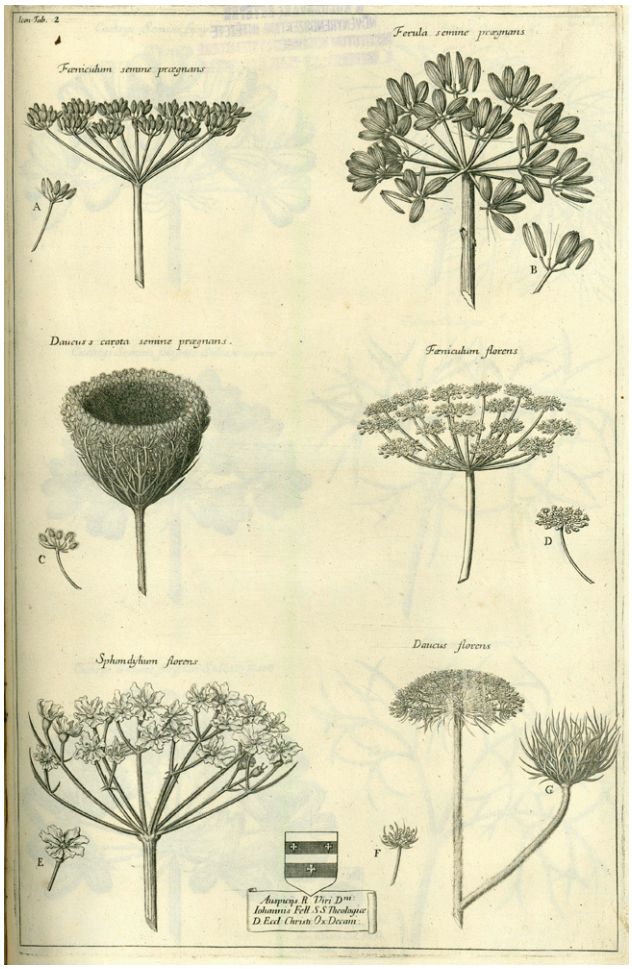
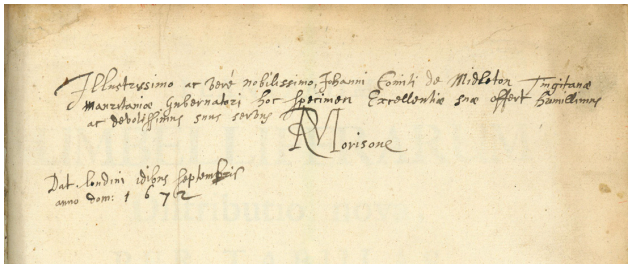


265 mm. Calf gilt ca. 1672, rebacked preserving original lettering piece, corners repaired, bookplate removed from inside front cover. *Signed Presentation Copy,* inscribed by Morison to Sir John Middleton (1618-74), Governor of Tangier, on the front free endpaper: "Illustrissimo ac vere nobilissimo, Johanni Comiti de Midleton Tingitanae Mauritaniae Gubernatori hoc specimen Excellentiae suae offert humillimus ac devotissimus suus servus Morison. Dat. londini idibus September anno dom: 1672" [To the most illustrious and truly most noble Sir John Middleton Governor of Tangier, this specimen is presented to his Excellency by his most humble and devoted servant Morison. Dated London, the ides of September, anno domini 1672]. Library stamps of the Botanical Institute of Cluj-Napoca, Romania on title and plates. $7500

First Edition of "the first monograph on a natural family of plants" (Hunt Catalogue, I, p. xxix). Morison, a Scotsman, was Charles II's royal physician and botanist,



and in 1669 became the first professor of botany at Oxford University, as well as Keeper of the university's Physic Garden. Dissatisfied with current approaches to plant classification, Morison came up with his own plan, "stress[ing] the need for a single, key criterion for determining the *nota generica,* or natural relationships, of plants. He revived Cesalpino's suggestion that classification should be based on fruit and seed characteristics. This principle was first applied in Morison's monograph on umbelliferous plants (1672), which successfully isolated the Umbelliferae from other plants with similar inflorescence forms. The family was then subdivided into a series of genera that closely resembled later categories" (*Dictionary of Scientific Biography*). Morison later incorporated an extended version of *Plantarum umbelliferarum* into his *Plantarum historia pars tertia* (1699), part of an ambitious but never completed work applying Morison's taxonomic scheme to the entire plant kingdom.

The Umbelliferae, also known as Apiaciae, is a family of hollow-stemmed plants including cumin, parsley, carrot, dill, fennel, celery, hemlock, Queen Anne's lace and other relatives. The family includes about 300 genera and over 3000 species. The name "umbelliferae" derives from the form of the flowers, which are usually in the form of a compound "umbel" and bear some resemblance to umbrellas.

Morison presented this copy of *Plantarum umbelliferarum* to fellow Scotsman Sir John Middleton, army commander and governor of Tangier, a port city in Morocco controlled by the British from 1661 to early 1684. Middleton served two terms as governor of Tangier, from 1669 to 1670 and 1672 to 1674. Morison may have known Middleton in France, where both were part of Charles II's entourage during the king's exile prior to the Restoration (1660). Signed presentation copies of significant scientific works from the 17th century are **rare.** Henrey, *British Botanical and Horticultural Literature before 1800,* I, 262. *Catalogue of Botanical Books in the Collection of Rachel McMasters Hunt*, I, 323. Nissen, *Botanische Buchillustration,* 1411. *Dictionary of Scientific Biography. Dictionary of National Biography* for Middleton. 40646

98. NEMA cipher machine. (1) NEMA ciphering machine (operational model), serial no. T-D 491, enclosed in olive-green metal case

(slightly water-streaked, small area on left side where paint has flaked off, traces of removed paper label) measuring 365 x 326 x 140 mm. Printed label on case lid contains instructions in German, French and Italian about not using the machine except in wartime. 1947. **(2)** Bedienung-Anleitung zur Chiffriermaschine "NEMA." Instruction de service de la machine à chiffrer "NEMA." 32pp. In German and French. Zurich: Aschmann & Scheller, [1947]. 211 x 148 mm. Original printed wrappers, sl. worn, stamped "Entklassifiziert datum 9. Juli 1992" on front cover. Both items in very good to fine condition.

$4500

The NEMA (short for **Ne**ue **Ma**schine) ciphering machine was designed between 1941 and 1943 by the Swiss Army's Cipher Bureau. The Swiss were driven to design their own ciphering machine by their lack of confidence in the 265 Enigma machines that had been supplied to them by Germany between 1938 and 1940. The Swiss used Enigma to encrypt diplomatic and military messages, and suspected that both the Germans and the Allied Forces might be able to read their Enigma-enciphered messages. The first functional NEMA model was completed in the spring of 1944, and by October 1945 the Swiss Army issued a production order for 640 machines, which were manufactured by Zellweger AG. This was the total number of NEMA machines produced. The machines were serially numbered starting with "100"; ours is numbered 491. Numbers 100-640 were used for training and observation, while numbers 641-740 were locked away to be used in case of war. The "T-D" in the serial number stands for "Tasten-Drucker'; another name for the NEMA as "Tasten-Drucker-Maschine" (Key-Stroke Machine). As is stamped on the cover of the instruction booklet, the NEMA machine remained classified until July 9, 1992.

The NEMA was designed on the same principle as the better-known Enigma, but includes features intended to overcome some of the Enigma's weaknesses. Sullivan and Weierud describe the different versions of the NEMA machine:

> The NEMA machines appear to have been divided into four distinct user groups, with each group being issued with its own notch rings, although the contact wheels had the same wiring. The contact wheels and the notch rings are the secret parts of the machine. The wheels were wired by the Army and not by Zellweger AG. The notch rings are not mentioned in the list of spare parts which further indicates their secret nature.

> A Training model was supplied with contact wheels A, B, C and D and with notch rings 16, 19, 20, 21 and 23/2 for the red drive wheel. An Operational model had the set of contact wheels A, B, C, D, E and F. The notch rings supplied being 12, 13, 14, 15, 17, 18 and 22/1 for the red drive wheel. The UKW wiring given in Figure 3 is common to both models.
>
> The Swiss Foreign Office (FO) also adopted the NEMA and had on average 100 machines in service. No further details are known about the FO machines but it is suspected that they would have used completely different notch rings from those in use by the Army (Sullivan and Weierud, "The Swiss NEMA cipher machine," *Cryptologia* 23 (Oct. 1999): 310-28).

Our machine is an example of the Operational model, conforming to Sullivan and Weierud's description. The spare contact wheels are stored on threaded posts in the case lid. Our example is unusual in that it includes the printed manual, a small (and presumably easily lost) pamphlet. "The Swiss NEMA Cipher Machine." *Frode Weierud's CryptoCellar*. Crypto Simulation Group. Web. 19 Jan. 2011. 39494

99. Nightingale, Florence (1820-1910). Florence Nightingale an angel of mercy. Scutari Hospital 1855. Mezzotint engraving by Charles Tomkins after F. Butterworth. London: Lloyd

Bros. & Co., June 30, 1855. On India paper, mounted. 391 x 345 mm. (image measures 333 x 300 mm.). Fine. $1250

Excellent impression of what is most probably the first separately published image of Florence Nightingale as "The Lady of the Lamp." The image shows Nightingale carrying a small lit oil lamp through a ward in the military hospital at Scutari (modern-day Üsküdar in Istanbul, Turkey), where she and 38 other women worked as volunteer nurses from 1854 to 1856 during the Crimean War. Beneath the image is the famous quotation from the *Times* of London ("Letter from Scutari," February 1855) from which Nightingale's "Lady of the Lamp" title was derived: "When all the medical officers have retired for the night, and silence and darkness have settled down upon those miles of prostrate sick, she may be observed alone, with a little lamp in her hand, making her solitary rounds." 40979

The Earth's Crust— Spectacular 9-Foot Scroll

100. Noeggerath, [Johann] Jakob (1788-1877) and **Joseph Burkart.** Der Bau der Erdrinde nach dem heutigen Standpunkte der Geognosie. La structure de l'écorce du globe géographiquement représentée selon l'état actuel de la géologie. The structure of the crust of the earth according to the present state of geology. Hand-colored lithograph scroll consisting of 5 imperial folio plates mounted on linen and wound around a wooden roller, with text in German, French and English. Bonn: Verlag des Lithographischen Instituts der Rheinischen Friedrich-Wilhelms-Universität und der Kaiserl. Leopoldinisch-Carolinischen Akademie der Naturforscher, von Henry & Cohen, 1838. 2 feet by approx. 9 feet. Outer edge of scroll a little soiled, and with a repair in the upper corner, ends of wooden roller a little wormed and chipped; interior portion of the scroll remarkably clean and fresh. $9500

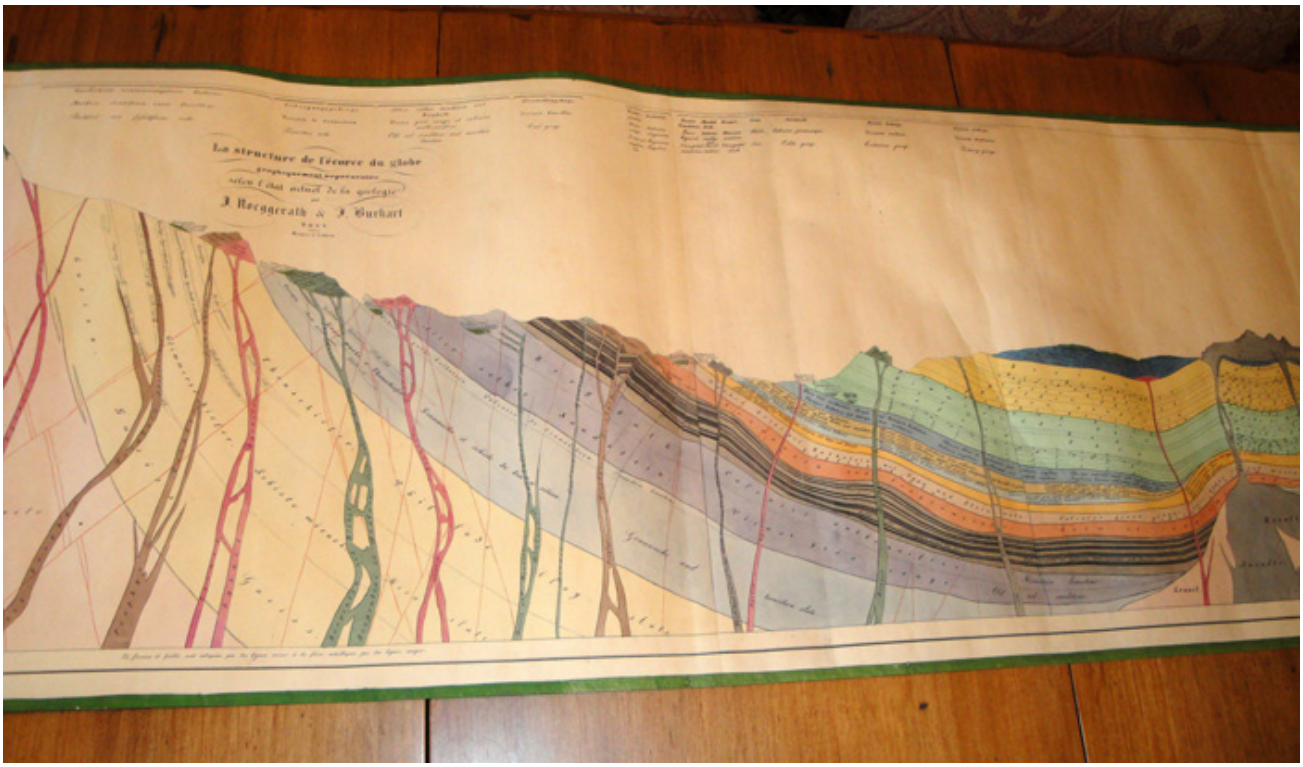
First Edition of this stunning large-scale visual representation in scroll format of the layers of the earth's crust, prepared by mineralogist and geologist Jakob Noeggerath, director of the Museum of Natural History in Bonn and chief of the mining department at the city's university. Noeggerath was the author of several important geological works, including *Über aufrecht im Gebirgsgestein eingeschlossene fossile Baumstämme und andere Vegetabilien* (1819-1821); *Das Gebirge in Rheinland-Westphalen, nach mineralogischem und chemischem Bezuge* (4 vol., 1822-1826); and *Die Entstehung der Erde* (1843).

The scroll, which can be unrolled for display, is made up of five imperial folio hand-colored plates, which were originally published as an atlas accompanied by a smaller-format text volume of 47 pages (not included here). Geological features are labeled in German, French and English. The scroll's linen backing and wooden roller date from the mid-nineteenth century, and the whole work is in a remarkably good state of preservation (see accompanying images). We are unaware of any other copies of this work in scroll form—our version may be unique. It would make a spectacular exhibition piece for any library or museum.

There are several copies of *Der Bau der Erdrinde* in German and French libraries, but it is exceedingly rare in North America: when we checked, OCLC listed copies in only two U.S. institutions (Harvard University and University of Cincinnati). 40988

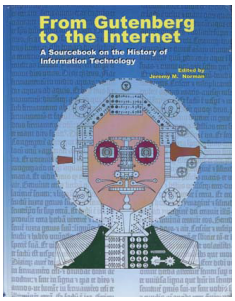
101. Norman, Jeremy M., editor. Morton's Medical Bibliography Fifth edition, revised and enlarged. 1243 pp. Aldershot: Scholar Perss, 1991. Hardcover. ISBN 0-85967-897-0. $245

Fifth and last edition, now out of print. The standard bibliographical reference, providing, in convenient form, an annotated chronological listing of the most important



contributions to the Western world literature on the health sciences from ancient times to circa 1980. Secondary sources are included up to roughly 1990. The annotations briefly explain the significance of individual contributions to the history and development of the bio-medical sciences. 40831

102. Norman, Jeremy M., editor. From Gutenberg to the Internet: A sourcebook on the history of information technology. xvi, 899pp. Illustrated. Novato: Historyofscience.com, 2005. 8-1/2 x 11 inches. Pictorial boards, laminated. ISBN 978-0-930405-87-8. $89.50

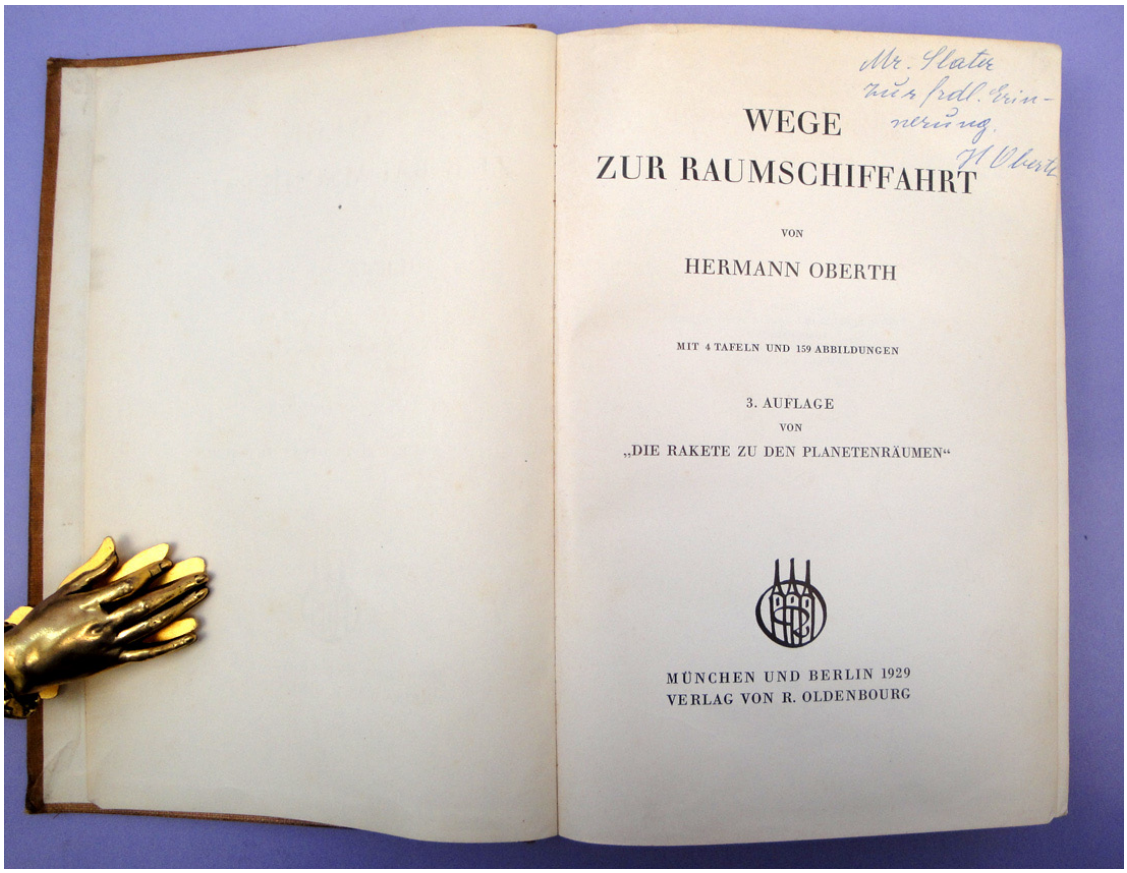


Presents 63 original readings from the history of computing, networking and telecommunications, arranged thematically by chapters. Most of the readings record basic discoveries from the 1830s through the 1960s that laid the foundation of the world of digital information. With an illustrated historical introduction, timeline, and introductory notes. 38950

Inscribed by Oberth

103. Oberth, Hermann (1894-1989). Wege zur Raumschiffahrt. xi, 431pp. 4 plates. Munich & Berlin: R. Oldenbourg, 1929. 236 x 163 mm. Original cloth, minor soiling and edgewear. Very good copy, *inscribed in pen on the title page by Oberth for A. E. Slater,* secretary of the British Interplanetary Society (inscription dated 1951 in pencil, presumably by Slater). With Slater's pencil signature on the front pastedown "A. E. Slater/ Flugsport Office Frankfurt/ 29.5. 36", and his pencil notes in the margins and on the rear free endpaper. $2750

Third edition of Oberth's *Die Rakete zu den Planetenräumen* (1923), the first published under this title, and greatly expanded from the first edition, containing over 400 pages to the 1923 edition's 92. A comparison of the tables of contents of the first and third editions indicates how much information Oberth added to the work between 1923 and 1929: the first edition contains an introduction and three main sections ("Operation and performance"; "Description of Model B. Discussion of technical implementation"; "Purpose and prospects") and is divided into 17 chapters, while the third edition contains four sections ("Preliminary"; "Physical and technical questions"; "Construction questions"; "Uses") and is



divided into 22 chapters. It was through this third edition that Oberth's work in rocketry became widely known.

Oberth inscribed this copy of *Wege zur Raumschiffahrt* for A. E. Slater, secretary of the British Interplanetary Society and author of numerous papers on issues relating to space flight, including the often-cited "Biological problems of space flight" (*Journal of the British Interplanetary Society* 10 [1951]: 154-158). Slater's annotations on the rear endpaper include references to Oberth's discussions of this issue, and it is probable that the two men met in 1951.

Oberth's *Wege zum Raumschiffahrt* began as a doctoral thesis on the rocket in interplanetary space, which he submitted to the University of Heidelberg in 1922. In his thesis Oberth set out to prove four propositions: (1) that the technology of the time permitted the building of machines capable of rising above the earth's atmosphere; (2) that these machines could attain velocities sufficient to prevent their falling back to earth, or even to escape the earth's gravitational pull; (3) that such machines could be built to carry human beings; and (4) that under certain conditions, their manufacture might be profitable. Oberth demonstrated that a rocket can operate in a vacuum and that it can surpass the velocity of its own exhaust; he also pointed out the superiority of liquid fuels in producing maximum exhaust velocity.

Oberth's thesis was rejected by the University of Heidelberg, so he published it commercially in 1923 under the title *Die Rakete zu den Planetenräumen*; a second, slightly enlarged edition appeared in 1925. In the 1929 third edition, which is over four times larger than the first, Oberth "reported most of [his] theories on space travel . . . described manned space travel in detail, proposed the inclined trajectory towards the east for ascending space ships, investigated the relationships between consumption of propellant and gain of energy, commented on most of the errors in the literature of the day concerning rockets, and finally, described an electrostatic space ship" (Oberth, p 136).

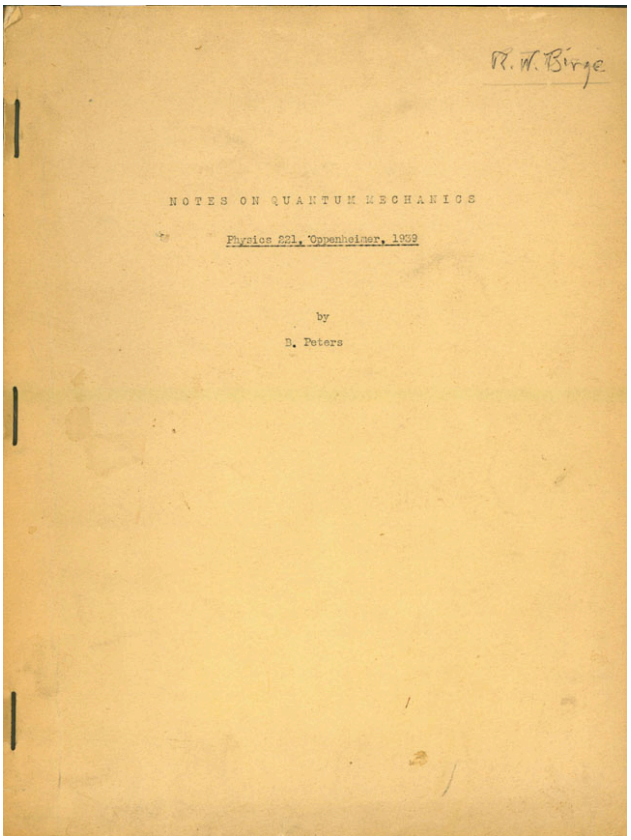
Wege zum Raumschiffahrt was the first work to receive the REP-Hirsch International Astronautics Prize, which had been established in 1928 by French rocketry pioneers Robert Esnault-Pelterie and André-Louis Hirsch; the prize was awarded annually between 1929 and 1939. The purpose of the prize was to recognize "the best original theoretical or experimental works capable of promoting progress in one of the areas permitting the realization of interstellar navigation or furthering knowledge in a field related to astronautics" (Blosset, p. 11). In the epilogue to his book, Oberth acknowledged its receipt of the REP-Hirsch Prize and expressed his surprise and gratitude that a French organization "would award such a prize to a German . . . It

is encouraging to see that science and education are able to bridge national differences" (p. [424]).

Some of Oberth's findings were anticipated by those of Goddard and of Tsiolkovsky; however, their work went largely unheralded, while Oberth's was greeted enthusiastically in Germany by a band of devotees that eventually became the *Verein für Raumschiffahrt* (Society for Space Travel). This in part explains why, when war came in 1939, Germany was able to quickly organize an efficient and competent rocketry research team capable of producing advanced weapons such as the V-2. After the war through Project Paperclip German rocket technology was transplanted into the United States' rocketry and space programs, greatly enhancing their development. Blosset, "Robert Esnault-Pelterie: Space Pioneer," in Durant & James, *First Steps toward Space* (1974), pp. 5-21. Oberth, "My Contributions to Astronautics," in *ibid.,* pp. 129-140. Von Braun & Ordway, *History of Rocketry & Space Travel*, pp. 57-59. 40982

104. [**Oppenheimer, J. Robert** (1904-67)]. (1) **Peters, Bernard** (b. 1910). Notes on quantum mechanics. Physics 221, Oppenheimer, 1939. Mimeograph typescript. [4], 138ff., printed on rectos only. [Berkeley, 1939]. 277 x 215 mm. Original wire-stitched wrappers, title mimeographed on front wrapper, minor soiling and wear, a few tiny marginal tears. Very good copy. From the library of Raymond T. Birge (1887-1980), chairman of the physics department at the University of California, Berkeley from 1933-55, with his pencil signature on the front wrapper; signature overwritten with that of Birge's son, Robert W. Birge, associate director of the Lawrence Berkeley National Laboratory from 1973-81. **(2) Pauli, Wolfgang** (1900-1958). The general principles of wave mechanics. Mimeograph typescript. 151ff., printed on rectos only. N.p., n.d. 281 x 220 mm. Unbound, pages punched with holes in the left margin and fastened with brads. Moderate soiling and fraying. $2750

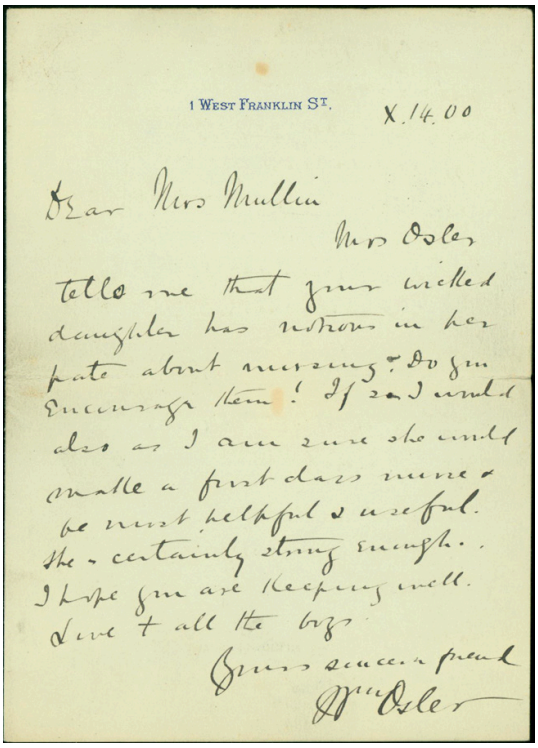
First Edition of the syllabus for Oppenheimer's course given at the University of California, Berkeley in 1939 on quantum physics, the field in which he had distinguished himself brilliantly during the previous decade, particularly in the re-examination of atomic phenomena that followed after the introduction of the "new" quantum theory in 1925. "[Oppenheimer's] course was an inspirational, as well as educational achievement.



He transmitted to his students a feeling of the beauty of the logical structure of physics and an excitement in the development of science. Almost everyone listened to the course more than once, and Oppie occasionally had difficulty in dissuading students from coming a third or fourth time. The basic logic of Oppenheimer's course in quantum mechanics derived from Pauli's article ["Die allgemeinen Prinzipen der Wellenmechanik"] in the *Handbuch der Physik* [vol. 24 (1933)]. Its graduates, Leonard Schiff in particular, carried it, each in his own version, to many campuses" (Rabi et al., *Oppenheimer,* p. 18).

The syllabus was prepared by Oppenheimer's student Bernard Peters; it was reprinted in 1948 by the University of California Press. The mimeographed version is *scarce,* with OCLC recording only 5 North American libraries with copies (University of California, Cal Tech, Oklahoma University, Princeton & Martin Marietta [Oak Ridge, TN]). It is probably the rarest of Oppenheimer's publications. We are offering it here with a mimeograph of an English translation of Pauli's "Die allgemeinen Prinzipen der Wellenmechanik," the article on which Oppenheimer based his course. This may have been the translation Oppenheimer gave to his students. *Dictionary of Scientific Biography*. 41104

105. Osler, William (1849-1919). Autograph letter signed to Mrs. [John A.] Mullin, with



1 West Franklin St. X.14.00

Dear Mrs Mullin

Mrs Osler tells me that your wicked daughter has notions in her pate about nursing? Do you encourage them? If so I would also as I am sure she would make a first class nurse & be most helpful & useful. She is certainly strong enough. I hope you are keeping well. Love to all the boys.

Yours sincere friend

Wm Osler

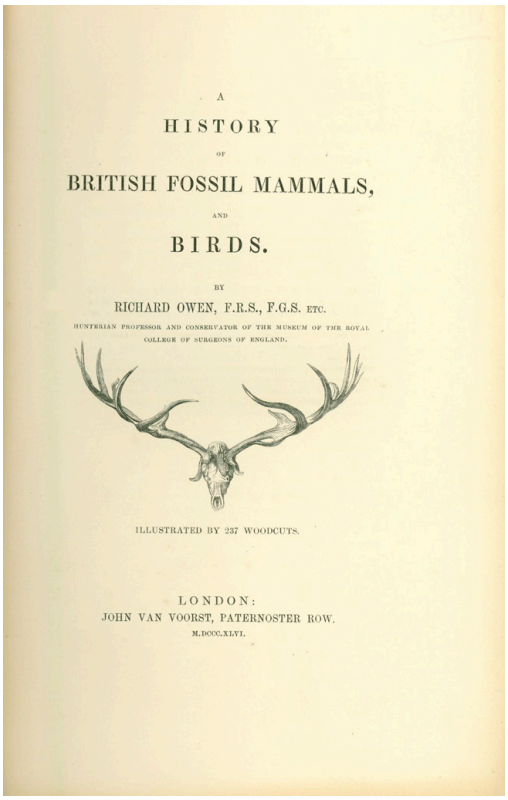
stamped cover. [Baltimore], October 14, 1900. 1 page, on Osler's 1 West Franklin St. stationery. 160 x 115 mm. Light soiling, a few spots on cover, but very good. Docketed by recipient.

$3750

A charming and humorous letter from Osler to the widow of his old friend Dr. John A. Mullin (1835-99) of Hamilton, Ontario. Osler had become acquainted with the Mullins in the 1870s, when he was a young professor at McGill University. Osler credited Dr. Mullin with being the first to observe "Osler's nodes," the cutaneous nodes in subacute bacterial endocarditis; Mullin had apparently demonstrated the nodes to Osler at the Hamilton City Hospital (Buchanan, pp. 163-64). Osler's affectionate relationship with Mrs. Mullin is apparent in the present letter:

> Dear Mrs. Mullin, Mrs. Osler tells me that your wicked daughter has notions in her pate about nursing. Do you encourage them? If so I would also as I am sure she would make a first class nurse & be most helpful & useful. She is certainly strong enough. I hope you are keeping well. Love to all the boys. You sincere friend, Wm. Osler.

Osler's letter is also of interest in that it demonstrates his approval of nursing as a career for women, an opinion that he expressed more fully in his *Medicine and Nursing* (1919). Buchanan, "Sir William Osler (1849-1919): The Early Years," *Proceedings of the Royal College of Physicians of Edinburgh* 31 (2001): 155-168. Cushing, *Life of Sir William Osler,* pp. 121, 487. 40797



A
HISTORY
OF
BRITISH FOSSIL MAMMALS,
AND
BIRDS.
BY
RICHARD OWEN, F.R.S., F.G.S. ETC.
HUNTERIAN PROFESSOR AND CONSERVATOR OF THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.
ILLUSTRATED BY 237 WOODCUTS.
LONDON:
JOHN VAN VOORST, PATERNOSTER ROW.
M.DCCC.XLVI.

106. Owen, Richard (1804-92). A history of British fossil mammals and birds. xlvi, 560, [2, errata]pp. Folding table. Text wood-engravings. London: John van Voorst, 1846. 256 x 165 mm. Original dark green cloth, gilt-lettered spine, minor wear. $1500

First Edition, Large Paper Copy. Owen was conservator of the Museum of the Royal College of Surgeons from 1842-56, and superintendent of British Museum's Departments of Natural History from 1856 until his retirement in 1883. An anti-Darwinist, Owen developed his own theory of evolution as species development according to divinely implanted laws; however, by the time of Darwin's death in 1889 Owen had come to acknowledge the validity of Darwin's theory of evolution of natural selection.

Owen's interest in fossil mammals began in 1836 when he was asked to describe the fossil material brought back by Darwin from the *Beagle* voyage; his results were issued as Part I of the *Zoology of the Voyage of H. M. S. Beagle* (1840). Owen went on to publish several works on the subject, including the present one, which caused him to be compared favorably in the British press to Cuvier and von Humboldt. The production of a large paper version

in addition to the regular edition was highly unusual for a scientific work published during this period. DSB. Rupke, *Owen,* p. 351. 40030

"I Hope to Hatch a Lovely Monster."

107. Owen, Richard (1804-92). Autograph letter signed to Joseph Pentland (1793-1873). [London,] College of Surgeons, Nov. 9, 1842. 3-1/2pp. 182 x 113 mm. Fine. $2250

Owen's letter discusses his award of a civil list pension of £200 per year from the British government, an event that marked "a major step up the social ladder for Owen" (Rupke, *Richard Owen,* p. 52). Owen received his first notification of the honor in a letter dated 1 November 1842 from British Prime Minister Robert Peel. He responded to Peel's letter the same day, but was still waiting for official confirmation at the time he wrote the present letter to Pentland:

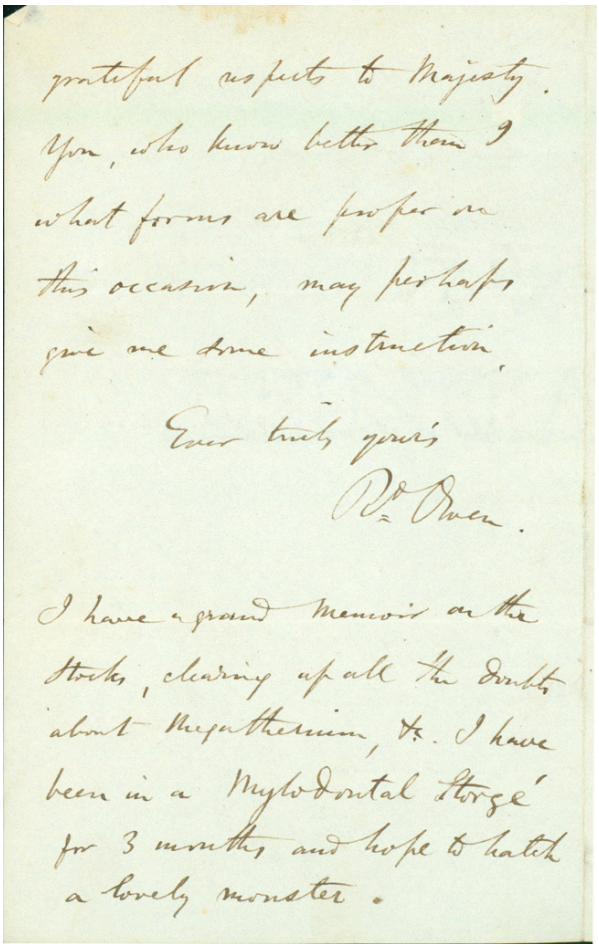
> As I never see a newspaper your congratulations startled me: but both Mrs. Owen & myself esteem the kindness which prompted them. I have, it is true, been honor'd by a gracious letter of 3 pages & a half from the Premier, proposing with my consent to name me for the Civil List, &c., but beyond that nothing official has yet reached me: & I only trust, for the honor of physiology, that it is intended to give it the same reward as Chemistry has received in the person of Faraday & astronomy in that of Airy.

In the last phrase Owen was echoing his friend and fellow paleontologist William Buckland, who in January 1842 had sent a letter to Peel recommending Owen for a civil list pension and comparing his national reputation as a scientist to those of Michael Faraday, John Dalton and astronomer George Biddle Airy.

In a postscript Owen touched on his important researches on the giant extinct ground sloths of South America:

> I have a grand memoir on the sloths, clearing up all the doubts about Megatherium, &c. I have been in a Mylodontal [...] for 3 months, and hope to hatch a lovely monster.

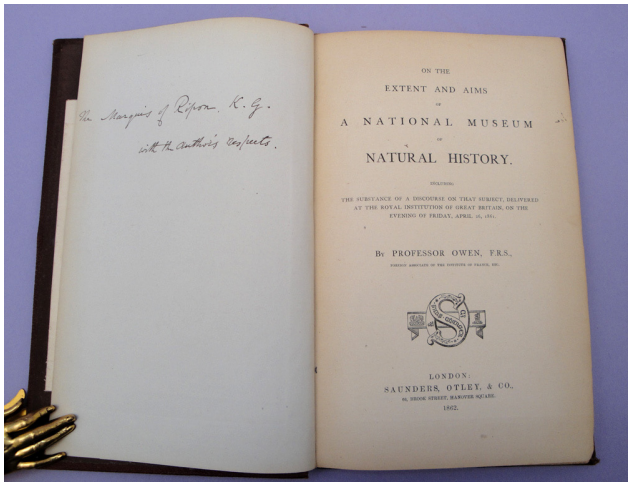
The "grand memoir" refers to Owen's *Description of the Skeleton of an Extinct Giant Sloth* (1842), an anatomical study of the mylodon skeleton donated to the College of Surgeons in 1841 by Woodbine Parish, Britain's *chargé d'affaires* at Buenos Aires. In his paper Owen used "a detailed description of form . . . to infer function, eating habits and habitat" (Rupke, p. 129), defending Cuvier's and Buckland's correct claim that the mylodon was indeed a herbivorous sloth and not an insect-eating armadillo-like creature, as some had argued.


grateful respects to Majesty.
You, who know better than I
what forms are proper on
this occasion, may perhaps
give me some instruction.
Ever truly yours
Rd Owen.
I have a grand Memoir on the
Sloths, clearing up all the doubts
about Megatherium, &c. I have
been in a Mylodontal Sloth
for 3 months and hope to hatch
a lovely monster.

Owen's correspondent, Joseph Pentland, was a geographer and naturalist who had studied with Cuvier. Pentland helped to survey a large portion of the Bolivian Andes in 1826 and 1827, and served as British Consul-General in Bolivia from 1836-39. 40453

108. Owen, Richard (1804-92). On the extent and aims of a national museum of natural history. 8vo. [4], 126pp. 2 folding plates. London: Saunders, Otley & Co., 1862. 222 x 142 mm. Original plum cloth, a little worn, inner hinges cracking. Light toning, but very good. *Presentation copy,* inscribed by Owen on the verso of the front free endpaper: "The Marquis of Ripon, K.G. with the Author's respects." $1500

First Edition. Owen was the prime mover behind the construction of the Natural History Museum, a project that occupied him for over two decades. After his appointment as superintendent of the Natural History department of the British Museum in 1856, dissatisfied with the cramped and disorganized confines of the existing British Museum (located in Bloomsbury), Owen began lobbying for a "separate but unified national museum

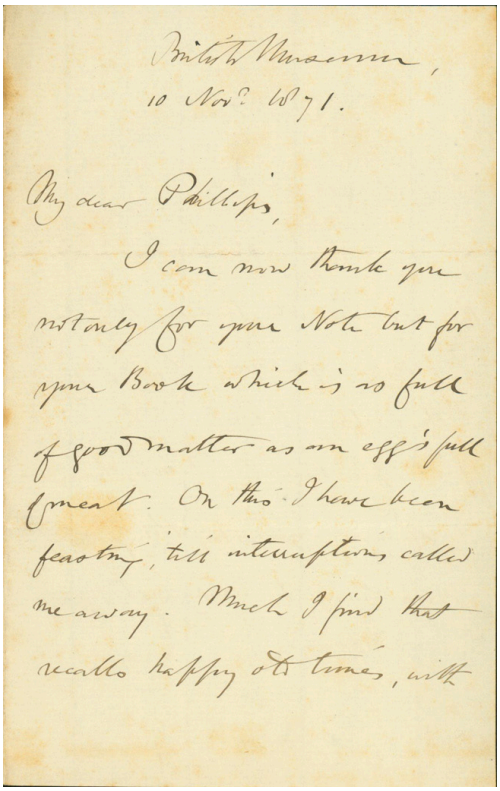


of natural history . . . to represent the three kingdoms of nature" (Rupke, p. 34), to be housed in a building spacious enough to display even the largest specimens of both living and fossil species. The project did not really get off the ground until October 1861, when Owen

> manipulated future Prime Minster Gladstone into the opinion that the current exhibition facilities for the Natural History Department of the British Museum were inadequate for their task. Owen cultivated Gladstone's support in order to bring the issue before Parliament once the Trustees of the British Museum fell into agreement with his extravagant plans for building not just more display space, but an entirely new building to house the natural history collection (Johnson-Roehr, "The Natural History Museum—London" [internet reference]).

After much heated debate, Owen's plan was approved and the South Kensington museum, designed by Albert Waterhouse, began construction in 1873. The building was completed by late 1879, and the museum opened its doors to the public in 1881. The social and cultural impact of Owen's Natural History Museum cannot be overestimated: Bill Bryson, in his *Short History of Nearly Everything* (2003), has stated that "by making the Natural History Museum an institution for everyone, Owen transformed our expectations of what museums are for" (p. 81).

Owen's *On the Extent and Aims of a National Museum of Natural History,* containing the text of his lecture delivered before the Royal Institution in April 1861, was part of his long campaign to obtain political backing for the South Kensington Museum. Owen presented this copy of the work to the George Frederick Samuel Robinson, first Marquess of Ripon, a prominent Liberal politician who held several influential posts during Gladstone's two terms as Prime Minister. The presentation was made in 1869 or afterwards, since Robinson was not made Knight of the Garter (K.G.) until that year. Wikipedia for Robinson. 40263



"Happy Old Times with Dear Old Buckland, When We Were Groping our Way."

109. Owen, Richard (1804-92). Autograph letter signed to John Phillips (1800-1874). [London], British Museum, 10 Nov. 1871. 4pp. 180 x 113 mm. Light spotting, but very good.

$1500

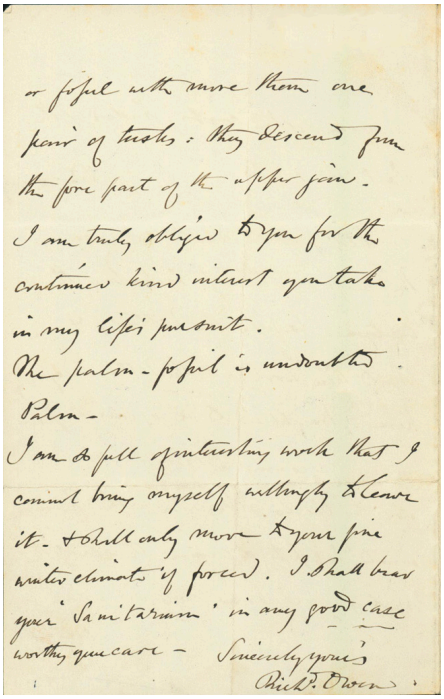
To Owen's old friend John Phillips, reader in geology at Oxford University, who had sent Owen a copy of his *Geology of Oxford and the Valley of the Thames* (1871).

> I can now thank you not only for your Note but for your Book which is so full of good matter as an egg's full of meat. On this I have been feasting, till interruptions called me away. Much I find that recalls happy old times, with dear old Buckland, when we were groping our way. If I live to finish, & you to see, the Vol. on Australian fossils I promise you an early copy: I think it is likely to be the first opportunity I may have of returning you anything in kind . . .

Owen refers here to geologist and paleontologist William Buckland (1784-1856), author of *Reliquiae diluvianae* (1823) and of the first full account of a fossil dinosaur (1824). Buckland's support had been crucial to the advancement of Owen's career in the 1830s and 1840s. The "Vol. on Australian fossils" refers to Owen's *Researches on the Fossil*

Remains of the Extinct Mammals of Australia, which he was then in the midst of writing; the work was published in 1877-78.

John Phillips, the recipient of this letter, was the nephew and pupil of geologist William Smith (1769-1839), whose "Delineation of the Strata of England and Wales with part of Scotland" (1815) was the first large-scale geological map of any country. 40454


or fossil with more than one
pair of tusks: they descend from
the fore part of the upper jaw.
I am truly obliged to you for the
continued kind interest you take
in my life's pursuit.
The palm-fossil is undoubtedly
Palm-
I am a full of interesting work that I
cannot bring myself willingly to leave
it. I shall only move if your fine
writer eliminates if forced. I shall hear
your 'Sanitarium' in any good case
worthy your care — Sincerely yours
Richd. Owen

110. Owen, Richard (1804-92). Autograph letter signed to Dr. [James Andrew Sandilands?] Grant (1840-96). N.p. [London], 27 Sept. 1875. 4pp., on stationery embossed with the seal of the British Museum. One or two faint spots, otherwise fine. $1500

Letter with excellent scientific content from Richard Owen, the foremost British comparative anatomist and paleontologist of his era, and founder of London's Natural History Museum. Owen here advises his correspondent on the best method of excavating fossil remains:

> I lose not a moment in acknowledging the receipt of your interesting letter of the 11th inst. with the sketches of the tusks (orig. size?) & vertebra of, most probably, a Sirenian [member of the manatee or dugong family]. In the case of such friable fossils when first explored in our home strata we find a bucket-ful of solution of glue, in hot water, the best application poured over the tusks or bones, in situ, before attempting the extraction. I think it likely that it would add also to the consistence of the limestone matrix. Then we work out as much of the matrix as appears to be in contact with the fossil, again soak the mass in glue-solution, before beginning the work of extraction.

The next portion of the letter contains Owen's instructions to Grant for shipping the fossil remains to the British Museum and billing the Museum for his costs. Owen then returns to the subject of the fossil itself:

> All of the shells associated with the tusks would help to determine the age of the matrix. I know of no Sirenian recent or fossil with more than one pair of teeth: they descend from the fore part of the upper jaw. I am truly obliged to you for the continued kind interest you take in my life's pursuit.

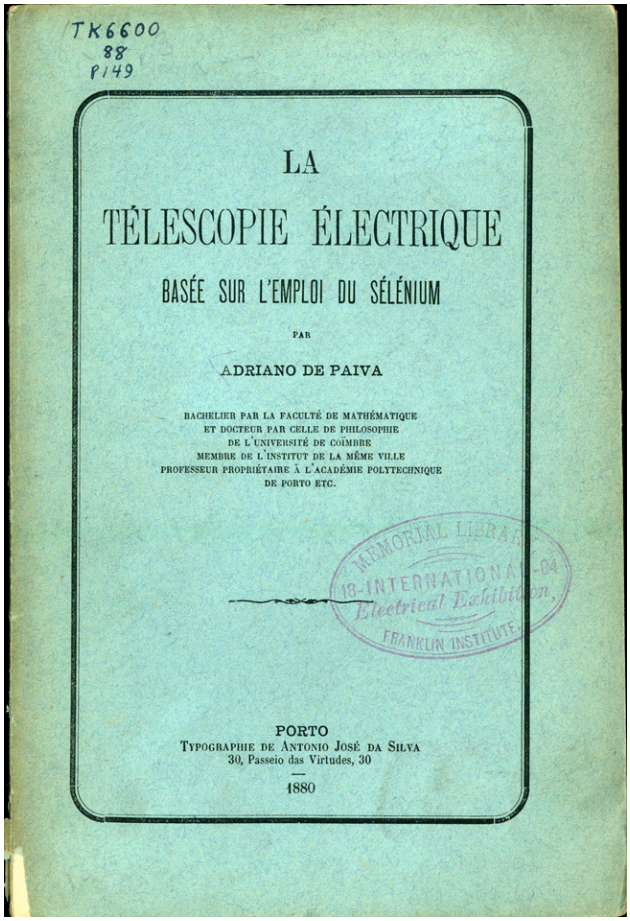
Owen's correspondent, identified in a later pencil note as being "of Egypt," was most likely Dr. James A. S. Grant, a Scottish physician who settled in Egypt in the 1860s. Grant assisted in the 1872 survey of the Great Pyramid, and took part in a number of archeological excavations. His large collection of Egyptian antiquities is now at the Marischal Museum at the University of Aberdeen. 40455

First Separate Publication on Television—Presentation Copy

111. Paiva, Adriano de (1847-1907). La télescopie électrique basée sur l'emploi du sélénium. 48pp. Porto: Antonio José da Silva, 1880. 232 x 157 mm. Original printed wrappers, small chip at foot of spine; boxed. Very minor creasing, but fine otherwise. *Presentation copy,* inscribed "Hommage de l'auteur" on the half-title. Stamps of the Franklin Institute Memorial Library on the front wrapper, half-title and p. 19, commemorating the Institute's 1884 International Electrical Exhibition; F. I. Library reference stamp on the verso of the front wrapper. $7500

First Edition. The first separate publication on television. *Rare*—OCLC and RLIN cite only three copies in the United States (Burndy Library, Lib. Congress, Cal. State Lib.), and the Karlsruhe database shows two copies in Portugal, one copy in Italy and one in France.

Paiva, a professor of chemistry and physics at the Polytechnic Academy at Porto (Portugal), became interested in the possibility of transmitting visual images by wire after the demonstration of Alexander Graham Bell's telephone in Lisbon in November 1877, and after reading L. Figuier's report, published in *L'Année Scientifique et Industrielle* (June 1877, but read by Paiva after November 1877), of the "telectroscope," an instrument supposedly



invented by Bell for the purpose of visual transmission. In February 1878 Paiva submitted a paper on a proposed telectroscope to the Portuguese journal *O Instituto*; the paper appeared in the March issue. Paiva's paper described an apparatus similar to that reported by Figuier, but was the first to suggest "televising" images by means of a selenium-covered plate, which would make use of selenium's peculiar electrical sensitivity to light (discovered in 1873 by Willoughby Smith) to convert light from images into electricity:

> The experiments we intended to make, and which we shall still attempt to realize, consisted in the employment of selenium as the sensitive plate of the camera of the telectroscope. This body possesses the remarkable property, recently discovered, of,—when interposed in an electric circuit which passes through a galvanometer,—making the needle of the latter deviate sensibly whenever a luminous ray incides on the selenium, and this deviation varies with the color of the light (p. 47).

According to Lange's *Histoire de la télévision*, Paiva's 1878 paper represents "la première formulation théorique de la possibilité d'utiliser le sélénium pour transmettre les images à distances" [the first theoretical formulation of the possibility of using selenium to transmit images at a distance]. In October 1879 Paiva published a paper in *Commercio da Portuguez* in which he presented another plan for a telectroscope, in which a selenium plate would be scanned by a metal point. As far as is known, Paiva never attempted to test his ideas experimentally.

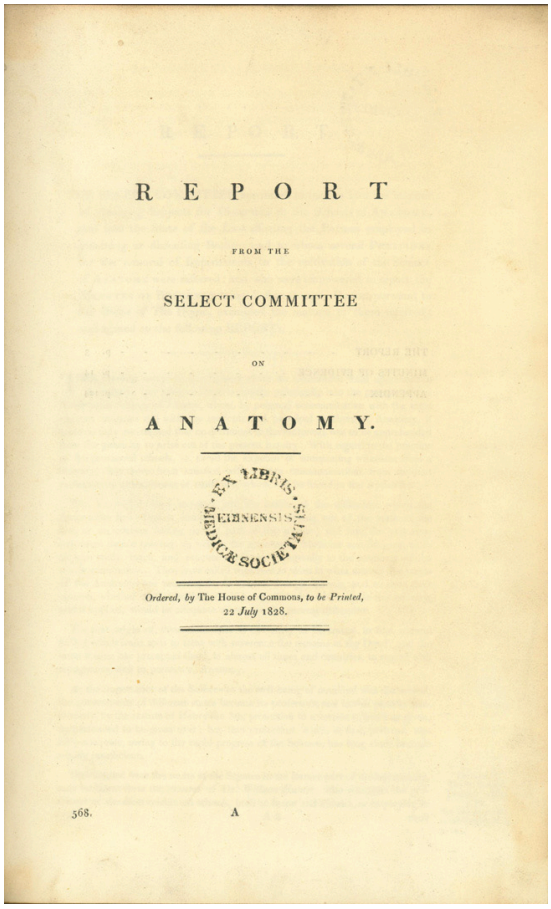
In 1880, in the interests of establishing priority, Paiva published *La téléscopie électrique*, which included reprints of his 1878 and 1879 papers (in both Portuguese and French), several articles on the telectroscope reprinted from scientific journals and newspapers, and an English translation of Paiva's 1878 paper made by his student William Macdonald Smith. This small pamphlet represents not only the first separate publication of Paiva's papers, but their first appearance in languages well known in the wider scientific community. This copy of *La téléscopie électrique* was presented by Paiva to the Franklin Institute in Philadelphia, which featured the work in its 1884 International Electrical Exhibition, the first exhibition on electricity held in the United States. Abramson, *History of Television*, pp. 8-9, 13. Shiers & Shiers, *Early Television: A Bibliographic Guide,* no. 142 ("the first publication of its kind on 'television'"). 40037

"Body-Snatching" Report

112. Parliament (Great Britain). House of Commons. Report from the select committee on anatomy. Folio. 150pp. [London:] House of Commons, 22 July 1828. 331 x 212 mm. 19th century boards, rebacked and recornered in calf, light edgewear. Very good copy. Old medical library stamp on title and first page.

$1000

First Edition of this highly interesting and entertaining report on the British body-snatching crisis. Since the mid-eighteenth century, obtaining cadavers for teaching purposes had been regulated in Britain by the Murder Act of 1752, which stipulated that only the corpses of executed criminals could be used for dissection. By the beginning of the nineteenth century, however, improvements in medical research coupled with a substantial drop in the number of executions caused the demand for cadavers to far outstrip the legal supply. This situation was ripe for exploitation by "resurrection men," criminals who robbed the graves of the newly deceased and sold their corpses to teachers of anatomy, who of necessity turned a blind eye to the illegality of these transactions. Some grave-robbers even resorted to murder, including the infamous William Burke, who in December 1828 was arrested in Edinburgh for the murders of over a dozen victims whose corpses he and his partner Hare sold



REPORT

FROM THE

SELECT COMMITTEE

ON

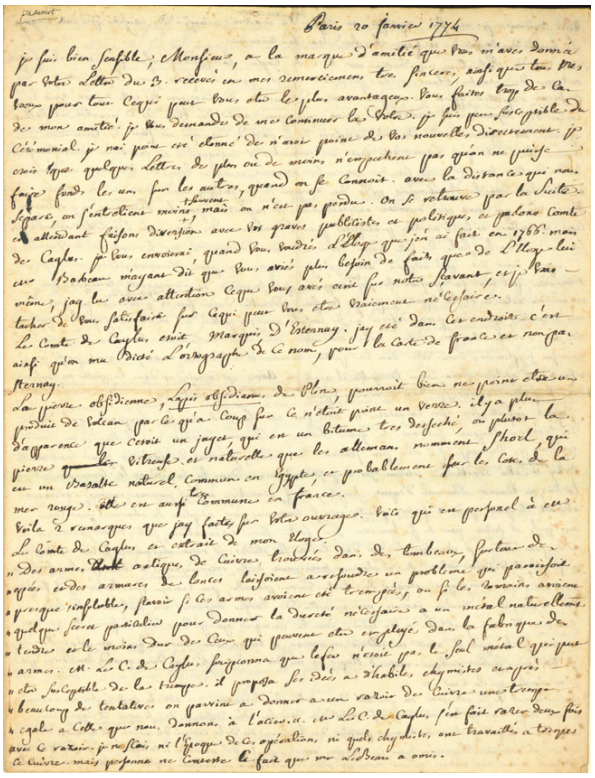
ANATOMY.

Ordered, by The House of Commons, to be Printed, 22 July 1828.

568. A

to Robert Knox, an anatomical demonstrator connected to Edinburgh University.

In the first half of 1828, in response to increasing calls for reform, the British Parliament appointed a committee to "enquire into the manner of obtaining subjects for dissection by schools of Anatomy and the State of law affecting persons employed in obtaining and dissecting bodies." During the course of its investigation the committee heard testimony from a wide range of witnesses, from eminent medical men to procurers of bodies for medical schools (these last identified only by initials). The medical men included Sir Astley Cooper, Benjamin Collins Brodie, John Abernethy, William Lawrence, Herbert Mayo, Granville Sharp Pattison (who himself was indicted for body-snatching at the age of 23), Thomas Southwood Smith, Henry Halford, John Webster and Benjamin Harrison, the treasurer of Guy's Hospital. The witness list can be found on page 13 of the committee's report. The testimony of these men, reproduced in full in the report, is followed by several appendices, including tables of paupers' deaths broken down by parish; the committee was proposing legislation that would allow the state to seize unclaimed corpses from workhouses and sell them to surgical schools. The committee's efforts were successful: In 1832 Parliament passed the Anatomy Act, granting licenses to teachers of anatomy and giving physicians, surgeons



and medical students legal access to corpses unclaimed after death. Wise, *The Italian Boy: A Tale of Murder and Body Snatching in 1830s London* (2004). 40962

113. Pasumot, François (1733-1804). Autograph letter signed, in French, to an unidentified correspondent. Paris, January 20, 1774. 4pp. 231 x 177 mm. Minor foxing, one or two tiny marginal tears, but fine otherwise.

$950

A long and detailed letter from French cartographic engineer and antiquarian François Pasumot, best known today as the co-creator, with Nicolas Desmarest (1725-1815), of the landmark geological "Map of a part of Auvergne, representing the lava flows, where basalt is found in prismatic and round forms . . . ," published as part of Desmarest's *Mémoire sur l'origine et la nature du basalt en grandes colonnes polygones* (*Mémoires de l'Académie royale des sciences 1771* [1774]: 705-775). The Pasumot-Desmarest map "set a new standard for precise graphic representation of the positions of distinct kinds of rock, and played a role in emerging conceptions about geomorphological change and about the distribution of volcanic rocks" (Taylor, p. 129).

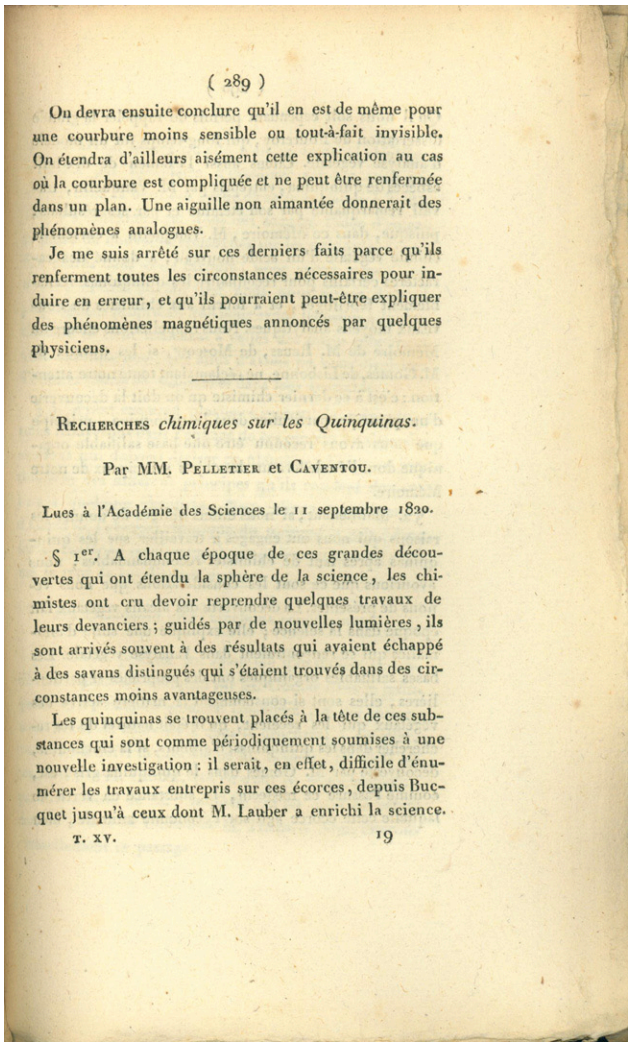
Pasumot devoted much of his time to the study of archeology and ancient geography, which he became interested in after the discovery of several ancient monuments in the Auxerre region of Burgundy, where he

was then teaching. He wrote several works on antiquarian subjects, the most important being *Recueil de mémoires géographiques sur quelques antiquités de la Gaule* (1765), in which he determined the topography of the ancient towns of Chora, Bandritum and Gergovia as well as the location of several sections of Roman road. The present letter is representative of Pasumot's activities in this area: In it, Pasumot obliges his correspondent with several long extracts, taking up nearly two pages of the letter, from his then-unpublished "Eloge" to fellow antiquarian the Comte de Caylus (1692-1765), whose seven-volume *Recueil d'antiquités égyptiennes, étruscanes, greques et romaines* (1752-55) helped lay the groundwork for the development of modern methods of archeology and art history. Pasumot's letter ends with an "Extrait du testament de feu M. le Comte de Caylus: à Paris, le 15 juillet 1765" (Extract from the will of the late M. le Comte de Caylus, Paris, July 15, 1765), and a transcript of the inscription on Caylus's tomb, taken from the July 1769 number of the *Journal des Scavants.* Pasumot's "Eloge" to the Comte de Caylus, completed in 1766, remained in manuscript until after Pasumot's death, when it was included in the posthumous *Dissertations et mémoires sur différens sujets d'antiquité et d'histoire* (1810-13) edited by Grivaud de la Vincelle. Taylor, "New light on geological mapping in Auvernge during the eighteenth century: The Pasumot-Desmarest collaborabion," *Revue d'histoire des sciences* 47 (1994): 129-136. *Nouvelle biographie générale.* 41003

Discovery of Quinine

114. Pelletier, Pierre Joseph (1788-1842) & **Caventou, Joseph Bienaimé** (1795-1877). Recherches chimiques sur les quinquinas. In *Annales de chimie et de physique* 15 (Nov.-Dec. 1820): 289-318, 337-365. Together 2 whole numbers, 8vo. 225-335, 337-448pp. 3 plates. 220 x 144 mm. (uncut and partly unopened). Original printed wrappers, spines worn & partly defective. Minor dust-soiling and fraying, otherwise very good. $2750

First Edition. Garrison-Morton 5233. The discovery and isolation of quinine. Between 1818 and 1821, the French chemists Pelletier and Caventou isolated a number of alkaloids from plants, including strychnine (1818), brucine and veratrine (1819), cinchonine and quinine (1820) and caffeine (1821). "The discovery of quinine was by far the most dramatic result of their collaboration, and soon there was worldwide demand for quinine as a therapeutic agent. In a letter written to the Academy of Sciences in 1827, Pelletier and Caventou pointed out that by 1826 a burgeoning French industry was annually producing approximately 90,000 ounces of quinine sulfate



(289)

On devra ensuite conclure qu'il en est de même pour une courbure moins sensible ou tout-à-fait invisible. On étendra d'ailleurs aisément cette explication au cas où la courbure est compliquée et ne peut être renfermée dans un plan. Une aiguille non aimantée donnerait des phénomènes analogues.

Je me suis arrêté sur ces derniers faits parce qu'ils renferment toutes les circonstances nécessaires pour induire en erreur, et qu'ils pourraient peut-être expliquer des phénomènes magnétiques annoncés par quelques physiciens.

RECHERCHES *chimiques sur les Quinquinas.*

Par MM. PELLETIER et CAVENTOU.

Lues à l'Académie des Sciences le 11 septembre 1820.

§ 1^er^. A chaque époque de ces grandes découvertes qui ont étendu la sphère de la science, les chimistes ont cru devoir reprendre quelques travaux de leurs devanciers ; guidés par de nouvelles lumières, ils sont arrivés souvent à des résultats qui avaient échappé à des savans distingués qui s'étaient trouvés dans des circonstances moins avantageuses.

Les quinquinas se trouvent placés à la tête de ces substances qui sont comme périodiquement soumises à une nouvelle investigation : il serait, en effet, difficile d'énumérer les travaux entrepris sur ces écorces, depuis Bucquet jusqu'à ceux dont M. Lauber a enrichi la science.

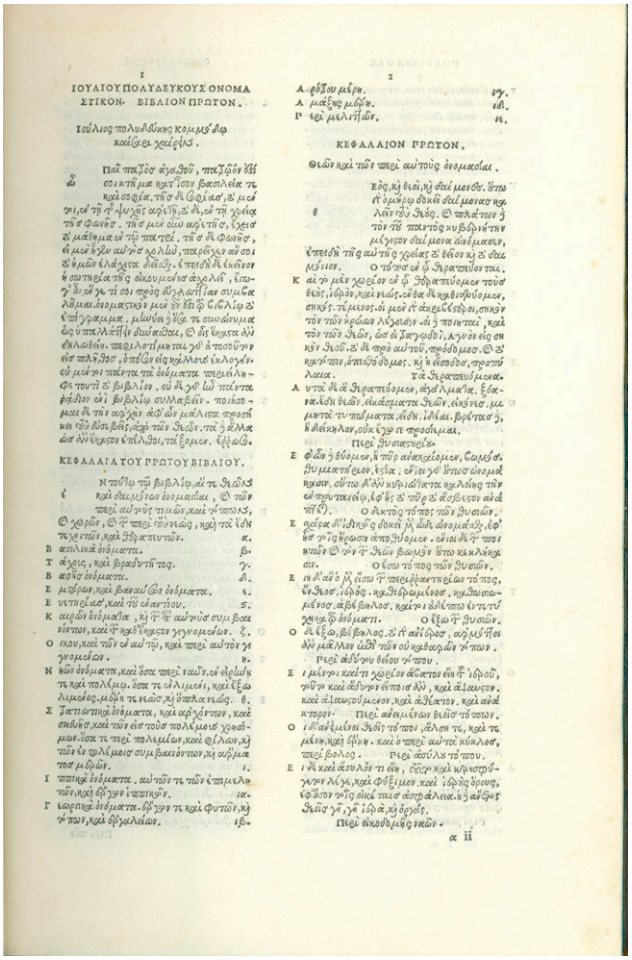
T. XV. 19

from cinchona bark, enough to treat more than a million individuals" (*Dictionary of Scientific Biography*). 40388

"Objects in Daily Life, the Theater, Politics . . . and Numerous Fragments from Lost Works"

115. Pollux, Julius [Poludeukes, Ioulios] (fl. 2^nd^ cent. A.D.). [Onomasticon] Pollucis vocabularii index in latinum tralatus, ut vel graece nescientibus nota sint . . . Folio. [104] ff. Venice: apud Aldum, April 1502. 296 x 201 mm. 18^th^ or early 19^th^ cent. gilt-ruled calf, a little rubbed, rebacked preserving original gilt spine. Fine copy. $17,500

Editio princeps. Pollux, a Greek grammarian and sophist from Alexandria, was appointed professor of rhetoric at the Academy in Athens by the Roman Emperor Commodus (son of Marcus Aurelius). According to

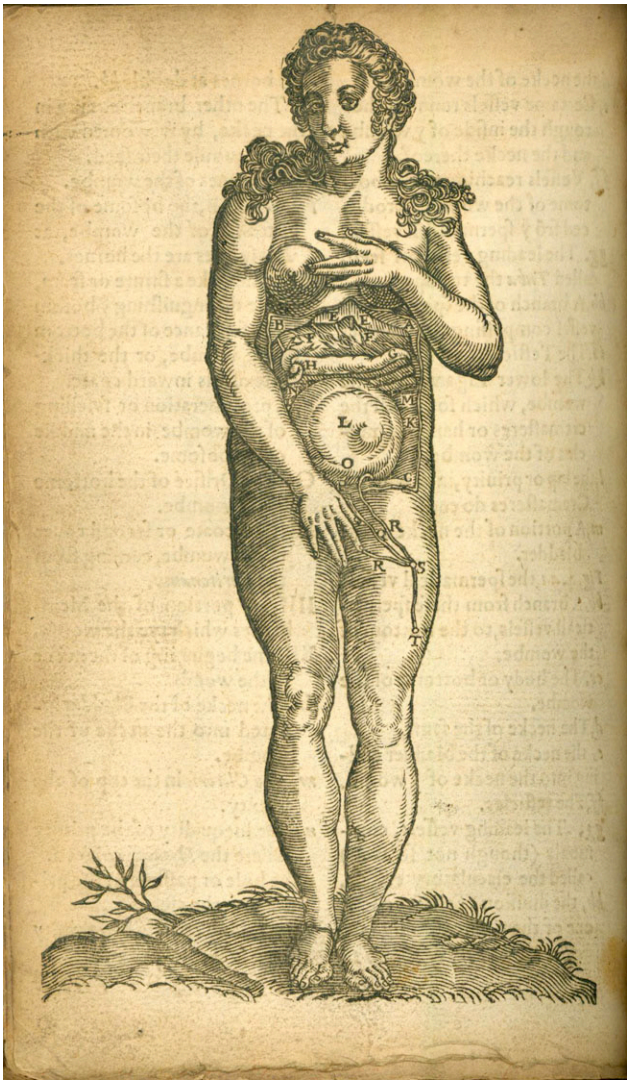


ΙΟΥΛΙΟΥ ΠΟΛΥΔΕΥΚΟΥΣ ΟΝΟΜΑΣΤΙΚΟΝ. ΒΙΒΛΙΟΝ ΠΡΩΤΟΝ.

ΚΕΦΑΛΑΙΑ ΤΟΥ ΠΡΩΤΟΥ ΒΙΒΛΙΟΥ.

ΚΕΦΑΛΑΙΟΝ ΠΡΩΤΟΝ.

Philostratus's *Lives of the Sophists,* Pollux was given this post on account of his melodious voice. Pollux was the author of numerous rhetorical works, of which only a few titles survive, and the *Onomasticon,* a thesaurus of Attic Greek synonyms and phrases arranged thematically in ten books. "It supplies in passing much rare and valuable information on many points of classical antiquity— objects in daily life, the theater, politics— and quotes numerous fragments of lost works. Pollux was probably the person satirized by Lucian as a worthless and ignorant person who gains a reputation as an orator by sheer effrontery, and pilloried in his *Lexiphanes*, a satire upon the affectation of obscure and obsolete words" (*Encyclopaedia Britannica* [1999]). The *editio princeps* of Pollux's *Onomasticon*, issued by Aldus Manutius in 1502, made the work widely available to Renaissance scholars and antiquaries, and anatomists of the period drew on the *Onomasticon* for obscure Greek words to describe parts of the body. The *Onomasticon* was a valuable source of information for several important nineteenth century works of classical scholarship, and has continued to attract the interest of researchers in a variety of fields—in 2004, John H. Dierkx published an article on "Dermatologic terms in the *Onomasticon* of Julius Pollux" in *The American Journal of Dermatopathology.* Adams P-1787. Ahmanson-Murphy 54. Renouard, pp. 32-33. 40354

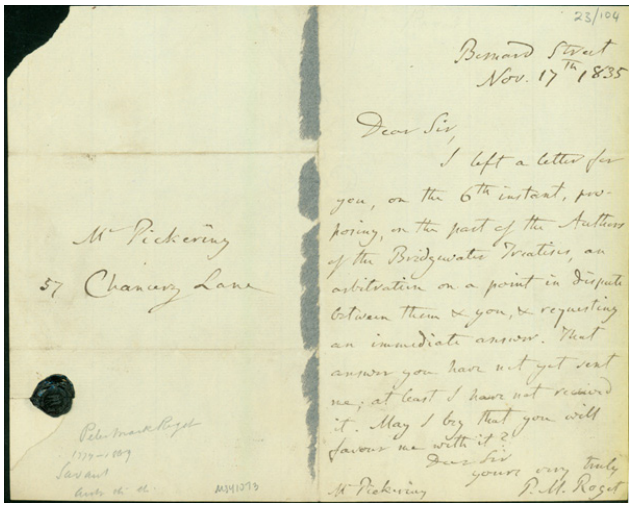


Rare Early Physician's Aid

116. [Read (or Reid), Alexander (1586?-1641).] Somatographia Anthropine [in Greek letters] or a description of the body of man. [Abridged from **Crooke, Helkiah** (1576-1635). Mikrokosmographia. A description of the body of man.] 8vo. [4], 153ff., final blank. *Lacks first blank and f. 154* (explanation of last illustration). Text on rectos, woodcuts on versos, some multi-figure. [London]: W. Iaggard [Jaggard], 1616. 180 x 115 mm. Title with margins renewed, affecting some letters including imprint date, R1 with outer margin renewed, some edges frayed, light browning. Modern calf in antique style. Some early marginalia on first woodcut and last blank.

$3750

First Edition of Read's abridgement of Helkiah Crooke's folio anatomy published in 1615. Crooke's work, based on Continental sources such as Bauhin and Laurent, was one of the earliest full-scale works of anatomy and physiology in English. The abridgement was commissioned by the publisher to provide a portable and affordable version, and as such, the *Somatographia Anthropine* is one of the earliest physician's aids in English. There is a woodcut illustration on the verso of every leaf with its explanation opposite on the recto. Read lectured at the Barber-Surgeon's Hall from 1632-34, and issued most of his writings in the 1630s. They were held in great repute and continued to be published for fifty years. At the time he worked anonymously for the publisher Jaggard he had probably just returned from studying surgery in France. *Very rare in any condition.* The Wellcome copy lacks the last two leaves, the NLM copy lacks the first preliminary leaf, and the Royal College of Surgeons copy cited as Russell 681 has two leaves in facsimile. NSTC 20782. DNB (article written by Sir D'Arcy Power in which he states that he had no evidence for the original 1616 edition aside from a single source [Wood]). 40086



117. Roget, Peter Mark (1779-1869). Autograph letter signed to [William] Pickering (1796-1854). [London] Bernard Street, Nov. 17, 1835. 1 page plus integral address leaf. 187 x 116 mm. Traces of former mounting, small tear in one corner where seal was broken (not affecting text), but very good. $650

From the author of "Roget's Thesaurus" to British publisher William Pickering regarding the Bridgewater Treatises, a series of eight treatises on natural theology commissioned by the Earl of Bridgewater to explore "the Power, Wisdom, and Goodness of God, as manifested in the Creation." Roget was the author of the fifth Bridgewater Treatise, a work titled *Animal and Vegetable Physiology Considered with Reference to Natural Theology* (1834); Pickering was the publisher of the series. The letter reads as follows:

> Dear Sir, I left a letter for you, on the 6th instant, proposing, on the part of the Authors of the Bridgewater Treatises, an arbitration on a point in dispute between them & you, & requesting an immediate answer. That answer you have not yet sent me; at least I have not received it. May I beg that you will favour me with it? Dear Sir, Yours very truly, P. M. Roget.

41073

118. Roget, Peter Mark (1779-1869). Portrait photograph, from Maull and Polyblank's *Photographic Portraits of Living Celebrities* (1856-60). 305 x 253 mm. Small tear in one margin, slight soiling, but very good. $1250

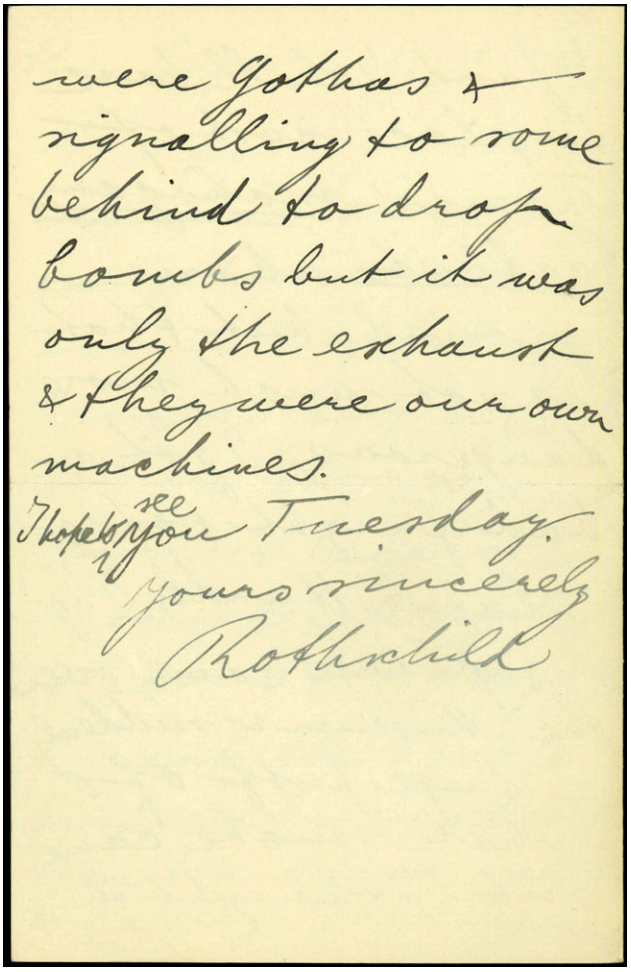
Photograph of Peter Mark Roget, best known as the compiler of *Roget's Thesaurus* (first ed. 1852), which has remained in print since its first publication. He is also known for having invented the log-log slide rule (1815), and for his 1824 paper entitled "Explanation of an optical deception in the appearance of the spokes of a wheel when seen through vertical apertures," which dealt with persistence of vision in regard to moving objects; this paper is one of the foundation works in the history of cinema. Roget trained as a physician, and helped to found both the School of Medicine at the University of Manchester, and the Medical and Chirurgical Society of London, which later became the Royal Society of Medicine. He

was the author of the fifth Bridgewater Treatise, *Animal and Vegetable Physiology Considered with Reference to Natural Theology* (1834). 40218

119. Rothschild, Walter (1868-1937). Six autograph letters signed to Charles E. Fagan, secretary of the Natural History Museum in London. V.p., November 26, 1912 – June 19, 1918. Approx. 18pp. total. 180 x 115 mm. **[With:] Rothschild, Nathaniel Charles** (1877-1923). Four autograph letters signed and one typed letter signed to Fagan. V.p., February 7, 1913 – May 21, 1915. Approx. 7pp. total. Various sizes. Together 11 items. Fine. $1500

A remarkable collection of letters written by Walter Rothschild (2nd Baron Rothschild) and his younger brother, Nathaniel Charles, to the secretary of the Natural History Museum in London. Scions of the British branch of the immensely wealthy and influential House of Rothschild, both brothers departed from their family's traditional roles as bankers and financiers to make important contributions to zoological science. Walter specialized in the taxonomy of birds and butterflies and amassed an enormous collection of bird skins, bird's eggs, butterflies and beetles, which—together with his thousands of specimens of mammals, reptiles and fishes—represented the largest privately assembled zoological collection ever formed. He established his own museum of natural history at his estate in Tring, opening it to the public in 1892, and in 1899 he became a trustee of the Natural History Museum. Nathaniel Charles devoted himself to entomology, specializing in fleas; it was he who discovered and named the plague vector flea, *Xenopsylla cheopis* (Rothschild). He was also a pioneer of nature conservation in Britain, founding the Society for the Promotion of Nature Reserves (the forerunner of the Wildlife Trusts partnership) in 1912.

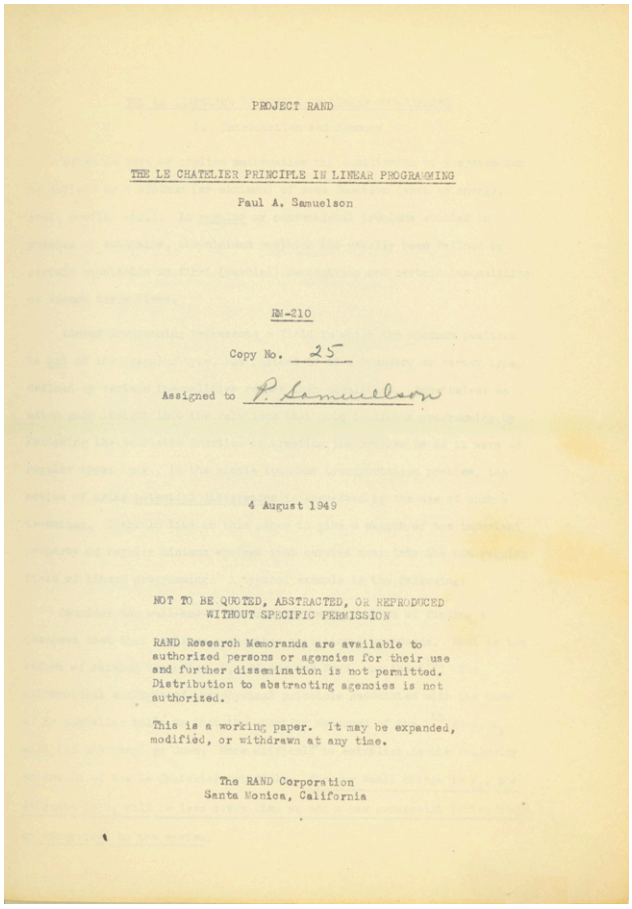
Most of the collection's letters from Walter Rothschild to Fagan were written in his role as trustee of the Natural History Museum, and have to do with the museum's operations. The fourth and fifth letters, both written in early 1918, refer to wartime dangers posed to the Museum's collections. Nathaniel Charles's letters are more varied—the first contains a probable reference to Society for the Promotion of Nature Reserves, while others refer to conference reports and charity work. Both brothers also wrote to Fagan to thank him for letters of condolence sent upon the death of their father, Baron Nathan Rothschild, in March 1915. 41082


were Gothas & signalling to some behind to drop bombs but it was only the exhaust & they were our own machines.
I hope to see you Tuesday.
Yours sincerely
Rothschild

Author's Copy

120. Samuelson, Paul Anthony (1915-2009). The Le Chatelier principle in linear programming. U.S. Air Force Project RAND report RM-210. Typescript duplicated by early chemical photocopy process. 18ff. Santa Monica, CA: The RAND Corporation, 4 August 1949. 280 x 217 mm. Original printed wrappers with author and title of paper supplied in original typescript, three or four small marginal tears, but fine otherwise. Samuelson's copy, no. 25 of most likely 50 copies or fewer, assigned to Samuelson on the title in a secretarial hand. $4500

First Edition, the Author's Own Copy, of this rare and important research memorandum, in which Samuelson first applied the Le Chatelier principle of thermodynamics—which he had introduced into economics two years before—to the field of linear programming. **Extremely Rare**, with only one copy (Duke University) cited in OCLC. This working paper, prepared under the auspices of the RAND Corporation,



PROJECT RAND

THE LE CHATELIER PRINCIPLE IN LINEAR PROGRAMMING

Paul A. Samuelson

RM-210

Copy No. 25

Assigned to P. Samuelson

4 August 1949

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was most likely issued in an edition of 50 copies or fewer; a note on the title reads that "RAND Research Memoranda are available to authorized persons or agencies for their use and further dissemination is not permitted."

Paul Anthony Samuelson, the first American to receive the Nobel Prize in Economics, was responsible, more than anyone else, for incorporating the use of mathematics and the principles of optimization that characterize the modern paradigm of economic analysis. In his magnum opus, *The Foundations of Economic Analysis* (1947), Samuelson established the method of "comparative statics" by adapting the Le Châtelier principle of thermodynamics, in order to solve the fundamental problem of explaining how the coordinates of an equilibrium point defined by a system of equations shift when one or more of the given determining parameters changes. Le Châtelier's principle can loosely be formulated in the following way: "If the external conditions of a thermodynamic system are altered, the equilibrium of the system will tend to move in such a direction as to oppose the change in external conditions." In the context of economics this principle yields itself as the property that if the quantity of one of the available resources changes, then its shadow price changes in the opposite direction, or in other words, the marginal value of a resource increases if its amount is reduced, and vice versa. Samuelson's method of comparative statics lies at the core of modern economic analysis.

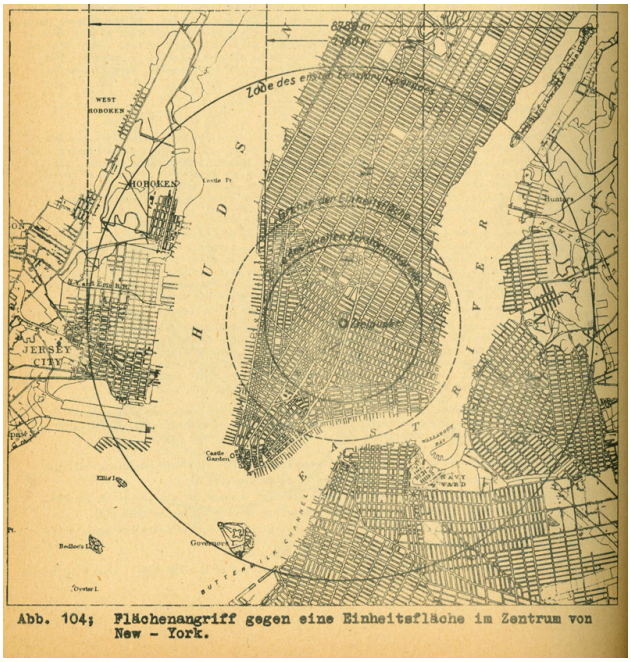
In this research paper Samuelson first introduced his principle, which later became known as the Samuelson-Le Châtelier (or correspondence) principle, into the newly born field of linear programming, which is a mathematical method for determining a way to achieve the best outcome in a given mathematical model. The method was first developed in 1939 by Russian mathematician Leonid Kantorovich, and further expanded in the following decade by George Dantzig, who published the simplex method in 1947, and John von Neumann, who developed the theory of the duality in the same year. Linear programming is used most often in business, economics and operations research. Samuelson published numerous works on linear programming, culminating with *Linear Programming and Economic Analysis* (1958), co-authored with Robert Dorfman and Robert Solow. 41018

Forerunner of the Space Shuttle

121. Sänger, Eugen (1905-64) and **Irene Bredt.** A rocket drive for long range bombers. Translated by M. Hamermesh. Offset typescript. [2], 174pp., including folding plates (some color). Text illustrations and diagrams. N.p.: Technical Information Branch, BuAer, Navy Department, [1946]. 261 x 218 mm. Original printed wrappers, slightly worn and creased. Paper moderately browned, staples in the top margin of the front wrapper, but very good. Front wrapper stamped "Unclassified"; back wrapper date-stamped "Oct. 15 9 19 AM '46." $1500

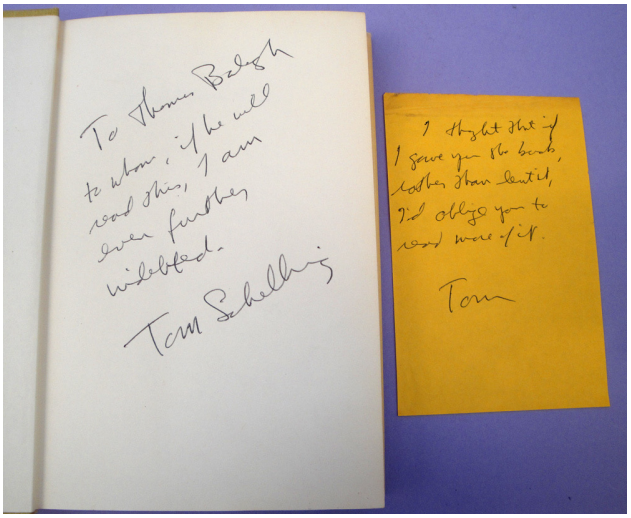
The Rare First English Translation of Sänger and Bredt's *Über einen Raketenantrieb für Fernbomber* (1944), a top secret report prepared for the German State Ministry for Aviation and issued in only 125 copies. The English translation, prepared by the Technical Information Branch of U.S. Navy's Bureau of Aeronautics, was also limited to a small number of copies. A condensed version of the translation was published in 1952.

Sänger and Bredt's report was originally intended to form part of the second volume of Sänger's revolutionary *Raketenflugtechnik* (1933), the first study leading to the development of a reusable human-piloted rocket-powered space vehicle. Sänger's "Silverbird" concept, which he and Bredt (who later became his wife) worked on during the 1930s, is a direct ancestor of the X-plane and the space shuttle; it was conceived of as "a winged vehicle propelled by a rocket engine burning liquid oxygen and kerosene, capable of reaching Mach 10.0 at altitudes in excess of



100 miles" (Jenkins, *Space Shuttle*, p. 1). In order to realize his concept of a reusable rocket engine, Sänger had to solve the major problem of how to cool the engine; this he accomplished by designing a "regeneratively cooled" engine cooled by its own fuel circulating around the combustion chamber. "Between 1932 and 1934, [Sänger] performed a series of pioneering experiments with reinforced cooled liquid rocket motors capable of burning mixtures of gas-oil and liquid oxygen (LOX), achieving thrust levels up to 30kp, pressures up to 50 bars, and exhaust velocities of about 3,000 m/s" (Sänger & Szames, "From the Silverbird to interstellar voyages," p. 2).

With the advent of World War II, Sänger and Bredt's space vehicle project had to be repurposed for military use if it was to survive. A preliminary report on space vehicles, prepared by the two in 1941, had been rejected by the German Research Institute for Aviation; Sänger and Bredt reworked this into a report on a rocket propulsion engine for long range bombers, issued as the GRIA's "Secret Command Report" UM 3538. "Thus, Sänger's former rocket-powered civilian space transport airplane project now evolved into an Earth-orbiting, single-stage, rocket-powered intercontinental bombing machine with a launch weight of 100 tons . . . It would be propelled by a rocket engine using highly efficient fuels with liquid oxygen used as an oxidizer in a combustion chamber at a pressure of 100 atmospheres and creating 100 tons of thrust" (Myrha, p. 78). This rocket-powered bomber was designed to attack strategic targets in the United States: New York City, Washington DC, Chicago and the steel-refining plants in Pittsburgh. Page 156 of Sänger and Bredt's report shows a map of lower Manhattan superimposed with a bull's-eye and containing calculations of the expected destruction pattern. Sänger-Bredt, "The Silver Bird story: A memoir," in Hall, ed., *Essays on the History of Rocketry and Astronautics,* vol. 1 (1977), pp. 195-228. Myrha, *Sänger: Germany's Orbital Rocket Bomber in World War II* (2002), *passim*. 40949

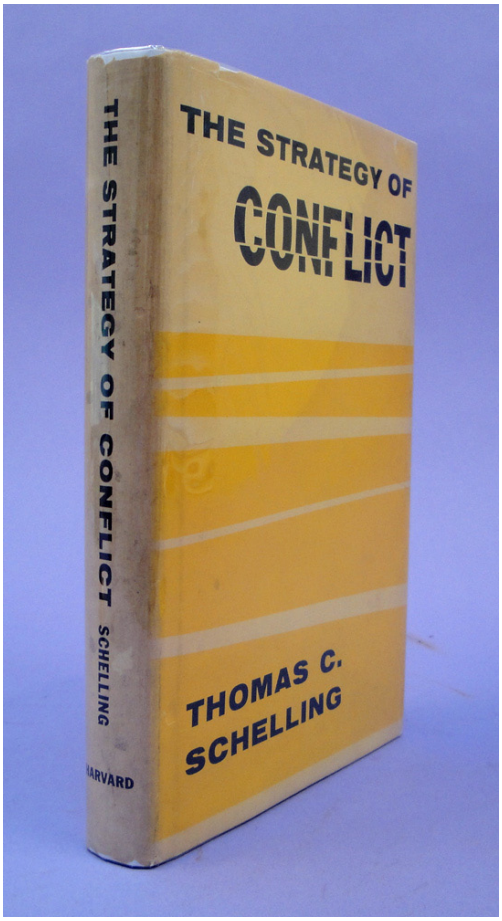


"Game Theory as a Unifying Framework for the Social Sciences"—Presentation Copy of Schelling's Nobel Prize-Winning Work

122. Schelling, Thomas C. (1921-). The strategy of conflict. vii, [3], 309pp. Cambridge, MA: Harvard University Press, 1960. 210 x 137 mm. Original cloth, dust-jacket (slightly chipped at head and foot). Very good copy, *inscribed by Schelling to British economist Thomas Balogh* (1905-85) on the front endpaper: "To Thomas Balogh to whom, if he will read this, I am even further indebted. Tom Schelling." Laid in is Schelling's signed autograph note to Balogh: "I thought that if I gave you the book, rather than lent it, I'd oblige you to read more of it. Tom."

$6000

First Edition of Schelling's most famous book, a study of bargaining and strategic behavior which pioneered the application of game theory to economics, business, warfare and other real-world situations. *The Strategy of Conflict* is considered one of the hundred books most influential in the West in the postwar era. The book introduced the concept of the "Schelling point" (also known as the focal point), defined as a point—physical or mental—that people will tend to converge on in the absence of communication, because it seems natural, special or relevant to them. In 2005 Schelling was awarded a share

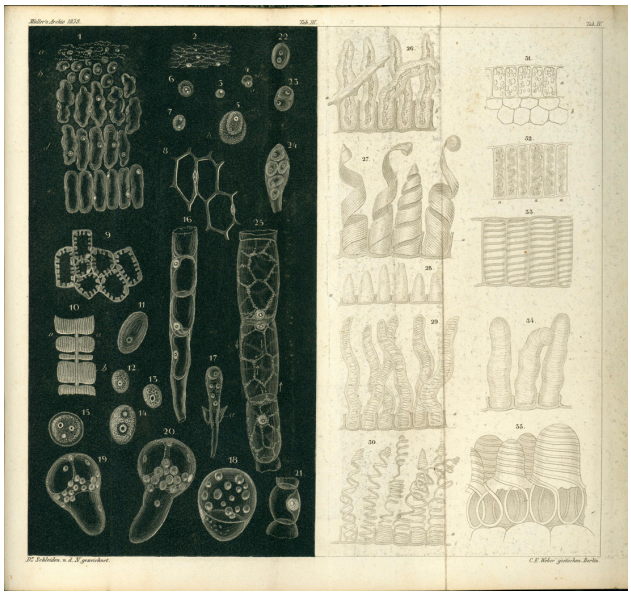


of the Nobel Prize in economics for his groundbreaking work in this field.

"Against the backdrop of the nuclear arms race in the late 1950s, Thomas Schelling's book *The Strategy of Conflict* set forth his vision of game theory as a unifying framework for the social sciences. Schelling showed that a party can strengthen its position by overtly worsening its own options, that the capability to retaliate can be more useful than the ability to resist an attack, and that uncertain retaliation is more credible and more efficient than certain retaliation. These insights have proven to be of great relevance for conflict resolution and efforts to avoid war.

"Schelling's work prompted new developments in game theory and accelerated its use and application throughout the social sciences. Notably, his analysis of strategic commitments has explained a wide range of phenomena, from the competitive strategies of firms to the delegation of political decision power" (Nobelprize.org).

Schelling presented this copy of his book to Thomas Balogh (Lord Balogh), a Hungarian-born economist who moved to England in the 1930s and taught for many years at Balliol College, Oxford and at the London School of Economics. In 1964 he was made Economic Advisor to the British Cabinet, and in 1968 he received a life peerage. He served as Britain's Minister of State for Energy from 1974 to 1977. "The Prize in Economics 2005 - Press Release". Nobelprize.org. 7 Dec 2010. Weisman, "2 Game Theorists Share a Nobel - The Boston Globe." Boston.com. 11 Oct. 2006. Web. 07 Dec. 2010. 41050

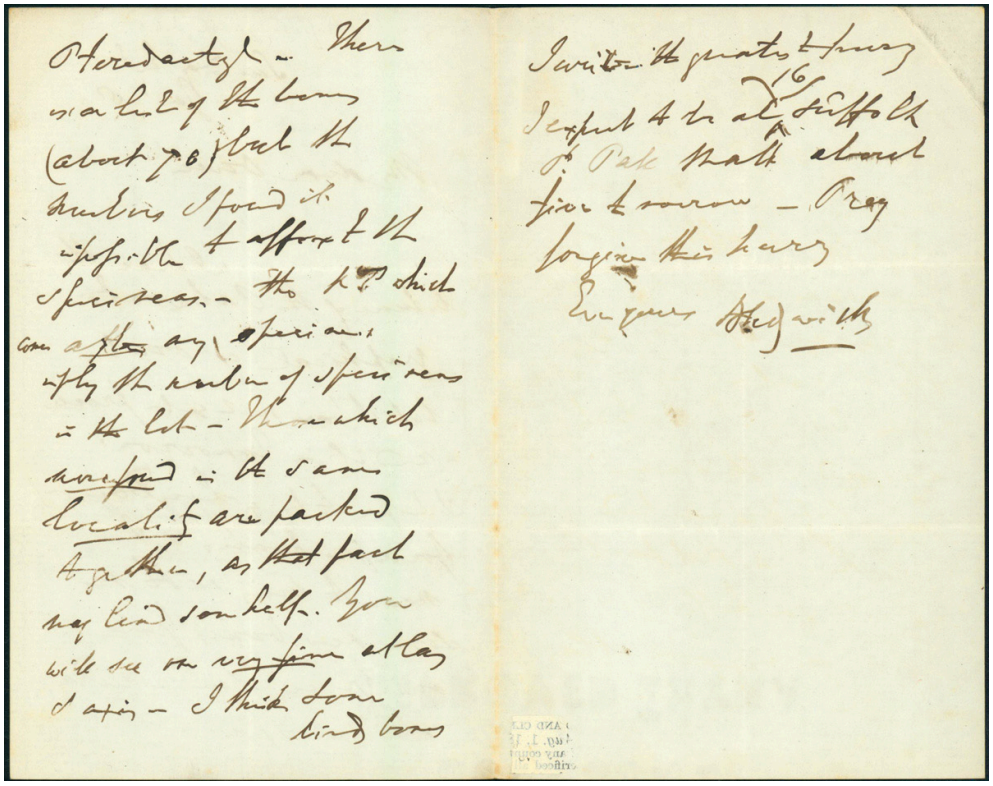


Cell Theory

123. Schleiden, Matthias Jakob (1804-81). Beiträge zur Phytogenesis. In *Archiv für Anatomie, Physiologie und wissenschaftliche Medicin* (1838): 137-76. 2 plates (nos. III and IV) on one folding sheet. Whole volume, 8vo. [2], cxcviii, 608pp. 16 plates on 15 sheets. Pp. 605-8 bound before p. 1 in this copy. Berlin: Veit, 1838. Marbled boards c. 1838, rebacked and repaired. Light browning, occasional faint spotting, but very good. Stamps of the Muséum d'Histoire Naturelle on the title.

$4500

First Edition. G-M 112. PMM 307a. Acting upon his belief that plants represented aggregates of individual cells, Schleiden published a study of the vegetable cell, beginning with the nucleus (discovered by Robert Brown in 1832), and proceeding to a discussion of its role in the formation of cells. Schleiden's "watch-glass" theory of cell formation was wrong—he believed that they crystallized in a formative liquid containing sugar, gum and mucous—but it focused attention on the problem of cell reproduction and provided a testable hypothesis. More significant was Schleiden's insistence that plants consisted entirely of cells and cell products. In 1839 Theodor Schwann published *Mikroskopische Untersuchungen*, in which he demonstrated that Schleiden's conclusion also applies to animals, thus



establishing the cell as the elementary unit common to both plant and animal kingdoms.

Tradition has it that the cell-theory was conceived in a conversation between Schleiden and Schwann on phytogenesis. A few years after the appearance of the above paper, Schleiden published his *Grundzüge der wissenschaftlichen Botanik* (1842-43), which gave the best and most detailed statement on the cell as the basis of the vegetable world. DSB. Norman 1907 (offprint version). Hughes, *Hist. Cytology*, pp. 37ff. 38168

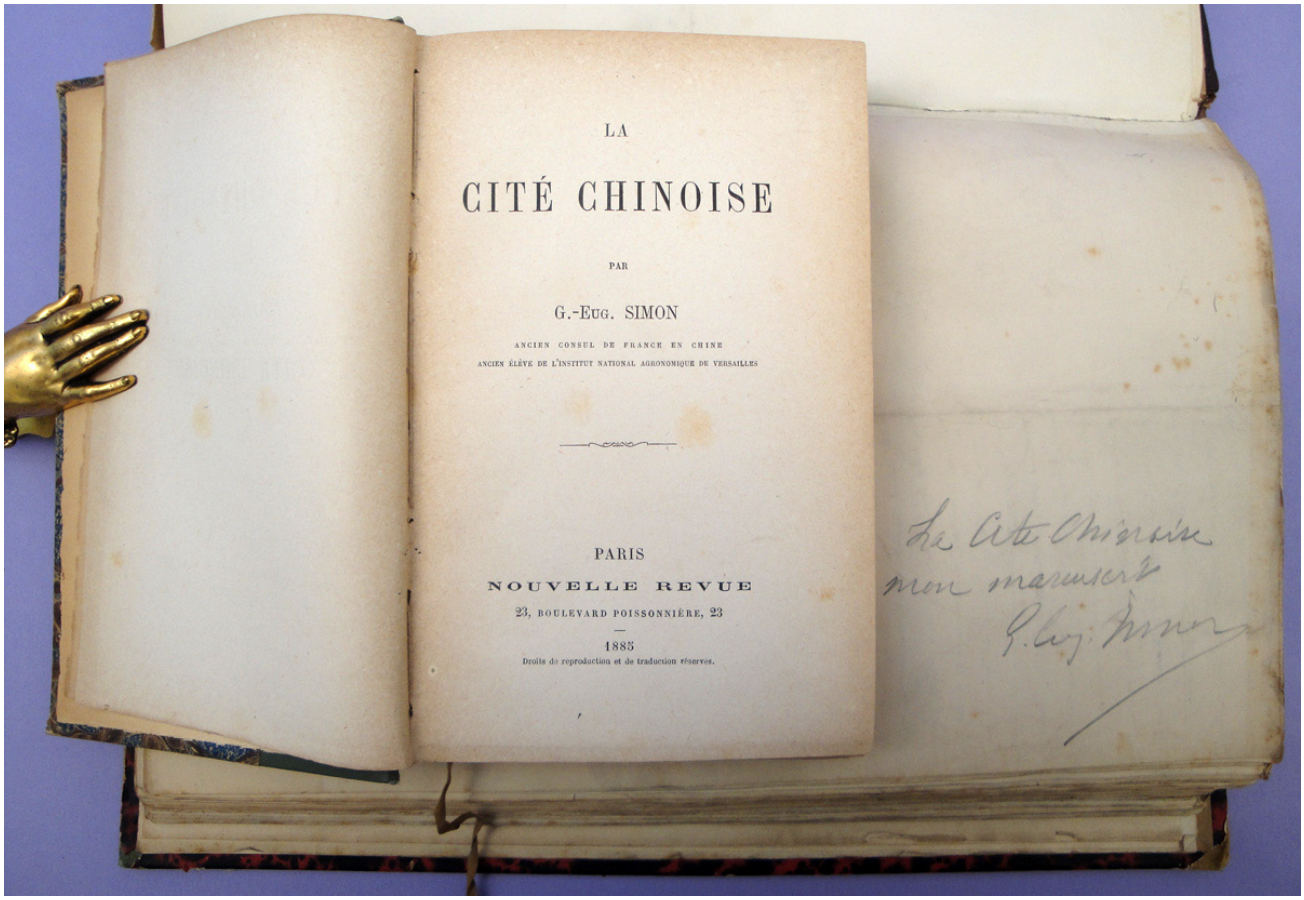
"Certainly One New Species of Pterodactyl"

124. Sedgwick, Adam (1785-1873). **(1)** Autograph letter signed to Richard Owen (1804-92). N.p., "Jany. 8," n.y. 2-1/2pp. 181 x 114 mm. Light soiling along folds, traces of former mounting, pencil notes in another hand on final blank page, but very good. **(2)** Lithograph portrait of Sedgwick at age 59 by J. H. Lynch after a drawing by S. Laurence, mounted. [1844.] 207 x 161 mm. (mount measures 238 x 163 mm.) **Signed by Sedgwick** in the lower margin of the mount. Small chip in lower right corner of mount, but very good. $1250

(1) Letter with excellent paleontological content from eminent British geologist Adam Sedgwick, who defined the Devonian and Cambrian ages in the geological time scale, to Richard Owen, the foremost British comparative anatomist and paleontologist of his era and the prime mover behind the foundation of London's Natural History Museum (est. 1881). The letter reads in part as follows:

> My dear Owen, I hear the volume of the Palaeontographical is out but I have not yet procured it. Tomorrow I hope to be in London, only for a few hours as I am off to the North on Tuesday. I mean to bring with me some new bones from our "Green Sand"—certainly one new species of Pterodactyl. There is a list of the bones (about 70) but the numbers I found it impossible to affix to the specimens. The nos. which come after any specimen imply the number of specimens in the lot. Those which were found in the same locality are packed together, as that fact may lend some help. You will see one very fine atlas & axis—I think some bird bones.
> . . .

As Woodwardian Professor of Geology at Cambridge, Sedgwick worked actively to enrich the fossil collections of the university's Woodwardian Museum, particularly with the remains of pterosaurs (pterodactyls) found in the Cambridge "Upper Greensand" stratum. His paleontological activities would have been of great interest to Owen, who coined the term "dinosaur" and earned



the nickname of "the British Cuvier" with his celebrated reports on the extinct South American Megatherium. It is likely that Sedgwick was giving the "new bones" referred to in his letter to the British Museum's Natural History Departments, which Owen had headed since 1856.

(2) A portrait (head only) of Sedgwick in late middle age, showing him in profile. See Clark and Hughes, *Life and Letters of the Reverend Adam Sedgwick* (1890), Vol. 2, p. 70. 41100

Manuscript of a Pioneering Sociological Treatise on China, Together with a Presentation Copy of the Published Work

125. Simon, G. Eugène (1829-96). **(1)** Manuscrits. [On following leaf:] La cité chinoise . . . Le village abandonné. Pages détachées. Autograph manuscript. 253ff., variously numbered, plus unnumbered cover sheets. 317 x 202 mm. Bound in quarter morocco, mottled boards, gilt-lettered spine, light rubbing. Some edges frayed, minor soiling. Inscribed by Simon on the first leaf: "A ma bien aimée soeur Adeline G. Eug. Simon" and signed by him in a few other places in the manuscript. Printer's marks and annotations. **(2)** La cité chinoise. 12mo. [8], 389, [3]pp. Paris: Nouvelle Revue, 1885. 183 x 116 mm. Marbled boards, cloth spine c. 1885, light rubbing. Light browning and foxing. Sheet bound in front with Simon's autograph presentation inscription: "Monsieur Maret hommage de l'auteur G. Eug. Simon." Pencil notes of former owner on this sheet and several leaves of text. $15,000

(1) The manuscript of Eugène Simon's *La cité chinoise* (1885), a pioneering sociological analysis of Chinese culture and traditions that was later praised by one Chinese scholar as "the best book written in any European language on the spirit of the Chinese civilization" (Gu Hongming, *Spirit of the Chinese People* [1915]; quoted by David Gosset). Simon, an agricultural engineer, traveled to China in the early 1860s and spent four years touring the country and studying its inhabitants and customs. During the latter part of the 1860s he served as France's consul in China. After his return to France, Simon published *La cité chinoise*, a work that helped to counter the prevailing mid-nineteenth

century European view of China as a stagnant, despotic and morally inferior society. Simon's book

> idealizes China as a peasant society where liberty in all its forms—political, economic, religious, and intellectual—is realized. Simon's book, which was very popular, prophesied that all European attempts to subject China to industrialization, colonization, or modernization would fail because of the astounding vitality of the rural nation and its naturalistic civilization. On contemporaries, Simon's book . . . had an impact out of all proportion to its intrinsic importance. Paul Ernst, the German poet, was inspired by Simon to adulate the collectivist peasant culture of China for giving a higher place to spiritual than to material values ("China in Western Thought and Culture," *Dictionary of the History of Ideas*, I, p. 371).

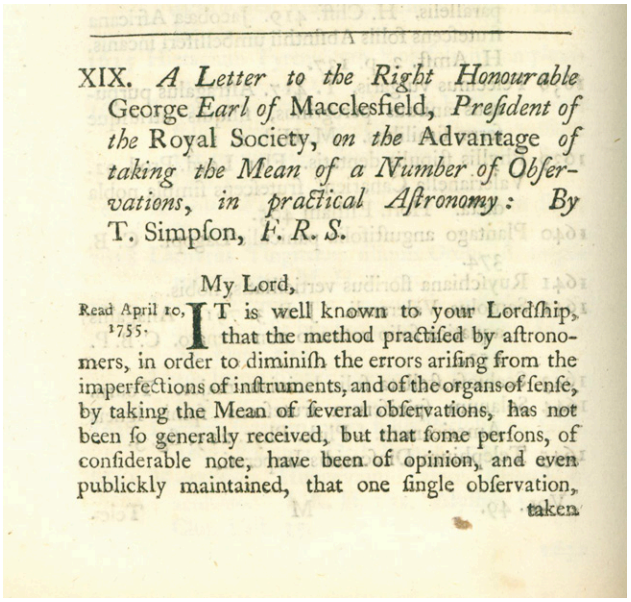
The manuscript volume we are offering contains not only the manuscript of *La cité chinoise* that Simon sent to the printer, but also an additional, apparently unpublished shorter work entitled "Le village abandonnée," as well as a section titled "Pages détachées," which appears to contain drafts, revisions or deleted pages from *La cité chinoise.* Some of these pages have portions cut from them; these probably correspond to some of the pasted-in corrections in Simon's manuscript. Simon presented this manuscript book to his sister, as indicated in his presentation inscription on the first leaf.

(2) First Edition. Simon's book went through seven editions between 1885 and 1891. This copy of the first edition bears Simon's presentation inscription to a M. Maret. Gosset, "The Dragon's Metamorphosis," *Asia Times*, Dec 9, 2006. 34390

Classic of Statistics and Data Processing

126. Simpson, Thomas (1710-61). On the advantage of taking the mean of a number of observations, in practical astronomy. In: *Phil. Trans.* 49 (1755), pp. 82-93. Whole number, 4to. [16], 444pp. Fold. plates, text illustrations. London: L. Davis & C. Reymers, 1756. 255 x 195 mm. (uncut & unopened). Quarter morocco, marbled boards in period style. Some dust-soiling and fraying to edges, but very good.

$1500



XIX. *A Letter to the Right Honourable* George *Earl of* Macclesfield, *President of the* Royal Society, *on the* Advantage *of taking the Mean of a Number of Obſervations, in practical Aſtronomy: By* T. Simpſon, *F. R. S.*

My Lord,

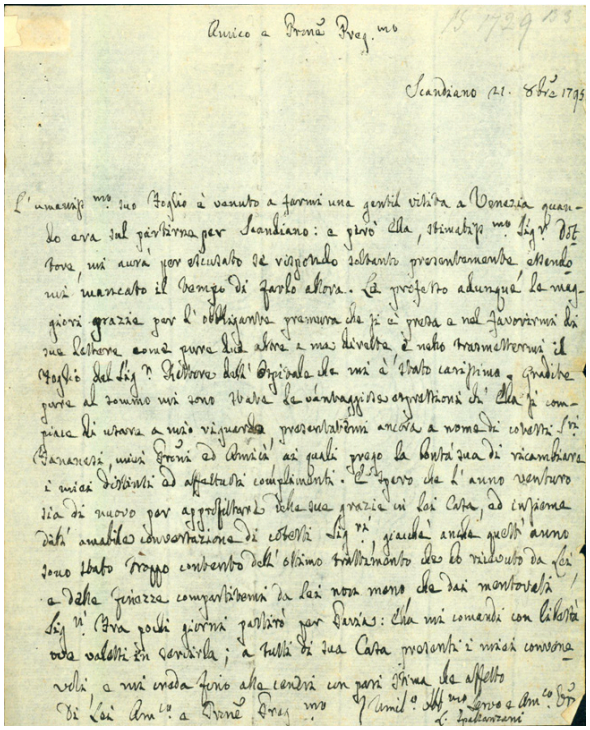
Read April 10, 1755. IT is well known to your Lordſhip, that the method practiſed by aſtronomers, in order to diminiſh the errors ariſing from the imperfections of inſtruments, and of the organs of ſenſe, by taking the Mean of ſeveral obſervations, has not been ſo generally received, but that ſome perſons, of conſiderable note, have been of opinion, and even publickly maintained, that one ſingle obſervation, taken

First Edition. Simpson's paper is considered a milestone in statistical inference, as well as the earliest formal treatment of any data-processing practice. Simpson was the first to attempt to prove mathematically that the mean result of several observations is nearer to the truth than any single observation (the law of large numbers). A key feature of his paper was that Simpson chose to focus "not on the observations themselves . . . but on the errors made in the observations, on the differences between the recorded observations and the actual position of the body being observed. . . . [This] was the critical step that was to open the door to an applicable quantification of uncertainty" (Stigler, *Hist. Statistics,* pp. 90-91; see also pp. 88-94). "Simpson was the first to characterize the errors in observations as independent events, taking positive and negative values with equal probabilities, and the first to provide a mathematical expression for the probability that the error in the mean result will lie between assigned limits" (Todhunter, *Hist. Probability,* p. 309).

Also present in this volume are two important medical papers: Jonathan Wathen's "A method proposed to restore the hearing, when injured from an obstruction of the tuba Eustachiana" (G-M 3356), describing his method of relieving catarrhal deafness by injections into the Eustachian tube through a catheter passed into the nose; and John Machin's "An uncommon case of a distempered skin" (G-M 4013), containing the first known description of ichthyosis hystrix. DSB. 35289

127. Spallanzani, Lazzaro (1729-99). Autograph letter signed, in Italian, to an unnamed correspondent. Scandiano, October 21, 1795. 1 page. 211 x 168 mm. Right margin slightly frayed, traces of former mounting. Transcription provided. $1250

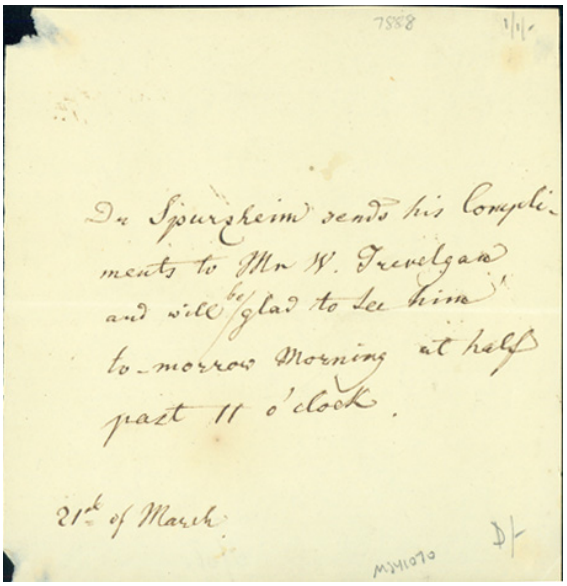
"Among the many dedicated natural philosophers of the eighteenth century, Spallanzani stands preeminent for applying bold and imaginative experimental methods to an extraordinary range of hypotheses and phenomena. His



main scientific interests were biological and he acquired a mastery of microscopy; but he probed also into problems of physics, chemistry, geology, and meteorology, and pioneered in vulcanology. Acute powers of observation and a broadly trained and logical mind helped him to clarify mysteries as diverse as stones skipping on water; the resuscitation of Rotifera and the regeneration of decapitated snail heads; the migrations of swallows and eels and the flight of bats; the electric discharge of the torpedo fish; and the genesis of thunderclouds or a waterspout. His ingenious and painstaking researches illuminated the physiology of blood circulation and of digestion in man and animals, and also of reproduction and respiration in animals and plants. The relentless thoroughness of his work on the animalcules of infusions discredited the doctrine of spontaneous generation and pointed the way to preservation of foodstuffs by heat" (*Dictionary of Scientific Biography* 12, p. 553). Spallanzani's scientific activities concluded only with his death: his investigations into bat flight, eel reproduction and animal and plant respiration were done in the final decade of his life, and his last scientific publication (1798) contains his discovery that plants respire oxygen and give off carbon dioxide (the reversal of the photosynthesis process) when kept in deep shade.

In the present letter, written to a doctor, Spallanzani alludes to medical treatments he had been receiving, most likely for the prostate and bladder problems that eventually caused his death. 40140

128. Spurzheim, Johann Gaspar (1776–1832). Autograph note to Mr. W. Trevelyan (most likely



Walter Calverley Trevelyan [1797–1879]). 21 March [n.y.]. 1 page. 121 x 116 mm. Traces of former mounting on verso, tiny lacunae in upper and lower left corners (not affecting text) but very good. $450

From J. G. Spurzheim, co-developer with Gall of the pseudoscience of phrenology, which holds that a person's character and personality traits can be determined by reading the bumps and fissures of the skull. Phrenology was very popular in the nineteenth century, and is credited with furthering the development of neuroscience by promoting the concept of localization of function in the brain. Spurzheim collaborated with Gall on several phrenological works and later set up on his own as a lecturer and writer on phrenology, traveling extensively throughout Britain and Europe.

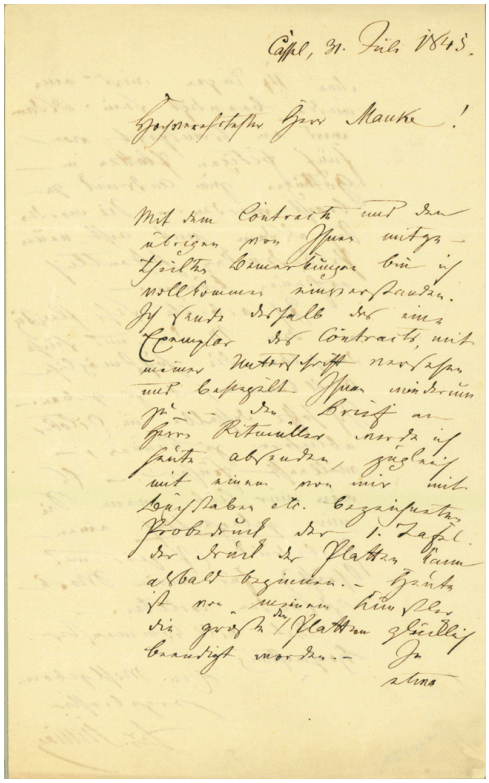
Spurzheim's note was almost certainly written to Walter Calverley Trevelyan (later Sir Walter Calverley Trevelyan, Bart.), a member of a prominent aristocratic family and one of Britain's most eminent supporters of phrenology. The note reads as follows:

> Dr. Spurzheim sends his compliments to Mr. W. Trevelyan and will be glad to see him to-morrow morning at half past 11 o'clock.

41070

129. Stilling, Benedikt (1810–79). Autograph letter signed, in German, to Herr Enke(?). Cassel, July 31, 1843. 2pp. plus integral blank. 214 x 133 mm. Mounted. Fine. $950

From German neurologist Benedikt Stilling, who named the vasomotor nerves in his *Physiologisch-*



pathologische und medicinisch-praktische Untersuchungen über die Spinal-Irritation (1840). He is also remembered for introducing a procedure of serial-section portrayal (thin slicing) of spinal cord specimens for histological study, and for having performed the first ovariotomy in Germany. His name is associated with "Stilling's canal" (a small channel running through the vitreous humor between the optic disk nerve and the lens) and the "Fleece of Stilling" (a mesh of myelinated fibers surrounding the dentate nucleus of the cerebellum).

Stilling's letter can be translated as follows:

> Dear Mr. Enke, I fully agree with the contract and other information you sent. I will therefore send you the contract with my signature and also will have it notarized. I will send the letter today to Mr. Ritmüller . . . Then the printing of the plates can begin. Today the largest of my plates was successfully finished by [. . .]. In a fortnight another one will be ready. Then five completed plates will be printed in Göttingen. You will have then eight new trial printings to enjoy—I hope. I am busy working on the MS and am trying to perfect it as much as possible . . .

Stilling's letter most likely refers to the publication of his *Ueber die Medulla Oblongata*, published in 1843 by F. Enke. 41002

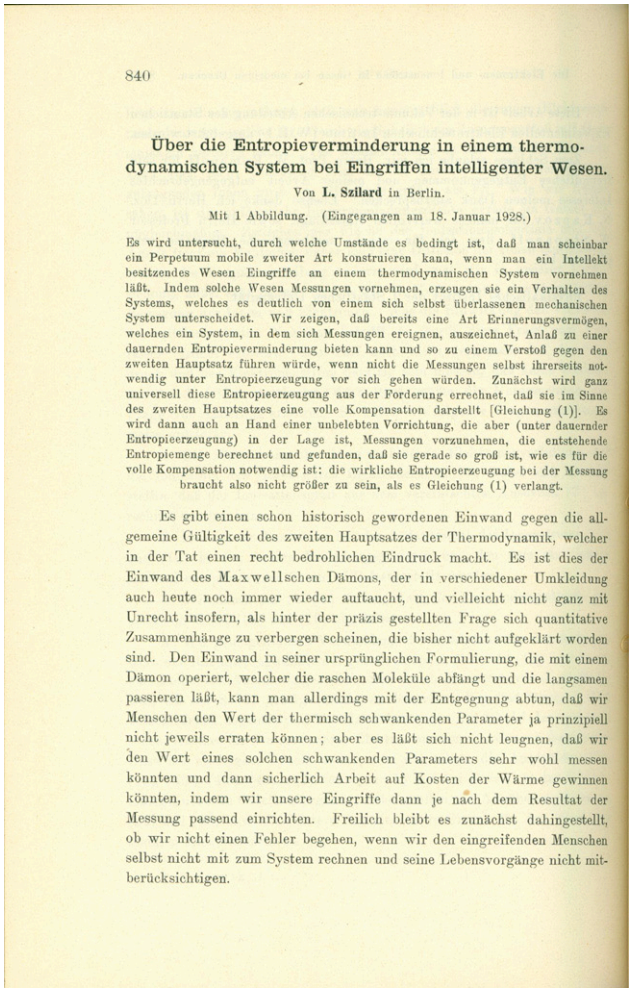
Relationship of Information to the Physical World

130. Szilard, Leo (1898-1964). Über die Entropieverminderung in einem thermodynamischen System bei Eingriffen intelligenter Wesen. In *Zeitschrift für Physik* 53 (1929): 840-856. Whole volume. vii, 889pp. Text illustrations. 223 x 152 mm. Library buckram. Fine. Embossed library stamp of the Carnegie Institution of Washington, Mount Wilson Laboratory on the front free endpaper, library call number on spine. Boxed. $3750

First Edition of the founding document of information theory. In "Über die Entropieverminderung in einem thermodynamischen System bei Eingriffen intelligenter Wesen" [On the reduction of entropy in a thermodynamic system by the intervention of intelligent beings], Szilard described a theoretical model that served both as a heat engine and an information engine, establishing the relationship between information (manipulation and transmission of bits) and thermodynamics (manipulation and transfer of energy and entropy). He was one of the first to show that "Nature seems to talk in terms of information" (Seife, *Decoding the Universe*, p. 77).

In his paper Szilard addressed the problem of "Maxwell's demon," a thought experiment posed by James Clerk Maxwell in his *Theory of Heat* (1871) as a challenge to the second Law of Thermodynamics. This law states that the entropy of an isolated system not in equilibrium will tend to increase over time, reaching its maximum level at equilibrium. Maxwell's demon exploits the random, statistical nature of matter in order to decrease entropy in a closed system without any expenditure of energy—a state of affairs that is physically impossible. Recognizing the flaw in Maxwell's concept, Szilard countered the earlier physicist's challenge as follows:

> Szilard realized that the act of measuring the position of the atom (or in the Maxwell case, the speed of an incoming atom) must, in some way, increase the entropy of the universe, counteracting the demon's reduction of the universe's entropy. When a demon performs a measurement, he is getting an answer to a question: Is the atom on the right side of the box or the left side of the box? Is the atom hot or cold? Should I open a shutter or not? So a measurement is an extraction of information from the particle. That information does not come for free. Something about that information—either extracting it or processing it—would increase the entropy of the universe. In fact, Szilard calculated that the "cost"



840

Über die Entropieverminderung in einem thermodynamischen System bei Eingriffen intelligenter Wesen.

Von **L. Szilard** in Berlin.

Mit 1 Abbildung. (Eingegangen am 18. Januar 1928.)

Es wird untersucht, durch welche Umstände es bedingt ist, daß man scheinbar ein Perpetuum mobile zweiter Art konstruieren kann, wenn man ein Intellekt besitzendes Wesen Eingriffe an einem thermodynamischen System vornehmen läßt. Indem solche Wesen Messungen vornehmen, erzeugen sie ein Verhalten des Systems, welches es deutlich von einem sich selbst überlassenen mechanischen System unterscheidet. Wir zeigen, daß bereits eine Art Erinnerungsvermögen, welches ein System, in dem sich Messungen ereignen, auszeichnet, Anlaß zu einer dauernden Entropieverminderung bieten kann und so zu einem Verstoß gegen den zweiten Hauptsatz führen würde, wenn nicht die Messungen selbst ihrerseits notwendig unter Entropieerzeugung vor sich gehen würden. Zunächst wird ganz universell diese Entropieerzeugung aus der Forderung errechnet, daß sie im Sinne des zweiten Hauptsatzes eine volle Kompensation darstellt [Gleichung (1)]. Es wird dann auch an Hand einer unbelebten Vorrichtung, die aber (unter dauernder Entropieerzeugung) in der Lage ist, Messungen vorzunehmen, die entstehende Entropiemenge berechnet und gefunden, daß sie gerade so groß ist, wie es für die volle Kompensation notwendig ist: die wirkliche Entropieerzeugung bei der Messung braucht also nicht größer zu sein, als es Gleichung (1) verlangt.

Es gibt einen schon historisch gewordenen Einwand gegen die allgemeine Gültigkeit des zweiten Hauptsatzes der Thermodynamik, welcher in der Tat einen recht bedrohlichen Eindruck macht. Es ist dies der Einwand des Maxwellschen Dämons, der in verschiedener Umkleidung auch heute noch immer wieder auftaucht, und vielleicht nicht ganz mit Unrecht insofern, als hinter der präzis gestellten Frage sich quantitative Zusammenhänge zu verbergen scheinen, die bisher nicht aufgeklärt worden sind. Den Einwand in seiner ursprünglichen Formulierung, die mit einem Dämon operiert, welcher die raschen Moleküle abfängt und die langsamen passieren läßt, kann man allerdings mit der Entgegnung abtun, daß wir Menschen den Wert der thermisch schwankenden Parameter ja prinzipiell nicht jeweils erraten können; aber es läßt sich nicht leugnen, daß wir den Wert eines solchen schwankenden Parameters sehr wohl messen könnten und dann sicherlich Arbeit auf Kosten der Wärme gewinnen könnten, indem wir unsere Eingriffe dann je nach dem Resultat der Messung passend einrichten. Freilich bleibt es zunächst dahingestellt, ob wir nicht einen Fehler begehen, wenn wir den eingreifenden Menschen selbst nicht mit zum System rechnen und seine Lebensvorgänge nicht mitberücksichtigen.

> of that information was a certain amount of useful energy—more precisely, kT log 2 joules for every bit of information, where T is the temperature of the room that the demon is in and k is the same constant that Boltzmann used in his entropy equation (Seife, *Decoding the Universe* [2007], pp. 78–79).

One of the most brilliant thinkers of the twentieth century, Szilard is best known for his work in nuclear physics: he conceived the idea of a nuclear chain reaction in 1933, filed a patent for a simple nuclear reactor in 1934, and collaborated with Fermi in the first demonstration of a chain reaction in 1942. In 1939 Szilard wrote a confidential letter to President Roosevelt outlining the possibility of nuclear weapons; this letter, co-signed by Einstein, led directly to the foundation of the Manhattan Project. Szilard worked on the Manhattan Project during the Second World War but opposed the use of the atomic bomb as a weapon of destruction, instead advocating for a demonstration of the bomb's power in the hope that the mere threat of such a weapon would force Germany and Japan to surrender. Horrified by the devastation of Hiroshima and Nagasaki, Szilard turned from nuclear physics to biology after the war, and became an outspoken opponent of nuclear proliferation. 40220

Genesis of the "Three-Age" System in Prehistory

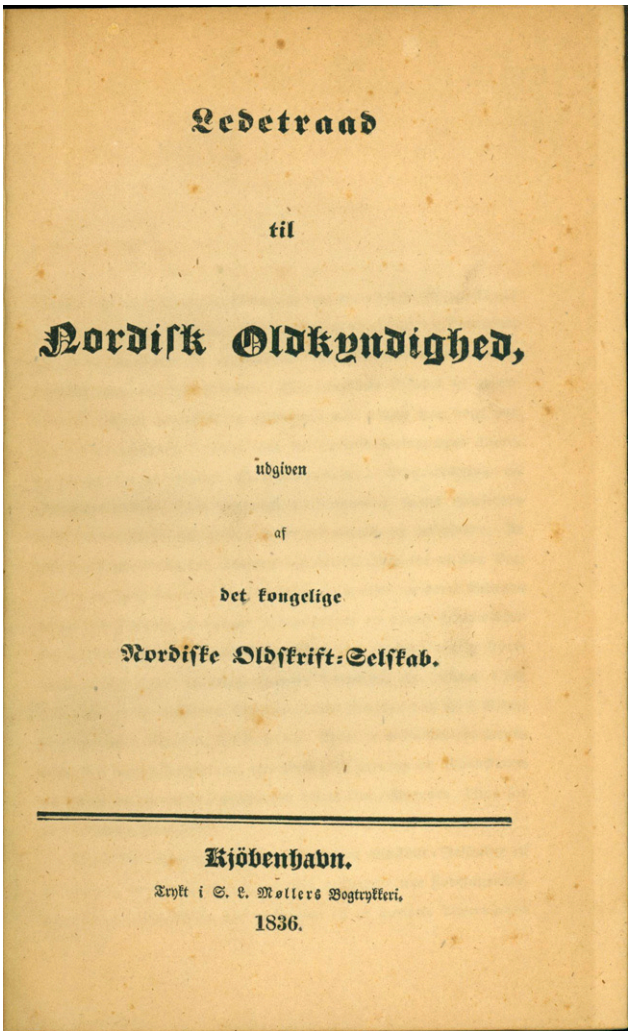
131. [**Thomsen, Christian Jurgensen** (1788–1865), ed.]. Ledetraad til Nordisk Oldkyndighed. [4], 100pp. Text illustrations. 201 x 127 mm. Copenhagen: S. L. Møller, 1836. 19th century boards, rebacked, endpapers renewed, edges a bit worn. Minor foxing but very good. 19th century armorial bookplate; 20th century bookplate of Laege Georg Moltved. $1500

First Edition. The first curator of the National Museum in Copenhagen, Thomsen formulated a method of classifying the museum's archeological collections according to whether the artifacts were made of stone, bronze or iron. He claimed that these three groupings represented three chronologically successive archeological ages; this was the genesis of the Three-Age system, "the basic chronology that now underpins the archaeology of most of the Old World" (Rowley-Conwy, *From Genesis to Prehistory* [2007], p. 1).

The principal publication of Thomsen's three-age concept appeared in *Ledetraad til Nordisk Oldkyndighed* (1836) a guidebook to the National Museum edited by Thomsen. The second chapter of this work, contributed by Thomsen, described his dating scheme and applied it to the monuments and antiquities of the North. Thomsen defined the three ages as follows:

> The Age of Stone, or that period when weapons and implements were made of stone, wood, bone, or some such material, and during which very little or nothing at all was known of metals. . . .
>
> The Age of Bronze, in which weapons and cutting implements were made of copper or bronze, and nothing at all, or but very little was known of iron or silver. . . .
>
> The Age of Iron is the third and last period of the heathen times, in which iron was used for those articles to which that metal is eminently suited, and in the fabrication of which it came to be employed as a substitute for bronze (Thomsen, *Guide to Northern Archaeology* [1848], pp. 64–68).

Thomsen was a scholar with a background in the history of numismatics, rather than a field archaeologist. He based his study of artifacts on the associations between stylistic change, decoration and context—topics which may have interested him initially through his numismatic researches. Thomsen recognized the importance of examining objects



Ledetraad

til

Nordisk Oldkyndighed,

udgiven

af

det kongelige

Nordiske Oldskrift-Selskab.

Kjöbenhavn.

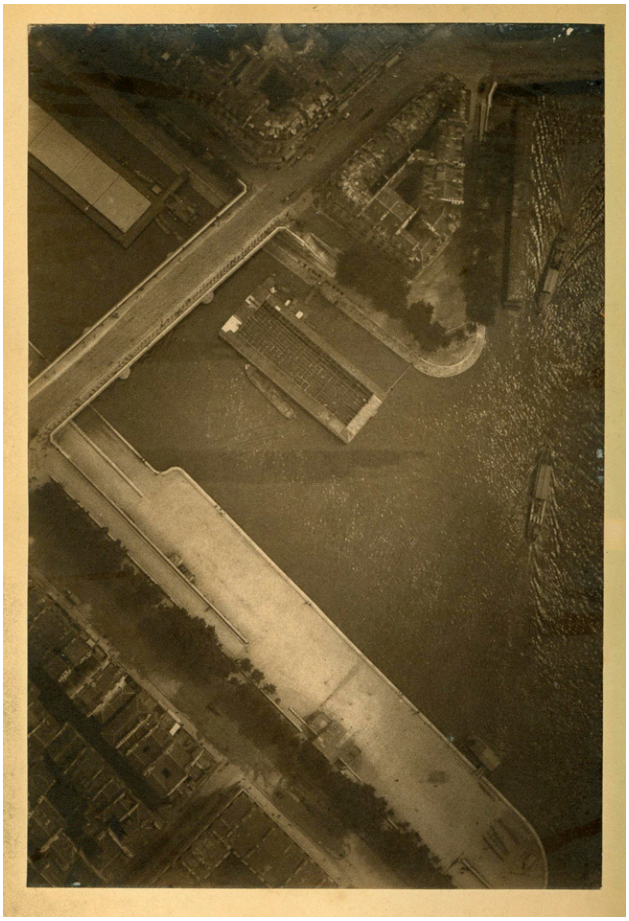
Trykt i S. L. Møllers Bogtrykkeri.

1836.

from "closed finds," which allowed him to determine the common associations of artifacts for various periods. Thomsen's assistant, archaeologist Jens J. A. Worsaae, later demonstrated through archeological fieldwork the stratigraphic succession of the stone, bronze and iron ages in Denmark. An English translation of *Ledetraad til Nordisk Oldkyndighed,* by the Earl of Ellesmere, was published in 1848. Spencer, *Ecce homo* (1986) no. 3.488. 41015

Aerial Photography

132. Tissandier, Gaston (1843-99). La photographie en ballon. Paris: Gauthier-Villars, 1886. Sm. 4to. vii, 45, [3]pp. Frontispiece consisting of original photographic print mounted on stiff card with tissue overlay key; text illustrations. 209 x 148 mm. Modern buckram, original printed wrappers bound in. Front wrapper mounted, corner of frontispiece



repaired (not affecting photograph), gutter margin of tissue overlay repaired, light soiling and foxing. $2000

First Edition. The history of aerial photography begins in 1858, when the photographer Nadar took the first photographs from a balloon. His results were only partially successful, as were those of other experimenters who followed him, and it was not until 1878, when factory-made gelatin dry plates were introduced, that aerial photography came into its own. Using gelatin plates, which were twenty times faster than the old wet-collodion plates, the photographer Paul Desmarets obtained two birds-eye views of Rouen in 1880 from a balloon at 4,200 feet. However, Desmarets' results were surpassed five years later by Jacques Ducom, who, in a balloon navigated by Gaston Tissandier, was able to take superb aerial photographs of Paris from a height of 1,800 feet. "Ducom's view of the Île Saint-Louis, Paris [the frontispiece to the present work] from 1,800 ft leaves absolutely nothing to be desired. Through a magnifying glass people can be counted on the bridge. The exposure of this and the other photographs taken on this flight was 1/50 second, using a specially constructed guillotine shutter which was opened

pneumatically and closed automatically with a rubber spring" (Gernsheim & Gernsheim, p. 508).

Tissandier's *La photographie en ballon* records his and Ducom's achievements in aerial photography, and also surveys the work of Nadar, Desmarets, Shadbolt, Triboulet, Pinard, Weddel and other aerial photographers. The preface mentions the pioneering aerial photograph of Boston taken in 1860 by J. W. Black from a tethered balloon at 1,200 feet—Tissandier, who saw a print of Black's photograph, described it as "assurément fort curieuse, mais comme les précédentes elle manque de netteté et semble en outre avoir été prise à très faible hauteur" (p. vi). Gernsheim & Gernsheim, *The History of Photography 1685-1914,* pp. 507-8. Frizot, *A New History of Photography,* p. 391. 39486

On the Fabric of the Human Body—Complete Translation in English

133. Vesalius, Andreas (1514-64). On the fabric of the human body. A translation of *De humani corporis fabrica libri septem*. Translated by William Frank Richardson and John Burd Carman. 5 volumes. San Francisco and Novato: Norman Publishing, 1998-2009. Cloth, pictorial dust-jackets. All volumes printed on 80-pound Mohawk Superfine acid-free paper.

$275 per volume

Vesalius's *De humani corporis fabrica* (1543) is one of the world's most famous books, and probably the greatest book in the history of anatomy. This award-winning translation by Richardson and Carman is now complete, and available in five volumes:

Vol. I: *Book I, The Bones and Cartilages*

Vol. II: *Book II, The Ligaments and Muscles*

Vol. III: *Book III, The Veins and Arteries; Book IV, The Nerves*

Vol. IV: *Book V, The Organs of Nutrition and Generation*

Vol. V: *Book VI, The Heart and Associated Organs; Book VII, The Brain*

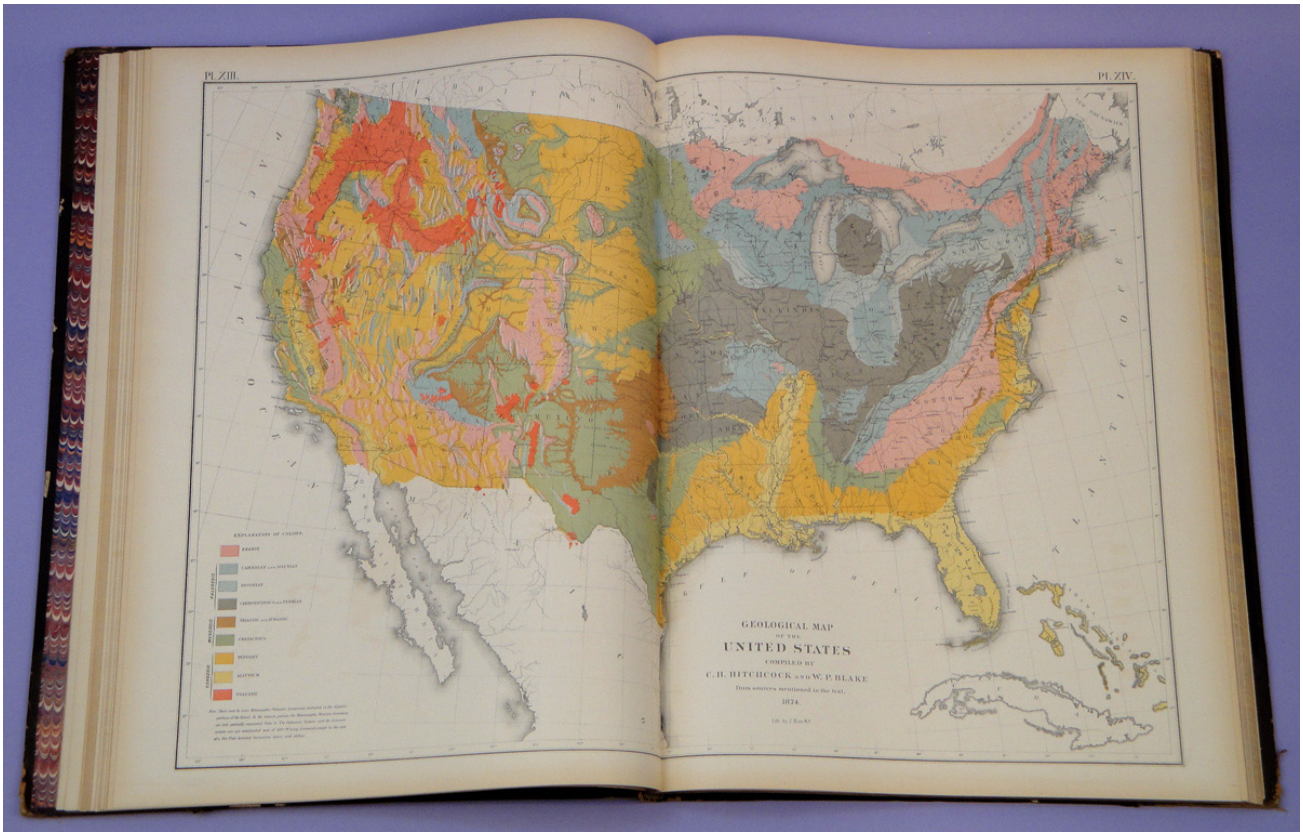
All of Vesalius's famous woodcut anatomical illustrations are reproduced, and each volume contains historical introductions and extensive notes. The last volume concludes with a series of indexes to the fifth volume and the complete set, which greatly adds to the usefulness of the translation. These include Dr. Richardson's translation of Vesalius's original index to the *Fabrica*, which represents Vesalius's outline of key discoveries and ideas in the *Fabrica*, and a set of cumulative indexes to all five volumes of *On the Fabric of the Human Body*.

First Comprehensive Thematic Atlas

134. Walker, Francis Amasa (1840-97). Statistical atlas of the United States based on the results of the ninth census 1870 with contributions from many eminent men of science and several departments of the government. Double folio. N.p.: Julius Bien, 1874. Variously paginated. 60 chromolithographed plates, numbered I-X, Xa, XI-XVI, XVIa, XVII, XVIIa, XVIII-XXXV, XXXVa, XXXVI, XXXVIa, XXXVIb, XXXVII-LIV. 555 x 416 mm. Original half sheep gilt, rubbed, gilt-lettered leather label on front cover. One or two marginal tears due to acidic paper, but very good.

$2750

First Edition. A landmark in the visual display of information. "Published in 1874, this oversized compendium of maps, graphs, statistical tables, and essays by scientists, economists, and federal officials was the first comprehensive thematic atlas produced by any nation, and it was hailed both at home and abroad for its innovative use of graphic elements to distill and display complex data" (Kinnahan, p. 399). Based on data from the 1870 census, the *Statistical Atlas of the United States* was one of the earliest



national atlases published. The work was conceived and supervised by Francis Amasa Walker, Chief of the U. S. Bureau of Statistics and superintendent of the 1870 census. The large plates, most of them in color, were lithographed by Julius Bien, who produced the plates for the first American full-size reissue of Audubon's *Birds of America* (1858-60). Kinnahan, "Charting Progress: Francis Amasa Walker's *Statistical Atlas of the United States* and narratives of Western expansion", *American Quarterly* 60, (2008): 399-423. 41106

135. Wallace, Alfred Russel (1823-1913). Autograph letter signed to Dr. [Maxwell Tylden] Masters (1833-1907). Waldrow Edge, Duppas Hill, Croydon, January 17, 1879. 2pp. 178 x 114 mm. Tiny rust-stain on verso of second leaf.

$1250

To the British botanist M. T. Masters, longtime editor of the *Gardener's Chronicle* and author of *Vegetable Teratology* (1869). In the letter Wallace refers to his article "Epping Forest," published in the November 1, 1878 number of the *Fortnightly Review*. Epping Forest, one of the surviving remnants of England's ancient Forest of Essex, had been declared a protected natural preserve in 1874, much to the delight of Wallace, who approved the move both as a conservationist and as an opponent of land enclosure. In 1878 the Epping Forest Committee was seeking to appoint a Superintendent of the forest, a post for which Wallace actively campaigned; his "Epping Forest" article was written in part to impress the committee with his scientific credentials and *bona fides*. Wallace made the committee's short list, but failed to get the Superintendent's position, which was given to Alexander McKenzie. Raby, *Alfred Russel Wallace*, pp. 218-20. 40192

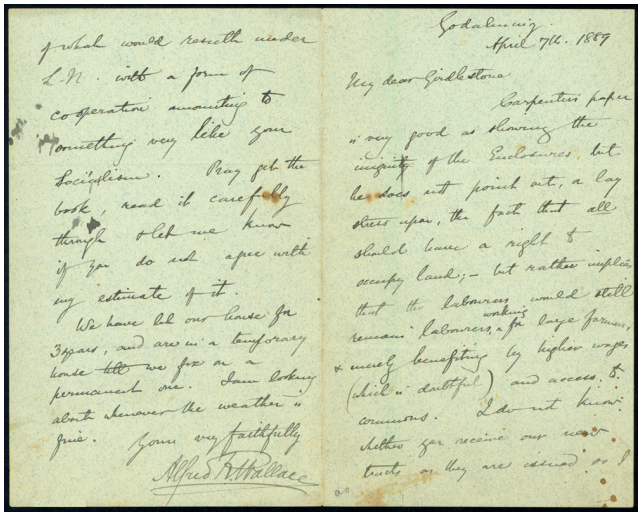
136. Wallace, Alfred Russel (1823-1913). Autograph letter signed to [Edward Deacon] Girdlestone (1829-92). Godalming, April 7, 1889. 4pp. 179 x 112 mm. A few minor spots.

$1750

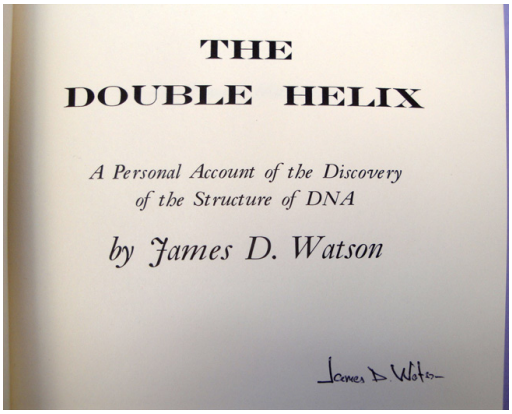
Excellent letter to socialist author Edward Deacon Girdlestone, discussing Wallace's progressive views on land reform, a cause that had taken up most of his energies over the preceding decade:

> Carpenter's paper is very good at showing the iniquity of the Enclosures, but he does not point out, or lay stress upon, the fact that all should have a right to occupy land;--but rather implies that the labourers would still remain labourers, working for large farmers, & merely benefiting by higher wages (which is doubtful) and access to commons. . . .

Wallace had long been a critic of England's system of land ownership, and in 1879 he began to devote himself in

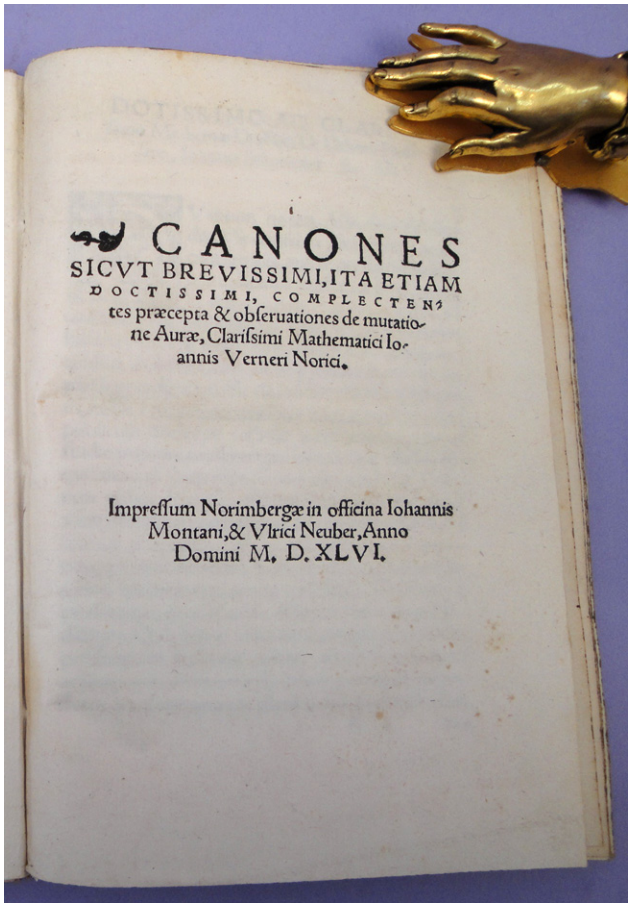


earnest to the cause of land reform. "He believed that rural land should be owned by the state and leased to people who would make whatever use of it that would benefit the largest number of people, thus breaking the often-abused power of wealthy landowners in English society. In 1881 Wallace was elected as the first president of the newly formed Land Nationalisation Society. The next year he published a book, *Land Nationalisation; Its Necessity and Its Aims*, on the subject. He criticized England's free trade policies for the negative impact they had on working class people" (Wikipedia, "Alfred Russel Wallace"). Raby, *Alfred Russel Wallace: A Life*. 40193



137. Watson, James D. (1928-). The double helix. Being a personal account of the discovery of the structure of DNA, a major scientific advance which led to the award of a Nobel Prize. xvi, 226, [12]pp. Numerous illustrations. New York: Athenaeum, 1968. 213 x 137 mm. Original cloth, dust-jacket. *Signed by the author on the title.* Former owner's bookplate on inside front cover. Fine. $3750

First Edition. Watson's famous and controversial best-selling account of the events surrounding the discovery in 1953 of the structure of DNA. Watson is not usually cooperative about signing his books, so books with his signature are uncommon. 39535



Pioneering Work on Environmental Science and Meteorology

138. Werner, Johann (1468-1522). Canones sicut brevissimi, ita etiam doctissimi, complectentes praecepta & observationes de mutatione aurae . . . 4to. [20]ff., last leaf blank. 2 woodcut initials. Nuremberg: J. Montanus & U. Neuber, 1546. 202 x 142 mm. Modern vellum. Minor soiling on verso of last leaf, otherwise fine. Manuscript annotations in an early hand, titled "Aphorismi Astrologiae," on recto of last leaf.

$10,000

First Edition of one of the rarest works by the mathematician and astronomer Johann Werner, and a pioneering contribution to environmental science at the height of the scientific revolution. Werner, a priest in Nuremberg, made notable contributions to astronomy,

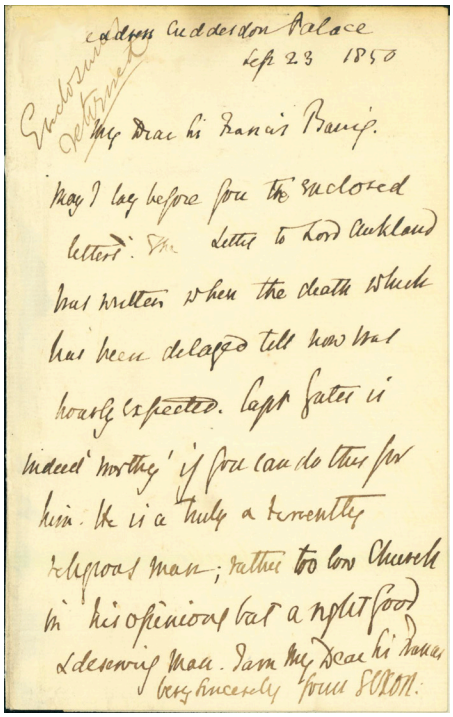
mathematics and geography. He invented instruments for solving problems in spherical astronomy and for determining the latitudes of planets, and his work on spherical triangles (not published until 1907) was superior to that of Regiomontanus in its presentation and practical applicability. He also developed the first method for determining latitude and longitude simultaneously.

Werner was the first to make regular observations of weather conditions in Germany; together with Tycho Brahe, he pioneered the practice of collecting meteorological data for scientific purposes. "In meteorology Werner paved the way for a scientific interpretation. Meteorology and astrology were connected, but he nevertheless attempted to explain this science rationally. . . . The 'guidelines that explain the principles and observations of the changes in the atmosphere,' published [posthumously] in 1546 by Johann Schöner, contain meteorological notes for 1513-1520. The weather observations are based mainly on stellar constellations, and hence the course of the moon is of less importance. Although Werner did not collect the data systematically, as Tycho Brahe did, he attempted to incorporate meteorology into physics and to take into consideration the geographical situation of the observational site. Thus he can be regarded as a pioneer of modern meteorology and weather forecasting" (*Dictionary of Scientific Biography*).

This pamphlet by Werner is very rare, with only three copies in the United States cited in OCLC (UC San Diego, Yale, U. Michigan). Our copy appears to be the first on the market since the Honeyman copy sold in 1981. 40981

139. Wilberforce, Samuel (1805-73). (1) Autograph letter signed to Sir Francis Baring (1796-1866). Cuddesdon Palace [Oxfordshire], Sept. 23, 1850. 1 page plus integral blank (docketed on verso by recipient). 182 x 115 mm. Some damage to blank along central fold due to removal from mounting (not affecting text), but very good. (2) Autograph letter signed to Charles Baring Wall (1795-1853). 61 Eaton Place [London], Nov. 20, 1852. 1 page, on Athaneaum stationery. 182 x 115 mm. Fine. $500

From Samuel ("Soapy Sam") Wilberforce, Bishop of Oxford, best known today for his participation in the famous 1860 Oxford debate on Darwin's theory of evolution, in which Wilberforce, an opponent of evolution, supposedly asked Thomas Henry Huxley whether it was through his grandfather or grandmother that he claimed descent from a monkey. Huxley is reported to have answered that he would not be ashamed to have a monkey for his ancestor, but he would be ashamed to be connected


address Cuddesdon Palace
Sept 23 1850
My dear Sir Francis Baring.
May I lay before you the enclosed letter? The letter to Lord Aukland was written when the death which has been delayed till now was hourly expected. Capt Gates is indeed 'worthy' if you can do this for him. He is a truly & fervently religious man; rather too low Church in his opinions but a right good & deserving man. I am my dear Sir Francis,
Very sincerely yours S Oxon.

with a man who used his great gifts to obscure the truth (no verbatim transcript of the debate exists, and accounts of what was actually said vary). Wilberforce, a son of the famous British abolitionist William Wilberforce, was one of the most influential British churchmen of the 19th century, noted for "his unfailing tact and wide sympathies, his marvellous energy in church organization, the magnetism of his personality, and his eloquence both on the platform and in the pulpit" (*Encyclopedia Britannica* [11th ed.]). His unflattering nickname originated with a comment made by Benjamin Disraeli that Wilberforce's manner was "unctuous, oleaginous, saponaceous" (oily, greasy, soapy).

Wilberforce's two correspondents were members of the wealthy and powerful Baring family, founders of Baring's Bank (est. 1762), which until its collapse in 1995 was the oldest merchant bank in Britain. Sir Francis Baring (later Baron Northbrook) was a Whig politician and longtime member of the House of Commons, who served as First Lord of the Admiralty from 1849 to 1852. Wilberforce's 1850 letter to Sir Francis addresses him in that capacity:

> My dear Sir Francis Baring, May I lay before you the enclosed letter? The letter to Lord Aukland [sic] was written when the death which has been delayed till now was hourly expected. Capt. Gates is indeed "worthy" if you can do this for him. He is a truly & fervently religious man; rather too low church in his opinions but a right good & deserving man. I am my dear Sir Francis, very sincerely yours S Oxon.

"Lord Aukland" refers to George Eden, first Lord Auckland (1784-1849), who had preceded Baring as First Lord of the Admiralty. Regarding the peculiar signature, it is customary

for Anglican bishops to sign letters with their first name (or parts thereof) and the Latin version of the name of their diocese—hence "S" for Samuel and "Oxon" for Oxford.

Charles Baring Wall, the recipient of Wilberforce's 1852 letter, was Sir Francis Baring's cousin; he too was politically active, serving as M.P. from Salisbury until his death at the age of 58. In his letter Wilberforce accepts Baring Wall's invitation to "dinner on Wednesday next at ¼ to 8." 41083

First Sales Brochure for a Wright Brothers Airplane

140. [Wright Brothers.] Flugmaschine Wright G.m.b.H. Flugmaschine Wright G.m.b.H. 12pp. Text illustrations. Berlin: Vereinigte Verlagsanstalten G. Braunbeck & Gutenberg-Druckerei Aktiengesellschaft, 1909. 256 x 168 mm. Original wrappers printed in silver, light wear, fore-edge irregularly trimmed. Very good copy. Ownership stamp of Dutch chemical engineer and inventor F.W. Bakema on front wrapper and title. $5500

First Edition of the first sales brochure advertising a plane designed by the Wright Brothers. The Wrights chose to demonstrate their flyer for the first time in France from August to December 1908, and these demonstrations had dramatic impact on the European aviation industry. Flugmaschine Wright G.M.b.H., established in June 1909, acquired the Wright German patents and the exclusive right to manufacture Wright airplanes in Germany, as well as sales rights for Sweden, Norway, Denmark, Luxemburg and Turkey (see Renstrom, p. 97). Flugmaschine Wright was the second Wright aircraft company established in Europe, following the Compagnie Générale de Navigation Aérienne, which had purchased the French rights to manufacture and sell Wright aircraft in March 1908, subject to satisfactory demonstrations of the plane. Though Gibbs-Smith 2002 states that the first French-built Wright Model A was delivered from the French factory in August 1909, we have found no record in OCLC or any bibliography of any sales or promotional publications issued by the French company. Both the French and German Wright aircraft companies preceded the American Wright company, which was not incorporated until November 1909.

The present brochure contains an extensive description of the Wright airplane and its performance, as well as an account of the formation of the Flugmaschine Wright company. The company manufactured between twenty and sixty examples of the Wright Model A, which was the first Wright aircraft to be produced commercially. **Rare,** with only four copies cited in OCLC (US Air Force Academy,

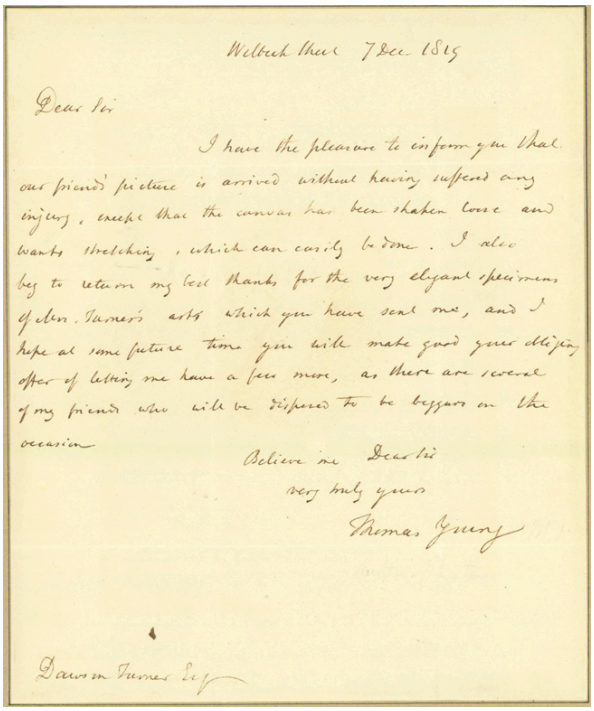
Library of Congress, Waseda University [Japan] and the ETH-Bibliothek [Switzerland]). This copy was originally owned by F.W. Bakema, a Dutch chemical engineer and inventor who built several superphosphate fertilizer factories in the Netherlands and Norway, and established the first Dutch chemical industry advisory agency (1909). Gibbs-Smith, *The Wright Brothers: Aviation Pioneers and their Work* (2002), p. 44. Gibbs-Smith, *The Rebirth of European Aviation 1902-1908. A Study of the Wright Brothers' Influence* (1974). Renstrom, *Wilbur and Orville Wright: A Bibliography Commemorating the One-Hundredth Anniversary of the First Powered Flight* (2002), p. 98. Kingma, Jur. "Building the Plant | Recensiebank Historisch Huis." Building the Plant: A History of Engineering Contracting in the Netherlands (review). Historisch Platform. Web. 28 July 2010. 41008

141. Wundt, Wilhelm (1832-1920). Autograph letter signed, in German, to Alfred R. v. Dutezinski (identified in a different hand on the verso of the second leaf). Leipzig, March 25, 1894. 1 page plus blank leaf. 196 x 125 mm. Fine. $750

From Wilhelm Wundt, known as the "father of experimental psychology," who established psychology as a separate science and founded one of the first formal laboratories for psychological research (at the University of Leipzig). He is one of the founding figures of modern psychology. His letter may be translated as follows:

> Dear Sir, My best thanks for sending your work to me. It deals with a subject in which I am very interested and I certainly will give my whole attention to your [thesis?] as soon as my own work leads to this subject. Yours very truly, W. Wundt.

40998



Welbeck Street 7 Dec. 1819

Dear Sir

I have the pleasure to inform you that our friend's picture is arrived without having suffered any injury, except that the canvas has been shaken loose and wants stretching, which can easily be done. I also beg to return my best thanks for the very elegant specimens of Mrs. Turner's arts which you have sent me, and I hope at some future time you will make good your obliging offer of letting me have a few more, as there are several of my friends who will be disposed to be beggars on the occasion

Believe me Dear Sir
very truly yours
Thomas Young

Dawson Turner Esq

142. Young, Thomas (1773-1829). Autograph letter signed to Dawson Turner (1775-1858). [London] Welbeck Street, 7 December 1819. 1 page. 215 x 180 mm. Mounted. Fine.

$1500

From British scientist Thomas Young, the founder of physiological optics and author of the wave theory of lights (see Garrison-Morton 1486-88, *Printing and the Mind of Man* 259, Dibner 152), to botanist and antiquary Dawson Turner, author of *The Botanist's Guide through England and Wales* (1805), the four-volume illustrated *Fuci, sive, Plantarum fucorum generi a botanicis ascriptarum icones descriptiones et historia* (1808-19), *Account of a Tour in Normandy* (1820), *Guide . . . towards the Verification of Manuscripts by Reference to Engraved Facsimiles* (1848) and several other works. Young's letter reads as follows:

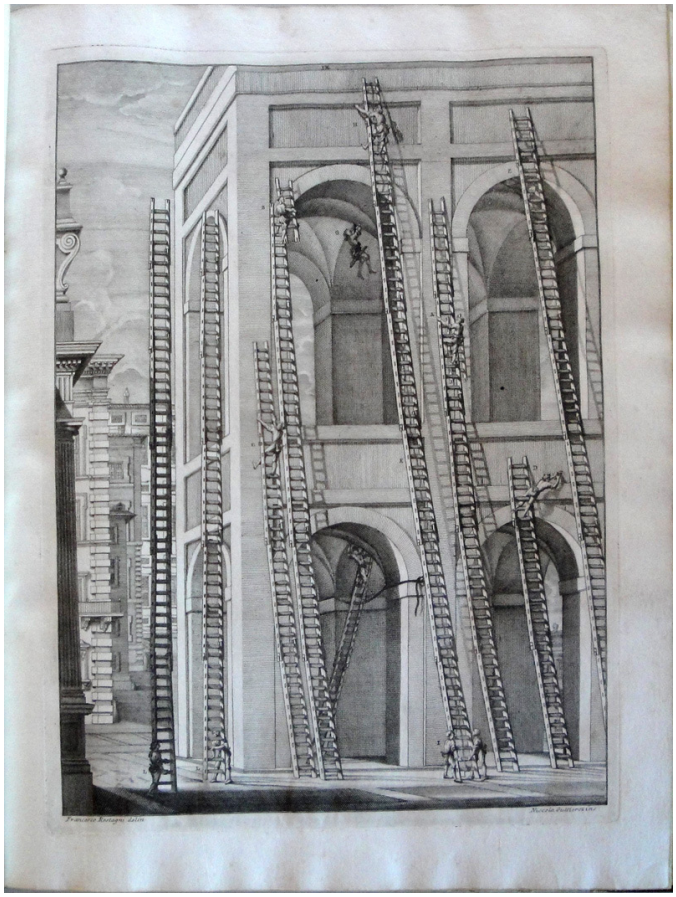
> Dear Sir, I have the pleasure to inform you that our friend's picture is arrived without having suffered any injury, except that the canvas has been shaken loose and wants stretching, which can easily be done. I also beg to return my best thanks for the very elegant specimens of Mrs. Turner's arts which you have sent me, and I hope at some future time you will make good your obliging offer of letting me have a few more, as there are several of my friends who will be disposed to be beggars on the occasion. Believe me Dear Sir very truly yours Thomas Young.

"The very elegant specimens of Mrs. Turner's arts" that Young had received were most likely drawings or prints. Mary Turner was a skilled artist who had studied under both John Crome and John Sell Cotman; together with her equally talented daughters, she produced an enormous number of drawings, paintings, etchings and lithographs, which Turner used both in his own publications and as additional illustrations for the 8000 volumes in his library.

Young wrote this letter from his Welbeck Street address in London, where he had lived and practiced medicine since 1799. Autograph letters from Thomas Young are *rare*—this is the first we have handled in our nearly forty years in business. 40834

143. Zabaglia, Niccola (1674-1750). Contignationes, ac pontes . . . Ac descriptione translationis obelisci vaticani, aliorumque per equitem Dominicum Fontana susceptae. Large folio. [46]ff. Engraved frontispiece portrait of the author by Rossi after Pietro Leone Ghezzi; 54 numbered engraved plates, 50 full-page and 4 double-page, by various engravers after Francesco Rostagni and Carlo Fontana. Rome: ex typographia Palladis, excudebant Nicolaus et Marcus Palearini, 1743. 475 x 370 mm. Elaborately gilt diced Russia spine, and corners, marbled boards ca. 1743. Rubbed, light wear at edges. Small portions, circa 2cm in diameter, of plates 35 & 36 skillfully repaired, very slightly affecting images, occasional minor dampstaining and spotting, but otherwise a fine, large copy on heavy paper in an attractive binding from the time of publication. Bookplate of Verne Roberts's *Bibliotheca Mechanica*. $22,500

First Edition of this spectacular and fundamental work for the history of engineering and the construction during the 18th century. It is also important for the building history of St. Peter's and other great buildings in Rome. Niccola Zabaglia was one of the foremost practical



mechanics of his time. Engineer for the construction of St. Peter's, he was involved in strengthening the dome after the earthquakes of 1703 and 1730, inventing the machines and training the maintenance crew. The splendid large engravings in his book illustrate the machinery and instruments used for the restoration of the dome — elaborate hoisting devices, construction tools, pulleys, scaffolding, ornamental tiles, etc. — as well as the craftsmen at work. The plates, together with the 21 explanatory tables in Latin and Italian, provide a clear understanding of early building techniques. The transportation of the Vatican obelisk by Domenico Fontana in 1590 is represented by a choice selection of 13 plates from Carlo Fontana's work on St. Peter's, published in 1694, and other plates original to Zabaglia's work. Apparently Zabaglia's book was meant to be issued with either a Latin or an Italian title-page and preface; however, in this copy both the Latin and Italian versions of these pages are present. The explanatory text is in both languages, with the Latin text at the left, and the Italian text at the right. In this copy, the text leaves have been bound after the plates. *Berlin Kat.* 2755. Riccardi I, 642. Brunet V, col. 1515 ("fort recherché"). Graesse VII, p. 501. Not in Fowler. 38665

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