

# CATALOGUE 46

## *Classics in Science, Medicine and the Humanities*

*For the 53rd Annual New York  
Antiquarian Book Fair*

*Park Avenue Armory, New York City*

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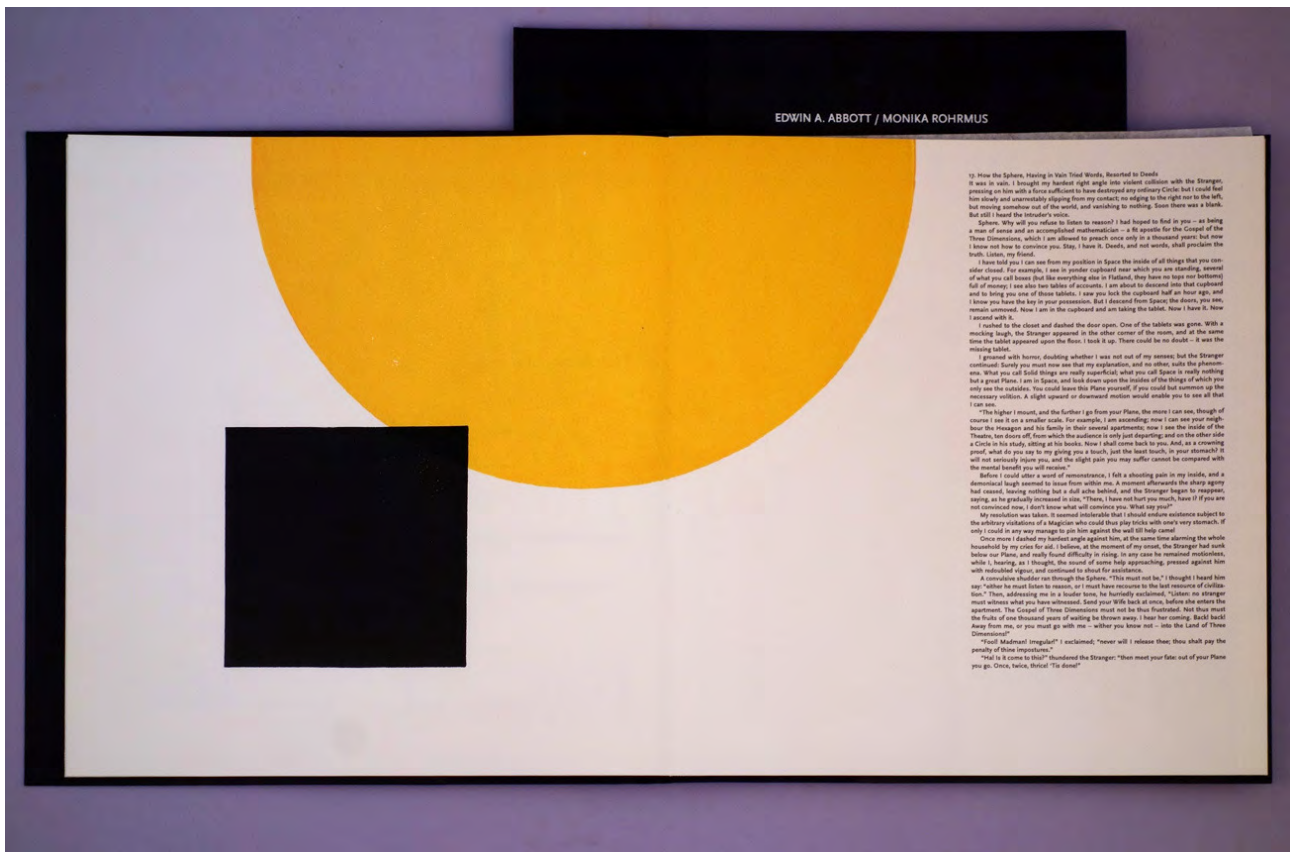
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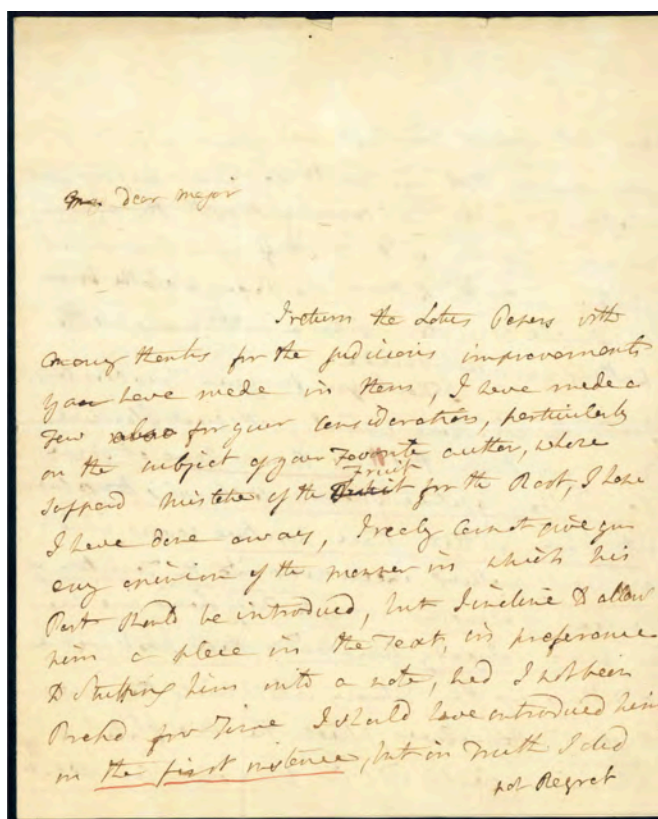
## Copy Number 4 of Only 5 Copies

**I. Abbott, Edwin Abbott** (1838–1926). *Flatland: A Romance of Many Dimensions*. An artist book by Monika Rohrmus. Part I: This world; Part II: Other worlds. 2 vols. [64], [64]pp., accordion folded. Illustrated with inkjet prints and linocuts by Monika Rohrmus after the illustrations in the original edition (1884). Berlin: Offizin parvus, 2012. 341 x 320 mm. Half linen, printed boards; in slipcase. As new. No. 4 of 5 copies, each volume numbered and signed by the author in the colophon.

\$3500

Beautiful and extremely limited fine art edition of Abbott's mathematical / philosophical novel, at once a satire of Victorian society and "the best introduction to the method of analogy used by virtually all mathematicians and physicists when describing the fourth dimension" (Banchoff). The illustrations, some of which were taken from the original 1884 edition of Abbott's novel, were printed on an etching press. Original images by Rohrmus were done by inkjet and linocut. The text was set from Scala Sans and digitally printed on 115 g/qm Somerset Book paper. The creator of this edition, German artist Monika Rohrmus, has been producing limited edition prints and illustrated books for nearly five decades; her works have been collected by such prestigious institutions as Yale University and the Kunstbibliothek Berlin. Banchoff, Thomas. "Math Plots and Plans: Edwin A. Abbott." *Math Forum* (Math Awareness Month 2000): Edwin A. Abbott (People/Abbott). The Math Forum, 23 Mar. 2001. Web. Accessed 22 Mar. 2013. 42831



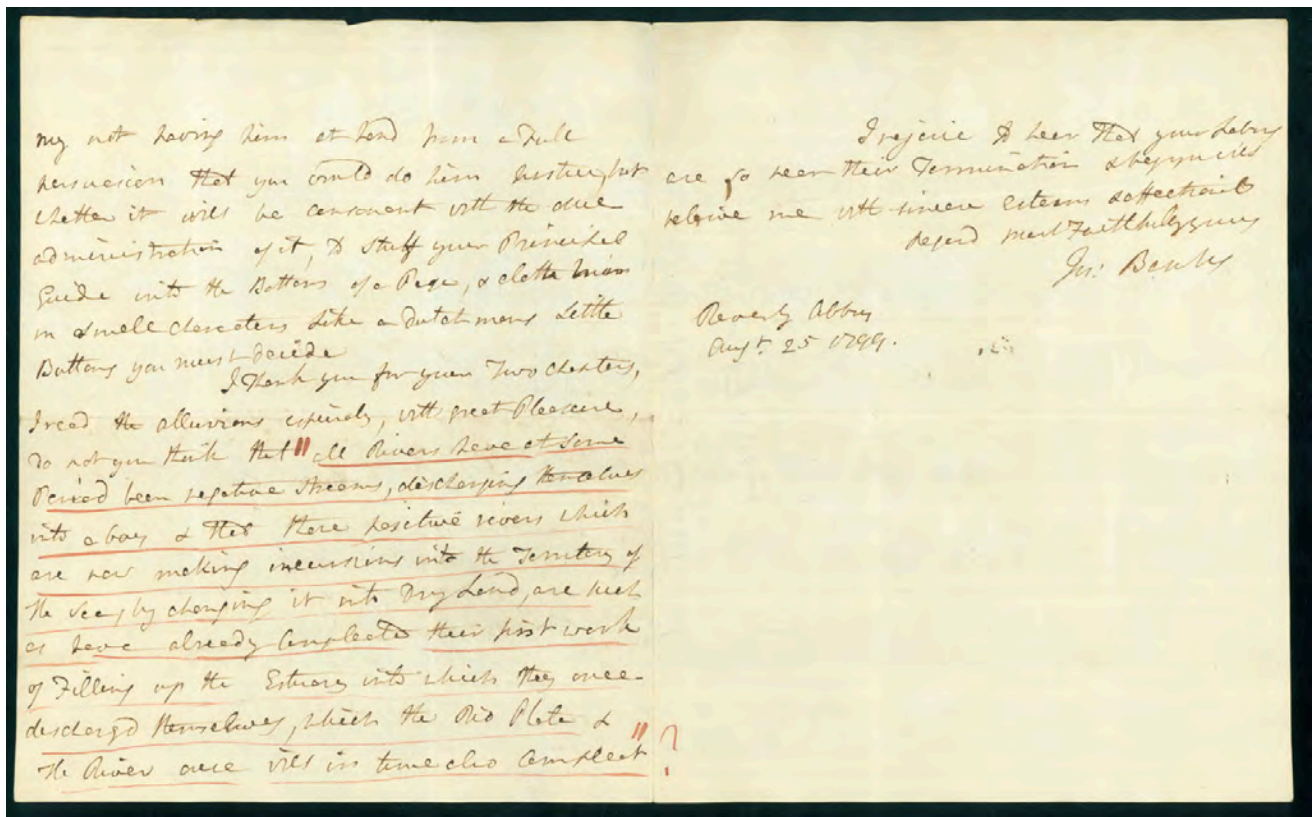


## Collating Ancient and Modern Natural History and Geography at the End of the 18th Century

**2. Banks, Joseph** (1743–1820). Autograph letter signed to “My dear Major”; i.e. James Rennell (1742–1830). 2 – 1/2 pages. Revesby Abbey, Lincolnshire, August 25, 1799. 225 x 184 mm. Faint pencil sketch accompanied by a column of numbers on the blank verso of the second leaf; some words and phrases underlined neatly in red ink, possibly by the recipient. Fine. \$6500

From noted botanist and patron of science Joseph Banks, who accompanied Captain James Cook on the latter’s famous voyage of discovery to the South Pacific on H.M.S. *Endeavour* (1768–71). During that voyage Banks described and collected hundreds of species of exotic flora, many of which were then new to science; the genus *Banksia*, comprising about 170 species native to Australia, is named for him. Banks served as president of the Royal Society from 1778 until his death, and also headed the Royal Botanic Gardens at Kew, which under his leadership became one of the pre-eminent botanical gardens in the world. Banks’ correspondent was geographer and historian James Rennell, who as an officer in the British East India Company was appointed to conduct the first survey of the territory of Bengal; his results were published in *A Bengal Atlas* (1779). Rennell returned to London in the late 1770s where he devoted himself to geographical research, particularly as pertaining to classical and biblical times. He was elected a member of the Royal Society in 1781 and became close friends with Banks.

Banks’ letter to Rennell discusses Rennell’s *The Geographical System of Herodotus* (1800), which was then nearing completion. The letter indicates that Rennell was in the habit of submitting work to Banks for his comments and criticism. From the correspondence we may observe that at the end of the eighteenth century, when so much of the geographical and natural historical world remained to be explored, information provided by Herodotus was regarded as having scientific as well as historical value.



I return the Lotus Papers with many thanks for the judicious improvements you have made in them. I have made a few also for your consideration, particularly on the subject of your favourite author [Herodotus], whose supposed mistake of the fruit for the root, I hope I have done away.

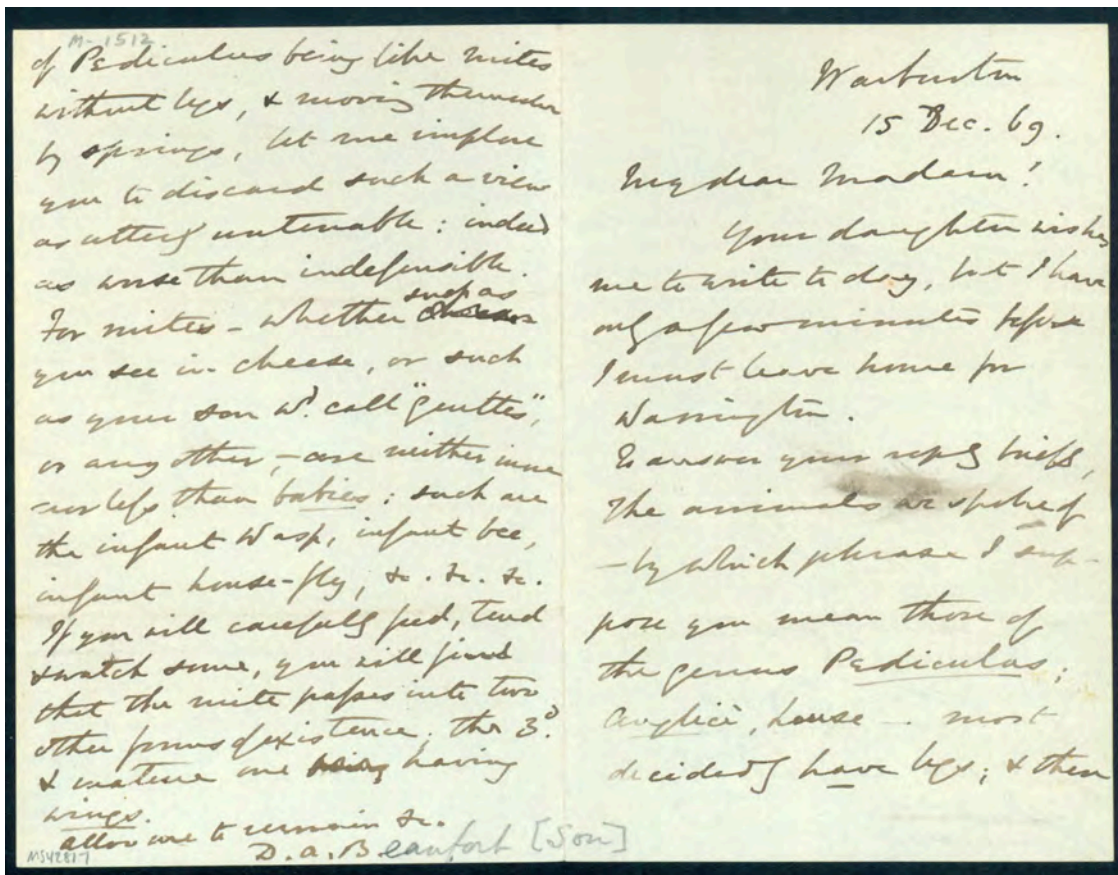
Herodotus described the white lotus (*Nymphaea Lotus*) in his account of the Lotus-eaters portrayed in Homer's *Odyssey*. The plant is a flowering shrub native to Egypt with edible seeds, fruits and roots. Rennell included in his treatise a historical and botanical dissertation on both the white lotus and the water lotus (*Nelumbo*); he paid tribute to Banks for his contribution in a footnote on p. 630 in which he stated that "for the following observations on the aquatic lotus, as well as some remarks on the subject of the lotus at large, the Author is indebted to a highly distinguished friend."

In the remainder of the letter Banks discussed two chapters on rivers included in Rennell's *Geographical System*:

I thank you for your two chapters. I read the alluvions especially, with great pleasure. Do you not think that all rivers have at some period been negative streams, discharging themselves into a bay & that these positive rivers which are now making incursions into the territory of the sea, by changing it into dry land, are such as have already completed their first work of filling up the estuary into which they once discharged themselves, which the Rio Plate & the River Ouse will in time also compleat.

On page 483 of his *Geographical System* Rennell distinguished between rivers that terminate negatively by emptying into a deep estuary, or positively by forming a projecting delta. Banks in his letter suggests that the first type evolves over time into the second.

Neil Chambers' 6-volume edition of *The Scientific Correspondence of Sir Joseph Banks 1765-1820* (2006) cites four letters from Rennell to Banks, all unrelated to the present letter, but none from Banks to Rennell. 42813



“Genus *Pediculi Anglici*”

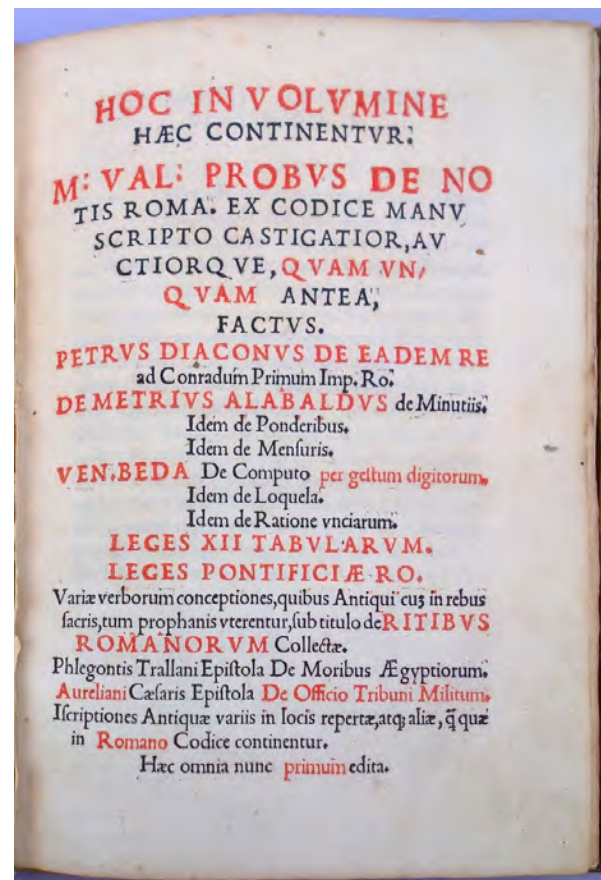
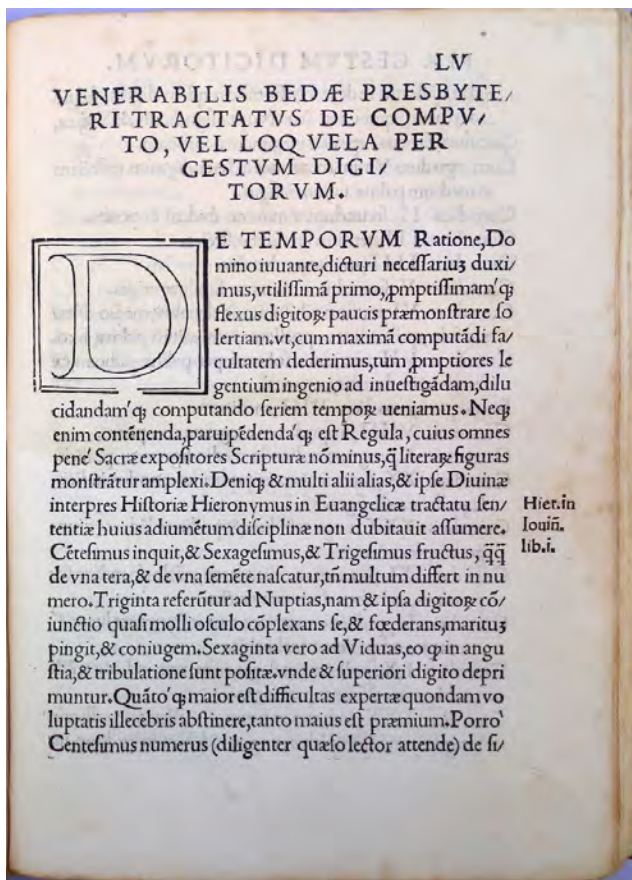
3. **Beaufort, Daniel Augustus** (1814–98). Autograph letter signed [“D. A. B.”; remainder of surname supplied in pencil in a different hand] to an unidentified correspondent. 4pp. Warburton, 15 December 1869. 139 x 191 mm. Faint trace of mounting on fore-edge of second leaf, but fine otherwise. \$450

From Daniel Augustus Beaufort the younger, son of Rear Admiral Sir Francis Beaufort (1774–1857) and grandson of geographer Daniel Augustus Beaufort (1739–1821). Beaufort came from a scientific family: His grandfather helped to found the Royal Irish Academy and published an important map of Ireland in 1792; his father developed the Beaufort Scale for indicating wind force and served as the British Admiralty’s Hydrographer of the Navy from 1829 to 1854; and two of his aunts, Harriet and Louisa Beaufort, wrote popular works on botany and entomology. Daniel Augustus the younger was a clergyman who served as rector of Warburton from 1850 to 1872; he also had a strong interest in natural history.

Beaufort’s letter reads in part as follows:

To answer your reply briefly, the animals we spoke of—by which phrase I suppose you mean those of the genus *Pediculus anglici*, louse—most decidedly have legs; & these like those of all true “Insects” are six in number (I say “true,” because spiders are only by a vulgar man called Insects: they, you know, have eight).

The point in which the members of the genus *Pediculus* differ from most other genera is that they are apterous, i.e. wingless . . .



## Medieval Classic of Digital Computation

4. [**Bede, the Venerable** (672/73 – 735).] De computo, vel loquela per gestum digitorum [and] De ratione unciarum. In *Hoc in volumine hæc continentur M. Val. Probus de notis Roma. ex codice manuscripto castigatio . . .*, ed. Giovanni Tacuino (Venice: G. Tacuino, 1525), ff. LV – LVII. Whole volume, 4to. [4], LXXIX [i.e., LXXXI], [1]ff. Title in red and black. Full-page woodcut of a sibyl within an architectural setting, signed “b. M.” in the block (probably Benedetto Montagna), a few woodcut initials. 211 x 153 mm. Modern vellum. Fine. \$4750

**Probably the Earliest Printings** of Bede’s accounts of finger-reckoning and duodecimal fractions. Bede’s “De computo, vel loquela per gestum digitorum” (On calculating and speaking with the fingers) and “De ratione unciarum” (On calculating duodecimal fractions) form part of the introduction to his treatise *De temporum ratione* (On the reckoning of time), written around 725 A.D. The *editio princeps* of *De temporum ratione* was published by Sichardus in 1529, four years after the present work. Portions of *De temporum ratione* appeared in print as early as 1505, but these do not appear to have included the section on finger-reckoning. Smith, in his *Rara arithmetica*, states that the 1522 edition of Johannes Aventinus’s *Abacus atque vetustissima, veterum latinorum per digitos manusque numerandi* contains a description of Bede’s finger-reckoning; however, we think this may be an error, since we have not been able to find any record of this edition in OCLC or the Karlsruhe Virtual Catalogue. Smith himself described only the 1532 edition of Aventinus’s work (see *Rara arithmetica*, pp. 136–138).

Finger-reckoning, a method of computation in which numbers are represented by finger and hand gestures, had been practiced since ancient times and was commonly used during the Middle Ages; however, there are very few written accounts of the technique dating from these times, probably because it was used primarily by “common or illiterate people” (Menninger, p. 201) who passed its methods on orally. Bede’s account of the

practice, although not the first, was the best and most influential. His purpose was to provide a useful method for calculating the Christian calendar, most importantly the date of Easter and other movable feasts.

Bede listed finger- and hand symbols for the numerals 1 through 9999; these

roughly work like a placement system. The middle, ring, and little fingers of the left hand denote the digits; the thumb and index fingers on the left hand express the tens; the thumb and index finger on the right hand the hundreds; and the middle, ring and little fingers the thousands . . . The informal manner in which Bede explains how to flex the fingers and form gestures seems to retain traces of oral instruction (Kusukawa, pp. 28-29).

Prior to Europe's adoption of Arabic numerals, finger-reckoning provided a rudimentary method of place-value calculation. "Neither Bede nor any of his contemporaries in Western Europe knew about place value or zero, but finger reckoning enabled them to proceed as if they did. Finger joints supplied place value—one joint 10s, another 100s and so on—and zero was indicated by the normal relaxed position of the fingers—by nothing, so to speak. The system was even capable of simple computation" (Crosby, *The Measure of Reality: Quantification in Western Europe, 1250-1600*, p. 42).

Bede's explanation of the Roman system of duodecimal fractions, which follows the description of finger-reckoning, clarifies the terminology and provides a list of synonyms for different types of fractions. Bede's two disquisitions are contained in a collection of works on Latin abbreviations, symbols, weights, measures and inscriptions edited by Giovanni Tacuino. The collection is devoted primarily to works on deciphering the abbreviations used in classical-era stone or bronze inscriptions, a subject of great interest to humanistic scholars eager to discover more about the ancient world. Included in the collection is the editio princeps of Petrus Diaconus' (Peter the Deacon's) *De notis literarum more Romano liber* (which Tacuino had discovered), along with a new edition of M. Valerius Probus' *De notis Romanorum* and several transcriptions of Roman inscriptions in quasi-facsimile. The typographic design of the title is reminiscent of an ancient text in stone. Kusukawa, "A manual computer for reckoning time," in Sherman, *Writing on Hands: Memory and Knowledge in Early Modern Europe*, pp. 28-34. Menninger, *Number Words and Number Symbols: A Cultural History of Numbers*, pp. 201-8. 42822

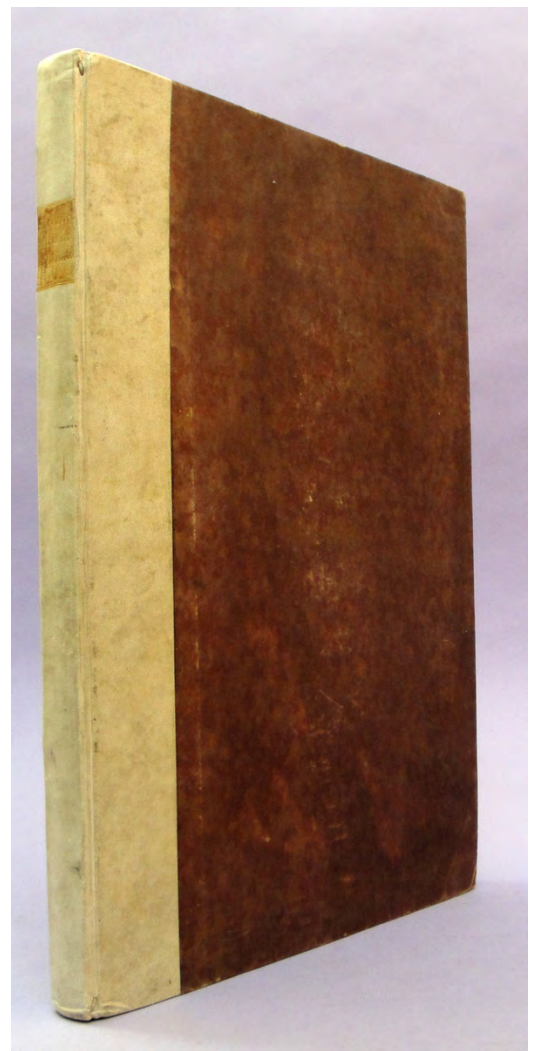
## *By One of the Foremost Painters and Architects of the Italian Baroque—The Best Edition with the Plates Printed in Sepia*

**5. Berrettini, Pietro**, called Pietro da Cortona (1596-1669). *Tabulae anatomicae*. . . . Folio. xv [1], 104pp. 27 copperplates engraved and printed in sepia by Luca Ciamberlino (b. 1580) after drawings by Berrettini; engraved head-pieces and initials. Rome: Venanti Monaldini, 1788. 464 x 320 mm. (uncut). Title and plates a bit foxed and browned, 2 small oval library stamps on title, but a fine copy on thick unpressed paper. \$15,000

Second and **Best Edition** of a dramatic and artistically important anatomical atlas, prepared by one of the foremost painters and architects of the Italian Baroque. Anatomical works by artists of the first rank are extremely uncommon; of the artists of Berrettini's stature, only Rubens and Dürer produced anything like the *Tabulae anatomicae*. "There is no doubt that among Italian painters [Berrettini] must be considered the most influential personality of his generation. . . . His attitudes as well as his forms of expression were in harmony both with the new sense of grandeur and richness of the contemporary Catholic world, and with the spirit of absolutism then establishing itself among the monarchs of Europe. . . . Behind his formal eloquence there lies a sense of universal participation, a new vision of nature, that was one of the positive achievements of the Seicento. Pietro da Cortona changed the course of Italian painting markedly" (*Enc. World Art*, with extensive bibliography).





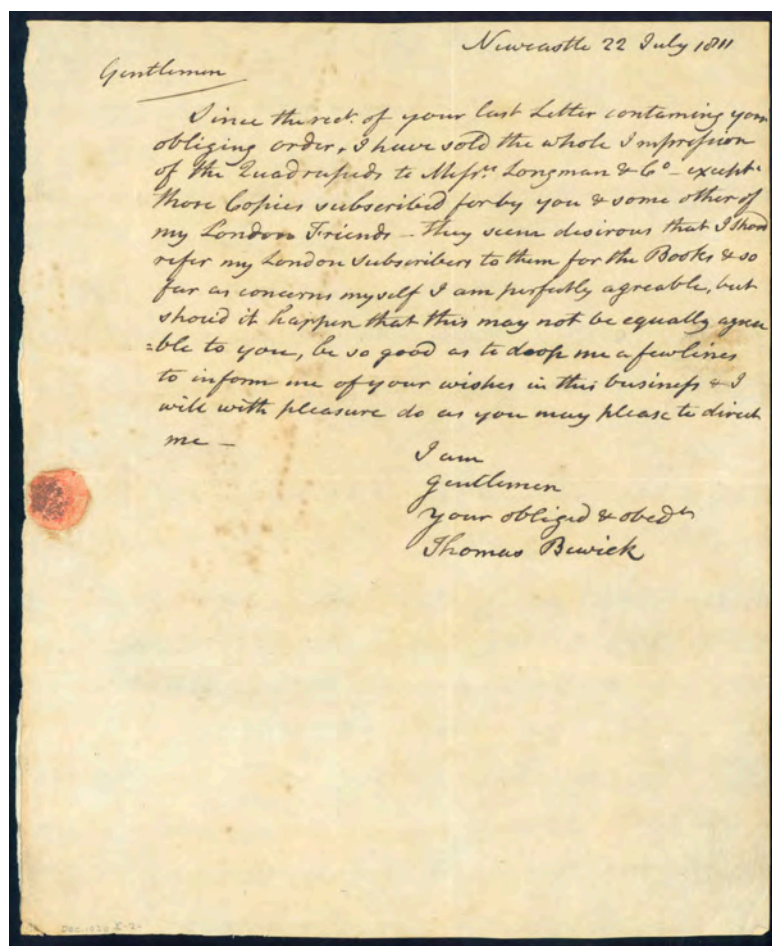


In about 1618, when he was not yet twenty years old, Berrettini prepared a series of twenty anatomical drawings, possibly from dissections by the surgeon Nicolas Larchée; it is probable that the drawings were engraved on copper at about this time. The drawings dealt chiefly with muscles, nerves and blood vessels, with special emphasis placed on the nerves; nineteen of them depict male figures and one (plate XXVII in the *Tabulae anatomicae*) a female. Inspired by his era's preoccupation with the "golden age" of classical Greece and Rome, Berrettini made his anatomical figures noble and heroic, placing them in dramatic attitudes amidst columns, plinths and arches derived from classical architecture. "Many of the dissected men hold oval or rectangular medallions—they look like framed mirrors—within which are drawn figures detailing the anatomy of various regions. Others have no accessory figures" (Roberts & Tomlinson, p. 273). Berrettini's actual drawings still exist—they were acquired by Sir William Hamilton, the British Ambassador to the King of Naples (and husband of Admiral Nelson's inamorata, Lady Emma Hamilton), who presented them to William Hunter for inclusion in Hunter's anatomical museum. The drawings are now in the Hunter Collection in the University of Glasgow Library.

No one knows why Berrettini's plates remained unpublished for over a century after their creation; however, their appearance in the 18th century was almost certainly due to the high reputation Berrettini enjoyed at the time. The plates were initially published in 1741 by Gaetano Petrioli, surgeon to Victor Amadeus II of Sardinia, who had also come into possession and editorship of the famous Eustachian anatomical plates after their publication in 1714. Petrioli's edition contained the original twenty plates (nos. I-XIX and XXVII) plus seven others with figures copied from Vesalius, Vesling, Casserio and others, along with commentary supplied by Petrioli. For this original edition Petrioli caused Berrettini's plates to be embellished with numerous smaller anatomical fig-

ures taken from Vesalius, Valverde, etc., “engraved in an incongruous manner wherever there was sufficient space on the plate” (Roberts & Tomlinson, p. 274). In the second edition of 1788, which we are offering, these intrusive and distracting figures were removed by the edition’s editor, Francesco Petraglia, thus returning them to a state much more closely resembling Berrettini’s original drawings. Petraglia’s introduction to the second edition gives a history of plates, attributed here for the first time to Ciamberlano, whose monogram appears on plates I and IV. This is one of only a few instances in the history of anatomical art where the second edition should be preferred to the first.

Our copy of the 1788 edition has the anatomical plates printed in sepia, and in this fashion resembles the copy at the Swedish Society of Medicine, believed to be a presentation copy intended for Napoleon Bonaparte or a member of his family. Unlike the Swedish copy, however, ours has the engraved vignettes and initials printed in black. Copies with the plates printed in sepia are extremely rare on the market. Garrison–Morton 395.2 (citing the first edition). Choulant / Frank, pp. 235–39. Hagelin, *Rare & Important Books in the Library of the Swedish Society of Medicine*, pp. 54–57. Roberts & Tomlinson, *Fabric of the Body*, pp. 272–79 (illustrating 3 plates from the first edition plus 3 of the original drawings). Norman, *The Anatomical Plates of Pietro da Cortona* (1986). Waller 983. 41478



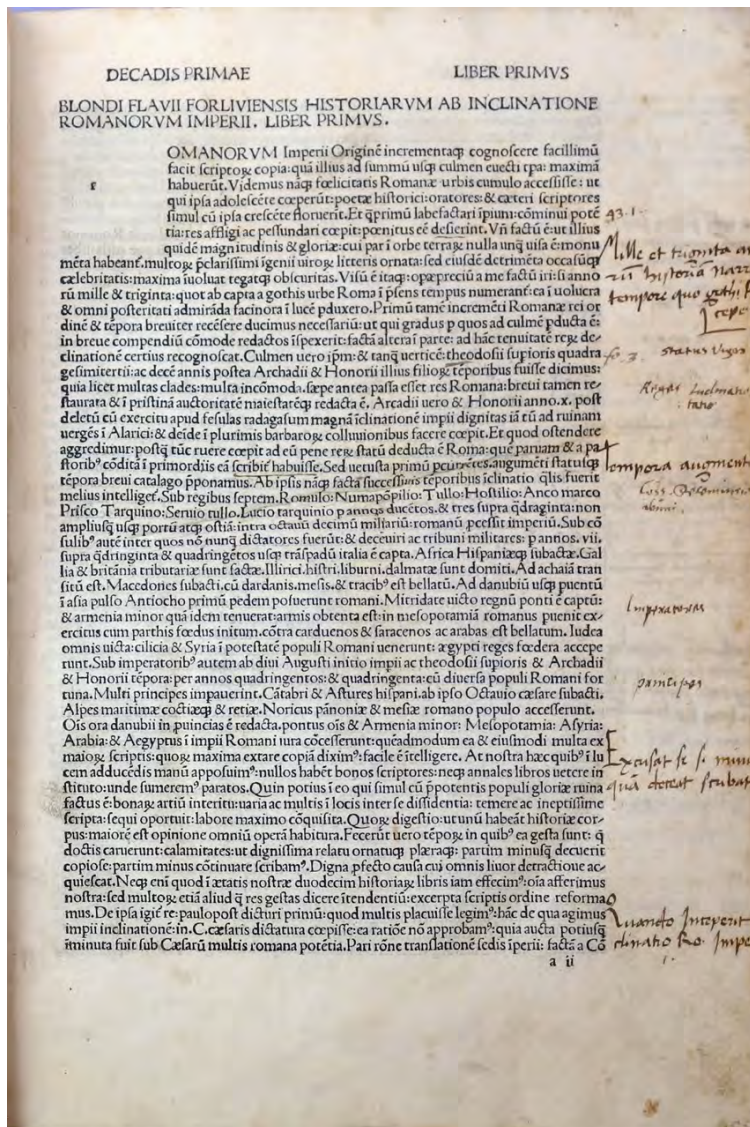
“I Have Sold the Whole Impression of the Quadrupeds”

6. **Bewick, Thomas** (1758–1828). Autograph letter signed to an unidentified correspondent. 1 page. Newcastle, 22 July 1811. 228 x 188 mm. Tiny traces of former mounting on blank verso, but fine otherwise. \$1750

From Thomas Bewick, inventor of the technique of wood-engraving for making prints and book illustrations, and author and illustrator of the enormously popular *General History of Quadrupeds* (1790) and *History of British Birds* (1797–1804), both of which went through numerous editions—probably more than any other English ornithological work of the early nineteenth century. The present letter, written to a bookselling or publishing firm, discusses Bewick’s financial arrangements for selling the sixth edition of the *Quadrupeds*, issued in 1811:

Gentlemen—Since the rect. of your last letter containing your obliging order, I have sold the whole Impression of the Quadrupeds to Messrs. Longman & Co. except those Copies subscribed for by you & some other of my London Friends. They seem desirous that I should refer my London subscribers to them for the Books & so far as concerns myself I am perfectly agreeable, but should it happen that this may not be equally agreeable to you, be so good as to drop me a few lines to inform me of your wishes in this business & I will with pleasure do as you may please to direct me. I am, Gentlemen, your obliged and obedt. Thomas Bewick.

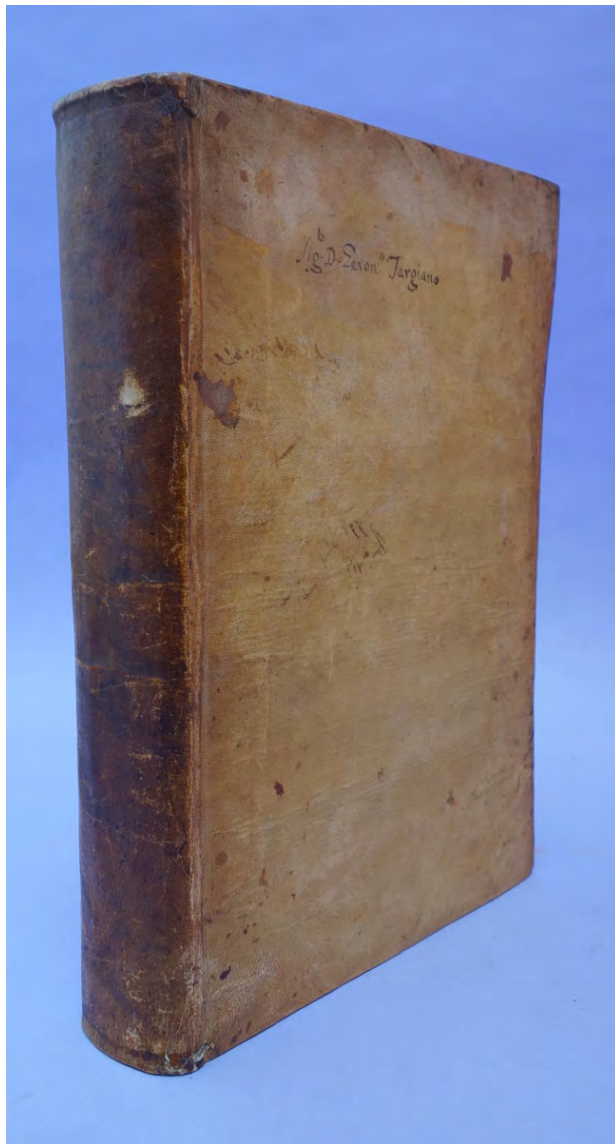
Bewick’s letter is discussed on pages 26 and 29 of Roscoe’s *Thomas Bewick: A Bibliography Raisonée* (1953). Included with the letter is correspondence from March 1961 between Goodspeed’s Book Shop and David A. Fraser of Syracuse, N.Y. regarding the letter’s provenance. Letters by Bewick are rare on the market. 42802



## Conceiving the “Middle Ages”

**7. Biondo, Flavio** (1392–1463). Blondi Flavii Forliviensis historiarum ab inclinatione Romanorum imperii [decades]. Folio. 301 unnumbered leaves (lacking blank a1). Venice: Thomas de Blavis de Alexandria, 1484. 304 x 211 mm. 18th century vellum, spine darkened, early owner’s name (Gerolamo Targiano) in ink on front cover. Very good copy. Extensive 15th or 16th century marginal annotations (some trimmed) throughout the first two-thirds of the volume, stopping at leaf C2. \$18,500

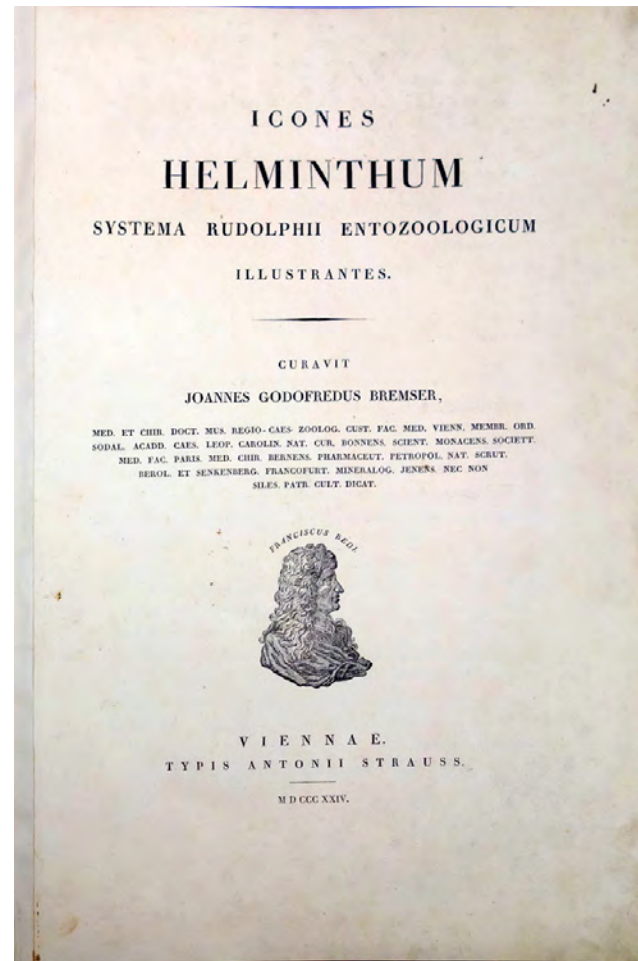
Second edition, the first to contain Pope Pius II’s epitome of the first two decades (10-book sections) of Biondo’s *Historiarum*. In this work Biondo, one of the great humanists of the early Renaissance, chronicled the history of Italy from the fall of the Roman Empire (410 A.D.) to his own day, using a three-period framework that strongly influenced the later division of historical times into the Classical, Middle and Modern Ages. Biondo “was the first to devise a general history of Italy, showing a continuity since the fifth century, and to conceive a ‘media aetas’ [middle age] standing between antiquity and his own times” (Weiss, p. 66). In his scholarly essay on Biondo and the *Historiarum*, Denys Hay calls Biondo “the first medieval historian” (p. 54) and notes that “recognizing and chronicling the *medium aevum*, even if not using the phrase, constitutes a major claim to the esteem of posterity” (p. 55).



Biondo wrote his *Historiarum* between 1439 and 1452, and manuscript copies circulated widely throughout Europe prior to the work's first printing in 1483. The 1484 edition, which we are offering here, was the first to contain Pope Pius II's abridgement of the *Historiarum*'s first two sections, a work that

had considerable influence, not least because in this form Biondo became one of the prime sources of Platina's *Lives of the Popes*, the most generally influential and long-lived of all humanist Latin histories. What may be described as the most influential of the vernacular histories, Machiavelli's *Florentine History*, equally depends greatly on the *Decades*. Practically every sixteenth-century scholar must have turned to the *Decades* for factual information and when Pius II's epitome appeared in the Italian translation of Lucio Fauno [1543-44] Biondo's work was made available to a much wider public (Hay, p. 61).

Hay, "Flavio Biondo and the Middle Ages," in Hay, *Renaissance Essays* (London: Continuum Publishing Group, 1951), pp. 35-66. Weiss, *The Renaissance Discovery of Classical Antiquity* (1969), pp. 66-72. ISTC no. ib00699000. 42789

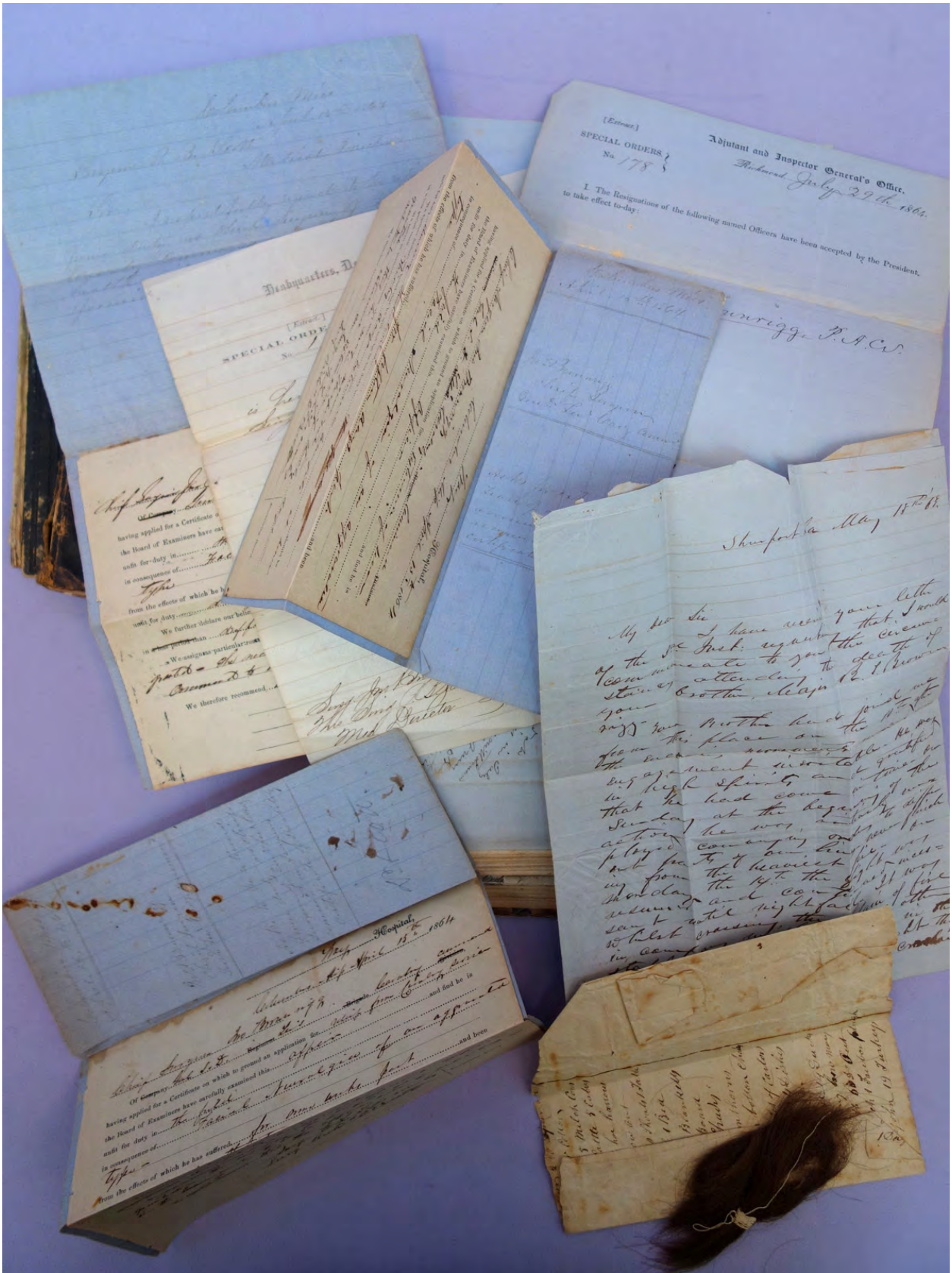


### *Spectacular Illustrations of Parasites*

**8. Bremser, Joannes Gottfried** (1767-1827). *Icones helminthum systema Rudolphii entozoologicum illustrantes*. [4], 12pp. 18 hand-colored engraved plates by Heinrich Mansfeld after Bremser's drawings. Vienna: Anton Strauss, 1824. 387 x 281 mm. Later half cloth, marbled boards, slight wear at corners. Very good copy. \$3000

**First Edition** of one of the earliest works on helminthology, the study of parasitic worms. These beautifully executed plates were prepared by the curator of Vienna's Natural History Cabinet and illustrate the specimens in the Cabinet's collection, along with some rare examples from other collections. The plates were intended to illustrate the classification system set forth in the *Synopsis entozoorum* (1819) of Karl Asmund Rudolphi (1771-1832), who founded the science of helminthology at the turn of the 19th century. The plates include images of nematodes, acanthocephalans, trematoda (flukes), cestoidea (tapeworms) and cystica (taenia). 42829







## *Archive of a Confederate Surgeon*

**9. Brownrigg, Jonathan.** Archive of autograph and printed materials relating to Brownrigg's service as a surgeon with the army of the Confederate States of America, as listed below. V.p., v.d. Many items with Brownrigg's annotations. Some rubbing and wear to covers of (1), (2) & (7); A few leaves of (1) and (2) apparently clipped out (including the title), and others darkened due to discoloration of glue used to affix newspaper clippings; other items showing signs of wear and use as might be expected, but overall very good and unique. \$12,500

There were only about 2500 surgeons in the Confederate States Army, and their archives virtually never appear on the market—this is the first we have seen in over 40 years of business. It is a rich, fascinating and poignant archive, preserved carefully by Brownrigg's descendants until the present, depicting in detail the military career of a typical Confederate army surgeon during the American Civil War, and unknown to scholars until now. According to the manuscript annotation on the "General order no. IX" mentioned below under (1), Brownrigg joined the army of Tennessee as a volunteer in the spring of 1861, where he served as a private until being elected surgeon of Blythe's Mississippi battalion the following July. He was later examined at Nashville and appointed surgeon to the army of Tennessee. Brownrigg was transferred and promoted numerous times, as documented in the official orders included in (1); he ended up as Chief Surgeon to the Department of Alabama, Mississippi and East Louisiana, commanded by Maj. General Stephen Dill Lee. He resigned from the C.S.A. in July 1864, a few months after his marriage to Bettie Yerger. We have been unable to discover anything about Brownrigg's life other than what is contained in this archive; however, his participation in the dramatic and bloody War between the States is well documented here.

The archive consists of the following:

(1) Brownrigg's medical syllabus from his student days at one of the medical schools in Philadelphia, the city where many Confederate physicians received their training (see Cunningham, *Doctors in Gray*, pp. 9-12). The syllabus is titled Mütter's Syllabus on the spine, after Thomas Mütter (1811-59) who taught at Jefferson Medical College, where Brownrigg presumably studied medicine. It is interleaved with blank pages on which Brownrigg wrote nearly 40 pages of medical notes; many of these relate to the treatment of wounds, which would have been one of his major concerns as an army surgeon. Glued over many of the printed pages and some of the holograph ones are numerous newspaper clippings relating to medical, political and personal matters; several are obituaries of family members, including Brownrigg's wife. Inserted are approximately 21 official orders (some of them official copies) transferring Brownrigg between various units, raising his rank, reacting to his requests for discharge, etc. Some of these orders are on official printed forms of the C. S. A. Medical Department, others are wholly manuscript. One of the printed forms, "General order no. IX" of the Provisional Army of the State of Tennessee, is cited as no. 4140 in Parrish & Willingham's *Confederate Imprints*; Brownrigg's name is included in the form's list of surgeons. (The remainder of the printed forms in this archive are not in Parrish & Willingham, since this bibliography does not include any type of document that required completion in manuscript.)

(2) Album titled *Token of Love*, belonging to Bettie Yerger, whom Brownrigg married in January 1864. Among the usual sentiments from friends are Brownrigg's manuscript account of his and Bettie's courtship and marriage: "John Brownrigg & Bettie Yerger. Met first in Febry 1863. Plighted their troth June 25th, 1863. Engaged to be married Oct. 15, 1863. Married on January 14th, 1864, at the residence of Judge Wm. Yerger, in Jackson Mississippi. . . . Separated by death Sep. 3rd, 1867, but not in heart. I fell in love with her at first sight, at Col. Fontes house at a little evening party. . . ." Also included are a printed obituary notice, an announcement of Bettie's funeral, and Brownrigg's ms. instructions bequeathing his engagement and wedding rings to his son.

(3) 3-page A.L.s. to Brownrigg from Brig. Gen. Henry Hopkins Sibley (1816-86), dated May 15th, 1863 from Shreveport, Louisiana, describing the death of Brownrigg's brother, Major Richard



T. Brownrigg, during the engagement at Irish Bend and Fort Bisland, April 13-14, 1863. Richard Brownrigg played a minor role in Texas politics, serving as signatory to an 1861 ordinance concerning the separation of Texas from the United States; see Parrish & Willingham 4155. Sibley described in detail the location of Richard Brownrigg's grave, and ended his letter by noting that "the Yankees have not advanced above Alexandria-their gun boats are some twenty miles below the river falling . . ." For further information on Sibley, see Faust, *Historical Times Illustrated Encyclopedia of the Civil War*, pp. 686-87.

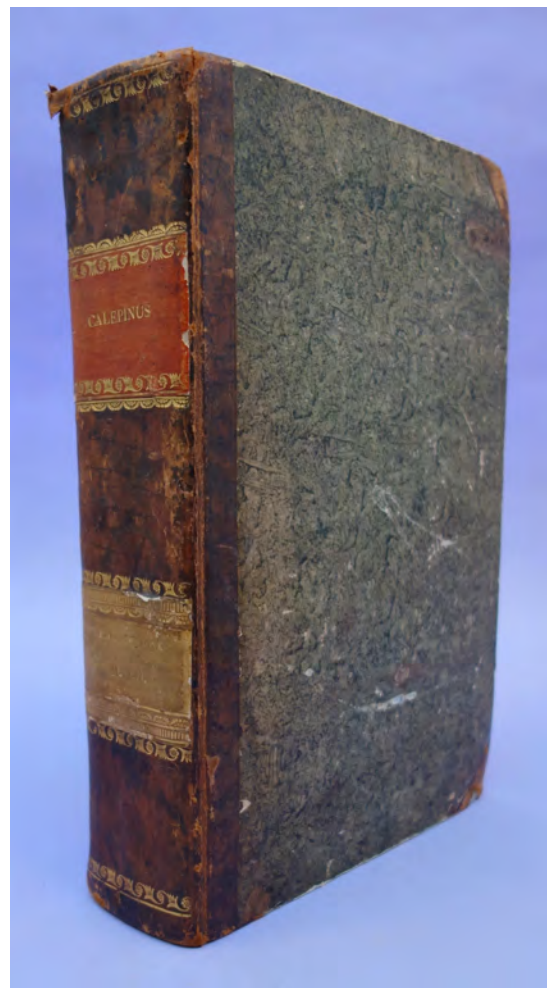
(4) Three 1-page printed medical forms filled out in manuscript, all dated April 15, 1864, recommending that "Chief Surgeon Jno. Brownrigg of Genl. S. D. Lee's Cavalry Command" be granted a 30-day extension of leave due to "facial neuralgia of an aggravated type," from which he had been suffering for the previous 15 days. The forms bear the signatures of Surg. W. L. Lipscombe and Surg. Richard L. Butt, of Way(?) Hospital in Columbus, Miss. Each form is attached to blue paper on which comments or docketing information have been written. Maj. Gen. Stephen Dill Lee (1833-1908), commander of the Department of Alabama, Mississippi and East Louisiana, was a distant relative of Robert E. Lee; see Faust, p. 431.

(5) Special Orders dated May 9, 1864 from Headquarters, Dept. of Alabama, Mississippi and East Louisiana in Demopolis, AL, relieving Brownrigg from duty as Chief Surgeon in Maj. General [S. D.] Lee's command.

(6) Special Orders dated July 29, 1864 from the Adjutant and Inspector General's Office in Richmond, VA, accepting Brownrigg's resignation from the C.S.A.

(7) New Testament printed in 1868, evidently belonging to Brownrigg, and signed later by various members of the Marshall family, to whom he was related.

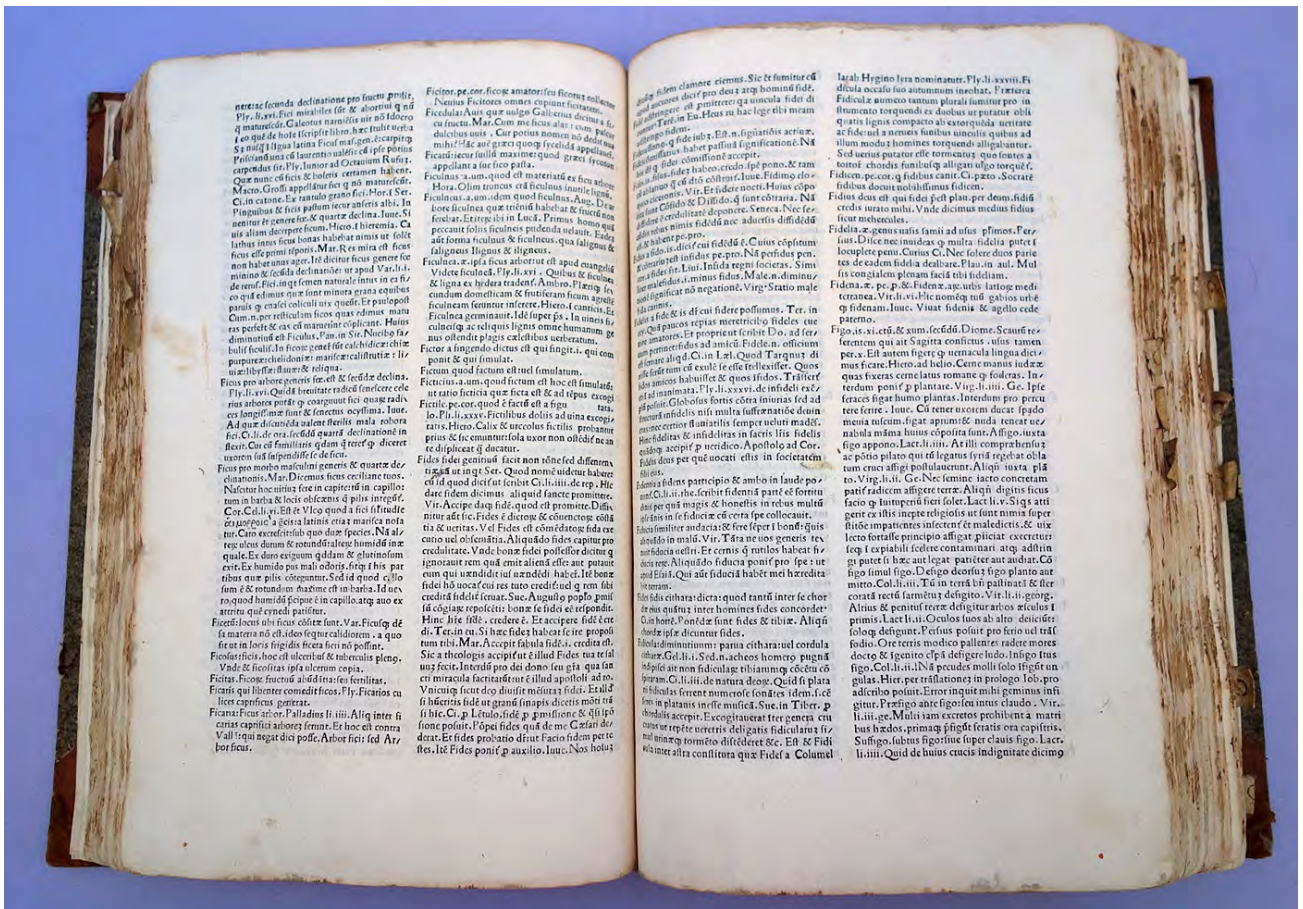
(8) Lock of hair from Brownrigg's youngest brother Thomas, who served in the C.S.A. and died in 1879. 34778



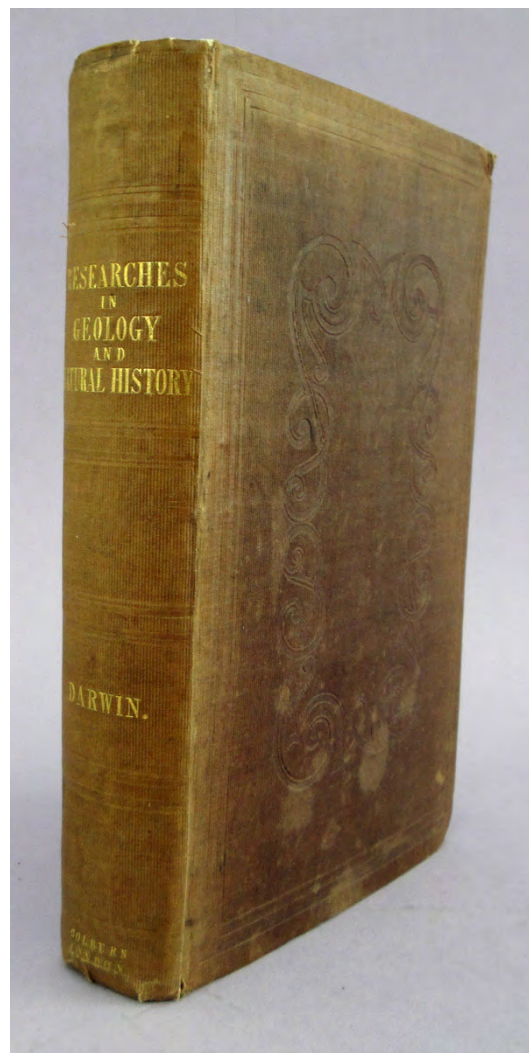
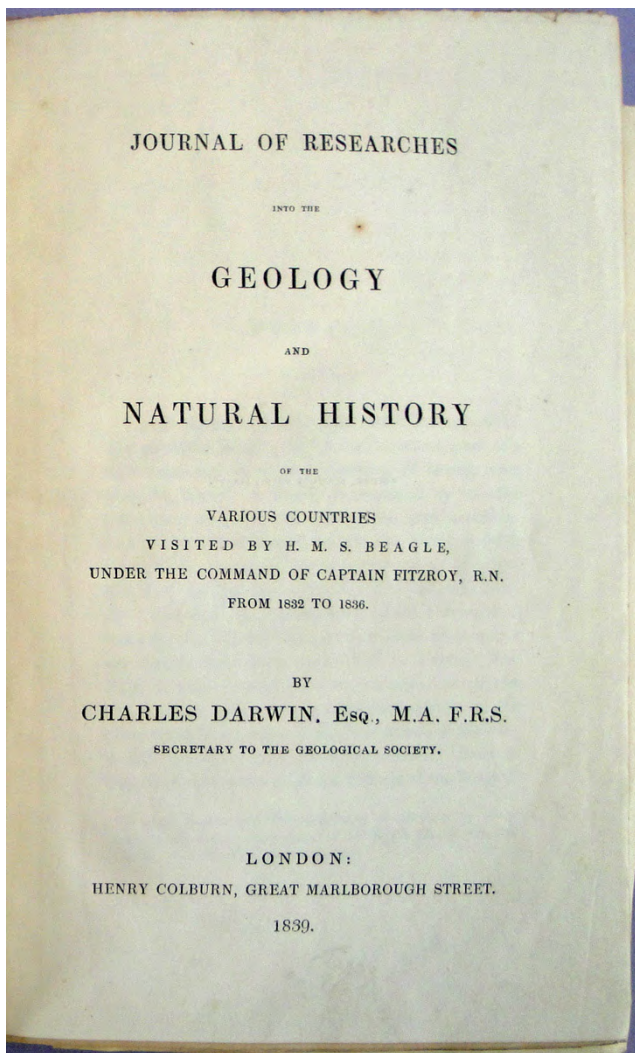
*The Most Widely Used Reference Book of the Early Modern Period*

**10. Calepino, Ambrogio** (1440–1510/11). Ambrosii Calepini bergomati eremitani dictionarium. Folio. [444]ff. Rhegii Lingobardiae [Reggio]: Dionysius Bertochus, 1502 (colophon). 312 x 208 mm. 19th century half calf, paste paper boards, rubbed, corners worn. First and last leaves remargined, marginal repairs to a number of other leaves, minor worming and staining, but on the whole a good copy. Letter tabs added by an early owner. Sheet with former owner’s notes tipped to inside front cover; notes in another hand on front free endpaper. \$9500

**Rare First Edition** of the most successful and widely reprinted reference book of the early modern period, which went through an astonishing 166 editions in the sixteenth century, followed by 32 in the seventeenth and 13 in the eighteenth. Calepino, an Augustinian monk, “devoted some thirty years to composing his dictionary, which focused on classical Latin usage and on encyclopedic information and literary examples from ancient culture. In the years after his death many, mostly anonymous editors made modifications, corrections, and especially additions, often borrowing from other dictionaries . . . In the early modern period the Calepino not only became the most widely recognized brand of dictionary, still active in the early twentieth century, but it also came to stand for the entire dictionary genre . . . At the same time the success of the Calepino solidified the association of the title ‘dictionarium’ with the dictionary genre—only a few major dictionaries were called by another title” (Blair, *Too Much to Know: Managing Scholarly Information before the Modern Age* [2010], p. 122).



The *Dictionarium*'s enormous success as a reference work meant that copies were "read to death"; also, the many revisions that the work underwent during its long publishing history—particularly the addition of vernacular translations beginning in the mid-sixteenth century—suggests that the earlier editions might not have been retained in scholarly libraries. The first edition of the *Dictionarium* is now quite rare: OCLC and the Karlsruhe Virtual Catalogue cite 11 copies in libraries, only one of which (the Indiana State University copy) is in the United States. Our copy shows signs of heavy use, but it is complete. 42764



## *Voyage of the Beagle—Darwin's First Published Book*

**II. Darwin, Charles** (1809–82). Journal of researches into the geology and natural history of the various countries visited by H. M. S. Beagle . . . [i–iv], [vii] viii–xiv, 615pp. plus pp. 609–629 addenda. 2 folding maps, 4 text wood-engravings. London: Henry Colburn, 1839. 235 x 146 mm. Original plum cloth (Freeman binding b), minor fading and spotting, spine skillfully and subtly repaired. Edges of first folding map a bit frayed, minor foxing, but fine otherwise. 19th century owner's name partly erased from front pastedown. \$25,000

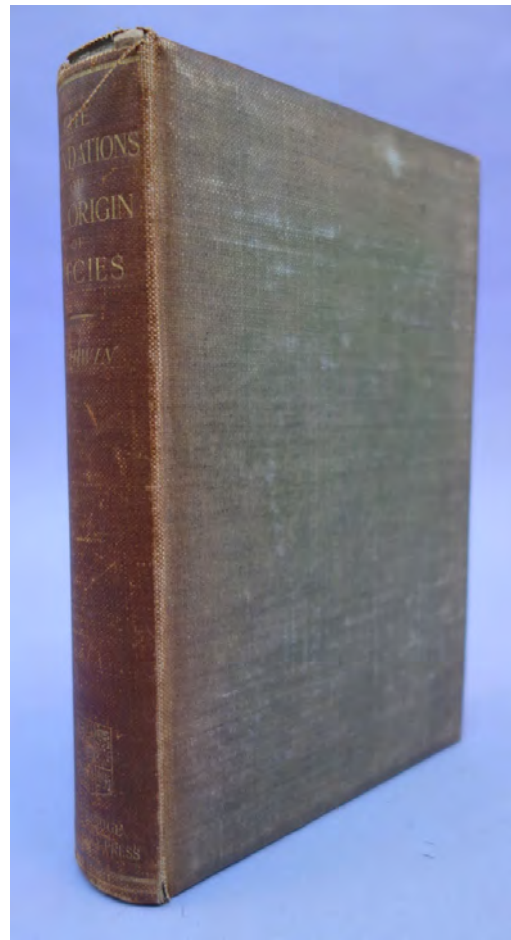
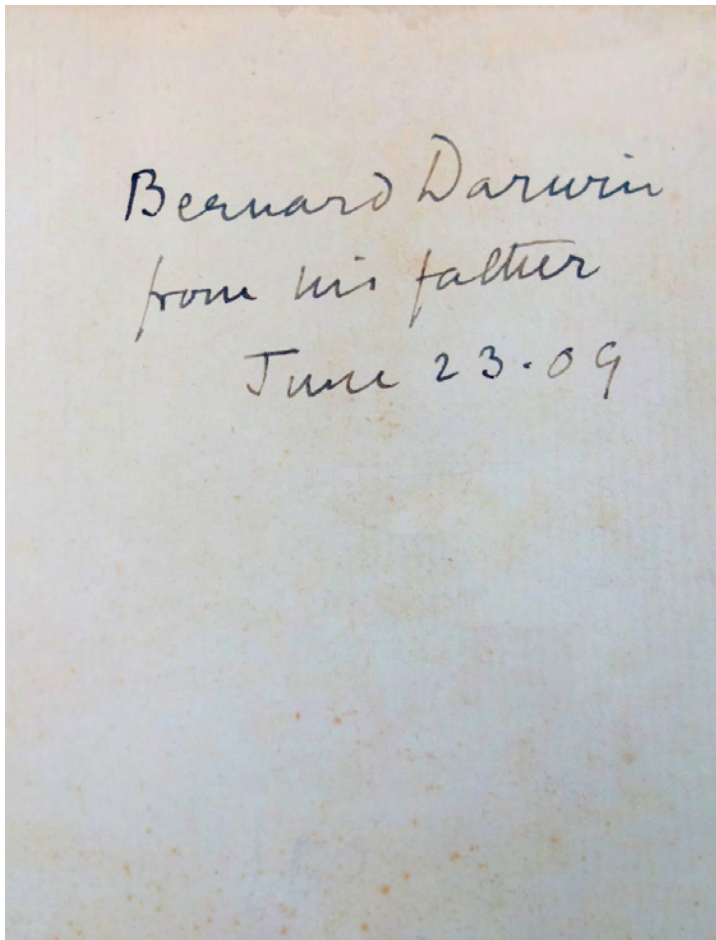
**First Edition**, second issue, and the **First Separate Edition**. Darwin's first published book, now universally known as *The Voyage of the Beagle*, "is undoubtedly the most often read and stands second only to *On the Origin of Species* as the most often printed. It is an important travel book in its own right and its relation to the background of his evolutionary ideas has often been stressed. . . . The first issue forms, as is well known, the third volume of *The Narrative of the Voyages of H. M. Ships Adventure and Beagle*, edited by Captain Robert Fitzroy and published, in three volumes and an appendix to Volume II, in 1839. . . . On its first appearance in its own right, also in 1839, it was called *Journal of Researches into the Geology and Natural History* etc." (Freeman, pp. 31–32). See Freeman for a detailed discussion of the work's publishing history and bibliographical features. Freeman, *The Works of Charles Darwin*, II. 414–56



*“Straits of Magellan” Map from the Voyage of the Beagle*

**12.** [Darwin, Charles (1809-82).] The strait of Magalhaens commonly called Magellan surveyed by the officers of His Majesty’s Ships Adventure and Beagle. Engraved map by J. Gardner. London: Henry Colburn, 1839. 346 x 489 mm. Folded, as all copies. Portion of blank left margin lacking, not affecting image, minor toning and foxing, but very good. \$1250

**First Edition.** This detailed map of the Straits of Magellan at the tip of the South American continent was one of two charts inserted loose in pockets in the first volume of the *Narrative of the Surveying Voyages of His Majesty’s Ships Adventure and Beagle* (3 vols., London, 1839), edited by Captain Robert Fitzroy. As is well known, Charles Darwin’s *Journal and Remarks* (now known as *The Voyage of the Beagle*) formed the third volume of the *Narrative*. See Freeman 10. 42835

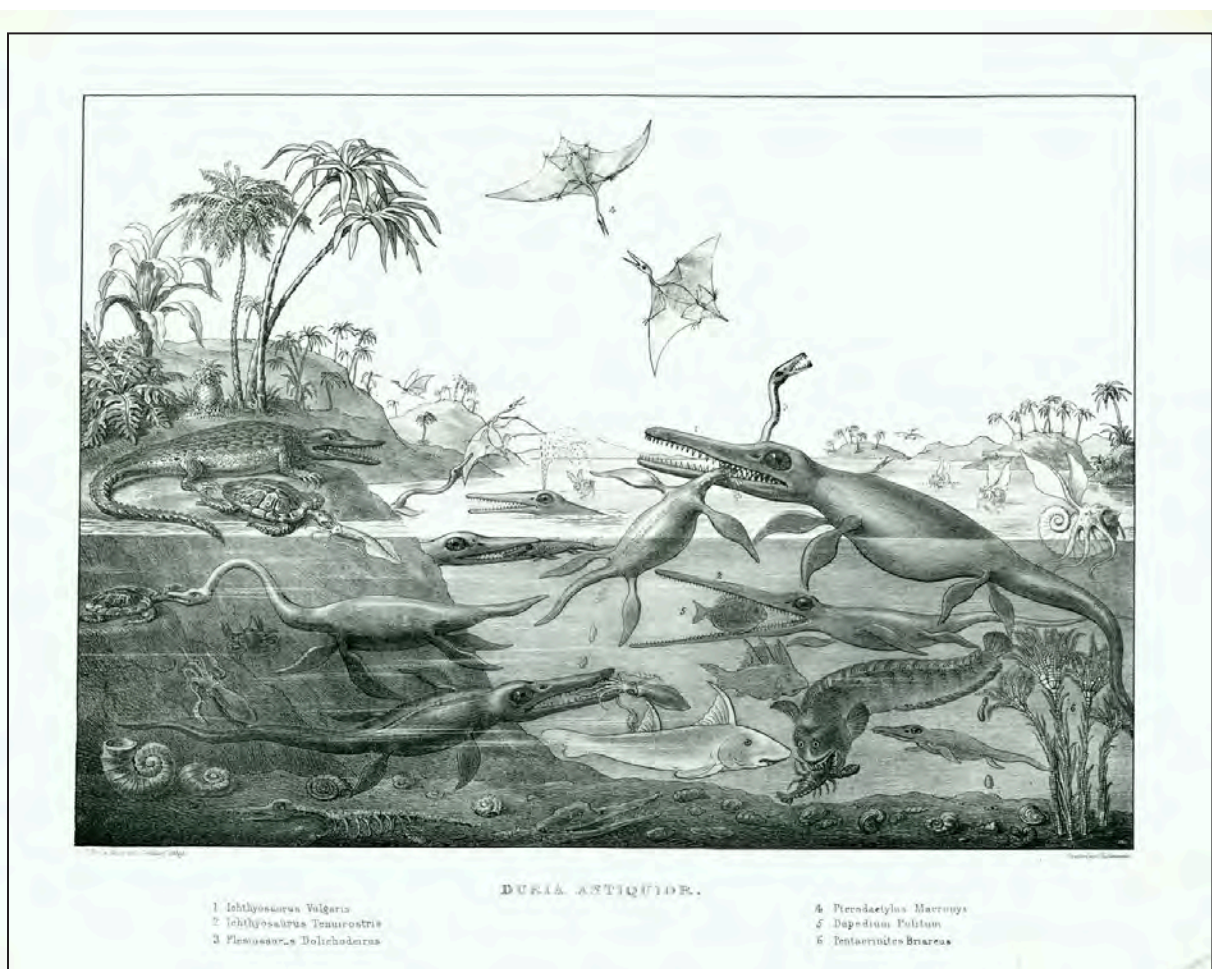


*Inscribed by the Editor, Darwin's Son Francis, to Darwin's Grandson*

**13. Darwin, Charles** (1809–84). The foundations of the *Origin of Species*. Two essays written in 1842 and 1844 . . . Edited by his son Francis Darwin. xxix, 263pp. Frontispiece portrait, plate. Cambridge: University Press, 1909. 222 x 147 mm. (uncut and partially unopened). Original cloth, top edge gilt, spine sunned, light wear at extremities. Some leaves carelessly opened, but very good. *Presentation copy*, inscribed by Francis Darwin to his son on the front free endpaper: “Bernard Darwin from his father June 23 09.” Bookplate of noted book collector and philanthropist Kenneth E. Hill. \$1750

**First Edition.** “When Francis Darwin put together Life and letters [of Charles Darwin (1887)] he did not know that the sketch of his father’s evolutionary ideas, which was written in 1842, had survived. The pencil manuscript was discovered in 1896, after the death of his mother [Emma Darwin], in a cupboard under the stairs at Down House” (Freeman, p. 182). The 1842 sketch was first privately printed for presentation to delegates to the Cambridge commemoration of the centenary of Darwin’s birth held in June 1909. Later the same year it was published together with Darwin’s expanded evolutionary essay of 1844, which had remained unpublished until that time. Both essays were carefully edited by Darwin’s son Francis (1848–1925), a botanist who collaborated with Darwin on some of his researches.

Francis Darwin presented this copy to his son, Bernard Darwin (1876–1961), a famous golf writer and historian of the sport; he was the first journalist to cover golf on a daily basis. This copy was later in the library of Kenneth E. Hill, who donated major collections to Cornell University and the University of California at San Diego. Freeman 1556. 42800



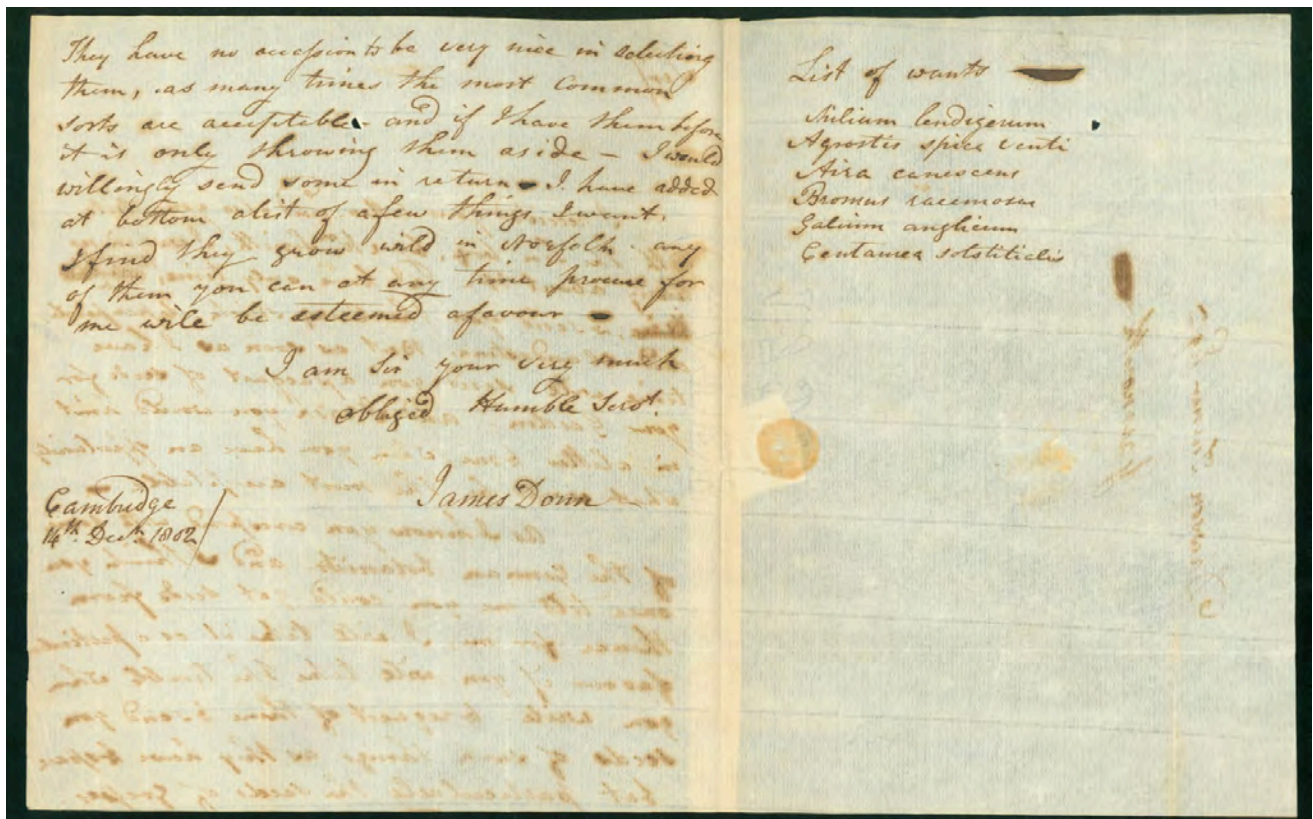
### First Image of the Prehistoric

**14. De la Beche, Henry Thomas** (1796–1855). *Duria antiquior*. Lithograph print by George Scharf (1788–1860) after De la Beche. [London:] C. Hullmandel, [1830]. 300 x 378 mm. One corner slightly creased, but very good. \$3850

**First Edition.** “The first true scene from deep time to have received even limited publication” (Rudwick, *Scenes from Deep Time: Early Pictorial Representations of the Prehistoric World* [1992], p. 47). De la Beche, a British geologist, was the first director of the Geological Survey of Great Britain and helped pioneer early geological survey methods. He was a longtime friend and client of Mary Anning, the famous Dorsetshire fossil collector and dealer, and when Anning fell on hard times De la Beche drew for her benefit this imaginative scene from “An earlier Dorset” (*Duria antiquior*), illustrating specimens of some of the extinct creatures Anning had discovered. Lithograph prints of De la Beche’s drawing were sold to Anning’s wealthier customers for the sum of £2 10s., with all the proceeds going to her.

“De la Beche’s scene is a remarkable achievement. . . . The most prominent ichthyosaur is biting the long slender neck of a plesiosaur. Other plesiosaurs are reaching up out of the water to seize a passing pterodactyle and to nip the neck of a turtle; other ichthyosaurs are caught in the act of seizing a variety of fish, whose distinctive scales and bones had been found by Buckland in their feces. The feces are also shown, with distinctly pre-Victorian indelicacy, dropping from several individuals. Among the invertebrates are several squid . . . In the right foreground is a clump of crinoids (stalked echinoderms distantly related to starfish), of which finely preserved specimens were also found at Lyme Regis” (Rudwick, pp. 45–46). Very rare. This is the first copy of this print we have seen on the market in forty years. 42830





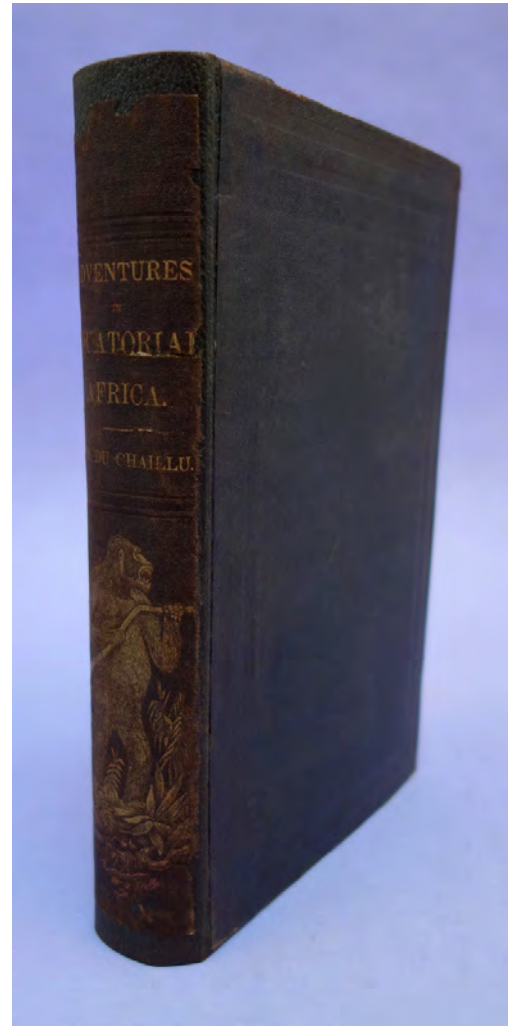
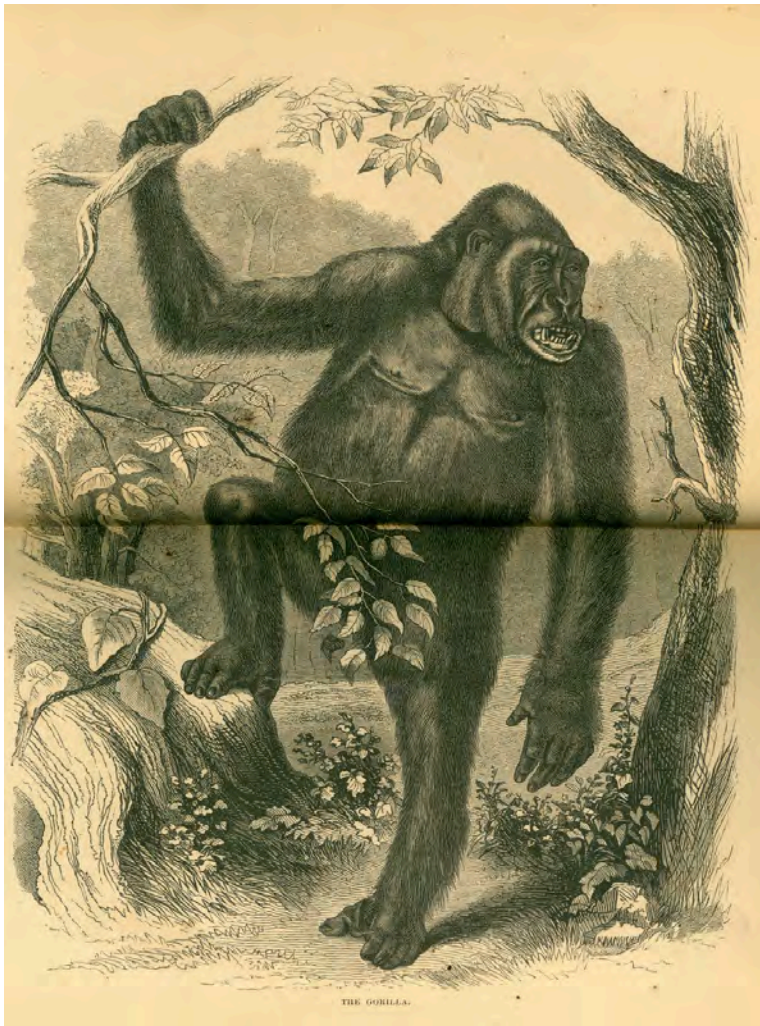
“Particularly the Seeds of Grasses”

**15. Donn, James** (1758-1813). Autograph letter signed to Dawson Turner (1775-1858). 2 – 1/2 pages. Cambridge, 14 December 1802. 217 x 191 mm. Tiny lacunae in both leaves not affecting text, otherwise fine. \$1250

From English botanist James Donn, curator of the Cambridge University Botanic Gardens from 1790 until his death and author of *Hortus Cantabrigiensis* (1796 and later editions), to fellow botanist Dawson Turner, author of several botanical works including *Synopsis of British Fuci* (1802) and *Botanist's Guide through England and Wales* (1805), and father-in-law of William Jackson Hooker. Donn and Turner were evidently in the habit of exchanging botanical specimens with one another; in his letter Donn acknowledged the receipt of a “tin box” from Turner and stated that while he “has only time, presently, to send you the *Carex stricta*, *depauperata* and *clandestina*,” he would soon “send you a packet of seeds for your garden.” Knowing that Turner habitually corresponded with German botanists, Donn asked him

if you will take the trouble when you write to request of them to send you seeds of such things as they have to spare but particularly the seeds of grasses. They have no occasion to be very nice in selecting them, as many times the most common sorts are acceptable and if I have them before it is only throwing them aside . . . I have added at bottom a list of a few things I want.

Under his “List of wants” Donn enumerated the following species: *Milium lendigerum* (i.e. *Gastridium ventricosum* or nitgrass); *Agrostis spica venti* (sweet bentgrass); *Aira canescens* (gray hairgrass); *Bromus racemosus* (bald brome); *Galium anglicum* (Lamarck’s bedstraw) and *Centaurea solstitialis* (yellow star-thistle). 42823



*Discovery of the Gorilla, Inscribed, with an Autograph Letter*

**16. Du Chaillu, Paul Belloni** (1835–1903). Exploration and adventures in equatorial Africa. With accounts of the manners and customs of the people and of the chase of the gorilla, crocodile, leopard, elephant, hippopotamus, and other animals. 531pp. plus 4pp. publisher's ads. Double-page plate of gorilla before title, folding map at end, numerous text illustrations. New York: Harper & Brothers, 1868. Original cloth, rebacked preserving original gilt spine, light wear at edges. Occasional minor spotting, but very good. *Presentation Copy*, inscribed by Du Chaillu to James Redpath (1833–91) on the front flyleaf: "To Mr. James Redpath With the kind regards of his friend P. B. Du Chaillu. Boston May 19th 1868." Tipped to the front free endpaper is Du Chaillu's Autograph letter signed to Redpath, dated May 19th, 1868, presenting him with this copy. \$2500

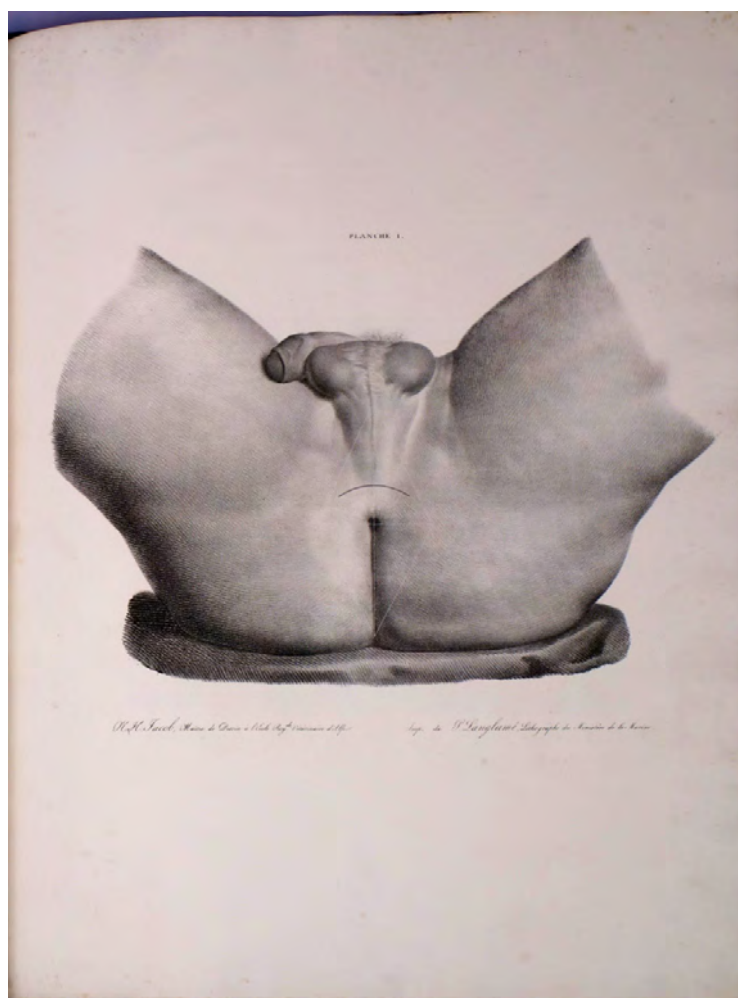
Du Chaillu, a French-American traveler and explorer, became famous in the 1860s for being the first outside of Africa to confirm the existence of the gorilla, which had previously been known to scientists only from a few skeletons and from Thomas Staunton Savage and Jeffries Wyman's description published in 1847. Du Chaillu observed several of these "monstrous and ferocious apes" during a scientific expedition to central Africa sponsored by the Philadelphia Academy of Natural Sciences. He was the first white man to hunt gorillas and other previously unknown African fauna, and the first to make contact with several inland tribes. When he

To Mr James Redpath  
With the kind regards  
of his friend  
P. B. Du Chaillu  
Boston May 19<sup>th</sup> 1868

Boston, May 19<sup>th</sup> 1868  
My dear Mr Redpath,  
Will you do me  
the favor to accept the  
volume where many of my  
explorations and adventures  
in Equatorial Africa  
are recorded.  
Many thanks for your  
kind visit yesterday. I was  
delighted to meet Mr  
Phillips.  
Can I see you at the hotel  
to day at half past one?  
Yours very sincerely  
P. B. Du Chaillu

returned from Africa he sold his gorilla specimens to the Natural History Museum in London, and went on the lecture circuit, where he was in great demand. His *Explorations and Adventures in Equatorial Africa*, which contained his description of the gorilla, was originally published in London in 1861. It was so filled with astounding adventures that it was greeted with disbelief by many readers, but his findings were later substantially confirmed by later explorers.

Du Chaillu presented this copy of the second American edition of his work to James Redpath, an American journalist and antislavery activist who advocated for abolition, civil rights, women's suffrage and labor unions. During the Civil War Redpath worked as a war correspondent with the armies of George Henry Thomas and William Tecumseh Sherman; later in life, ironically, he was the ghostwriter for Jefferson Davis's history of the Confederacy. Given his antislavery interests, Redpath would have been extremely interested in Du Chaillu's account of his explorations of equatorial Africa. Du Chaillu's presentation letter to Redpath reads: "My dear Mr. Redpath, Will you do me the favor to accept the volume where many of my explorations and adventures in equatorial Africa are recorded. Many thanks for your kind visit yesterday. I was delighted to meet Mr. Phillips. Can I see you at the hotel today at half past one? Yours very sincerely, P. B. Du Chaillu." 42834

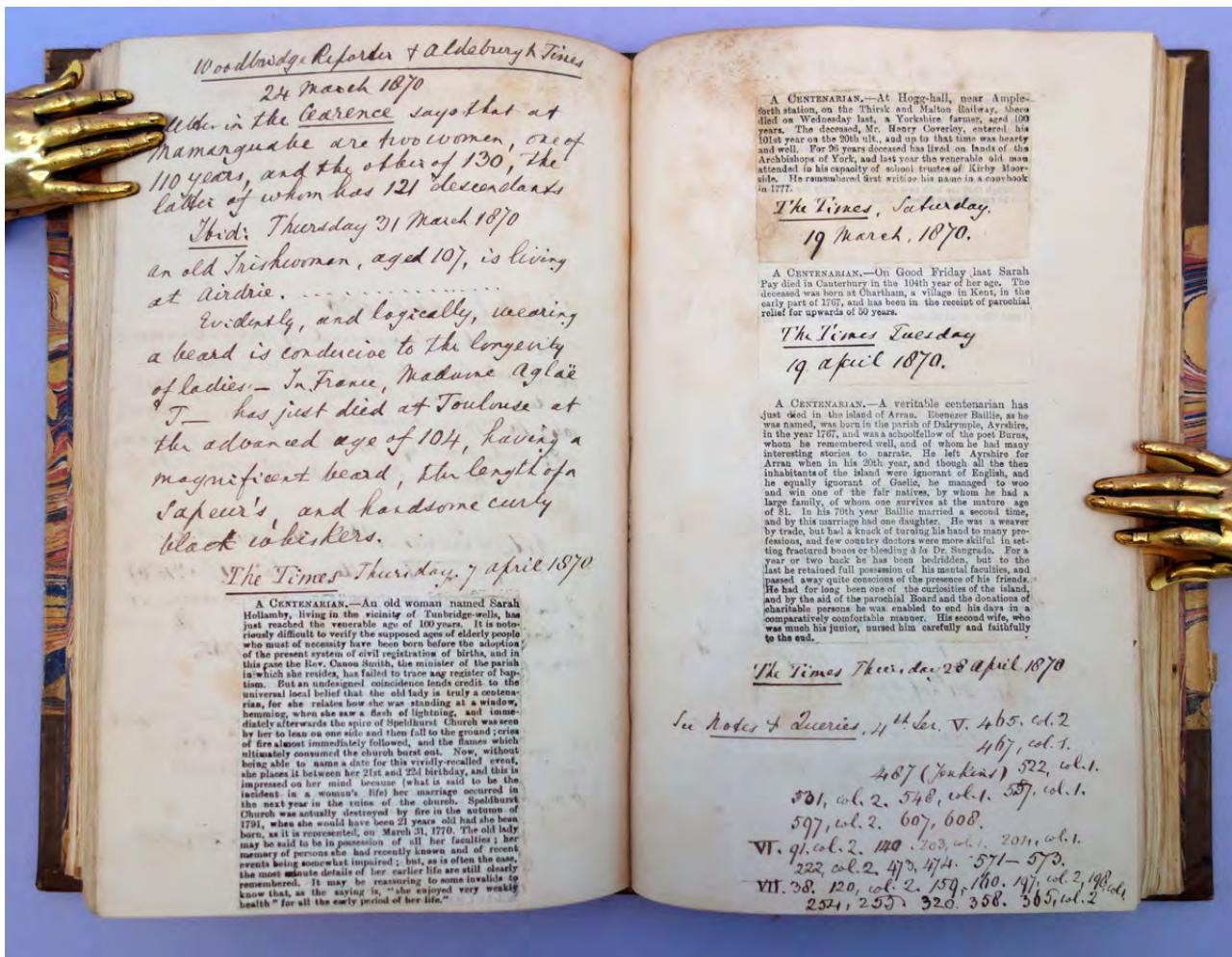


### *Remarkable Life-Size Plates*

**17. Dupuytren, Guillaume**, *baron* (1777-1835). *Mémoire sur une manière nouvelle de pratiquer l'opération de la pierre . . . Terminé et publié par J. L. Sanson et par L. J. Bégin. . . . Folio. [4], 50pp. 10 lithographed plates (9 by N. H. Jacob, 1 by A. Chazal, printed by Langlumé). Paris: Baillière, 1836. 589 x 437 mm. Quarter morocco, gilt, uncut, 19th century style. 2 small repairs to title margin, minor ink staining in upper margin of title & 1 or 2 plates, a little soiling, ink notation on 2nd leaf. Very good.* \$2000

**First Edition** of this beautifully illustrated work on Dupuytren's operations for bladder stone. "Posthumously published by Sanson, whose method of rectovesical lithotomy is considered here along with the controversial method of lithotrity. Dupuytren tried both but dropped them in favor of continuing the method of bilateral lithotomy, which he invented in 1812, and was adopted as the normal procedure, with later modifications" (Garrison-Morton 4290.1). The work is remarkable for its life-size plates, boldly drawn by Jacob, Bourguery's artist. Murphy 122 re Sanson. Barsky 192. 11371

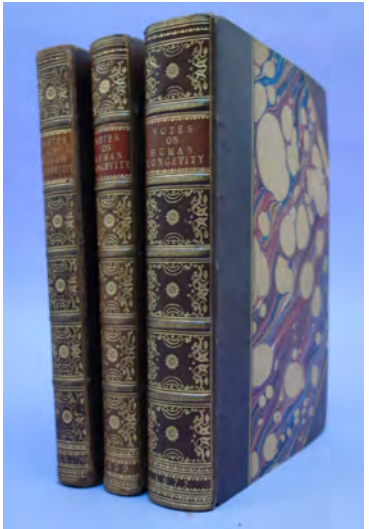


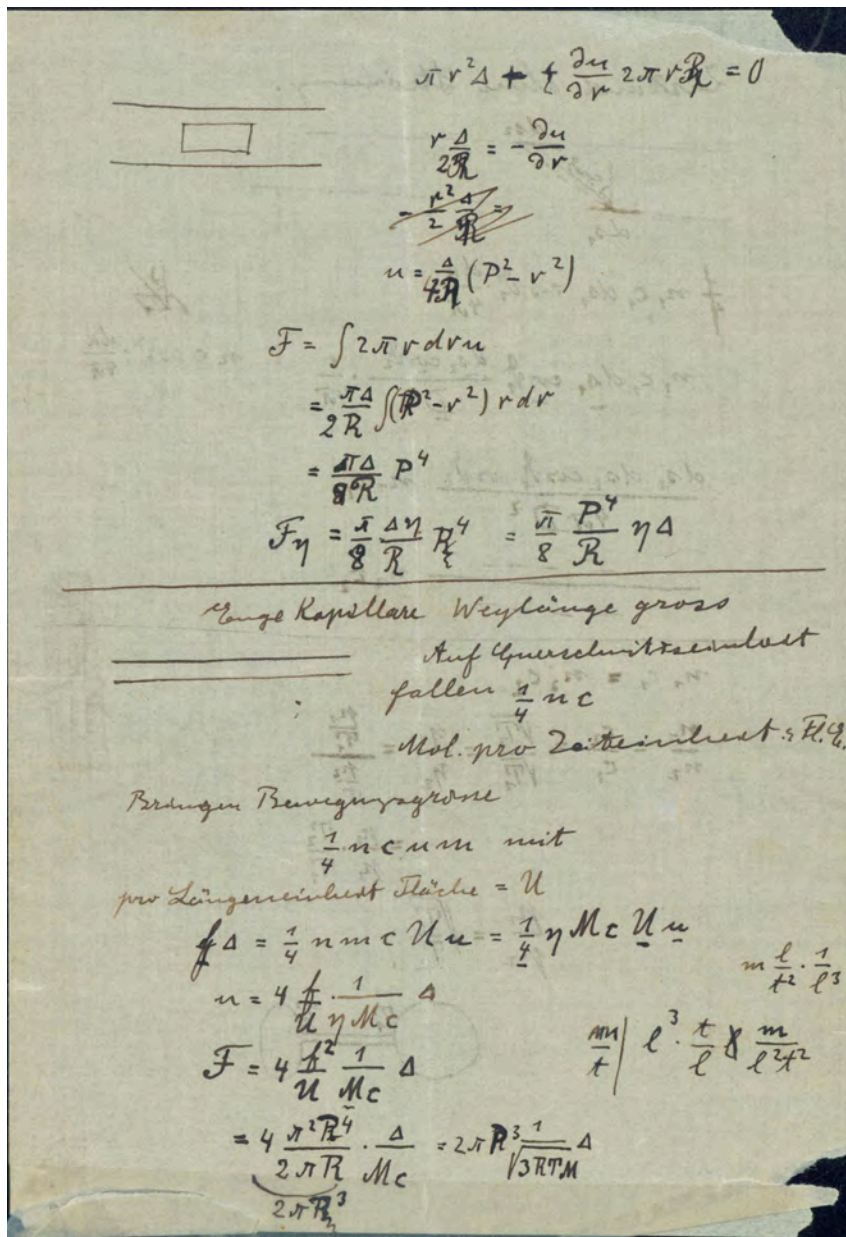


**Human Longevity**

**18. Easton, James.** Human longevity: recording the name, age, place of residence, and year, of the decease of 1712 persons, who attained a century, & upwards, from A.D. 66 to 1799. . . . 8vo. xxxii, [60], 292pp. Salisbury: James Easton; London: John White, 1799. Several manuscript notes and press cuttings bound in. With: Supplementary notes to Easton's Human Longevity [manuscript title]. 2 vols., containing mounted press cuttings, manuscript notes, letters, a photograph, etc. N.p., n.d. (between 1859 and 1898). Together 3 vols. 220 x 136 mm. Uniformly bound in 19th century half calf, gilt spines, marbled boards, top edges gilt, light rubbing. Very good. \$4750

**First Edition.** A remarkable and unique collection of statistical, social and demographic information on the subject of human longevity. Easton's published book on centenarians is here supplemented with two volumes of additional notices of centenarian deaths gathered primarily from British newspapers, covering the years between 1859 and 1891. This collection of primary source material, which would be very difficult to duplicate today, appears to have been compiled by a Capt. Brooke; several letters to him are laid in the supplementary volumes. 39539



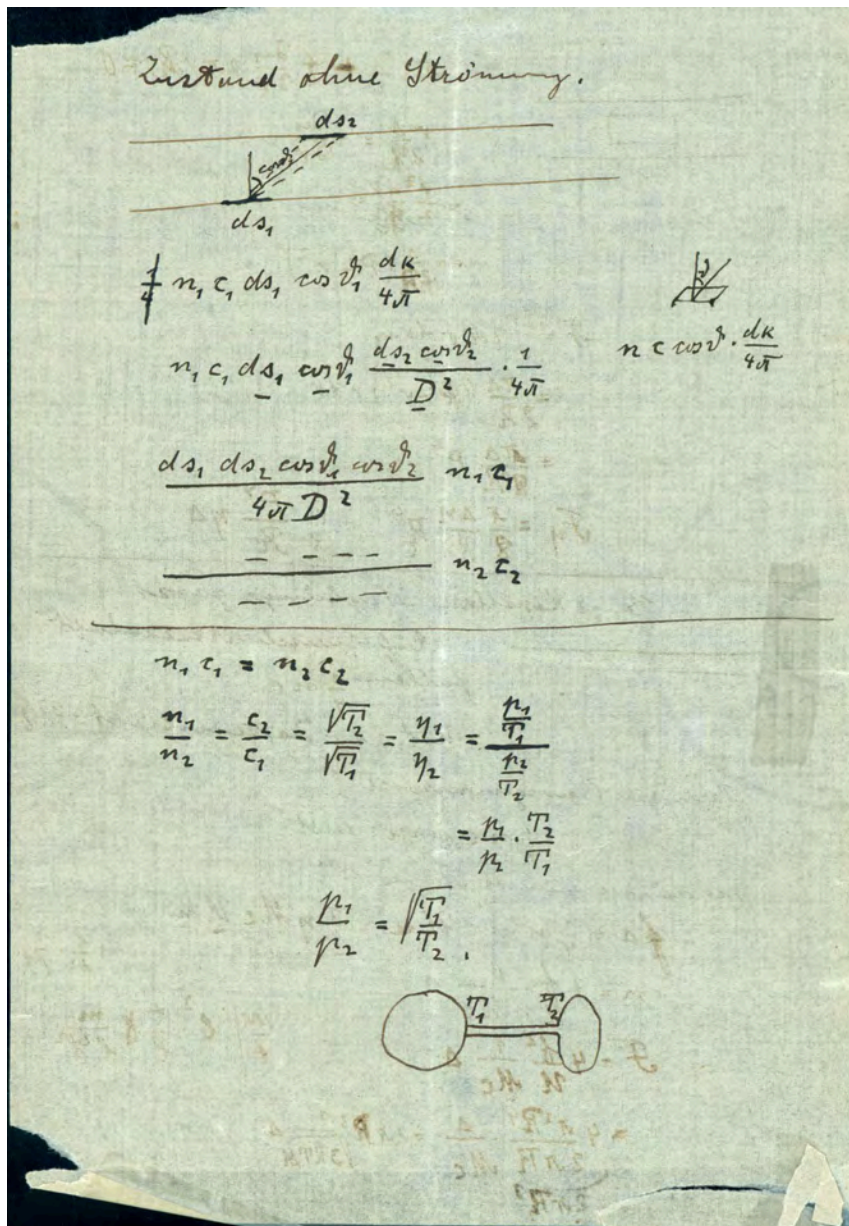


### Autograph Notes on the Kinetic Theory of Gases

**19. Einstein, Albert** (1879-1955). Autograph scientific notes on the kinetic theory of gases. 2ff. [Zurich, summer 1910.] 178 x 124 mm. A few marginal chips and tears, some mended with clear tape, but very good. From the library of historian of physics Jagdish Mehra (1931-2008). \$60,000

The calculations on this sheet appear to be closely related to similar notes that Einstein made in preparation for a lecture course on the kinetic theory of gases that he held at the University of Zurich in the summer semester 1910 (Einstein, Collected Papers, Vol. 4, Doc. 4, pp. 192-195, 238-239).

On the recto, Einstein juxtaposes two expressions for the flow of viscous fluids and gases through pipes. In the upper half of the page, Einstein sketches a derivation of Poiseuille's law for laminar flow through circular tubes. The mass flow  $F_\eta$  is proportional to the fourth power of the radius of the tube  $R$ , directly proportional to the mass density  $\eta$  and the pressure difference  $\Delta$ , and inversely proportional to the viscosity  $R$ . In the bottom half, he sketches a derivation of a similar relation for the case of rarefied gases flowing through very narrow tubes.

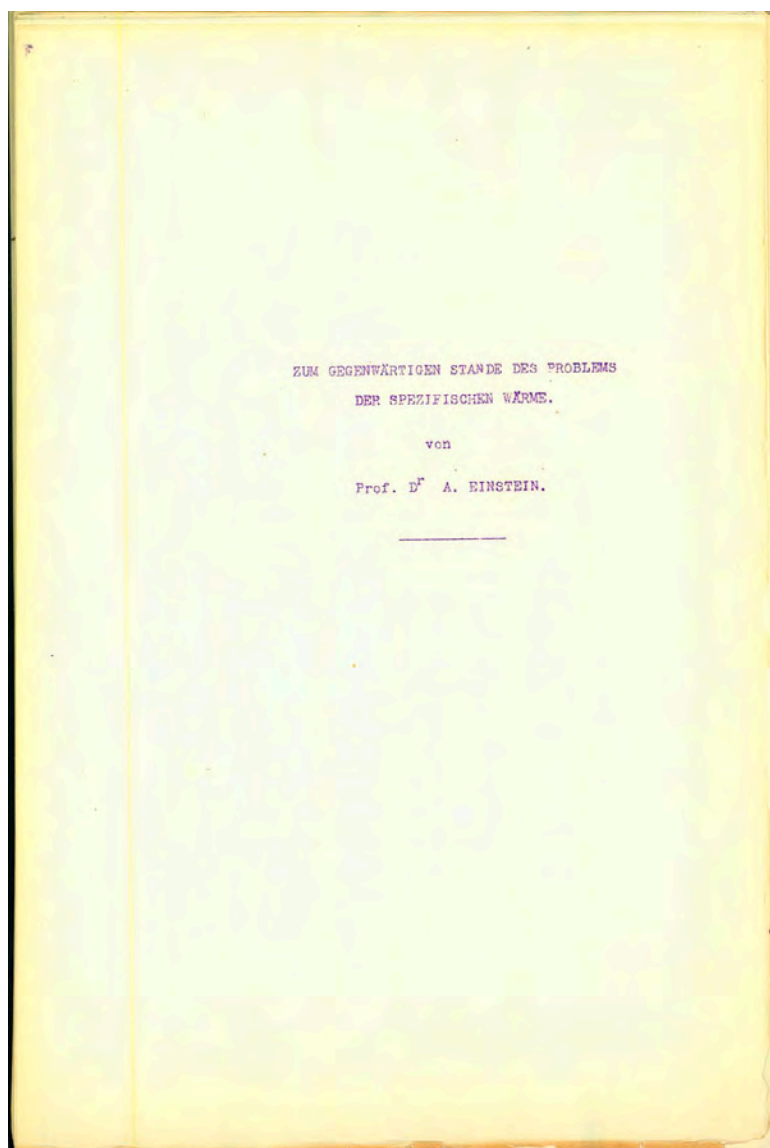


Here the flow is proportional only to the third power of  $P$ , and it is found to be dependent on temperature  $T$ . The latter relation was derived and empirically verified by the Danish physicist Martin Knudsen (1871-1949) in a paper of 1909.

On the verso, Einstein derives another relation that is due to Knudsen which says that in gases of very low pressure, a difference in temperature causes a difference in pressure; specifically, it is found that the ratio of pressures is proportional to the square root of the ratio of temperatures. This relation was found and investigated by Knudsen in 1910.

Einstein had a long-standing interest in capillarity phenomena, which was the subject of his first two scientific papers, as well as in the kinetic theory of gases and statistical mechanics. He would meet Knudsen in person a year later, in 1911, at the first Solvay Congress in Brussels (see below).

We are grateful to Dr. Tilman Sauer of the Einstein Papers Project at the California Institute of Technology for providing suggestions about the content of these notes and their apparent place in Einstein's body of work.

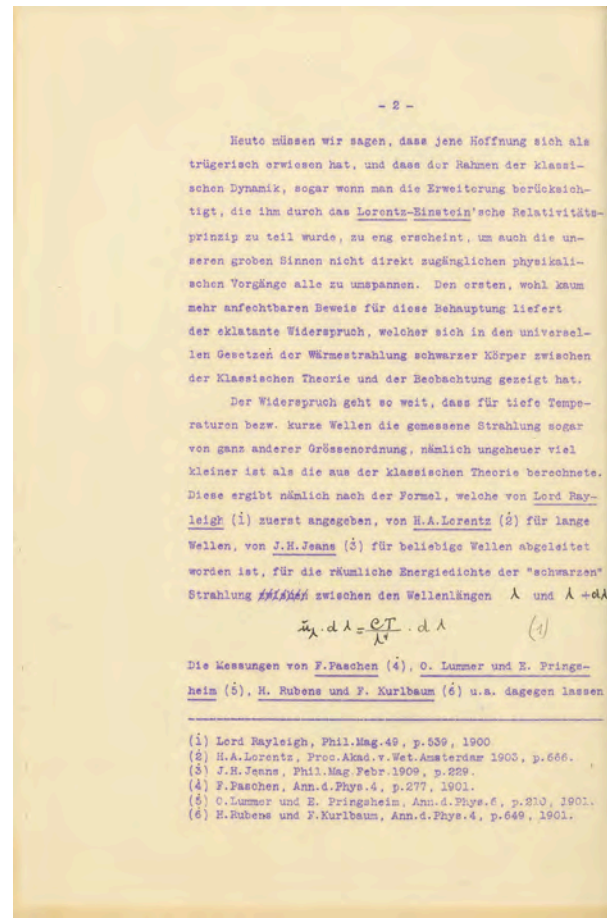
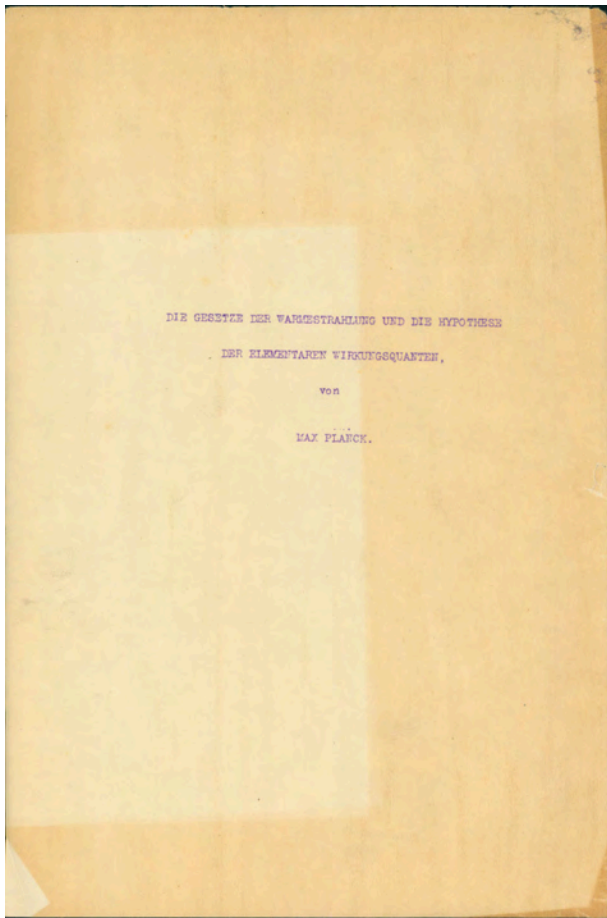


*Extremely Rare Mimeograph Preprint Set of Papers Delivered at the First Solvay Conference*

**20. Einstein, Albert** (1879-1955). Zum gegenwärtigen Stande des Problems der spezifischen Wärme. Mimeograph typescript. [1], 37ff. N.p., 1911. [With:] Eight other papers delivered by participants at the first Solvay Conference on Physics (1911), as listed below. Mimeograph typescripts in purple ink. Together 312ff. plus 1 sheet figures; see list below for individual paginations. N.p., 1911. 333 x 218 mm. Sheets unbound, in folders. Occasional minor chipping along edges, but very good to fine condition. No. (6) below inscribed in pencil on the first leaf: "A.E., Prag, November 2011"; we cannot verify whether this is in Einstein's hand. Equations in nos. (3) and (7) below accomplished in manuscript, possibly by the writers of the papers, Jeans and Planck. From the library of historian of physics Jagdish Mehra (1931-2008), author of *The Solvay Conferences on Physics* (1975). \$60,000

**Extremely Rare Preprint Version of the Papers Delivered at the First Solvay Conference.** Papers in this form would have been distributed to participants before or during the conference. The only other set of 1911 Solvay Conference mimeograph preprints that we know of was described as Einstein's own set, also con-





taining nine papers, which was sold in 2008 for \$60,000 at Christie's sale of important scientific books from the Richard Green library. Remarkably OCLC, which includes the holdings of most significant institutional libraries world-wide, does not record a set of the preprints, but cites only copies of three of the individual preprints (Einstein, Sommerfeld, Planck) at Harvard University. Therefore this set and the copy sold in 2008 may be the only "complete" copies, and virtually the only copies known. Both this set, and the set sold as Einstein's copy, were originally in Mehra's collection. The other copy was also docketed "A.E. Prague 1911" on a flyleaf. The other set was in two black cloth spring binders stamped in gold on their covers "Bruxelles 1911." The set we are offering is in folders.

Einstein was one of the youngest participants in the first Solvay Conference (1911), regarded as one of the major events in the history of modern physics. Einstein delivered the conference's final paper, on the quantum theory of specific heats; his paper "critically discussed all the problems of quantum theory as they were known to exist at a time when the threats and promises of the hydrogen atom were yet to be revealed" (Pais, *Subtle is the Lord*, p. 201). By the end of the conference the other participants recognized Einstein as the new leader in their profession. Marie Curie, one of the participants in the 1911 conference, praised Einstein's clarity of mind, the vastness of his documentation and the profundity of his knowledge; another participant, Henri Poincaré, wrote that Einstein was "one of the most original thinkers I have ever met . . . What one has to admire in him above all is the facility with which he adapts himself to new concepts and knows how to draw from them every possible conclusion" (quoted in Mehra, *The Solvay Conferences on Physics*, p. xxii [n]).

Along with Einstein, participants in the first Solvay Conference numbered nearly two dozen of the world's leading physicists, including Max Planck, Ernest Rutherford, H. A. Lorentz and Marie Curie. Dedicated to quantum and radiation theory, the conference "reviewed the ideas of quanta and their applications since 1900, and the publication of the reports and discussions were vital in propagating these ideas to a larger scientific public, especially outside Germany. Thus the investigation of quantum phenomena became a major occupation

of physicists and physical chemists in Europe and America during the following decades” (Twentieth Century Physics, I, p. 146). The conference “set the style for a new type of scientific meetings, in which a select group of the most well informed experts in a given field would meet to discuss the problems at its frontiers, and would seek to define the steps for their solution” (Mehra, *Solvay Conferences*, p. xv). Subsequent Solvay Conferences, devoted to outstanding preeminent problems in physics and chemistry, have been held every three years except during wartime.

Eleven papers were delivered at the first Solvay Conference, nine of which are represented in the collection we are offering here; see the listing below. The remaining two papers given at the conference—Kamerlingh Onnes’s exceedingly brief report on electrical resistance, and Langevin’s discussion of the kinetic theory of magnetism and the magnetons—may never have been issued in mimeograph form. The conference papers were reproduced from typescripts provided by the participants; they may therefore be regarded as rare preprints of the papers published, with revisions, in the conference proceedings edited by P. Langevin and M. de Broglie (*La théorie du rayonnement et les quanta*, 1912). These papers, especially Einstein’s, constitute an important bibliographic survival. Einstein’s paper in this form is absent from both the Boni-Russ-Lawrence *Bibliographical Checklist and Index to the Published Writings of Albert Einstein*, which cites only the French version published in the conference proceedings, and Weil’s *Albert Einstein: A Bibliography of his Scientific Papers 1901-1954*, which cites the French version and a 1914 German printing. 42589

Papers contained in this collection:

Perrin, Jean. Les preuves de la réalité moléculaire. 98ff., including charts. In French. No title leaf present.

Lorentz, Hendrik A. Sur l’application au rayonnement du théorème de l’équipartition de l’énergie. [1, title], 37ff. In French.

Jeans, James H. La théorie cinétique de la chaleur spécifique, d’après Clausius, Maxwell et Boltzmann. [1, title], 25ff. In English. Some equations completed in manuscript, possibly by Jeans.

Nernst, Walther. Anwendung der Quantentheorie auf eine Reihe physikalisch-chemischer Probleme. [1, title], 31ff. In German.

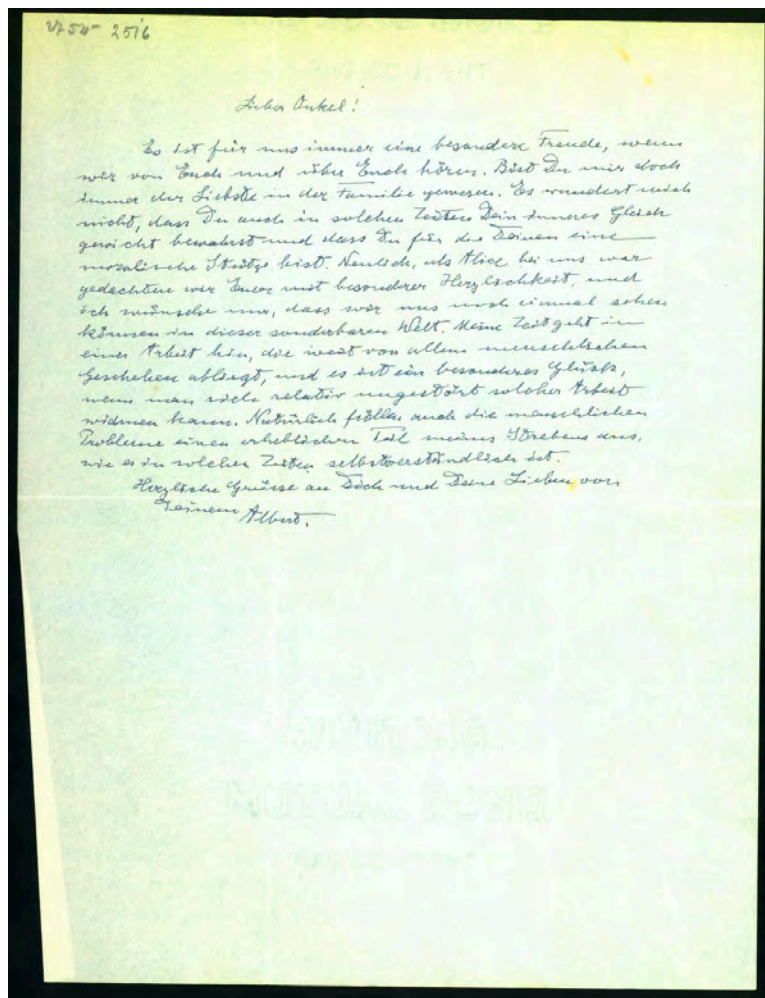
Knudsen, Martin. Die kinetische Theorie der ideale Gase und die Versuchsergebnisse. [1], 13ff. In German.

Rutherford, Lord. Letter to Prof. Nernst. 2ff. In English. Pencil notation, “A.E., Prag, November 2011”; we cannot verify whether this is in Einstein’s hand.

Planck, Max. Die Gesetze der Wärmestrahlung und die Hypothese der elementare Wirkungsquanten. [1, title], 31ff. In German. Some equations completed in manuscript, possibly by Planck.

Einstein, Albert. Zum gegenwärtigen Stande des Problems der spezifischen Wärme. [1, title], 37ff. In German.

Sommerfeld, Arnold. Die Bedeutung des Wirkungsquantums für unperiodische Molekularprozesse in der Physik. [1, title], 69ff. plus 1 sheet figures. In German.



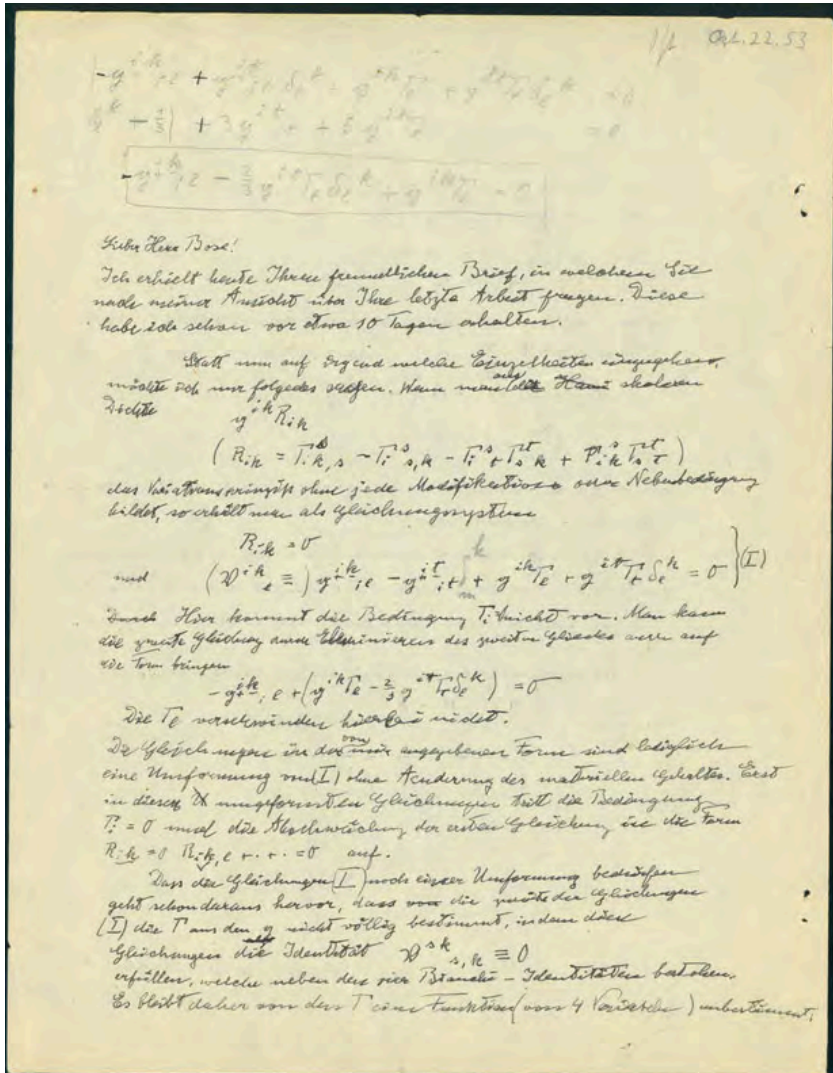
*“You Have Always Been the One Dearest to Me in the Entire Family”*

**21. Einstein, Albert** (1879–1955). Autograph letter signed, in German, to his maternal uncle, Caesar Koch (d. 1941). 1 page. N.p., n.d. [Princeton, 1941?]. 278 x 211 mm. Evidence of folding, 2 faint rust spots, but very good. \$12,500

Einstein’s last letter to his favorite uncle, his mother’s younger brother Caesar Koch. Koch had long held a special place in Einstein’s affections; in 1895, when Einstein was still in his teens, he sent Koch one of his first scientific manuscripts, titled “Über die Untersuchung des Ätherzustandes im magnetischen Felde” (On the examination of the state of the ether in a magnetic field), together with a cover letter announcing his intent to go to the ETH in Zurich (see Pais, *Subtle is the Lord*, p. 130). Koch, a widely traveled grain merchant, eventually settled in Antwerp; in 1941 he was in his mid-eighties, but still very much in Einstein’s thoughts:

It is always a great joy to us when we hear from you and about you. You have always been the one dearest to me in the entire family. I am not surprised that you are still able to maintain in such times your inner equilibrium and that you remain such a pillar of moral strength for your family. Recently, when [Caesar’s daughter and Einstein’s cousin] Alice visited us, we thought of you with special warmth, and I only wish that we could meet one more time in this strange world [translation].

Einstein’s wish was not granted, as Koch died a few months after receiving this letter. The form of the signature used in the letter—“deinem Albert” (your Albert)—is quite unusual, but it is the same as the one Einstein used in his youthful 1895 letter to Koch. 42412



How Einstein Crafted his Reply to Bose

**22. Einstein, Albert** (1879-1955). 1. Autograph letter signed (“A. E.”), in German, to Satyendra Nath Bose (1894-1974). 2ff. [Princeton,] October 22, 1953. 2. Einstein wrote his letter on the verso of 2 pages of Bose’s typed draft of a paper on unified field theory that he sent to Einstein; the pages include Bose’s signature (“S. N. Bose”) and extensive mathematical calculations in Bose’s hand. 3. Accompanied by Einstein’s 3-page carbon typescript (with ms. additions in an unidentified hand) of his typed reply to Bose translated into English. Small marginal tears and staple holes in the leaves of Einstein’s autograph letter, light creasing, but very good. From the library of historian of physics Jagdish Mehra (1931-2008). \$75,000

**Einstein’s File Copy of the Last Scientific Contact between Einstein and his One-Time Collaborator, the Brilliant Indian Physicist S. N. Bose.** The file contains Einstein’s autograph draft of his letter written on the back of Bose’s signed typescript with Bose’s autograph corrections, followed by Einstein’s carbon copy of his letter to Bose, presumably typed by his secretary, Helen Dukas, on which further corrections have been made in another hand. We are unaware that the typed letter that Einstein sent to Bose survived in India. Thus, this may be the **Only Surviving Example** of a letter from Einstein to Bose. In 1924 Bose, then living in Dacca, India (now part of Bangladesh), sent Einstein a manuscript on the investigation of a new deri-

Das den Gleichungen (I) inhaltlich gleichwertige Gleichungssystem  
 (II) 
$$\begin{aligned} g^{ik}; c=0 & \quad T_i = 0 \\ R_{ik} = 0 & \quad R_{ik}; c + \dots = 0 \end{aligned} \quad \left\{ \begin{array}{l} \text{(I)} \\ \text{(II)} \end{array} \right.$$

erhält man in folgender Weise. Man ersetzt die  $T^i$  durch  
 genau die Formel  $T^i_k = T^i_k + S^i_k$ ,  
 wobei  $S^i_k$  ein Vektorfeld und  $T^i_k$  ein neues Vektorfeld  
 ist. Diese Ersetzung der  $T^i_k$  durch  $T^i_k + S^i_k$  bringt es  
 mit sich, dass man nach Einföhrung der Variationen wiederum  
 $T^i_k$  und  $S^i_k$  die  $T^i_k$  den vier Bedingungen  $T^i = 0$  unterwerfen  
 kann (Normierung) ohne die fälschlicherweise vorausgesetzte  
 für das Feld einzuführen.

Durch die obige Substitution erhält man  

$$R_{ik} = R^i_k - (S^i_k - S^k_i),$$
 so dass die im variierenden Funktionen nun die Form  

$$g^{ik} [R^i_k - (S^i_k - S^k_i)]$$
 annimmt. Durch Variieren von  $T^i_k$  liefert man  
 dann genau die gleiche der Gleichungen I, aber geschrieben  
 in den  $T^i_k$  statt in den  $T^i_k + S^i_k$ . Diese nimmt dann  
 nach Beachten der Normierung genau  $T^i = 0$  die Form  

$$g^{ik}; c=0$$
 an (wobei die Differentiation) mit den  $T^i$  vorgenommen ist.  
 Die Variationen nach den  $S^i_k$  liefert nichts Neues. Die Variation  
 nach den  $S^i_k$  aber liefert  

$$R_{ik} - (S^i_k - S^k_i) = 0 \quad \text{oder} \quad \left\{ \begin{array}{l} R^i_k = 0 \\ R^i_k; c + \dots = 0 \end{array} \right.$$

Damit hat man das System (II) erreicht (für den  $T^i$ ),  
 welches also mit (I) völlig gleichwertig ist.

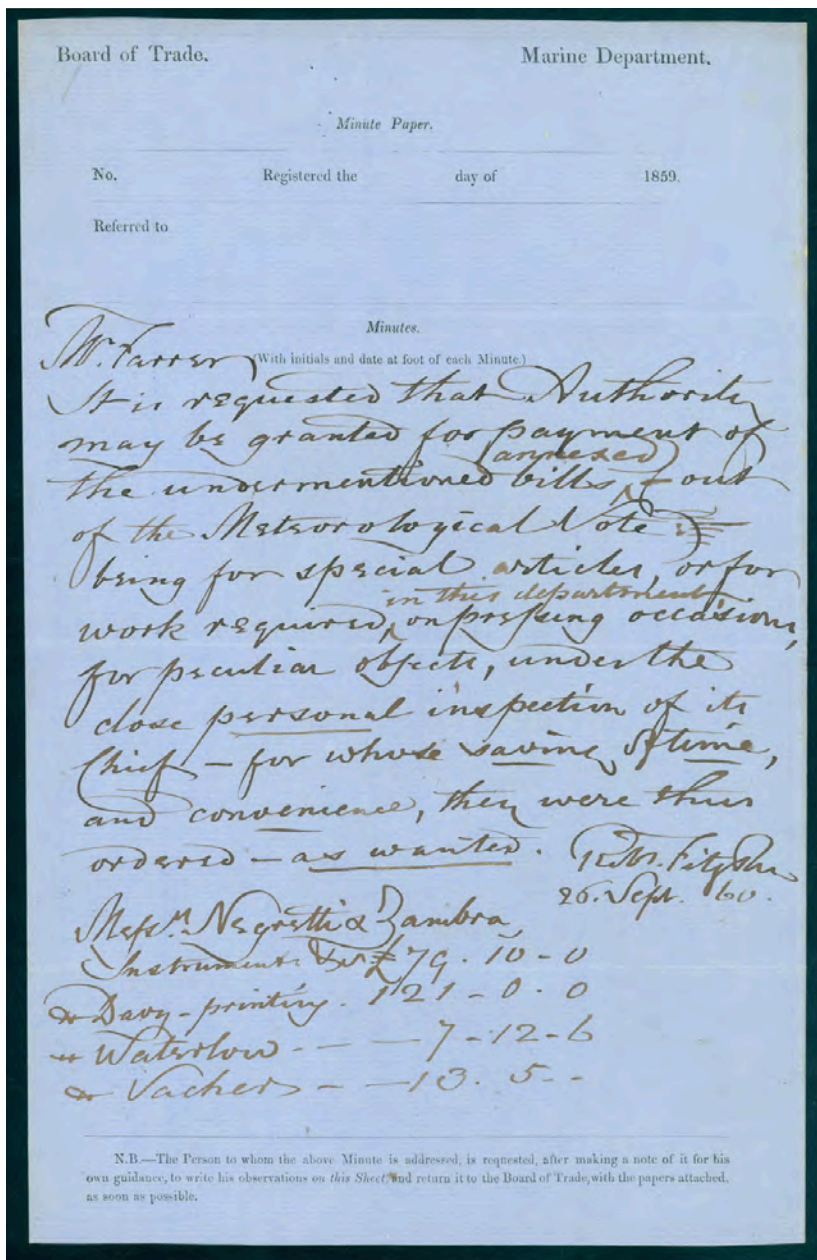
Es soll zeigen, dass die Gleichungen  $T^i = 0$  keine  
 Willkür in sich mit sich hat. Das System (II) hat  
 unstrittig den Vorteil, erkennen zu lassen, dass es  
 ein Transformations-invariantes  
 System ist.

Ferner ist zu zeigen, dass die  
 A 2.

vation of Planck's blackbody radiation law, asking Einstein to see to its publication if it had any merit. Recognizing the paper's importance, Einstein translated it himself into German and had it published in the *Zeitschrift für Physik*. Einstein realized that the form of statistics used by Bose could be applied to the quantum theory of ideal gas, and he himself published three papers on this topic in 1924 and 1925. On the basis of Einstein's support, Bose was awarded a fellowship allowing him to spend two years in Europe, working with Maurice de Broglie in Paris and Einstein in Berlin. Bose then returned to India, where he had a long and distinguished scientific and administrative career in Dacca.

Almost three decades after this initial contact Bose, then working in Paris, sent Einstein a draft of his paper "A unitary field theory of gravitation and general relativity," which was eventually published in the *Journal de Physique*. Einstein's reply to Bose commented on the use of the variational principle and on the significance of the auxiliary conditions—the conservation laws. Einstein had great respect for Bose, taking account of Bose's criticisms in Appendix II of the final edition of his *The Meaning of Relativity* (1955).

The names of Einstein and Bose are permanently linked in the terms "Bose-Einstein statistics" and in Einstein's postulate of the ultra-low temperature phenomenon known as "Bose-Einstein condensation," in which individual atoms condense into a "superatom" that behaves as a single entity. This unique state of matter was created and confirmed in 1995 by the physicists Eric Cornell and Carl Wieman, who received the Nobel Prize in 2001 for their achievement. 42415



*“It is Requested that Authority be Granted for Payment”*

**23. FitzRoy, Robert** (1805–65). Autograph letter signed to Thomas H. Farrer (1819–99). 1 page, on official minute paper of the Board of Trade Marine Department. [London,] 26 September 1860. 315 x 206 mm. Tiny tear in top margin, a few pin-holes, but fine otherwise. \$950

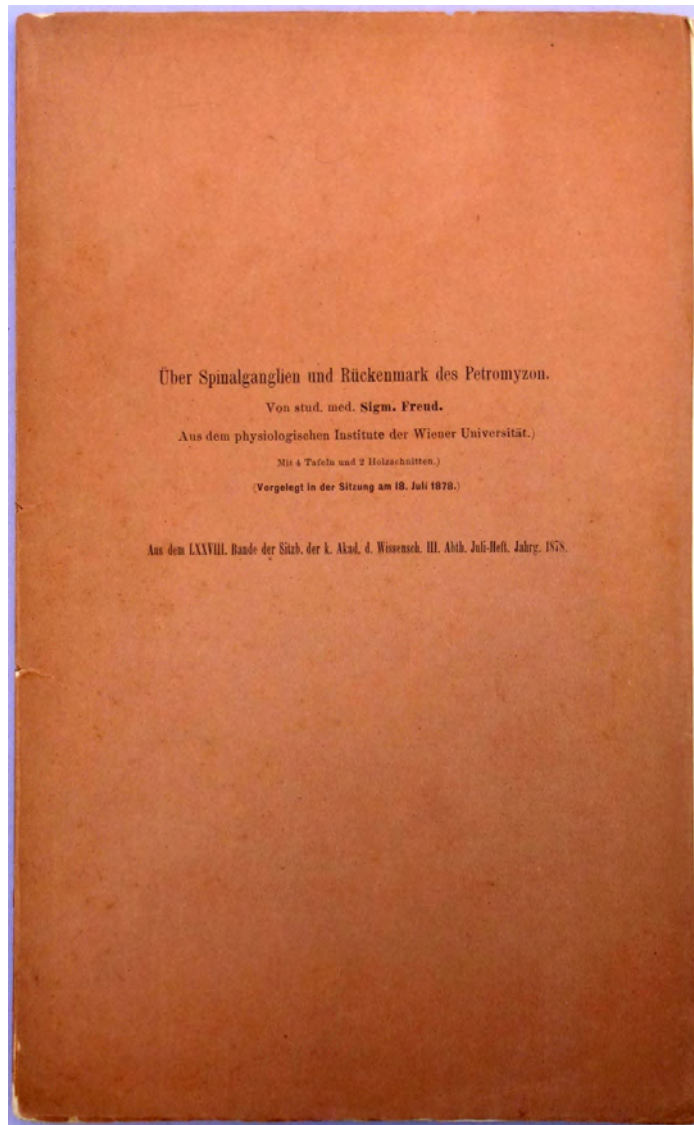
From Robert FitzRoy, who achieved lasting fame as the captain of H.M.S. Beagle during Darwin’s famous voyage, and later became a pioneering meteorologist, serving as the first head of what is now Britain’s Meteorological Office from 1854 until his death. His correspondent was Thomas H. Farrer, a senior government official at the Board of Trade’s Marine Department, amateur botanist, and a future connection of Charles Darwin through his marriage in 1873 to Darwin’s cousin Julia Wedgwood. Farrer often corresponded with Darwin on scientific subjects; see the online Darwin Correspondence Project.

FitzRoy's letter to Farrer, written in his capacity as head of the Meteorological Office, reads as follows:

Mr. Farrer, It is requested that Authority may be granted for payment of the undermentioned annexed bills out of the Meteorological Note: being for special articles, or for work required in this department on pressing occasions, for peculiar objects, under the close personal inspection of its Chief—for whose saving of time, and convenience, they were thus ordered—as wanted. Robt. FitzRoy.

Messrs. Negretti & Zambra, Instruments &c.	£79.10.0
Davy—printing.	121.0.0
Waterlow	7.12.6
Vacher	13.5.

The instrument-making firm of Negretti & Zambra, which still exists today, began in 1850 as a manufacturer of meteorological instruments. As head of the Meteorological Office FitzRoy “distributed standard instruments to the navy and to the merchant marine, and collected and analyzed the records that observers returned to London” (Anderson, *Predicting the Weather: Victorians and the Science of Meteorology*, p. 109). We have not been able to further identify the other expenses FitzRoy listed in his letter. 42827

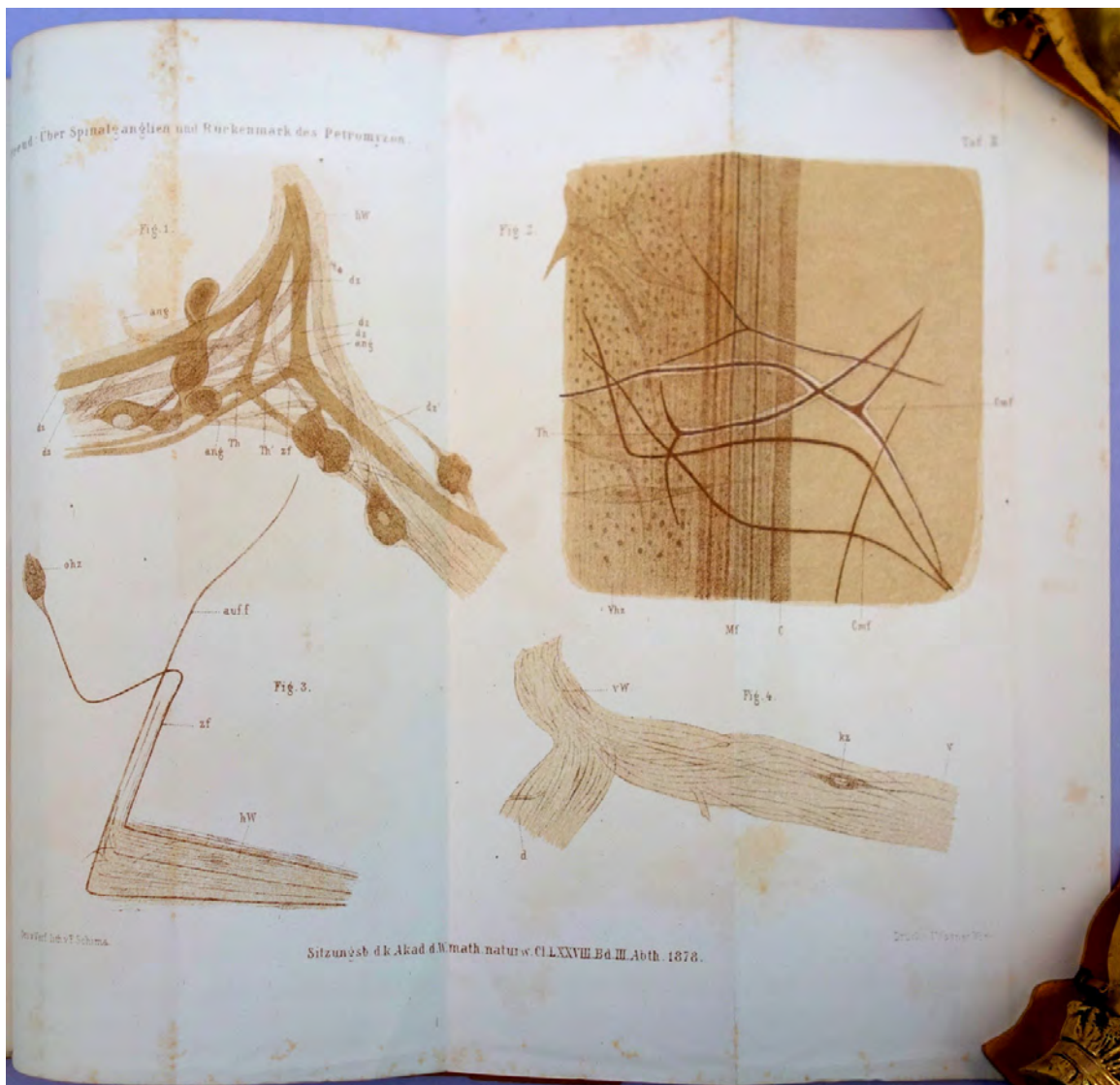


### *First Step Toward Discovery of the Neuron*

**24. Freud, Sigmund** (1856–1939). *Über Spinalganglien und Rückenmark des Petromyzon*. Offprint from *Sitzb. der k. Akad. d. Wissenschaften, 3 Abth.*, 78 (1878). [Vienna: K.k. Hof- und Staatsdruckerei, 1878.] 87 [1]pp. 4 folded lithographed plates by F. Schima after Freud. 244 x 156 mm. (uncut & unopened). Original brown printed wrappers, tears along spine folds, slightly chipped at extremities. Slight foxing but fine. \$2750

**First Separate Edition.** Freud's third paper published as a medical student continued his research on the large Reissner cells in the spinal cord of the fish *Petromyzon*, which he had undertaken at the direction of the eminent physiologist Ernst Brücke, under whom he was studying. Freud determined these cells to be "nothing else than spinal ganglion cells which, in these low vertebrates. . . remain within the spinal cord." Freud was aided in this research by his improved methods of tissue preparation: "By the use of a gold maceration technique it was possible to make a complete survey of the spinal ganglia of *Petromyzon*" (Freud, *Standard Edition* III, p. 229). Freud made a major contribution to evolutionary biology by showing that the spinal ganglion cells of *Petromyzon*, which "exhibit every transition between bipolarity and unipolarity" (*ibid.*), represent a tran-



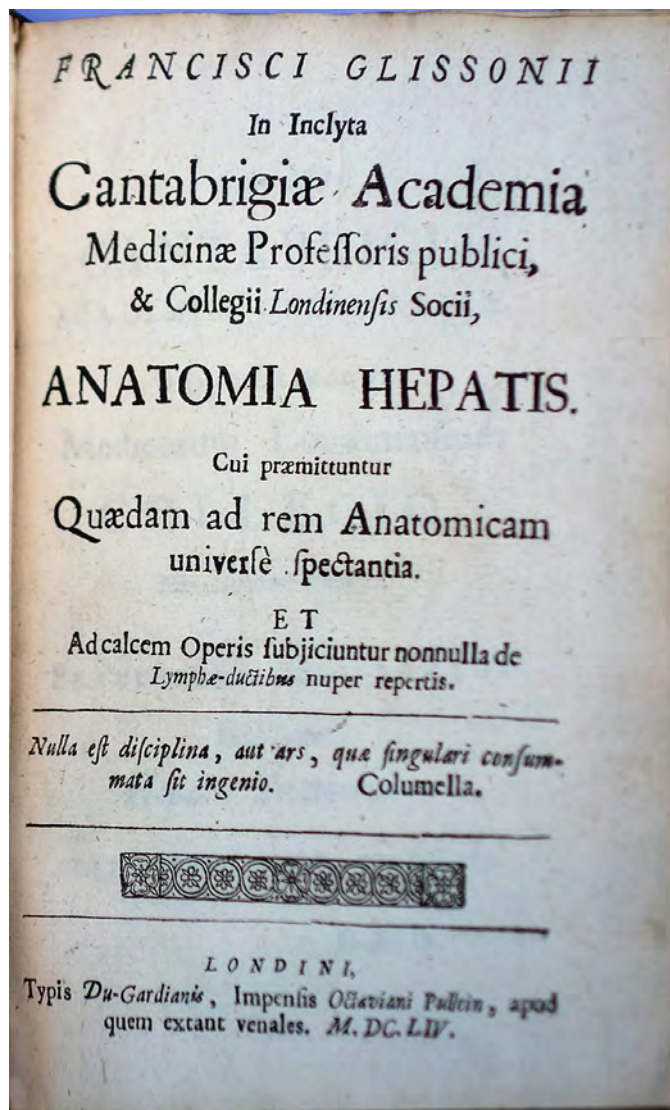


One of very few published drawings by Sigmund Freud

sition between the bipolar cells of lower and the unipolar cells of higher vertebrates. He also, in these early researches, took some first steps toward the theory of the neuron, as noted by Freud's biographer Peter Gay:

Some of Freud's earliest published papers, written between 1877 and 1883, detail findings that are far from trivial. They substantiate evolutionary processes revealed in the nervous structures of the fish he was examining under his microscope. What is more, it becomes clear in retrospect that these papers form the first link in the chain of ideas leading to the draft of a scientific psychology he would attempt in 1895. Freud was working toward a theory specifying the ways that nerve cells and nerve fibrils function as a unit. But he moved on to other investigations, and when, in 1891, H. W. G. Waldeyer published his epoch-making monograph on the "neuron" theory, Freud's pioneering research was ignored. "It was not the only time," Ernest Jones has noted, "that Freud narrowly missed world fame in early life through not daring to pursue his thoughts to their logical—and not far off—conclusion" (Gay, *Freud: A Life for our Time*, p. 36).

Grinstein 34. Jones I, pp. 52-53. *Standard Edition* 1878a. Norman F3. 31780



“Glisson’s Capsule”—Very Fine Copy

**25. Glisson, Francis** (1597?–1677). *Anatomia hepatis. Cui præmittuntur quædam ad rem anatomicam universè spectantia.* . . . 8vo. [48] 458 [14]pp. 2 folding engraved plates, engraved text illustration, text woodcuts. London: Du-Gard for Octavian Pulleyn, 1654. 165 x 111 mm. Vellum c. 1654, author’s name in ink in a later hand on spine. Very fine, crisp copy. Long neat marginal note in pen in an early hand, a few penciled notes in the same hand. Minute early owner’s signature (?) on front free endpaper, along with gift inscription dated October 9, [19]23 from Harry Friedenwald (1864–1950), author of *The Jews and Medicine* (1944–46; Garrison–Morton 6501.1), to Louis P. Hamburger. \$12,500

**First Edition.** The first book printed in England to present a detailed account of a single organ based on original research, and the most important book to date on the physiology of the digestive system. Glisson used advanced anatomical methods, such as casts and injection of colored fluids, which enabled him to illustrate the vessels of the liver (portrayed in the two engraved plates). He described the passage of blood from the portal vein to the vena cava, and proved that lymph flows not to the liver, as was then believed, but from it, passing to the recently discovered capsula communis. This fibrous capsule, which Glisson was the first to describe accurately, is now known as “Glisson’s capsule.”

*On the 11th*  
A Louis P. Hamburg  
with kind regards  
from  
Harry F. B. B. B.  
Oct. 9/43



“Educated at Cambridge, where he later served as Regius Professor of Physic, Glisson was part of the extraordinary ferment in medicine and the life sciences that occurred in the two English universities in the earlier seventeenth century. Like his influential colleague and friend, William Harvey, Glisson epitomized the English style of biological research: he was theoretically conservative and non-dogmatic; and at the same time he was committed to a rigorous program of experimentation, precise observation, and accurate description. His principal publications, especially the *Anatomia hepatis*, join an experimental exactitude and direct observation of the particular with a felt concern to preserve basic Aristotelian and Galenic traditions of natural philosophy. . . . Glisson’s classic work on the liver . . . was based on dissections that Glisson had done over a decade earlier. It was the first work to recast fundamentally the physiology of the abdominal organs, to delineate the structure and function of the liver, and to identify and describe the fibrous tissue encasing the liver (Glisson’s capsule). It also introduced Glisson’s important concept of ‘irritability,’ in which he argued that irritation was the organism’s way of recognizing substances to be expelled. The property of irritability was thus basic to the health of the organism” (Grolier Club, *100 Books Famous in Medicine*, 29). Garrison-Morton 972. Lilly, p. 67. Norman 911. Russell 322. 29376



## An Unusual Festival Book

**26. [Gregoire, Gaspard, père.]** Explication des cérémonies de la Fête-Dieu d'Aix en Provence. . . . 12mo. [2], 220pp. Fronts. portrait of René d'Anjou (1408-80) & 13 plates (1 folding with music), mostly engraved by Gaspard Gregoire fils (1751-1846), after drawings by his brother Paul Gregoire. Aix: David, 1777. 190 x 109 mm. Wrappers c. 1800, uncut, spine chipped. Very faint dampstain in gutter of first two leaves, a little browning & soiling. Very good copy. \$1000

First Edition. A very full account of the Corpus Christi pageant in Aix, with twelve plates showing theater and dance, and one with notation for five accompanying pieces of music. Barbier II 378 attributes the work to the Aix silk manufacturer, Gaspard Grégoire, and his sons Gaspard and Paul. Gaspard fils manufactured a famous velvet, "velours Grégoire," which could be painted; his brother Paul became the first to paint on velvet. The Grégoires, as Aix manufacturers, would probably have had a prominent role in the pageant, which was, even in the 18th century, one of the great city affairs of the year. Doubtless they supplied cloth for the costumes, and were in a position to provide specialist descriptions of the masks and dress of the participants.



*Leis Tirassouns.*  
( Qui se traînent par terre. )

Ce jeu représente le massacre des Innocens. On y voit le Roi Hérodes ordonner de les faire mourir.

Il y a un Porte-Enseigne, un tambour, un fusilier, qui accompagnent ce Roi pour marquer qu'il employa ses troupes à satisfaire sa rage.

Le jeu consiste à faire courir en cercle sept ou huit petits enfans, à quatre pas les uns des autres, avec un air effrayé, & en criaillant devant le Roi Hérodes: au coup de fusil que fait tirer le Roi, ils tombent par terre & se traînent à qui mieux-mieux, & souvent dans les ruisseaux, ce qui leur a fait donner à juste titre le nom de *Tirassouns*.

On a déjà vu à fol. 86, comment est habillé le Roi Hérodes; il l'est de même à ce jeu.

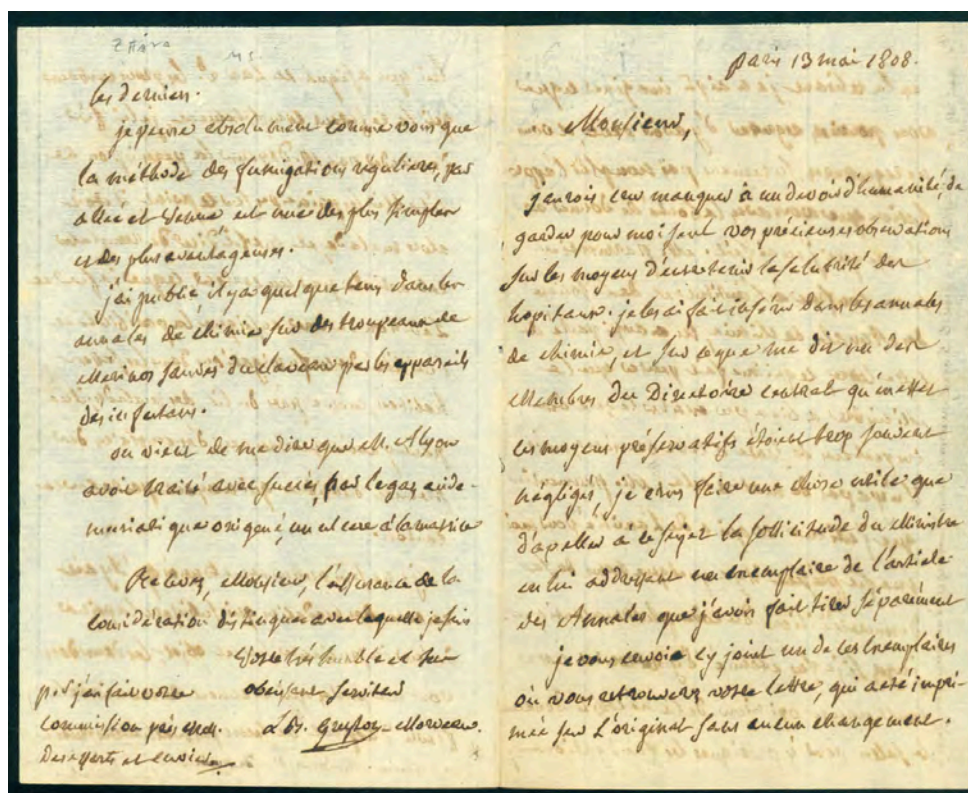
Les enfans ont tous une testiere, & on leur fait présent à chacun d'une chemise de toile crue qui leur tombe jusqu'aux



P. G. del. et Sculp.

*Leis tirassouns*

The Corpus Christi pageant reached its height in the 15th century, when it became in effect the principal feast of the Church, a time for the most magnificent processions of nobles and clerics, and for the mystery plays put on by the merchants and craftsmen which were the foundation of modern theater in the countries of Europe. The late medieval traditions of the pageant were preserved at Aix still in the 18th century. Grégoire saw in them the hand of the first patron of the Aix pageant, René, duke of Anjou, whose daughter Marguerite married Henry VI of England. René was viewed around Grégoire's time as a paragon of chivalry, as well as a poet, painter and musician; he was indeed a patron of the arts, whose reputation earned him a line in Shakespeare's Henry VI ("whose large style agrees not with the leanness of his purse", quoted in Oxford companion to French literature in the article on René). Whatever personal guidance the duke gave the pageant, its symbolic costumes, dramas and dances were rooted in the Christian and pagan folklore of the region. Grégoire's full descriptions of the various ceremonies of the week-long springtime holiday in its last years before the French Revolution are very valuable for reconstructing French folk habits and social arrangements. Lipperheide II 2804. Benezit V 190 re the Grégoires. 12690



“The Minister Can Very Well Stir Up the Health Inspectors’ Enthusiasm”

**27. Guyton de Morveau, Louis Bernard** (1737–1816). Autograph letter signed to an unidentified correspondent. Paris, 13 May 1808. 4pp. 185 x 117 mm. Fine. \$2750

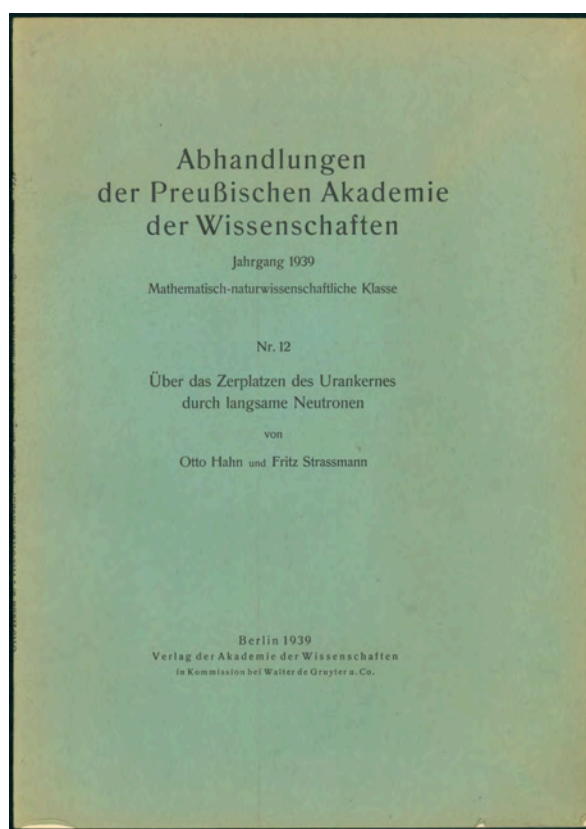
Excellent letter from French chemist Guyton de Morveau on hospital fumigation, a practice that he pioneered. In 1773 Guyton de Morveau began using chemical fumigation to control “putrid emanations” in hospitals and other unhealthy environments, believing that epidemic diseases were carried by the foul airs emanating from decaying flesh. He later introduced the practice of chlorine disinfection, which he described in his *Traité des moyens de désinfecter l’air* (1801). He was one of the original editors of the *Annales de chimie*, and worked with Lavoisier, Berthollet and Fourcroy in creating the first systematic method of chemical nomenclature.

Guyton de Morveau’s letter, written to someone who had corresponded with him on hospital sanitation, reads in part as follows (translation ours):

I would have violated a duty to humanity in keeping your precious observations on maintaining hospital sanitation to myself. I had them inserted into the *Annales de chimie*, and since one of the members of the Directoire central tells me that preventive methods are too often overlooked I believe I have done a useful thing in calling this subject to the attention of the Minister by sending him a copy of the article from the *Annales* which I had printed separately.

I send you enclosed one of these copies where you will find your letter printed from the original without any changes. In reading it over, I cannot imagine what you might regret having written there, and you will surely not regret the approval that you kindly grant to the picture I have drawn. M. Parmentier my associate at the Institute and in the Society of the *Annales de chimie*, has also talked to me about this letter, which makes me think that the Minister can very well stir up the health inspectors’ enthusiasm on this occasion, but there is no harm in this . . .

“Parmentier” refers to Antoine-Augustin Parmentier (1737–1813), the famous nutritional chemist and promoter of potatoes as food for humans. *Dictionary of Scientific Biography*. 22254

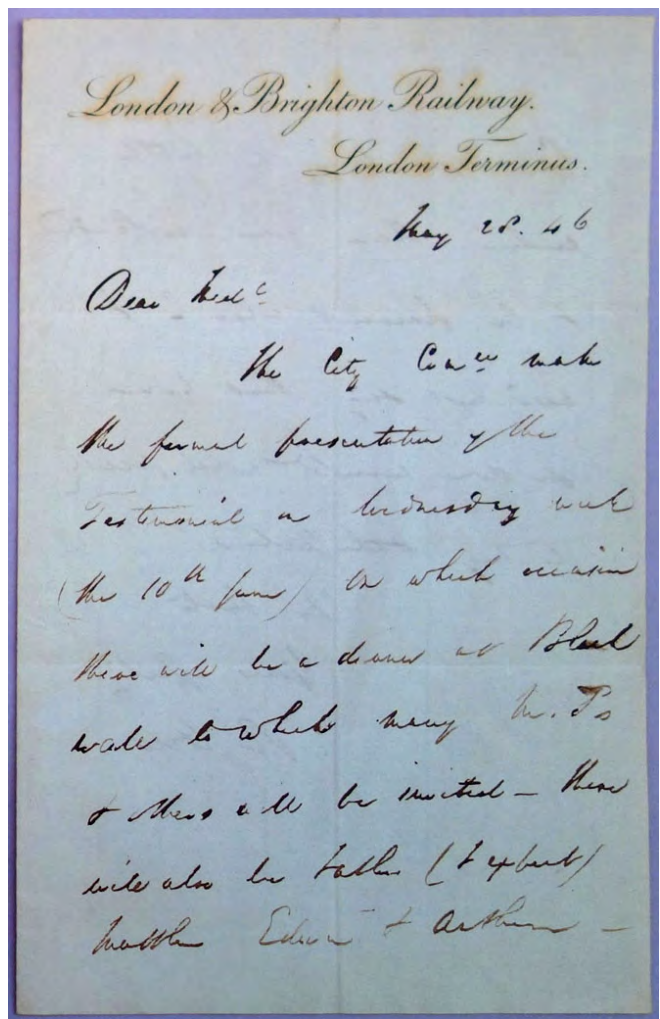
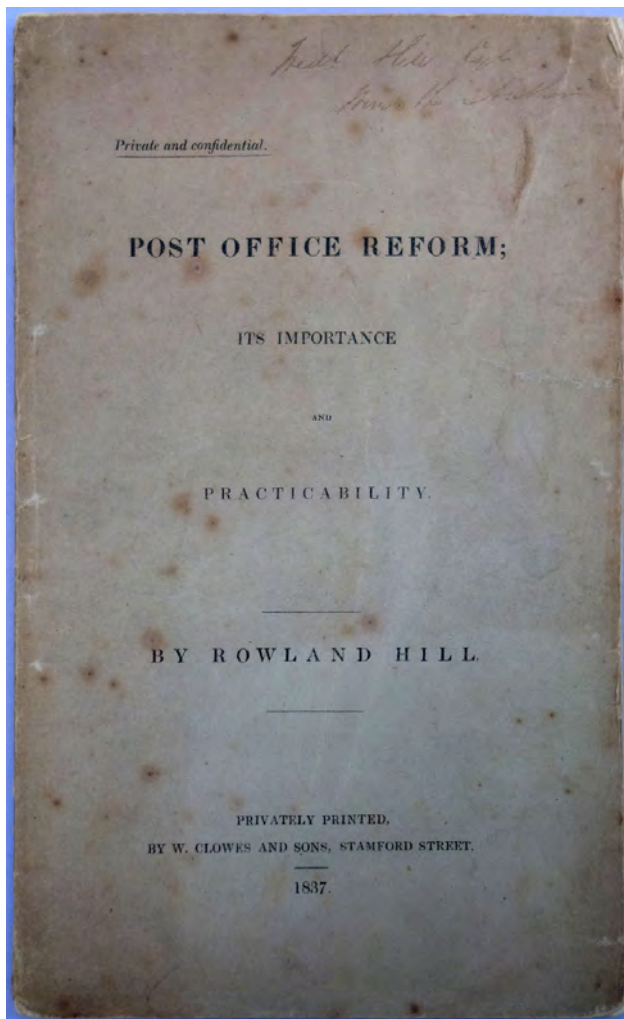


## *Nuclear Fission*

**28. Hahn, Otto** (1879–1968) & **Fritz Strassmann** (1902–80). Über das Zerplatzen der Urankernes durch langsame Neutronen. Offprint from *Abh. Preuss. Akad. Wissensch., math.-naturwiss. Klasse*, no. 12 (1939). 4to. 20pp. Text diagrams. Berlin: Akademie der Wissenschaften, 1939. 297 × 211 mm. Original green printed wrappers, slightly faded, small crease in one corner, but a very good copy, preserved in a cloth folding box. \$2000

**First Edition**, commercial offprint issue of the first of Hahn and Strassmann's three fundamental papers on nuclear fission, containing the first comprehensive account of the phenomenon. In 1938 radiochemist Otto Hahn and nuclear chemist Fritz Strassmann demonstrated the presence of radioactive barium, lanthanum and cesium among the products of neutron bombardment of uranium—a phenomenon that seemed to contradict all previous experiences of nuclear physics. The two announced their puzzling findings in a paper published in *Naturwissenschaft* on January 6, 1939 (“Ueber den Nachweis und das Verhalten der bei der Bestrahlung des Urans mittels Neutronen entstehenden Erdalkalimetalle”). Before the paper's publication Hahn wrote to the theoretical physicist on their research team, Lise Meitner, then under Nazi exile in Copenhagen, to report their discovery and ask advice. It was this letter that inspired Meitner and her nephew Otto Frisch to theorize a fission process, which they published on February 11, 1939.

Hahn and Strassmann's paper offered here “indicated fission of the uranium nucleus into two parts of about equal size with the release of much energy [in fact a tremendous jump over the energy produced in all previous transmutation reactions]. Hahn received the Nobel Prize for chemistry in 1944; he, Meitner and Strassmann shared the U.S.A. Fermi Award in 1966” (Dibner). Two versions of the offprint exist: the present green-wrapped version, issued commercially, and an extremely rare version issued in orange wrappers and with “Einzelausgabe” and “Überreicht von den Verfassern” on the front wrapper. We have seen only one copy of the orange-wrapped version in our 40-plus years in the trade. Dibner 168. Norman 963. Segrè, *X-Rays to Quarks*, pp. 206–7. 41730



## Postal Reform

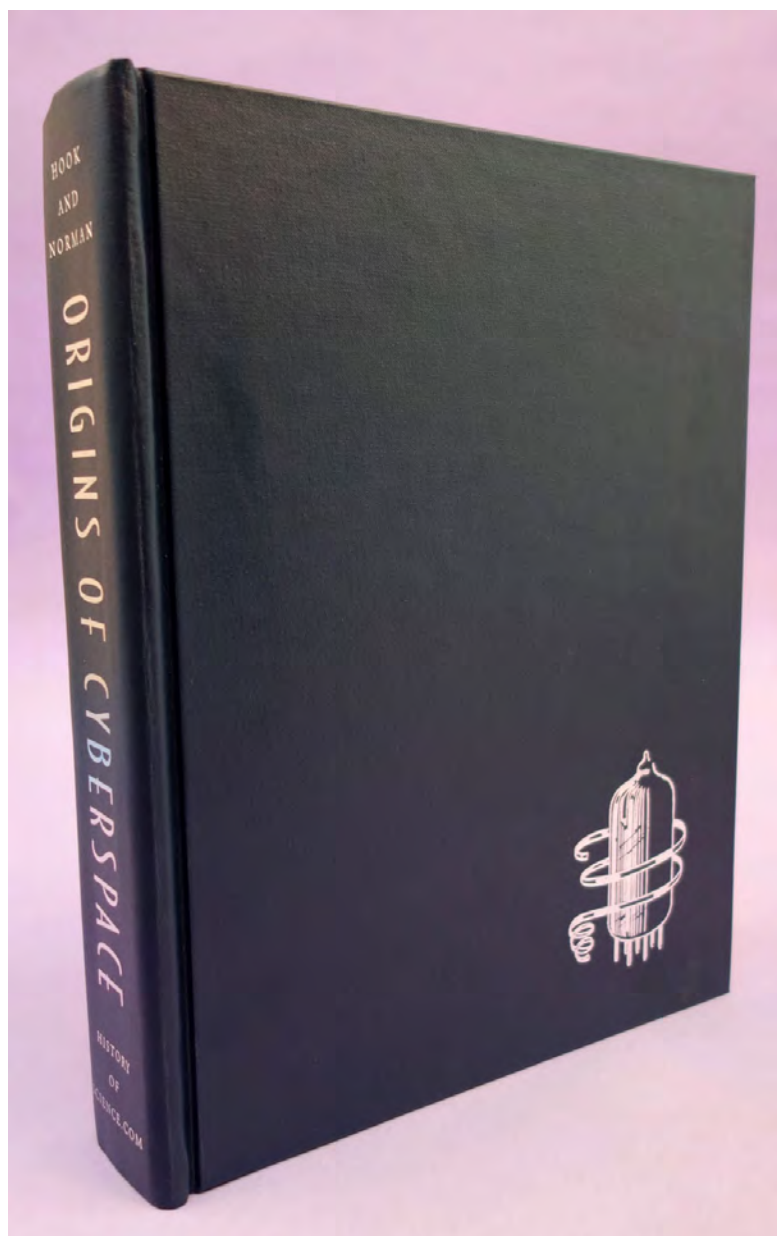
**29. Hill, Rowland** (1795-1879). Post Office reform. 8vo. 73pp. Original printed wrappers, spine repaired, in cloth drop-back box. [London], 1837. 217 x 134 mm. Inscribed by the author to Fred[erick] Hill on front wrapper (inscription a bit faint), with Autograph letter signed to same, 2pp., May 28, 1846, laid in. Fine copy in the original state. \$20,000

**First Edition.** The rare privately printed pamphlet outlining postal reform in Britain which became standard throughout the world. Hill's proposals included the first use of postage stamps.

The penny post inaugurated and administered by Rowland Hill required the adoption of four novel principles: (1) prepayment of postage, (2) payment by weight instead of by the number of sheets, (3) the use of envelopes, (4) the use of adhesive stamps on letters. Prior to this reform, for example, the use of an envelope would have been a novelty to most letter-writers and entailed double postage (*Printing and the Mind of Man*).

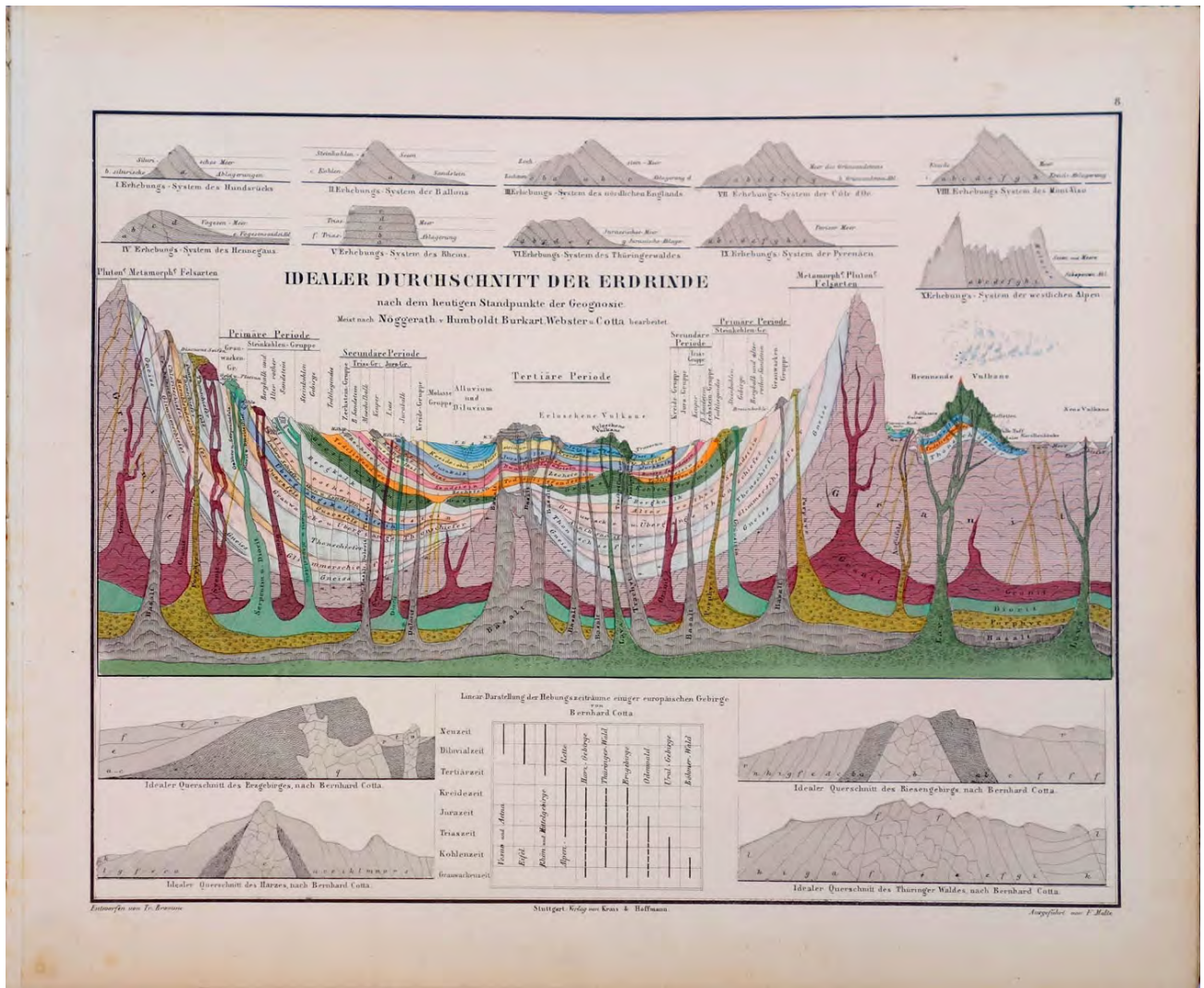
The accompanying letter, on London & Brighton Railway stationery, requests the attendance of the addressee at the Testimonial to be given to Hill in June. The Testimonial, a substantial monetary gift raised by public subscription, was given in recognition of Hill's work after he had been dismissed from the postal service without reward by an opposing minister. The event was one of the most memorable in his career. *Printing and the Mind of Man* 306a. 40286





**30. Hook, Diana H. & Jeremy M. Norman**, with contributions by Michael R. Williams. *Origins of cyberspace: A library on the history of computing, networking, and telecommunications*. x, 670 pages. 284 illustrations. 8-1/2 x 11 inches. Novato: Historyofscience.com, 2002. Cloth, 80-pound acid-free paper. Limited to 500 copies. \$500

Extensively annotated and illustrated bibliography describing 1411 books, technical reports, pamphlets, blueprints, typescripts, manuscripts, photographs and ephemera on the history of computing and computer-related aspects of telecommunications. Covers the period from the 17th century to circa 1970; includes several lengthy essays and a detailed timeline of significant events and publications in computer history. Indexed. Printed in two colors throughout. 38301

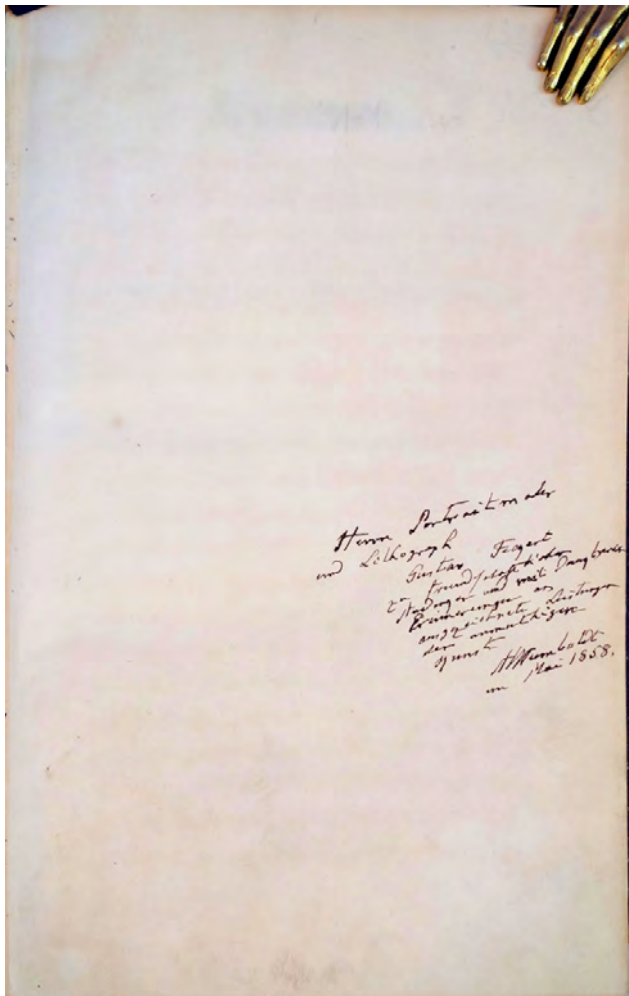


Inscribed to Gustav Feckert by Alexander von Humboldt

**31. Humboldt, F. W. H. Alexander von** (1769–1859). *Kosmos*. Entwurf einer physischen Weltbeschreibung, 4 vols. text plus oblong folio atlas by Traugott Bromme (1802–66). Folding table in Vol. III; 42 plates in the atlas, mostly hand-colored wood or steel-engraved thematic maps & some plain aquatint views. Stuttgart: Cotta, 1845–58 (text); Kraus & Hoffmann, 1861 (atlas). 213 x 133 mm. text; 280 x 335 mm. atlas. Text bound in half calf gilt c. 1858, with light wear to edges and corners; atlas in half sheep ca. 1861, spine and corners worn, light rubbing. With Humboldt's presentation inscription to German artist Gustav Feckert (1820–99), dated May 1858, on the front free endpaper of Vol. I.

\$8500

**First Edition** of the text; second edition of the atlas. Humboldt presented this copy of the text to German portrait painter and lithographer Gustav Feckert. The inscription, written in Humboldt's characteristically difficult hand, praises Feckert for his "ausgezeichnete Leistungen der anmuthigen Kunst" (excellent performance of the graceful art). This is the only inscribed presentation copy of *Kosmos* that we have seen in over forty years.



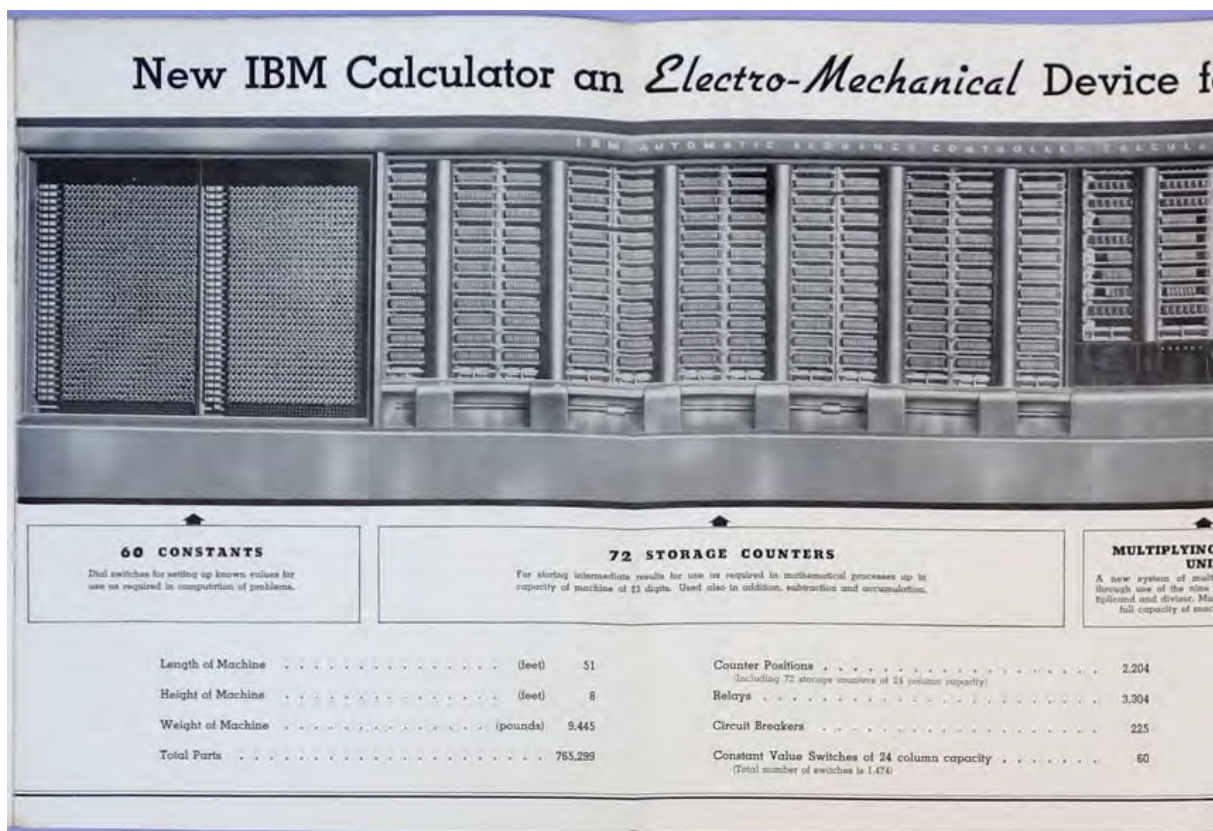
“Written in superb literary style, the *Kosmos* became the most prestigious scientific work ever produced up to that time. It was an immense success. The first edition of volume I was sold out in two months. Soon it had been translated into many languages . . .

“The *Kosmos* put together in one unified work all the various interests and discoveries of Humboldt’s lifetime. In the first volume there is a general presentation of the whole picture of the universe. The second volume starts with a discussion of the portrayal of nature through the ages by landscape painters and by poets and then continues with a history of man’s effort to discover and describe the earth since the time of the ancient Egyptians. Humboldt’s enormous erudition becomes especially clear in this second volume. The third volume deals with the laws of celestial space, which we would call astronomy. The fourth volume deals with the earth, not only with geophysics, but also with man” (James, *All Possible Worlds. A History of Geographical Ideas* [1972], pp. 162-63). The work also provides citations to 9,000 sources which make it an invaluable reference for the history of science. The atlas reflects the latest trends in cartography with its colored thematic maps.

*Kosmos*, as Humboldt conceived it, consisted of the four text volumes only. Although *Printing and the Mind of Man* calls for the atlas, which first appeared in 1851/52, this was actually issued separately without Humboldt’s participation. The same is true of the work’s posthumous

fifth volume (1862) which contains the index (not included here). *Printing and the Mind of Man* 320. Sabin 33726 (text) & 8201 (atlas). 41611



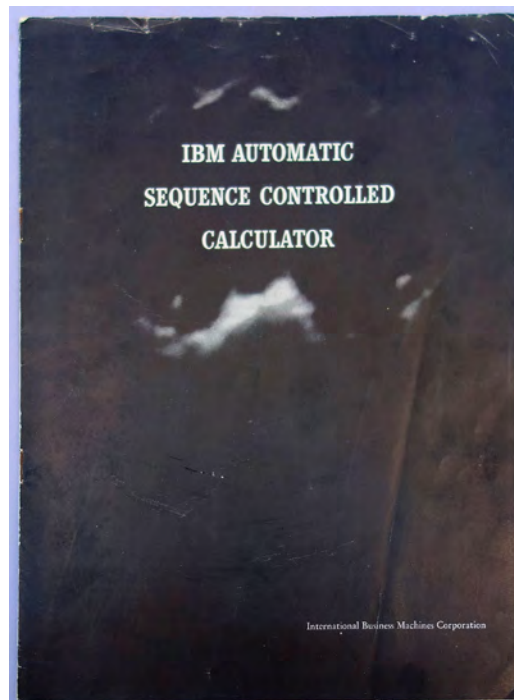


*Extremely Rare Brochure for the Harvard Mark I*

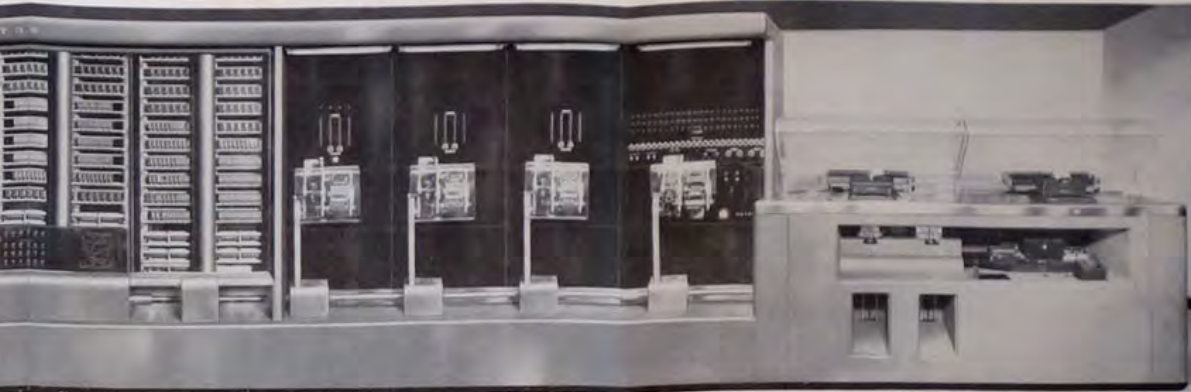
**32. IBM.** IBM Automatic Sequence Controlled Calculator. Advertising brochure. 6pp. Folding halftone plate, halftone illustrations. N.p.: International Business Machines Corp., 1945. 284 x 217 mm. Original printed self-wrappers (recto of back wrapper forms part of folding plate). Minor wear along spine and top edge, small crease in front wrapper, verso of plate a little foxed, but very good. \$1750

**Rare Promotional Brochure** for IBM's Automatic Sequence Controlled Calculator, also known as the Harvard Mark I. OCLC notes five copies in libraries (Cornell, Yale, Iowa State U., Dartmouth and Swarthmore), and given the brochure's ephemeral nature it is likely that only a few other copies exist outside of IBM's archives.

The IBM ASCC, a programmable electromechanical calculating machine based largely on existing IBM punched-card technology, was the first of its kind to actually produce mathematical tables, fulfilling the dream that Charles Babbage had originally expressed in print over a century earlier. It was the brainchild of Howard Aiken, who first conceived of building a powerful, large-scale calculating machine in 1935 while pursuing graduate studies in physics at Harvard University. In 1937, after Aiken had become a professor of applied mathematics at Harvard's Graduate School of Engineering, he proposed his idea to a number of calculat-



# For General Use in the Field of Applied Mathematics



FULL-CAPACITY DIVIDING		FUNCTIONAL COUNTERS		INTERPOLATORS		SEQUENCE CONTROL		ELECTROMATICS & CARD FEEDS SUMMARY CARD PUNCH	
Miles of Wire	530	Electromatic Typewriters	2	Card Feed Mechanisms	2	Summary Punch	1	Full Capacity Multiplying (seconds)	5.7
Taper Plug Connections (electrical)	175,000	Ball Bearings	1,210	Value Tape Mechanisms	3	Sequence Tape Mechanism	1	Full Capacity Dividing (seconds)	15.3

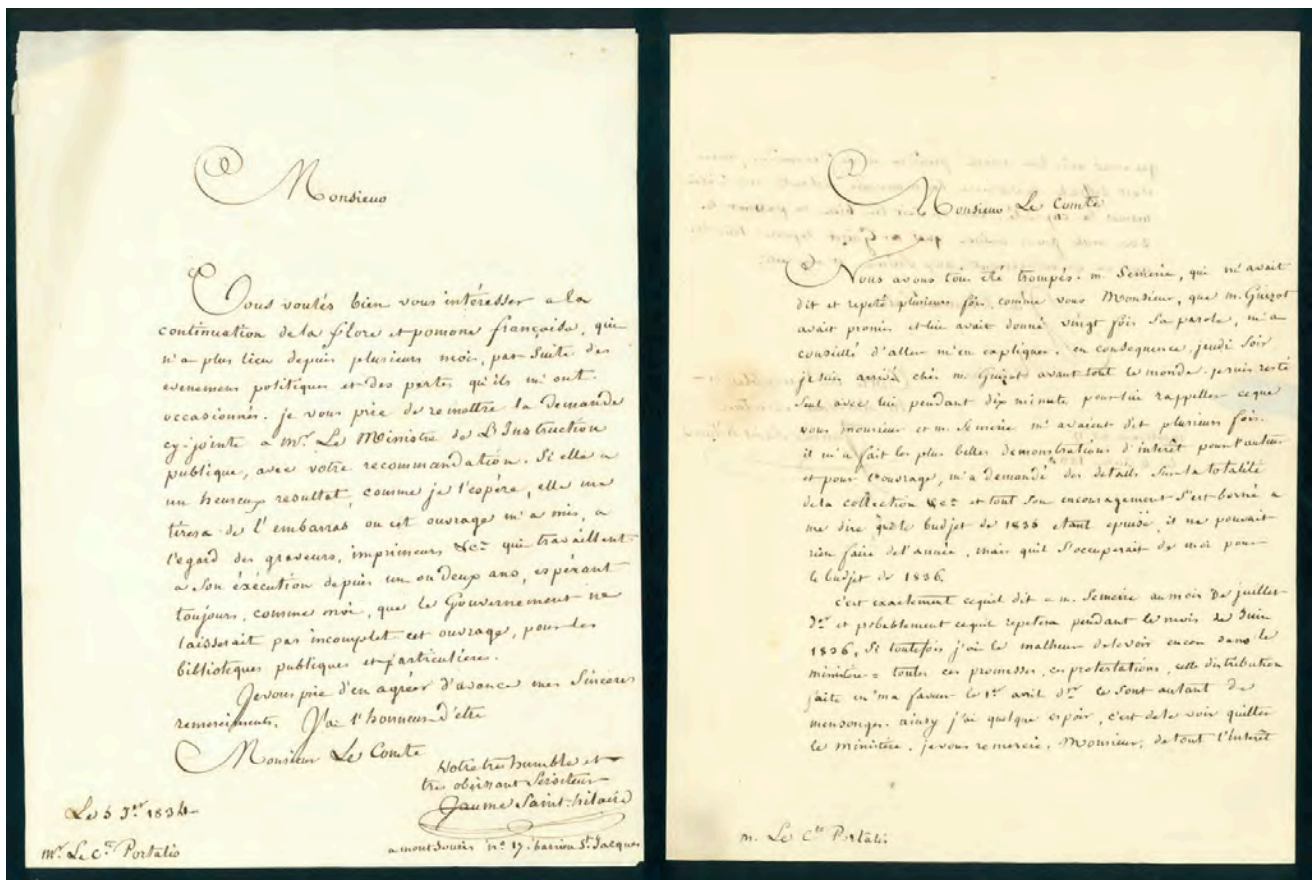
ing-machine manufacturers, finally convincing IBM to undertake the project. The project was partly funded by money from the United States Navy; the remainder came from IBM, whose president, Thomas J. Watson, viewed the undertaking as good publicity and as a showcase for IBM's talents.

Aiken's machine began construction in May 1939 and was completed in early 1943; it became operational in May 1944. The machine was immediately commandeered for war work by the United States Navy—the present brochure, produced shortly before the end of World War II, notes that “for the duration of the war the machine will be used by the U. S. Navy exclusively, its operations being handled by a technical staff including a group of former members of IBM now serving in the Navy” (p. 4). One of these staff members was Lieutenant (later Admiral) Grace M. Hopper, who would go on to become one of the most famous of the postwar computer pioneers.

Anticipating the end of the European and Pacific conflicts, IBM's brochure for the ASCC advertises the machine's potential usefulness in both science and business:

When this calculator returns to civilian use it will be of the greatest importance in astronomy, atomic physics, radio research, investigations of the ionosphere, actuarial work, optics, and electronics . . . The apparatus will quickly solve statistical problems in which the manual labor has been enormous . . . It will be the key to the solution of differential equations, the evaluation of integrals, and all phases of applied mathematics, yielding a speed and accuracy formerly beyond belief (p. 5).

The back wrapper of the brochure folds out into a large plate illustrating the ASCC's sleek modernistic design, the work of avant-garde industrial designer Norman Bel Geddes (see *Origins of Cyberspace* 411). 42825



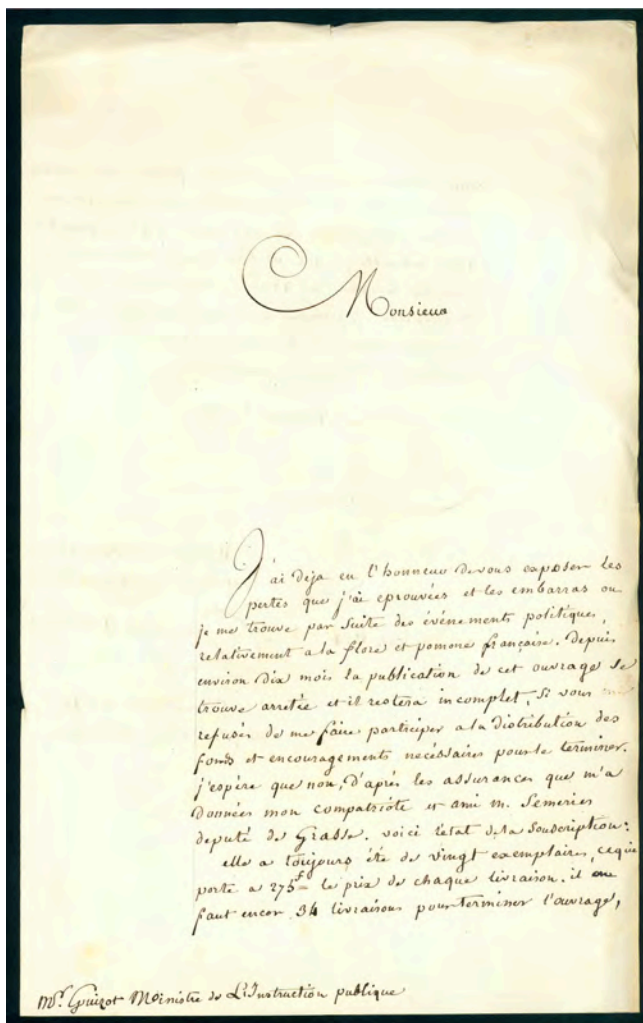
“We Will Need 34 Fascicles to Finish the Work”

**33. Jaume Saint-Hilaire, Jean Henri** (1772-1845). (1) Autograph letter signed to François Guizot (1787-1874). 2pp. plus integral blank. [Paris,] 5 January 1834. 326 x 207 mm. (2) Autograph letter signed to Joseph-Marie, comte Portalis (1778-1858). 1 page plus integral blank. [Paris,] 5 January 1834. 250 x 187 mm. (3) Autograph letter signed to Portalis. 1 – 1/2 pages plus integral address leaf. [Paris,] 6 June 1835. 247 x 188 mm. Together three items. Light creasing, a few small marginal tears, lacuna in no. (3) where seal was broken (not affecting text), but fine otherwise. \$1650

From French botanist and botanical artist Jean-Henri Jaume Saint-Hilaire regarding the difficulties impeding the publication of his *La flore et la pomone françaises* (1828-32). Jaume, who studied floral painting under the noted Dutch artist Gerard van Spaendonck, was the author of several important illustrated natural history works including the monumental 10-volume *Plantes de la France décrites et peintes d'après nature* (1808-9; 1819-22), and *Exposition des familles naturelles, et de la germination des plantes* (1805), the first work to popularize Jussieu's natural classification system of flowering plants. He was also interested in forestry and helped to create policies promoting reforestation and sensible management of France's timber resources.

Jaume Saint-Hilaire began publishing *La flore et la pomone* in parts in 1828. The work was intended to comprise eight volumes and 800 plates, but ceased publication in 1832 (most likely due to ongoing political unrest) after only 544 plates had been issued. This left Jaume in a difficult financial situation and in January 1834 he wrote a letter (no. [1] above) to François Guizot, the powerful Minister of Public Instruction, to try to obtain public funding for his project (translation ours):

I have already had the honor of presenting you with the losses I have endured and the financial embarrassment I find myself in as a result of political events relative to the *Flore et Pomone Françaises*. Publication of this book stopped about ten months ago and it will remain incomplete if you refuse



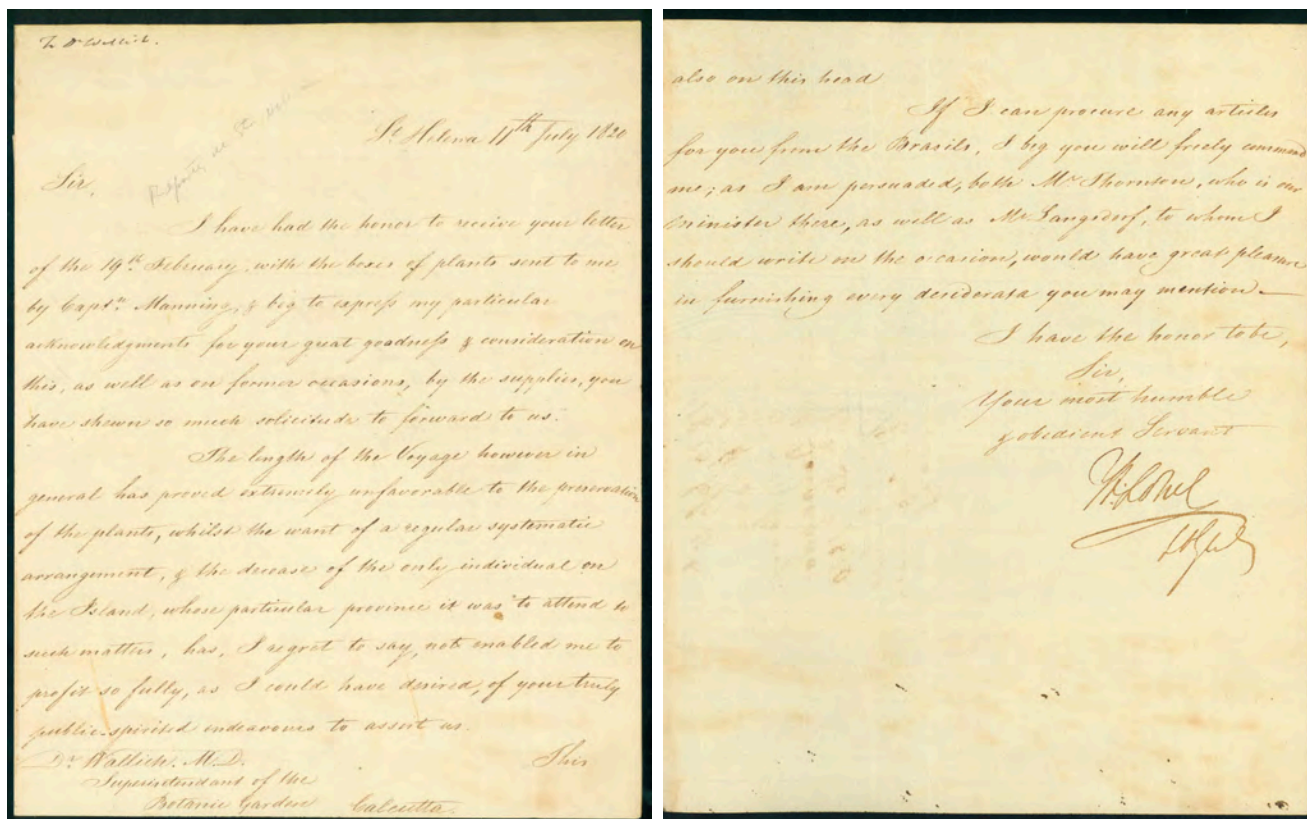
to allow me to participate in the distribution of the necessary funds and encouragements to finish it. . . . Here is the status of the subscription: It was always twenty copies, bringing the price of each fascicle to 275 francs. We still need 34 fascicles to finish the work; they will be published over thirty-four months, but I need an increase in subscription of ten copies on vellum paper in 4to for 150 francs altogether, which will bring the price of each new fascicle to 425 francs. Through this subscription I will be able to continue my work and the book will not remain incomplete, particularly in public libraries.

Jaume Saint-Hilaire enclosed the above letter in another (no. [2] above) written to Joseph-Marie, comte Portalis, Vice-President of the French House of Lords and First President of France's Supreme Court. Jaume begged Portalis to "remettre la demande ci-jointe à M. le Ministre de l'Instruction Publique, avec votre recommandation" [remit the attached request to the Minister of Public Instruction, with your recommendation], hoping that his petition, if successful, "me tirera de l'embarras ou cet ouvrage m'a mis, à l'égard des graveurs, imprimeurs, &c. qui travaillent à son exécution depuis un ou deux ans, espérant toujours, comme moi, que le Gouvernement ne laisserait pas incomplet cet ouvrage" [will take me out of the embarrassed circumstances this book has placed me in with regard to the engravers, printers &c. who have been working on it for one or two years, hoping always, as I am, that the

government would not leave the work incomplete]. Unfortunately, Jaume's petition to Guizot was not successful, and in June 1834 he wrote to Portalis (no. [3] above) to express his outrage at Guizot's shabby treatment of him:

We've all been deceived. M. Semeries, who had told me and repeated several times, like you, sir, that M. Guizot had promised and had given him his word twenty times, advised me to go explain myself. Consequently, on Thursday evening I arrived at M. Guizot's before anyone else. I remained alone with him for ten minutes to remind him of what you, sir, and M. Semeries had told me several times. He demonstrated a great deal of interest in the author and the work, asked me details about the totality of the collection &c. and all of his encouragement was limited to telling me that the budget for 1835 is used up, he couldn't do anything about it this year, but would keep me in mind for the 1836 budget.

This is exactly what he told M. Semeries last July and probably what he will repeat during the month of June 1836, if I have the misfortune to see him again in the Ministry. All these promises, these protestations, this distribution made in my favor last April 1, these are all lies. . . .



### Napoleon's Jailor Discusses Gardening on St. Helena

**34. Lowe, Hudson** (1769–1844). Letter signed (“H. Lowe Lt. Genl.”) to Dr. Nathaniel Wallich (1786–1854). 2 – 1/2 pages. St. Helena, 11 July 1820. 253 x 202 mm. Docketed on verso of second leaf. Traces of mounting present, but fine otherwise. \$1000

From Hudson Lowe, Governor of St. Helena during Napoleon’s final exile and imprisonment on the island (1815–21), to Nathaniel Wallich, Superintendent of the British East India’s botanical garden at Calcutta. Lowe’s letter, written during the time he was serving as Napoleon’s “gaoler,” discusses a shipment of plants sent to him by Wallich from India. Napoleon had taken up gardening for his health in the last years of his exile, and it is possible that some of the plants in Wallich’s shipment ended up in Napoleon’s garden. Lowe himself had a great interest in botany and horticulture—a contemporary source refers to “the fine plants which thrive in Sir Hudson Lowe’s garden at St. Helena”—and it is clear from Lowe’s letter that he and Wallich had previously supplied each other with botanical specimens.

Lowe and Napoleon may have shared a love of gardening, but the relationship between the two men was otherwise a difficult one. Lowe exacerbated Napoleon’s natural antagonism towards him by placing the deposed emperor under house arrest, billing him for some of the costs of his imprisonment and refusing to provide enough firewood to heat his quarters. This harsh treatment angered Napoleon’s supporters and even drew criticism from some of his foes. Some modern scholars claim that Lowe might have helped to hasten Napoleon’s death, whether by restricting the emperor’s movements on St. Helena to the point that his health was affected, or possibly by allowing him to be poisoned by an agent of the French monarchy.

Lowe’s letter reads in part as follows:

I have the honor to receive your letter of the 19th February, with the boxes of plants sent to me by Captn. Manning . . .

The length of the Voyage however in general has proved extremely unfavorable to the preservation of

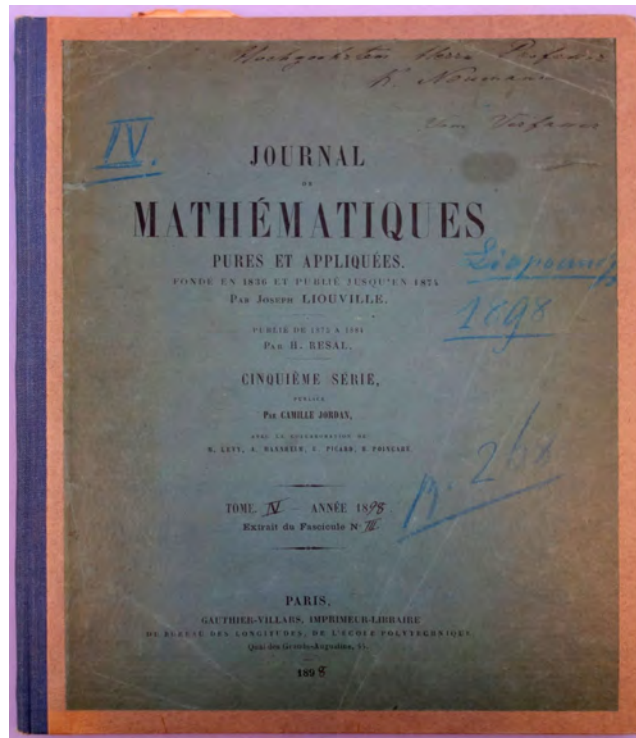


the plants, whilst the want of a regular systematic arrangement, & the decease of the only individual on the Island, whose particular province it was to attend to such matters, has, I regret to say, not enabled me to profit so fully, as I could have desired, of your truly public-spirited endeavours to assist us. . .

Our collusion which comes from every quarter of the Globe is already pretty numerous. I have received of late in particular some rare plants of the Brasils from Mr. Langsdoff [sic] (whose name may be known to you as a writer on natural history); and if all we have was properly arranged, the Collection, I have no doubt would appear very important. It is with the hope I may some time or other derive scientific aid in making such arrangement, I beg the continuance of your kind consideration towards us . . .

If I can procure any articles for you from the Brasils, I beg you will freely command me; as I am persuaded, both Mr. Thornton, who is our Minister there, as well as Mr. Langsdorf, to whom I should write on the occasion, would have great pleasure in furnishing every desiderata you may mention. I have the honor to be, Sir, your most humble & obedient Servant, H. Lowe Lt. Genl.

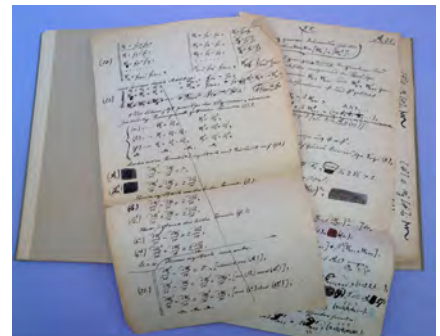
“Langsdorf” refers to the German-born naturalist Georg Heinrich (Grigory) von Langsdorff (1774-1852), who was appointed Russia’s consul-general to Brazil in 1813; between 1826 and 1829 he led a scientific expedition up the Amazon that yielded a great deal of new information on the region’s botany, zoology, mineralogy and ethnography. “Thornton” refers to Sir Edward Thornton (1766-1852), the British ambassador to Portugal and Brazil. Lowe’s correspondent, Nathaniel Wallich, helped to design the Calcutta Botanical Garden and developed a large herbarium collection of over 20,000 specimens (the “Wallich Catalogue”), now housed at Kew. Abel, *Narrative of a Journey in the Interior of China, and of a Voyage to and from that Country, in the Years 1816 and 1817* (1818), p. 224 (re Lowe’s St. Helena garden). Friedman, “Another Napoleonic mystery—Napoleon’s death,” *First Empire* 116/117 (Jan./Feb. 2011): 4-13. 42821

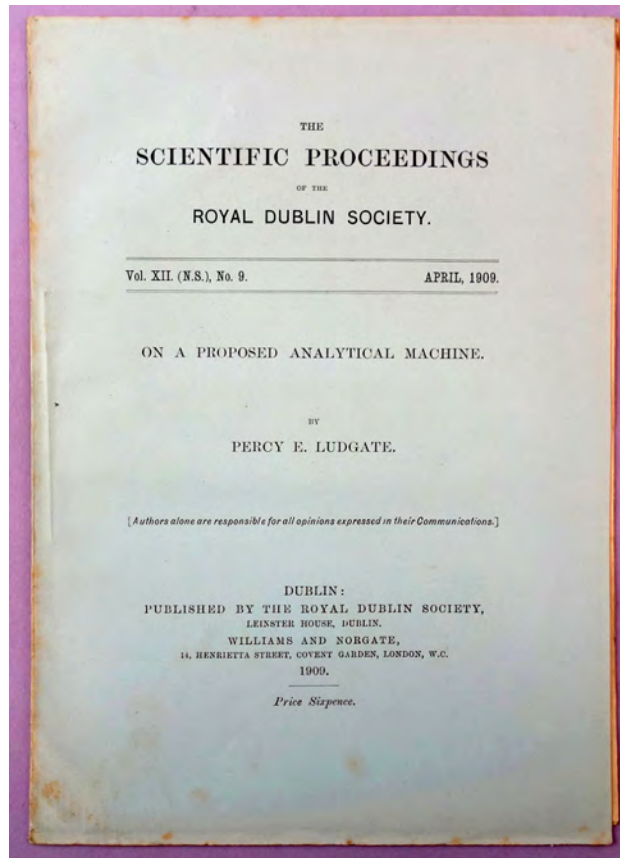


*Presentation Copy of a Fundamental Work on Potential Theory*

**35. Lyapunov, Aleksandr Mikhailovich** (1857–1918). Sur certaines questions qui se rattachent au problème de Dirichlet. Offprint from *Journal de mathématiques pures et appliquées*, 5th series, 4 (1898). 241–311pp. Paris: Gauthier-Villars, 1898. 271 x 218 mm. Later boards, cloth backstrip, original printed front wrapper pasted to front board. Small marginal tear in last leaf, but very good. **Presentation copy**, inscribed by Lyapunov to mathematician Carl Gottfried Neumann (1832–1925) on the front wrapper: “Hochgeehrten Herrn Professor K. Neumann vom Verfasser.” 2 sheets of manuscript notes by Neumann laid in, along with three sheets of mathematical notes in another hand. Ownership signature of E. O. Fellmann, marginal notes in pencil probably by him. \$1850

**First Edition, Offprint Issue.** Lyapunov’s classic work on potential theory investigates the Dirichlet problem, “the problem of finding a function which solves a specified partial differential equation in the interior of a given region that takes prescribed values on the boundary of the region” (Wikipedia). “During the period 1886–1902, Lyapunov devoted several works to mathematical physics; Sur certaines questions qui se rattachent au problème de Dirichlet is fundamental among these. Here, for the first time, a number of the basic properties of the potentials of simple and double layers were studied with utter rigor and the necessary and sufficient conditions, under which the function that solves Dirichlet’s problem within a given range has normal derivatives over the limiting range of the surface, were indicated. These investigations created the foundation of a number of classic methods for solving boundary-value problems” (*Dictionary of Scientific Biography*). Lyapunov, a Russian mathematician and mathematical physicist, is best known for his theory of the stability of mechanical systems and for his contributions to probability theory and the theory of ordinary differential equations. He presented this copy of his work to German mathematician Carl Neumann, professor of mathematics at the University of Leipzig and editor of *Mathematische Annalen*, for whom the “Neumann series” in mathematics is named. 42828



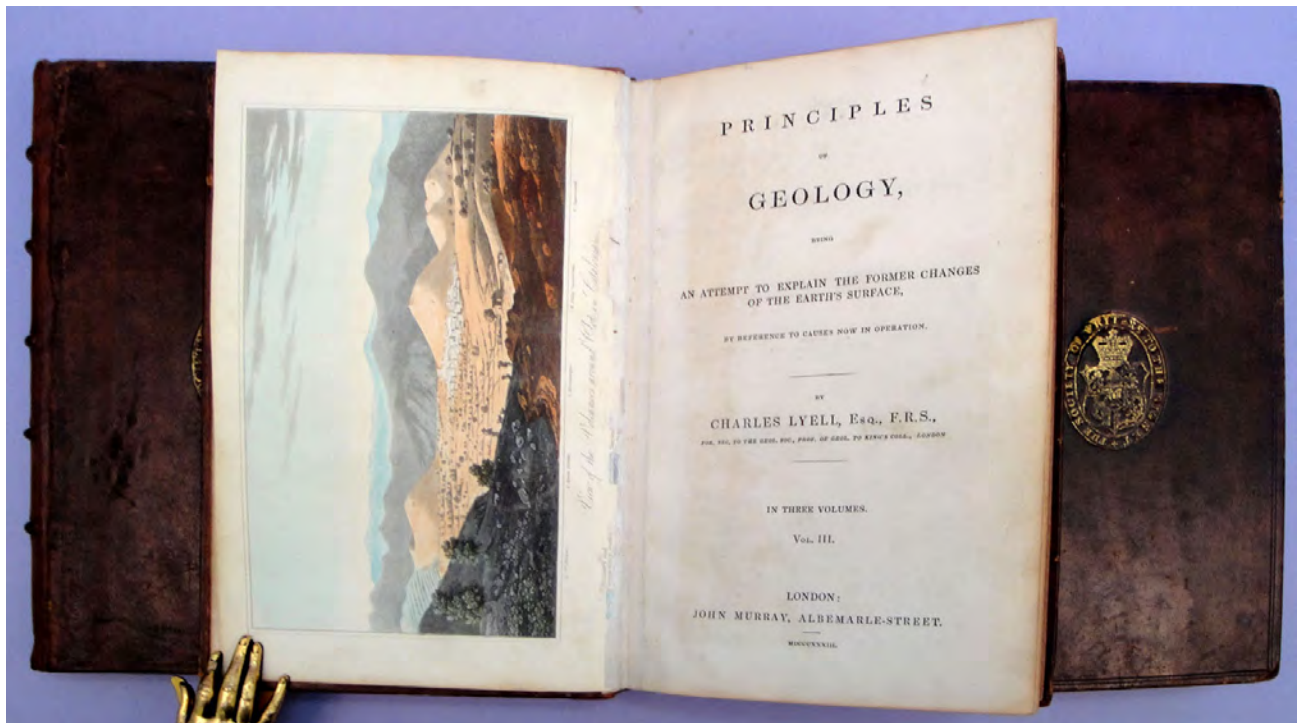


*The Only Attempt at a General Purpose Programmable Computer  
Between Babbage and Howard Aiken*

**36. Ludgate, Percy** (1883–1922). On a proposed analytical machine. In *Scientific Proceedings of the Royal Dublin Society*, n.s., 12 (1909–10): 77–91. (whole number). 8vo. 277 x 188 mm. (uncut & unopened). Original printed wrappers. Very fine copy. \$2500

First Edition of Ludgate's paper describing "the result of about six years' work, undertaken . . . with the object of designing machinery capable of performing calculations, however, intricate or laborious, without the immediate guidance of the human intellect" (p. 77). Ludgate's efforts followed about eighty years after Babbage began designing his Analytical Engine, a never-completed calculating machine embodying many of the features of present-day computers. Although Ludgate knew nothing of Babbage's work until after he had completed the first design of his own machine, he was "greatly assisted in the more advanced stages of the problem by, and [received] valuable suggestions from, the writings of that accomplished scholar" (p. 78). Ludgate was the only person to attempt this type of computing machine between Babbage and Howard Aiken, whose Harvard Mark I became operational in the early 1940s.

Ludgate's machine, as designed, was much smaller than Babbage's, handling 192 variables of 20 figures each compared to Babbage's 1000 variables of 50 figures each, and using "shuttles" to store the variables instead of Babbage's bulkier columns of wheels. A description of the machine's operation is given in this paper; the machine was never built, however, and Ludgate's drawings for it have been lost. The only records of it are in this paper and in a very brief account embedded in Ludgate's report on automatic calculating machines published in the 1914 *Handbook of the Napier Tercentenary Celebration* (also issued as *Modern Instruments and Methods of Calculation*). Randell, *Origins of Digital Computers* (3d ed.), pp. 73–87 (reprinting this paper); 489. See *Origins of Cyberspace*, p. 72. 38575

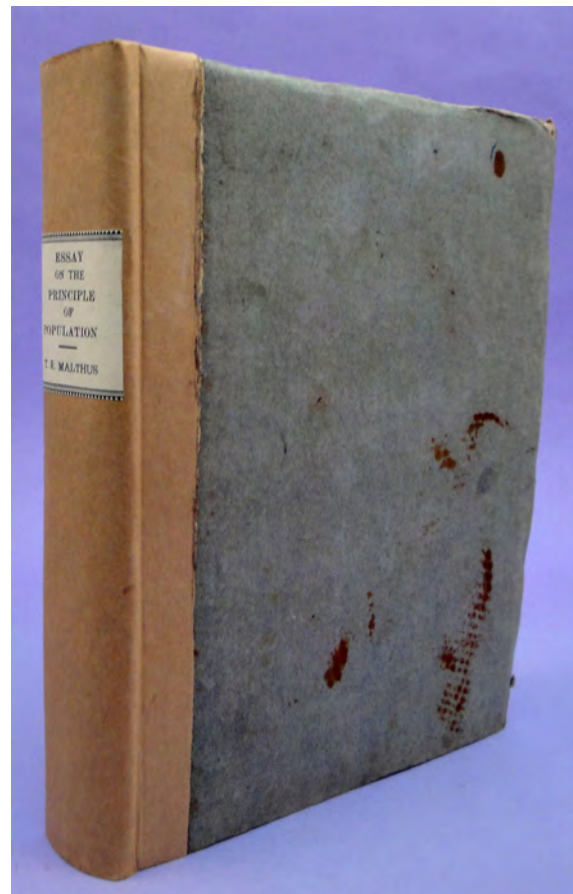
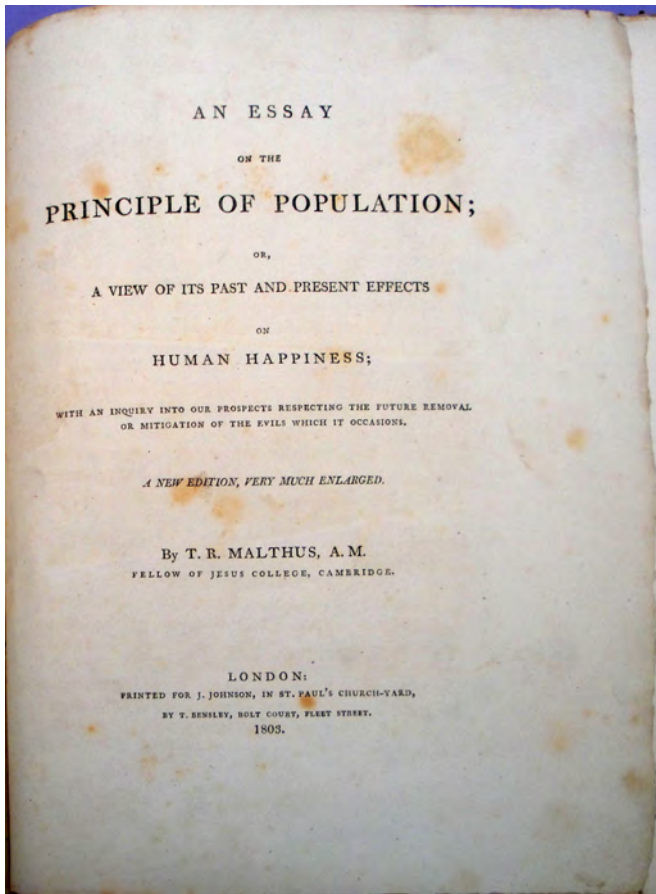


## Foundation of Modern Geology

**37. Lyell, Charles** (1797-1875). *Principles of geology, being an attempt to explain the former changes of the earth's surface, by references to causes now in operation.* 3 volumes, 8vo. xv, [I], 511; xii, 330, [2]; xxxi, [1], 398, 109pp., plus 4pp. publisher's advertisements. 11 plates, including 3 engraved frontispieces (2 hand-colored), and 3 maps (2 folding, 2 hand-colored). London: John Murray, 1830-32. Calf ca. 1832, a little rubbed, rebaked, endpapers renewed. Gilt arms of the Society of Writers to the Signet on front covers. Very good set. \$9500

**First Edition.** Lyell's *Principles of Geology* revolutionized the science of geology. The work had two major and controversial goals: First, and most important, to establish a strict uniformitarian theory of the earth based upon a knowledge of the existing causes and effects of geologic change; and second, to resolve the terminological and methodological confusion then hampering the progress of geological research by giving a specific meaning to the term "geology," and establishing its proper position relative to the other physical sciences. Unlike many geologists of his day, who believed that the earth had been subjected in the past to events unparalleled in modern times, Lyell argued that the order of nature in the past was uniform with that in the present, and that therefore geological phenomena-- even major changes, such as alterations in global climate--should be attributed to the gradual action, over sufficient time, of modern geological processes. Lyell devoted the whole of his second volume to the changes that had occurred in the biosphere throughout geologic time, demonstrating that both the existence and extinction of species are dependent upon geologic phenomena. Lyell's work had profound influence upon Charles Darwin, who read the *Principles* aboard the *Beagle*. Not only did the work shape Darwin's understanding of geology, but it served him as a guide in scientific method generally, and its thorough discussion of the problems of evolution stimulated Darwin's thinking on the subject.

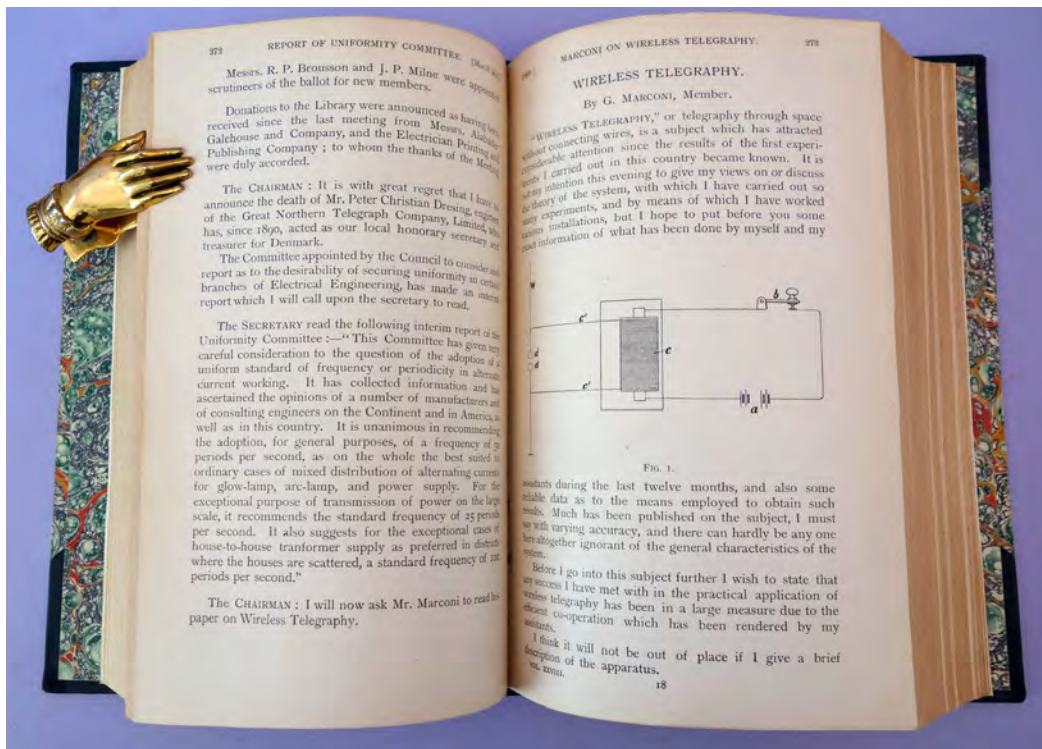
The first edition was published in an edition of 1,500 copies and sold for fifteen shillings a copy. Lyell received 200 guineas for the work. The title page of Vol. I indicates that the work was originally intended to be published in two volumes. Norman 1398. Greene, pp. 70-76. Rudwick, pp. 174-191. Ward & Carozzi 1407. Wilson, *Charles Lyell: The Years to 1841*, pp. 146-47; 210. 41761



### The “Struggle for Existence”

**38. Malthus, Thomas** (1766–1834). An essay on the principle of population; or a view of its past and present effects on human happiness . . . 4to. viii, [4], 610pp. London: T. Bensley for J. Johnson, 1803. 285 x 225 mm. (uncut). Original boards, rebacked, endpapers renewed, one corner restored. Tape repair to last leaf, minor foxing, but a very good copy, preserved in a cloth case. \$8500

Second edition, extensively revised and four times larger than the original edition of 1798. The 1803 edition was the first to have Malthus’s name on the title, and the first to contain numerical data supporting his claim that populations increase by geometrical proportion but food supplies only increase arithmetically. “Malthus was one of the founders of modern economics. His *Essay* was originally the product of a discussion on the perfectibility of society with his father . . . Thus the first edition (published anonymously) was essentially a fighting tract, but later editions were considerably altered and grew bulkier as Malthus defended his views against a host of critics . . . The *Essay* was highly influential in the progress of thought in early nineteenth century Europe [and] his influence on social policy was considerable . . . Both Darwin and Wallace clearly acknowledged Malthus as a source of the idea of the ‘struggle for existence’” (*Printing and the Mind of Man* 251). Garrison–Morton 1693. Kress B4701. 41515

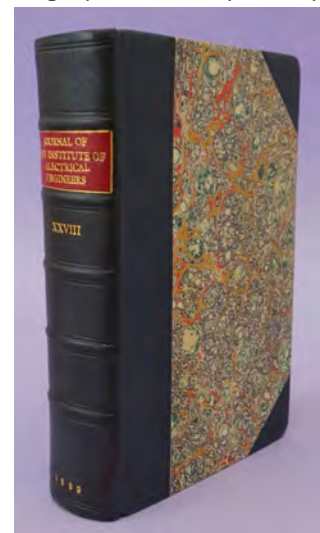


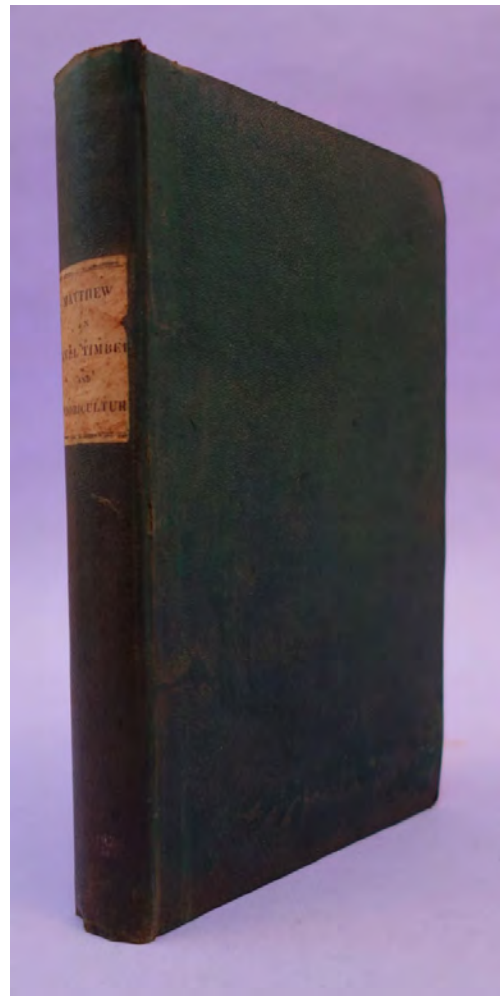
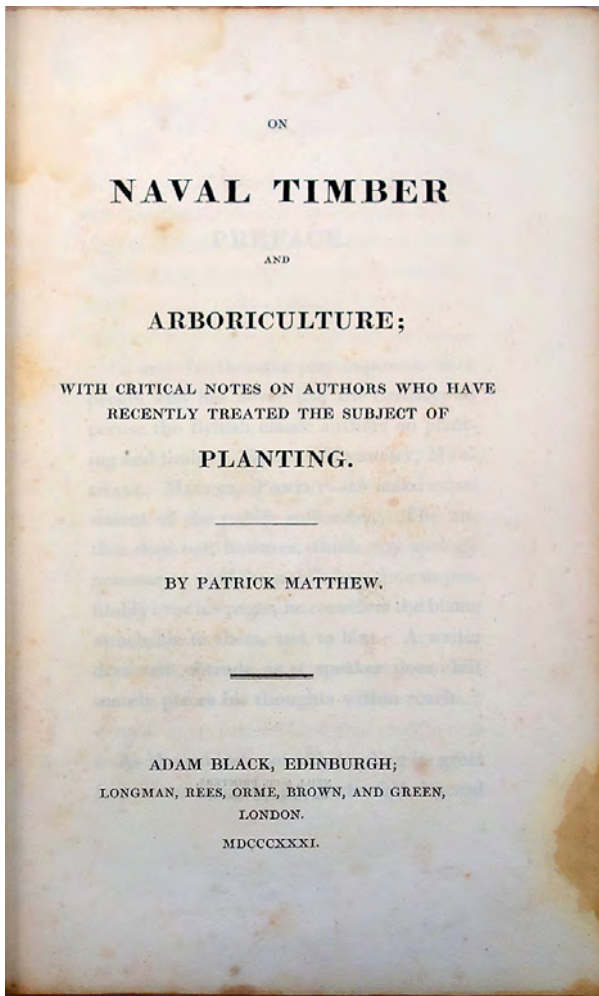
## The Wireless

**39. Marconi, Guglielmo** (1874-1937). Wireless telegraphy. In *Journal of the Institute of Electrical Engineers*, XXVIII, no. 139 (April 1899): 273-290. Discussions: 291-316. Whole volume. x, 694pp. Plates, folding tables, text illustrations. Errata slip inserted before p. 367. 206 x 133 mm. Modern half calf, marbled boards. Light toning, volume title a bit soiled, but very good. \$3000

**First Edition.** Marconi's first paper on wireless telegraphy. "Marconi seems to have learned in 1894 of Hertz's laboratory experiments with electromagnetic waves. He was immediately curious as to how far the waves might travel, and began to experiment, with the assistance of Prof. A. Righi of Bologna. His initial apparatus resembled Hertz's in its use of a Ruhmkorff-coil spark gap oscillator and dipole antennas with parabolic reflectors, but it replaced Hertz's spark-ring detector with the coherer that had been employed earlier by Branly and Lodge. [Lodge was only able to transmit and receive over a distance of 150 yards.] Marconi quickly discovered that increased transmission distance could be obtained with larger antennas, and his first important invention was the use of sizable elevated antenna structures and ground connections at both transmitter and receiver, in place of Hertz's dipoles. With this change he achieved in 1895 a transmission distance of 1.5 miles (the length of the family estate), and at about the same time conceived of 'wireless telegraph' communication through keying the transmitter in telegraph code" (*Dictionary of Scientific Biography*).

Due to the great interest in the above presentation, Marconi had to read the paper twice, and the journal records two sets of discussions. Within a year after this speech Marconi increased his signaling distance to 150 miles, and decided to attempt to transmit across the Atlantic. In 1901 Marconi succeeded in wireless transmission across the Atlantic. In 1909 he shared the Nobel Prize for physics with K. F. Braun. *From Gutenberg to the Internet*, reading 5.4. Origins of Cyberspace 174. *Printing and the Mind of Man* 382 cited Marconi's *Provisional Specification* for his patent dated June 1896. Dibner 72 cited Marconi's patent published in 1899. 39309





*“The Discoverer of Natural Selection”*

**40. Matthew, Patrick** (1790-1874). On naval timber and arboriculture. . . . 8vo. xvi, 391, [1]pp.; 4 leaves of advertisements bound at the front. Edinburgh: Adam Black; London: Longman. . . , 1831. 227 x 144 mm. (uncut). Original green cloth, printed paper spine label, recased, minor bubbling on front cover, light wear at corners. Minor foxing, a few dampstains, especially in outer margin of first few leaves, but very good. \$8500

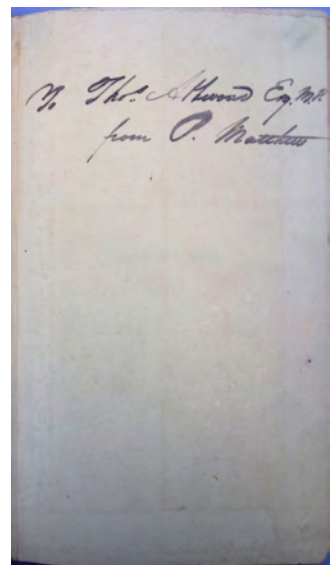
**First Edition**, rare on the market, especially in the original cloth binding. This is only the third copy we have handled in more than 40 years, and the first in the original cloth binding. Matthew is considered the first to clearly and completely anticipate the Darwin-Wallace theory. He used the expression “natural process of selection” and was acknowledged by Darwin in the third and subsequent editions of his *Origin*: “Mr. Patrick Matthew . . . gives precisely the same view on the origin of species as that . . . propounded by Mr. Wallace and myself.” Matthew’s anticipation of Darwin is found in the appendix to his little-read book on arboriculture; however, he gives no scientific evidence for his view. Even so, Matthew had cards printed up identifying himself as “the discoverer of natural selection.” Garrison-Morton 216.3. Norman 1457. 42793



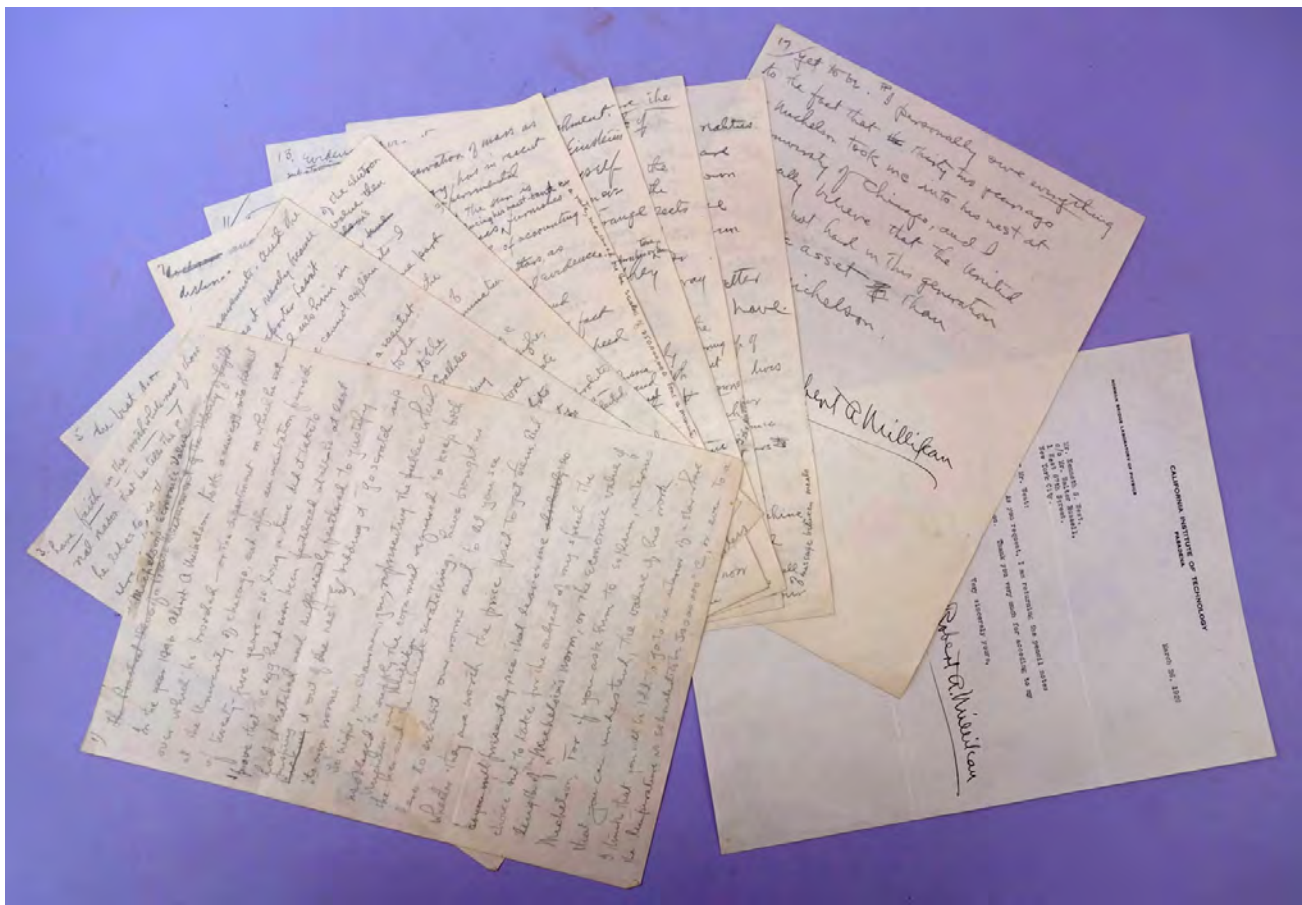
*Rare Presentation Copy*

**41. Matthew, Patrick** (1790-1874). *Emigration fields*. 12mo. xi, [I], 237, [I]pp., adverts. 2 large folding maps engraved by Sidney Hall. Edinburgh: Black. . . , 1839. 198 x 120 mm. Original cloth, gilt, rebacked preserving original backstrip, worn & spotted. Light browning but very good. *Presentation Copy, Inscribed by Matthew to Thomas Attwood* (1783-1856) on endpaper. \$4500

**First Edition.** This plan for British emigration to North America, Africa, Australia and New Zealand is informed by Matthew's ideas on natural selection, which he first expressed in 1831, fully anticipating Darwin (see no. 40 above). He speculates on the influence of environmental conditions, for example in southern Africa, where he predicts that the native population, perfectly adapted to the climate, and now governed by a more humane colonial policy, will grow at a faster rate than the colonial population. Matthew presented this copy to the social reformer and M. P. Thomas Attwood, who presented the Chartists' petition for universal suffrage and other democratic rights to the House of Commons in June of 1839 (see the *Dictionary of National Biography*). Books inscribed by Matthew are exceptionally rare. This is the only one we have seen on the market in more than forty years. 37704







## One Nobel Physics Laureate's Tribute to Another

**42. Millikan, Robert** (1868–1953). Michelson's economic value. Autograph manuscript signed. 17pp. on 9 sheets, written in pencil with numerous corrections and emendations, Millikan's signature in ink on the last page; accompanied by later typed transcript. N.p., n.d. [1929]. 280 x 218 mm. **[With:]** Typed letter signed from Millikan to Kenneth S. West. 1 page, on Caltech stationery. Pasadena, March 26, 1929. Together 2 items. Fine. Manuscript and letter preserved in a quarter morocco folding box.

\$9500

The working draft of Millikan's address in tribute to his mentor and colleague Albert A. Michelson (1852–1931), delivered at a dinner honoring both men hosted by the Society of Arts and Sciences in New York; the address was later published as an article in *Science* (vol. 69 [1929]: 481–85). Both Millikan and Michelson were Nobel laureates: Millikan had received the Nobel Prize for physics in 1923 for his determination of the charge of the electron and his researches on the photoelectric effect; and Michelson was awarded the same prize in 1907 for his optical precision instruments and the measurements carried out with their aid—particularly his determination of the speed of light and the famous Michelson-Morley experiment, regarded as the first strong evidence against the existence of a luminiferous ether. It was Michelson who in 1897 gave Millikan his first teaching job, at the University of Chicago. While at Chicago Millikan worked as Michelson's assistant, wrote several important textbooks, and performed the experimental research on the electron charge that helped gain him the Nobel Prize. Millikan went on to become vice chairman and director of the National Research Council, and then in 1921 moved to Pasadena to head the newly established California Institute of Technology.

Millikan's eloquent address honors the man who had exerted such a profound influence on his early career. In the course of his tribute, Millikan places Michelson's work in the context of contemporary physics, noting its significance and interrelationship with the work of Einstein, Lebedev, Aston et al.:

The special theory of relativity may be regarded as merely a generalization of the famous Michelson and Morley experiment, another typical Michelsonian attempt to measure with great precision a quantity of fundamental importance, namely, the speed of the Earth through the ether. As everybody knows it came out negative, that is, no such speed, nor any trace of it, could be found . . . Einstein, in 1905, generalized the foregoing result by postulating that it is in the nature of the universe impossible to find the speed of the earth with respect to the ether. This postulate rests most conspicuously upon, and historically grew chiefly out of the negative result of the Michelson-Morley experiment (p. 5).

Millikan ended his address with a paean to the value of Michelson's research and of scientific research in general:

Michelson's economic value!! In the last analysis there is nothing that is practically important at all except our ideas, our group of concepts about the nature of the world and our place in it . . . There is not an idea that I have advanced tonight, a conclusion that I have drawn from Einstein's equation, from Aston's curve, from cosmic ray/data that would have been possible had not somebody driven to the limit the precision and physical measurement, and much of it became possible because of Michelson's own super refined experiments. So true has it been proven to be that human progress "grows out of measurement made in the sixth place of decimals." Not he, nor anybody else, saw at the time what bearings the result would have. He merely felt in his bones, or knew in his soul, or had faith to believe that accurate knowledge was important. But some of the bearings have already appeared and others will continue to be found for ages yet to be (p. 11).

Millikan's manuscript is accompanied by his brief letter to Kenneth West: "As you request, I am returning the pencil notes that you sent on. Thank you very much for acceding to my request." 42832



*Introduction of Western Medical Illustration to Persia*

**43. Mirza Mohammad-Vali Hakimbashi.** [In Persian script] Cheraagh haa rewshenaaa der asewl pezeshekea [Illumination of the fundamentals of medicine]. Lithographed book. 194, 108, 234, [16]pp., irregularly numbered. 56 plates after Vesalius, Scarpa, Fabrici and others. Tabriz: Dar al-Tabae [State Printing House], 1271 A.H. [1854 A.D.]. 330 x 205 mm. Full morocco, vellum onlays ca. 1854, Persian style binding presumably bound in Tabriz. Occasional light wear and staining but a fine copy.

\$15,000

**First Edition**, extremely rare, of the first book to introduce Western anatomical illustration into Persian culture. During the 19th century, under the rule of the Qajar dynasty, Persia (now Iran) increased its contacts with European governments, while at the same time enjoying periods of relative political stability and a growing sense of nationalism. In the arena of public health and medical education, these influences resulted in “a mounting sense of responsibility on the part of the Government with regard to its citizenry. Moreover, an emerging sense of national ‘shame’ [aberou] in the face of staggering epidemics, together with a growing need to counter Western imperial interventions resulted in stronger stimuli for the promotion of an organized policy of public health. Hence, Iran’s social, military, economic and mercantile interests became stronger advocates of sanitary reform” (Afkhami, p. 122).

In 1851, at the urging of Prime Minister Mirza Taqi Khan Amir Kabir, Persia established its first modern institution of higher learning, the Dar al-Fonun (now the University of Tehran), which included a medical school for the training of army physicians. “Whereas Iranian Hakims of the mid-19th century could, in hindsight, have claimed to rival their European counterparts in therapeutics, a superior anatomical knowledge on the part of Western surgeons made them better caregivers on battlefields. Consequently, clinical instruction became a



cornerstone of the Dar al-Fonun and like the academies of Europe, Amir Kabir also founded a ‘Government Hospital’ in January 1850 for the purpose of instructing medical students” (Afkhani, p. 123).

As part of this effort to modernize medical education in Persia, medical textbooks such as Mirza Mohammad-Vali’s *Illumination of the Fundamentals of Medicine* were written or translated by Persian authors and printed by lithography for publication by the Dar al-Fonun or the Dar al-Tabae, the state printing house established in the 1840s. Mirza Mohammad-Vali, who had been named chief physician of the Persian army in 1852, was also supervisor of the physicians at the Government Hospital and most likely taught at the Dar al-Fonun. Mirza Mohammad’s dependence on Western sources in this early period of modern Persian medical education is evident in his book’s numerous anatomical illustrations, adapted from Vesalius, Scarpa, Fabrici and other European authors.

The Qajar period also saw the introduction of the lithographic press, the first successful method for the mass production of books in Persia. Several attempts had been made to establish letterpress printing in Persia beginning in the 17th century, but casting type in Arabic script raised technical problems beyond those faced by typographers creating Roman typefaces, and it was not until the 1820s, when the first lithographic printing press began operating in Tabriz, that books, newspapers and other printed material began to be manufactured in Persia on a large scale. “By the late 1840s, there were already at least six lithographic printing houses at work in Tehran, and dozens of books were published. From this time on, one can speak of regular lithographic book printing in Persia. The reasons for the success of the lithographic method of printing are obvious and well-known: simpler and



cheaper equipment in comparison to that required for the typographic printing, availability of a large number of professional copyists, and the traditional culture of calligraphy. Although considerably less expensive than manuscripts, lithographed books retained the usual format of the handwritten codex in a sturdy binding . . . In the latter part of the 1840s, the State Printing House (dar al-taba a-ye dowlati) began its work; and was operative until the end of the first decade of the 20th century. After the opening of the Dar al-fonun (the first modern polytechnic on European lines in Persia) in 1851, a lithographic press was established within it for printing teaching aids. Activities of these two printing houses were of some significance for the cultural and scientific life of Persia, since they published books on new subjects: manuals on exact and natural sciences, both translated and original, and works on history and geography” (Shcheglova).

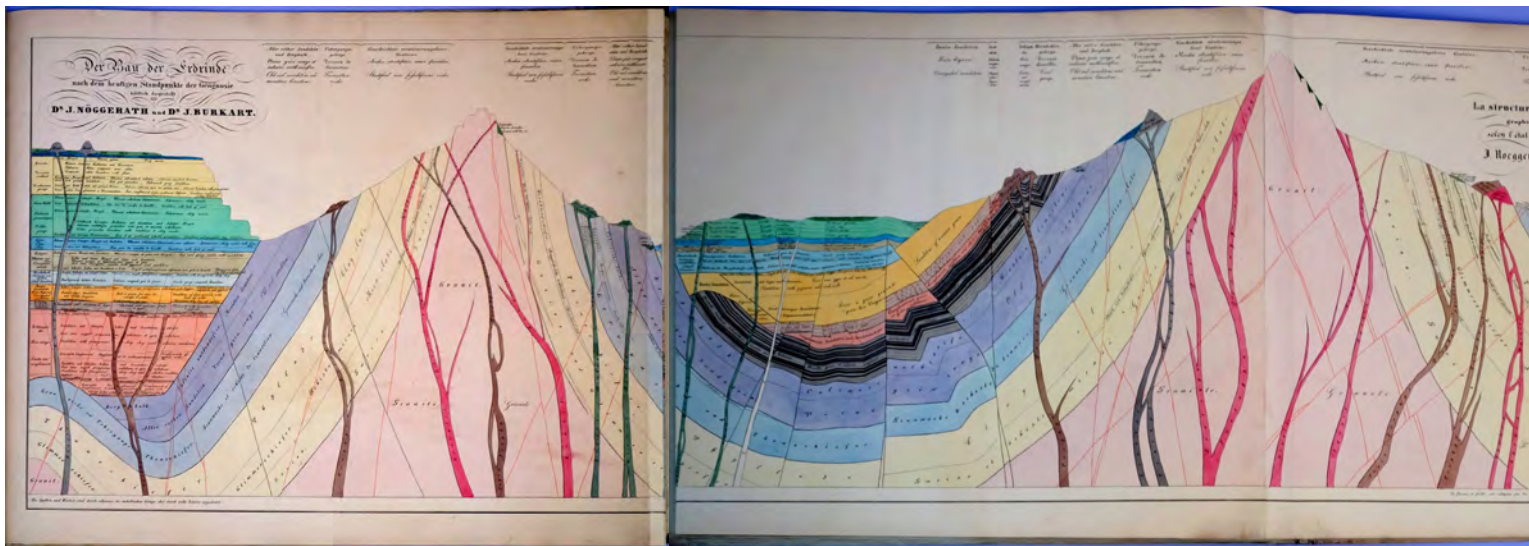
This book is extremely rare. We have been unable to locate any copies in OCLC or the Wellcome Library, London. It is not Storey, *Persian Literature, a Biblio-Bibliographical Survey* II, part 2. E Medicine (1971), and it is not in Edwards, *A Catalogue of the Persian Printed Books in the British Museum* (1922). Afkhami, “Epidemics and the emergence of an international sanitary policy in Iran,” *Comparative Studies of South Asia, Africa and the Middle East* 19 (1999): 122-134. Shcheglova, Olimpiada P. “Lithography I. In Persia.” *Encyclopaedia Iranica*. N.p., 15 Aug. 2009. Web. Accessed 22 Jan. 2013. Ebrahimnejad, *Medicine, Public Health and the Qajar State: Patterns of Modernization in Nineteenth-Century Iran* (2004), p. 51. 42777





authors excerpted and acknowledged that some of these had mocked the Holy Scriptures and taken positions contrary to the Catholic truth. But thanks to his careful selection, Nani promised safe passage through the shoals of pagan literature—both the raciness of Ovid and Horace and the obscurity of Aristotle—for the moral edification of Christians . . . At the same time as he played up the religious themes, Nani identified his principal audience as young people studying rhetoric. For them especially, Nani was proud to offer definitions and descriptions; Latin translations of all Greek expressions; sentences of philosophers, historians, and poets in Latin and Greek; and a tabular outline of the larger topics. The early *Polyanthea* served in part as a dictionary of hard words, offering in addition to the major articles, many very short ones, with just a definition, a Greek etymology, and one or even no quotation as an example (Blair, pp. 177–178).

The *Polyanthea* went through at least 41 editions between 1503 and 1681, nearly all of which were revised and expanded by their successive editors. Like other popular reference works of the early modern period, the *Polyanthea* tended to suffer hard usage and copies of the first edition, especially in good condition, are now scarce. Blair was able to locate 20 copies of the first edition cited in online library catalogues; most of these copies are in Italy. OCLC records 10 copies, three of which (Newberry Library, Harvard and U. Chicago) are in the United States. Collinson, *Encyclopedias: Their History Throughout the Ages* (1964). 42765

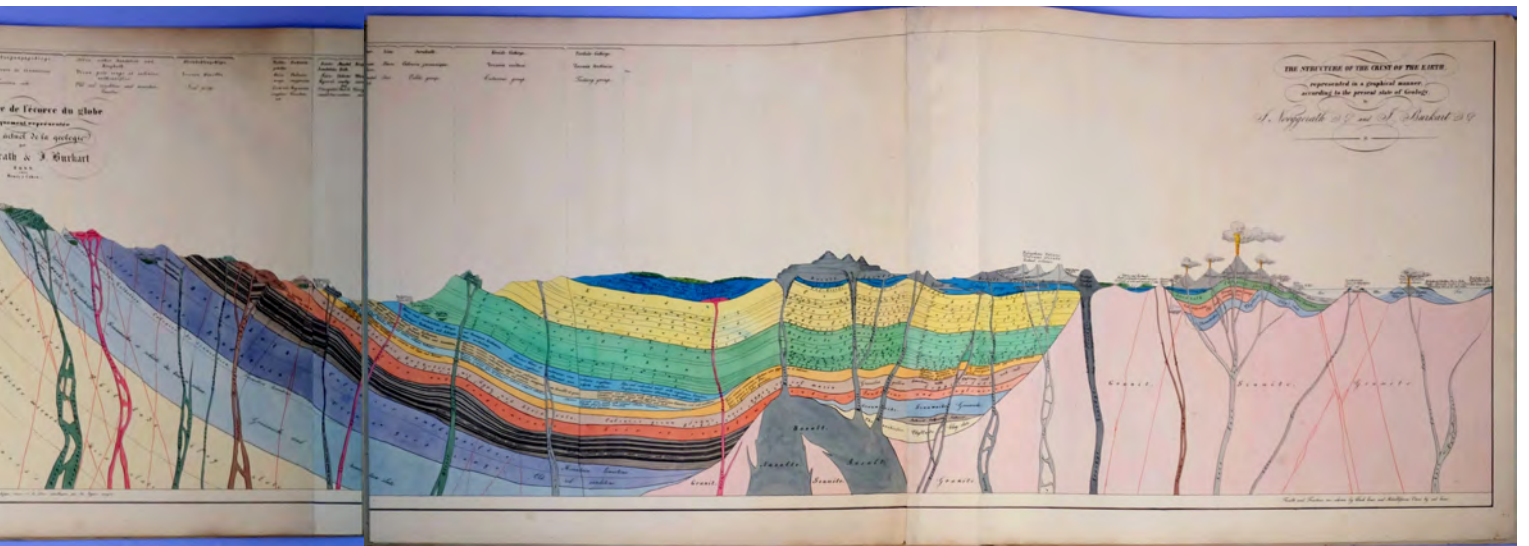


## The Earth's Crust—Spectacular Nine-Foot Geological Image

**45. Noeggerath, [Johann] Jakob (1788–1877) & 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 atlas consisting of 5 imperial folio plates glued together to make one continuous image, with text in German, French and English; accompanying text volume in photo-facsimile. Bonn:Verlag des Lithographischen Instituts der Rheinischen Friedrich-Wilhelms-Universität und der Kaiserl. Leopoldinisch-Carolinischen Akademie der Naturforscher, von Henry & Cohen, 1838. 50.5 x 64.5 cm., with image unfolding to 292.5 cm. (approx. 9.5 feet); text measures 422 x 298 mm. Paste paper boards ca. 1838, spine repaired, slight wear, original lithographed front wrapper bound in; text volume in plain wrappers. Small library stamp and shelfmark on atlas front wrapper. Fine copy. \$9500

First Edition of this stunning large-scale visual representation 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).

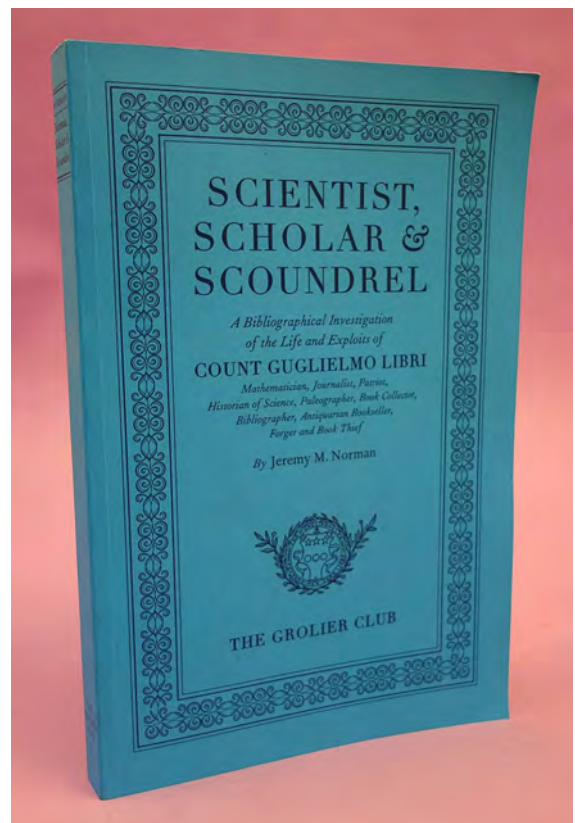
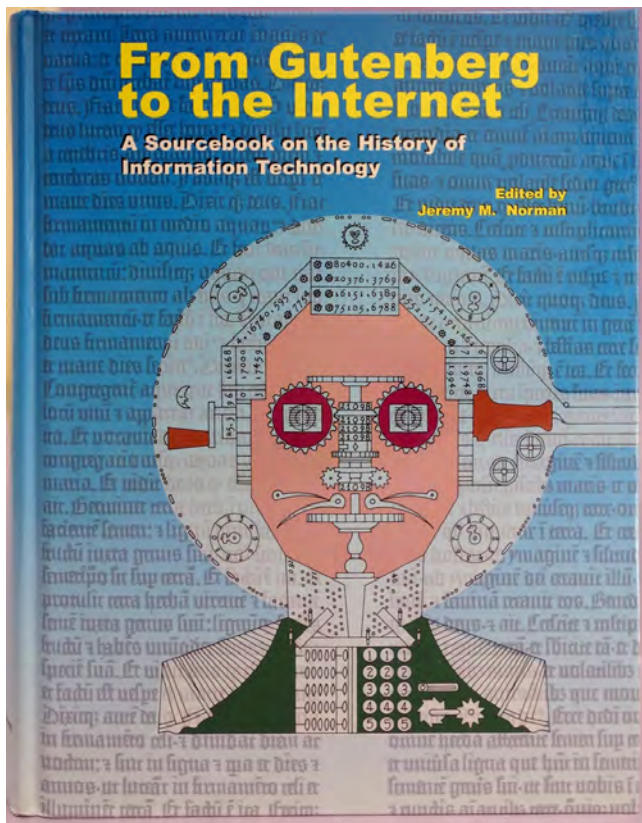




The atlas, which can be unfolded for display, is made up of five imperial folio hand-colored plates glued edge to edge to make a single large image. Geological features are labeled in German, French and English. The text volume, subtitled “Erklärung der bildlichen Darstellung” [Explanation of the pictorial representation], is written primarily in German but provides French and English translations of the image’s section headings and geological terms. The text volume in our set is present in photocopy.

There are several copies of *Der Bau der Erdrinde* in European 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). Our copy is noteworthy for preserving the atlas’s original decoratively printed front wrapper. 42797



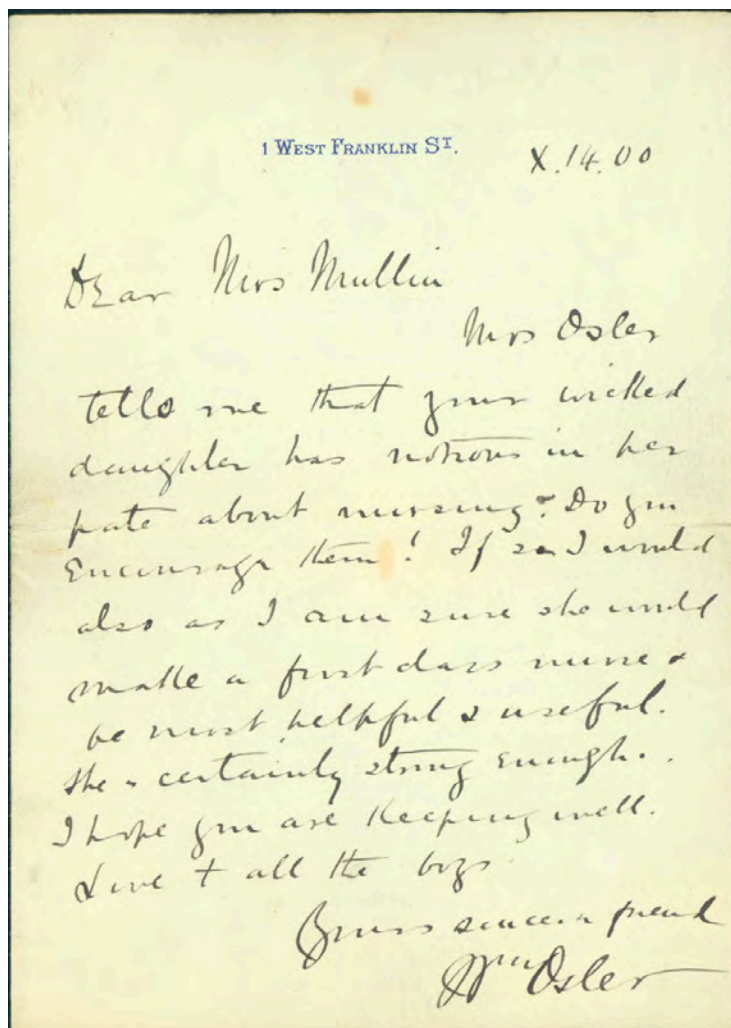


**46. Norman, Jeremy M.,** editor. *From Gutenberg to the Internet: A sourcebook on the history of information technology.* xvi, 899pp. Illustrated. Novato: Historyofscience.com, 2005. 8-1/2 x 11 inches. Pictorial boards, laminated. \$89.50

Presents 63 original readings from the history of computing, networking and telecommunications, arranged thematically by chapters. Most of the readings record the 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. ISBN 978-0-930405-87-8. 38950

**47. Norman, Jeremy M.** *Scientist, scholar & scoundrel: A bibliographical investigation of the life and exploits of Count Guglielmo Libri . . .*, by Jeremy M. Norman. xxii, 176pp. Numerous illustrations, some in color, the rest in duotone. New York: Grolier Club, 2013. 9 x 6 inches. Soft cover. \$35

A bio-bibliographical account of the life and exploits of the notorious Count Guglielmo Libri (1802-69), mathematician, journalist, patriot, historian of science, paleographer, book collector, bibliographer, antiquarian bookseller, forger and book thief. Finely designed by Jerry Kelly and printed on Mohawk paper. Published in connection with an exhibition held at the Grolier Club which will be on display from March 28 to May 24, 2013 Includes a timeline and index of names. ISBN 978-1-60583-041-4. 42810



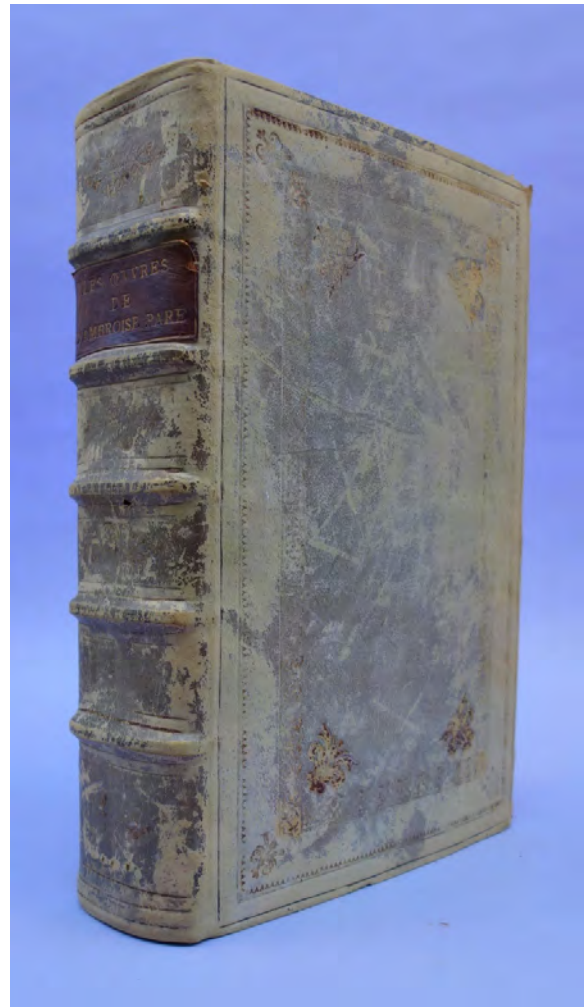
*"I am Sure She Would Make a First Class Nurse"*

**48. Osler, William** (1849–1919). Autograph letter signed to Mrs. [John A.] Mullin, with 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. Your sincere friend, Wm. Osler.

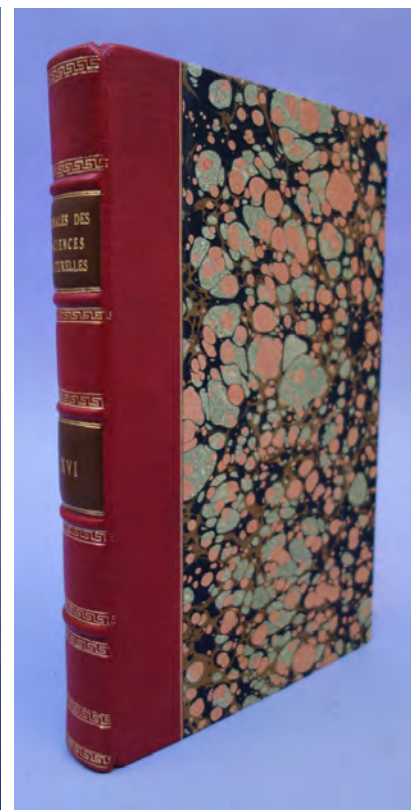
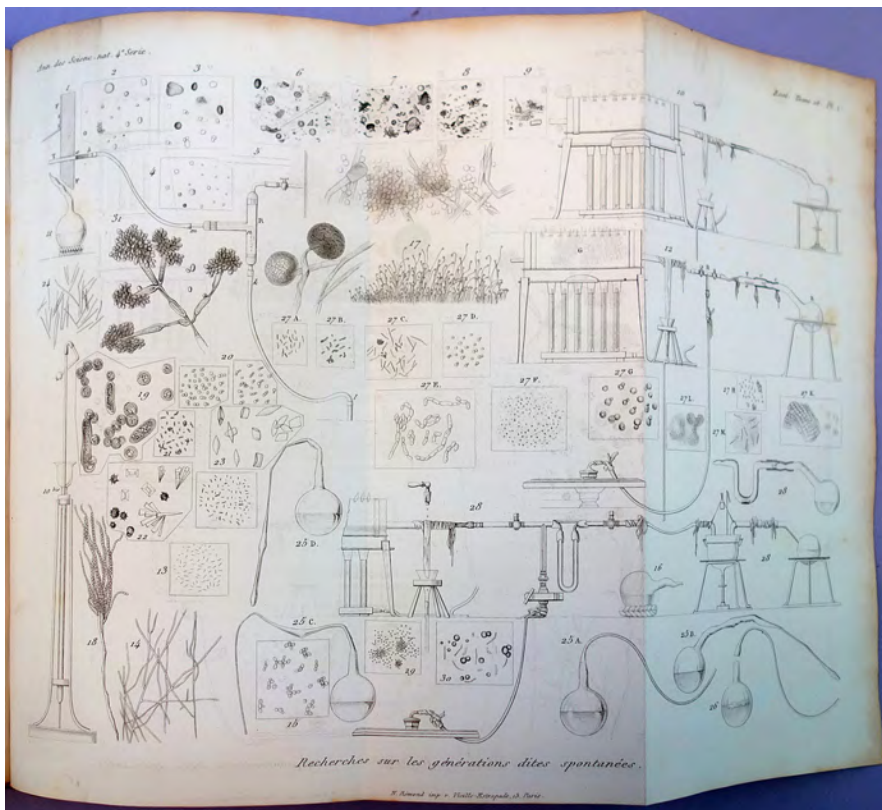
Osler's letter is also of interest in that it demonstrates his approval of nursing as a career for women, an opinion that he expressed more fully in his *Medicine and Nursing* (1919). Buchanan, "Sir William Osler (1849–1919): The Early Years," *Proceedings of the Royal College of Physicians of Edinburgh*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



*Paré's Method for Induced Labor*

**49. Paré, Ambroise** (1510–90). *Les oeuvres. . .* Folio. [26] 1228 [118]pp. Woodcut title and text  
Woodcut title and hundreds of text woodcuts of instruments, surgical procedures, anatomy, obstetrics,  
monsters, etc.; lacking the engraved portrait of Paré by Horbeck, as do many copies. Paris: Barthelemy  
Macé, 1607. 325 x 212 mm. 20th cent. calf in period style, rubbed, corners worn. Title and second leaf  
expertly remargined, light browning, occasional foxing. Very good copy apart from the missing por-  
trait. \$4750

Sixth edition, Macé imprint, of the collected works of Paré. See Garrison–Morton 59 and 5565. The sixth  
edition uses the text of the fifth edition, considered the most complete; however, it incorporates for the first  
time an addition to Book 28, namely, the passage recommending induced labor in certain cases. This was added  
after Guillemeau, Paré's son-in-law, related having learned the method from Paré; Guillemeau used it to deliver  
his wife (Paré's daughter), thereby saving her life. Doe 34. 32018



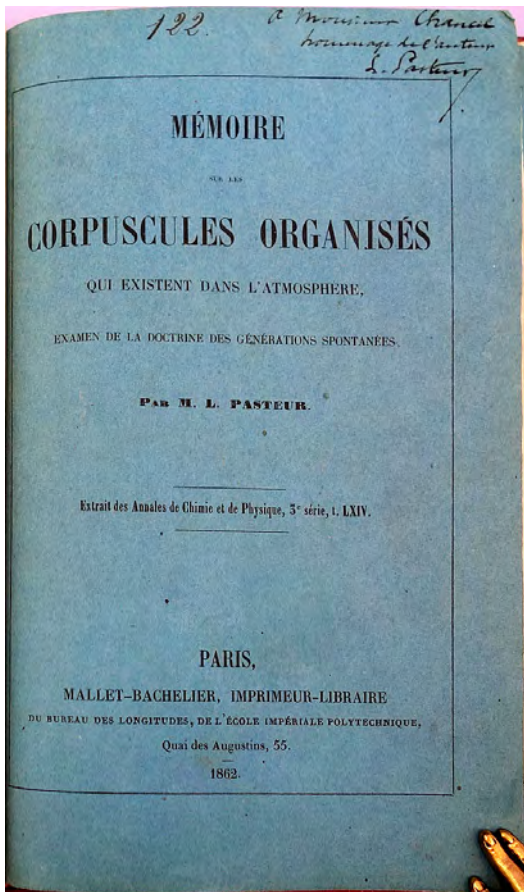
## Foundation of Modern Microbiology

**50. Pasteur, Louis** (1822–95). *Mémoire sur les corpuscules organisés qui existent dans l’atmosphère. . .* In: *Annales des sciences naturelles* (partie zoologique), 4th series, 16 (1861): 5–98. Plate. Whole volume, 8vo. [3]–382 [2]pp. 10 plates (some folding). Paris: G. Masson, 1861. 239 x 151 mm. Quarter morocco, marbled boards in period style. Minor scattered foxing, otherwise fine. \$5500

**First Edition.** In this paper Pasteur demonstrated how to sterilize a liquid and keep it sterile, enabling the eventual culture and study of a single microorganism in the absence of any others. This marks the beginning of modern microbiology.

One of the greatest scientific classics, which is taught in all histories of biological science, Pasteur’s paper described the series of landmark experiments with bent-necked and sealed flasks by which he proved conclusively that fermentation and putrefaction are caused by airborne microorganisms and not the product of “spontaneous generation,” an ancient pseudoscientific explanation for the phenomenon which had persisted for centuries. “Pasteur demonstrated beyond dispute that fermentation is caused by the action of minute living organisms, and that if these are excluded or killed fermentation does not occur. The heating process which Pasteur recommended for sterilization was the earliest form of ‘pasteurization.’ The above paper marks the downfall of the theory of spontaneous generation. Pasteur’s researches on fermentation led him to the discovery of the bacteria and yeasts and hence to the germ theory of disease; from all this modern bacteriology and immunology have developed” (Garrison–Morton 2475).

No offprint of the present journal printing of Pasteur’s paper exists. A few months after its appearance in the *Ann. sciences naturelles*, the “Mémoire” was reprinted in the *Annales de chimie et de physique* (3rd series, 64 [1862]); a small number of offprints were made from this later printing (see no. 51 below). They are very rare. Garrison–Morton 2475. Geison, *The Private Science of Louis Pasteur*, pp. 110–19. *Printing and the Mind of Man* 336c. See Norman 1654 (1862 offprint). 38399

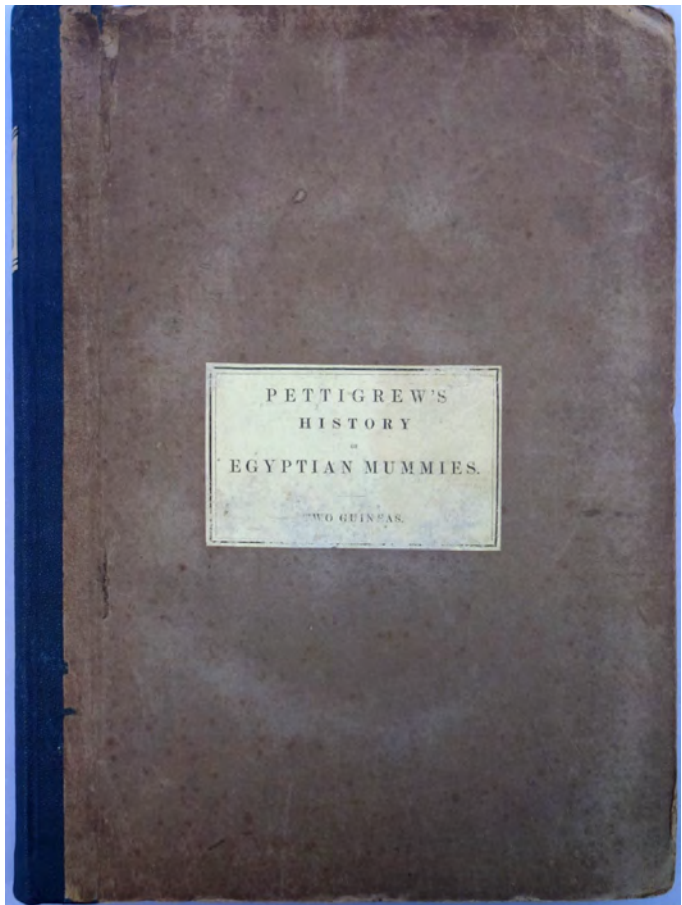


*Foundation of Modern Microbiology—Presentation Copy of the Very Rare Offprint*

**51. Pasteur, Louis** (1822–95). *Mémoire sur les corpuscules organisés qui existent dans l’atmosphère, examen de la doctrine des générations spontanées*. Offprint from *Annales de chimie et de physique*, 3rd series, 64 (1862). 110pp. 2 folding plates. Paris: Mallet–Bachelier, 1862. 226 x 139 mm. Quarter morocco, marbled boards in antique style, original wrappers bound in. Minor foxing, especially to plates, but very good. *Presentation copy, inscribed by Pasteur to Marius Chancel on the front wrapper: “A Monsieur Chancel, hommage de l’auteur, L. Pasteur.”* \$35,000

**First Offprint Edition**, rare in this form, and *extremely rare inscribed*. This is the second inscribed copy we have seen on the market in fifty years. Pasteur presented this copy of his paper to Marius Chancel, an industrialist involved in silk manufacture who invented the first machine for processing silk waste into usable fiber; see Peguet, p. 308. As is well known, Pasteur played a critical role in saving the French silk industry from ruin: In 1870 he discovered that pebrine, a serious silkworm disease, was caused by a microscopic organism, and developed a method for screening silkworm eggs (still used today) to separate out the infected ones. Chancel was the son of French chemist Jean Chancel (1779–1837), inventor of the first modern self-igniting match; see Bouvet et al., p. 37.

Pasteur’s paper was first printed in Vol. 16 of the *Annales des sciences naturelles*, Zoologie, 4th series (1861), but no offprint was made from this journal printing. The present offprint, printed in a small edition, was made from the *Annales de chimie et de physique*, 3rd series (1862), in which Pasteur’s paper was reprinted a few months after its first appearance. *Printing and the Mind of Man* 336c. Norman 1564 (describing a copy in a 20th century binding like the present copy) Bouvet et al., “Sur Jean Joseph Louis Chancel, inventeur des allumettes ou briquettes oxygénés,” *Revue d’histoire de la pharmacie* 52 (1964): 35–39. Peguet, “L’industrie française des déchets de soie,” *Revue de géographie alpine* 32 (1944): 307–314. 42806



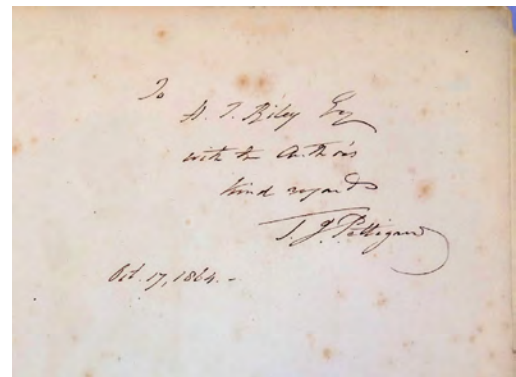
*Presentation Copy of "One of the Most Valuable Works on the Subject"*

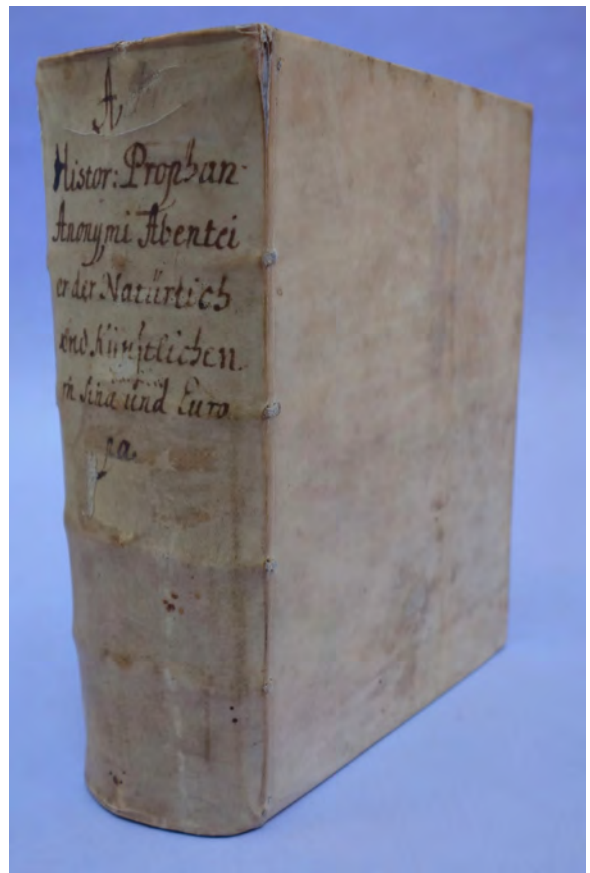
**52. Pettigrew, Thomas Joseph** (1791–1865). A history of Egyptian mummies, and an account of the worship and embalming of the sacred animals of the Egyptians; with remarks on the funeral ceremonies of different nations. 4to. xxi [1], 264 [2, incl. errata]pp. 13 engraved plates (4 hand-colored), mostly after drawings by George Cruikshank (1792–1878). London: Longman, 1834. 297 x 230 mm. Original boards, cloth backstrip (spine almost entirely defective), printed paper label on front cover. Minor foxing & staining, mostly confined to the plates. *Presentation copy, inscribed by the author on the half-title as follows: "To H. T. Riley Esq. with the Author's kind regards. T. J. Pettigrew Oct. 17, 1864."* Very good copy.

\$1750

**First Edition.** "One of the most valuable works on the subject extant. It is a monument of exact observation, and considering the state of archaeological knowledge at the time, it is in every way admirable" (Dawson, *Bibliography of Works Relating to Mummification in Egypt* [1929], 97).

Surgeon and medical writer as well as antiquary (he vaccinated Queen Victoria), Pettigrew was one of the founding members of the British Archaeological Society, whose early meetings were held in his house. The range of material covered in the work went beyond mummies in that Pettigrew also included a chapter on "papyri manuscripts" summarizing some of the available knowledge. He also discussed fake mummies, which were apparently an industry in Egypt at the time. Illustrated mostly from drawings by the famous artist / caricaturist George Cruikshank, best known as the illustrator of Dickens' novels. See Garrison-Morton 6711, Pettigrew's 4-vol. collection of medical biographies. 30345





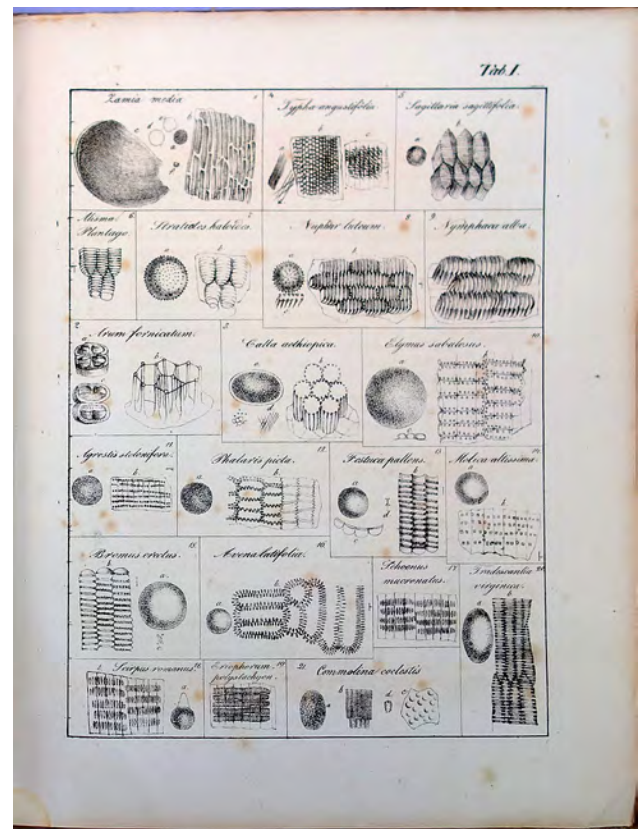
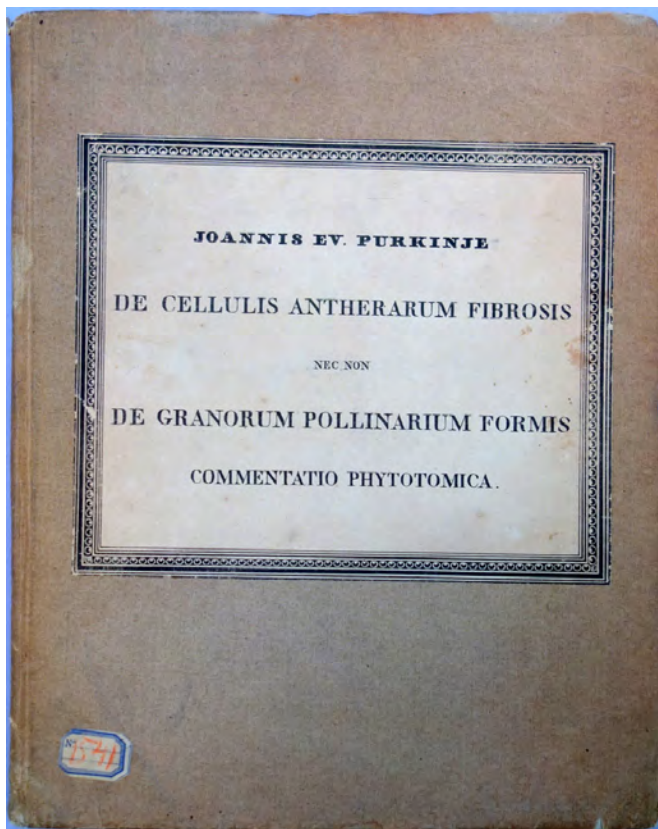
### *First Comparison of China & Europe*

**53. [Preyel, Adam]. A. P. F. B.** Abentheur von Allerhand Mineralien, Wurtzeln . . . Thieren . . . Bergen . . . Gebäwen/Sitten und Geschichten welche in . . . Sina . . . auch in Europa. . . 4to. Engraved title by And. Frölich, [14], 1054, blank leaf, [28], 174, final blank. Frankfurt: Wilhelm Serlin & Georg Fickwirth, 1656. 190 x 145 mm. Vellum c. 1656, handwritten spine label. Some foxing & brown- ing as to be expected, remains of paper label on spine. Very good copy. Modern bookplate of Fuerstl. Auersperg. Fid. Com. Bib. zu Laybach. \$2750

**First Edition In German** of Preyel's *Artificia hominum miranda naturae in Sina & Europa* (1655), which may be the first extensive comparison of China and Europe, covering natural history, geography, and political systems in over 1000pp. The range of the work is broad enough to include references to European colonies in America, for example Virginia and its tobacco. Chinese culture, especially the political system, was admired by philosophes in the Enlightenment and offered as a model for reform in Europe; Preyel's book is perhaps an early indicator of this eighteenth century trend.

Scarce—OCLC cites five North American locations (Harvard, Lehigh, Dartmouth, N.Y. Botanical Garden and U. Minn.). Cordier, *Bibliotheca Sinica* I, pp. 25–26. Löwendahl, *Sino-Western Relations* I (2008) No. 119. The Berlin exhibit catalogue *Europa und die Kaiser von China* (1985 7/7). 12241

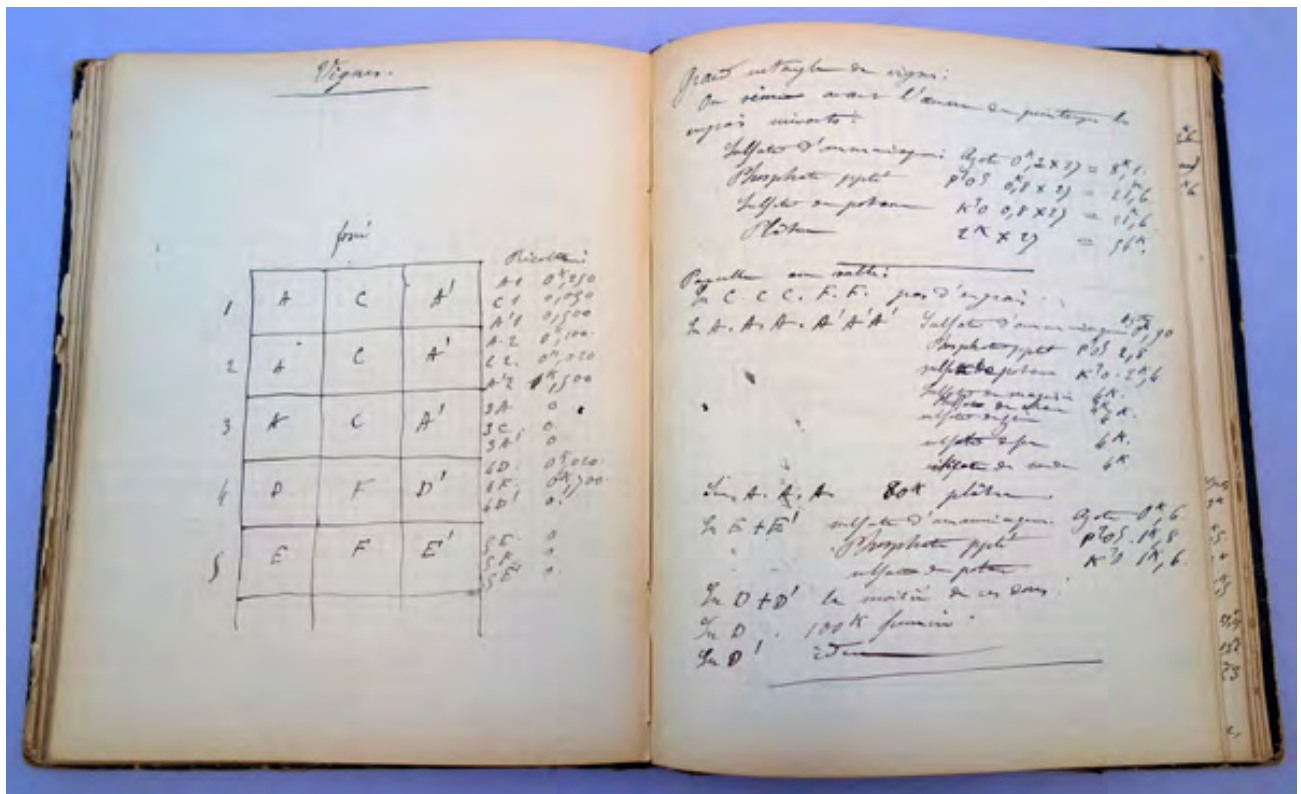




### *Anticipation of the Discovery of the Cell Nucleus*

**54. Purkyne, Jan Evangelista** (1787-1869). *De cellulis antherarum fibrosis nec non de granorum pollinarium formis commentatio phytotomica*. 4to. viii, 58pp. 18 lithographed plates, each with several figures. 258 x 205 mm. Original boards, original printed label on cover, slight wear. Light foxing & browning but very good. Signatures on endpaper. Breslau [Wrocław]: Grueson, 1830. \$2500

**First Edition.** Purkyne anticipated Brown's discovery of the cell nucleus, and was acknowledged by Brown to have done so in his 1831 account before the Linnean Society, published at large in 1833 (see Garrison-Morton 109). "Stimulated by his colleague A. W. Henschel, Purkyne studied plant structures, mainly the elastic fibrous cells of the anthers and the form of the pollen and spores in relation to the mechanism of their dispersion. In his extensive comparative study, combining anatomy with physiology, he distinguished structural types, and drew attention to mechanical factors and the role of cells in the differentiation of plant tissues. His dynamic concept was recognized mainly by French botanists" (*Dictionary of Scientific Biography*). Morton, *History of Botanical Science* (1981), p. 376. Pritzel 7368. 42780



Scientific Notes on Botanical Research by Pasteur's Close Collaborator

55. [Raulin, Jules (1836-96).] Champ d'expériences. Autograph manuscript notebook. [130]pp., with diagrams and charts. N.p., 1890-93. 214 x 172 mm. Original embossed boards, cloth backstrip, some wear at spine and edges, a few leaves loose. Minor fraying at edges but very good. \$8500

Autograph scientific notebook written by plant physiologist Jules Raulin, who studied under Pasteur at the École Normale Supérieure and served as Pasteur's first laboratory assistant at the school. Raulin investigated the chemical role of minerals in plant nutrition, which led to important advances in agriculture; he also collaborated with Pasteur on the latter's investigations of fermentation, oxidation and silkworm disease. In 1876 Raulin was appointed professor of chemistry at the Faculté des Sciences in Lyon, and in 1883 he founded the École de Chimie Industrielle (School of Industrial Chemistry), where he spent most of his research time on agronomy and silk production. He was the first to identify the role of zinc in plant nutrition, and his experimental studies of the mold species *Aspergillus niger* led to the development of the nutritive medium known as Raulin's fluid. The present notebook contains extensive notes and diagrams detailing Raulin's agricultural researches in the early 1890s, including information on soil chemistry, fertilizers, pest control, etc. At the end of the notebook are several pages devoted to silkworm culture. *Dictionary of Scientific Biography*. 42803



### *Demonstration of the Capabilities of a Babbage-Designed Difference Engine*

**56.** [Schutz, Georg (1785-1873) & Edvard Schutz.] Specimens of tables, calculated, stereo-moulded, and printed by machinery. xviii, 50pp. Woodcut frontispiece (included in pagination). "Note at the foot of page 7" printed slip tipped in ahead of Preface. London: Longman, Brown, Green, Longmans and Roberts, 1857. 232 x 150 mm. Quarter morocco, marbled boards in period style. Some toning and minor soiling, a few repairs, but a very good copy. \$9500

**Extremely Rare First Edition**, only the third copy we have handled in over forty years in the trade. Published with the aid of Babbage, dedicated to Babbage by the Scheutzes, and with prefatory material probably written by Babbage, *Specimens of Tables* represents the most detailed demonstration of work done by a fully functioning difference engine based on Babbage's designs, since Babbage never completed either of his Difference Engines.

Inspired by the design of Babbage's incomplete Difference Engine No. 1, the Swedish father-and-son team of the Scheutzes began to work on their machine in the 1830s, completing a crude prototype model in 1843 (Schutz Engine no. 1) and an improved and more highly finished example in the 1850s (Schutz Engine no. 2)

In 1854 the Scheutzes took their Engine no. 2 to England in the hopes of marketing it. There they were introduced to Babbage, who received them with great friendliness and showed a lively interest in their work. The Schutz Engine no. 2 was exhibited in London and Paris, winning a gold medal at Paris's Great Exposition of 1855. After the machine's return to London, the Scheutzes used it to prepare the sample logarithmic and other scientific tables included in this promotional pamphlet.

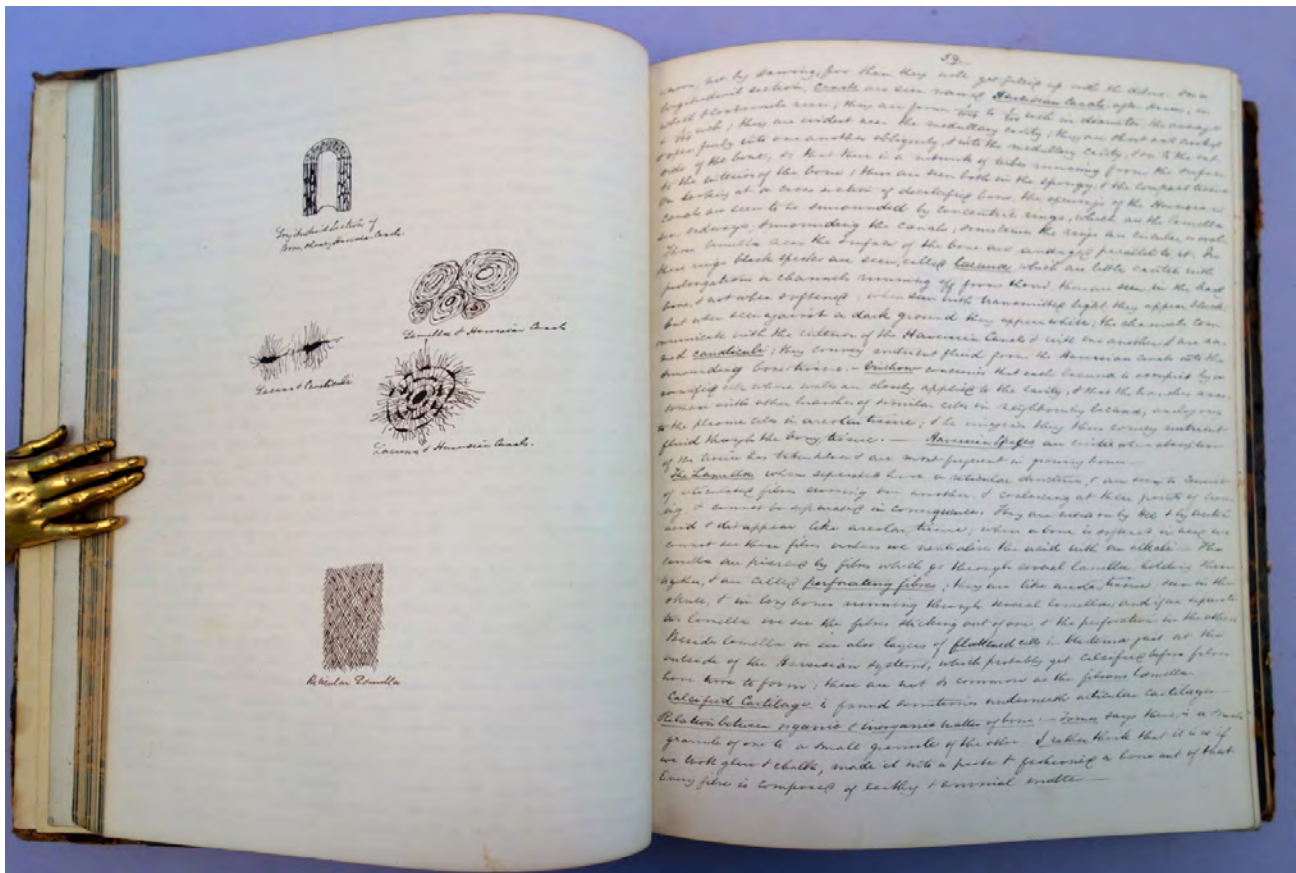
Babbage played a key role in publishing the *Specimens of Tables* with its selection of specimen tables demonstrating the machine's abilities with logarithms, fourth-degree polynomials, life-assurance, ordnance and astronomical functions, and printed from the stereotype plates the machine produced. That the machine was able to set type was especially significant since one of Babbage's original goals in designing his difference engines was to produce tables which not only avoided mathematical errors, but also avoided errors in typesetting mathematical tables, which were notoriously difficult to proof-read.

Not in *Origins of Cyberspace*. In the 1990s when we built that collection there was no copy obtainable. This is the first copy on the market in about 30 years. 42457

( 23 )

4000	60206	4050	60746	4100	61278	4150	61805	4200	62325	4250	62839
4001	60217	4051	60756	4101	61289	4151	61815	4201	62335	4251	62849
4002	60228	4052	60767	4102	61300	4152	61826	4202	62346	4252	62859
4003	60239	4053	60778	4103	61310	4153	61836	4203	62356	4253	62870
4004	60249	4054	60788	4104	61321	4154	61847	4204	62366	4254	62880
4005	60260	4055	60799	4105	61331	4155	61857	4205	62377	4255	62890
4006	60271	4056	60810	4106	61342	4156	61868	4206	62387	4256	62900
4007	60282	4057	60821	4107	61352	4157	61878	4207	62397	4257	62910
4008	60293	4058	60831	4108	61363	4158	61888	4208	62408	4258	62921
4009	60304	4059	60842	4109	61374	4159	61899	4209	62418	4259	62931
4010	60314	4060	60853	4110	61384	4160	61909	4210	62428	4260	62941
4011	60325	4061	60863	4111	61395	4161	61920	4211	62439	4261	62951
4012	60336	4062	60874	4112	61405	4162	61930	4212	62449	4262	62961
4013	60347	4063	60885	4113	61416	4163	61941	4213	62459	4263	62972
4014	60358	4064	60895	4114	61426	4164	61951	4214	62469	4264	62982
4015	60369	4065	60906	4115	61437	4165	61962	4215	62480	4265	62992
4016	60379	4066	60917	4116	61448	4166	61972	4216	62490	4266	63002
4017	60390	4067	60927	4117	61458	4167	61982	4217	62500	4267	63012
4018	60401	4068	60938	4118	61469	4168	61993	4218	62511	4268	63022
4019	60412	4069	60949	4119	61479	4169	62003	4219	62521	4269	63033
4020	60423	4070	60959	4120	61490	4170	62014	4220	62531	4270	63043
4021	60433	4071	60970	4121	61500	4171	62024	4221	62542	4271	63053
4022	60444	4072	60981	4122	61511	4172	62034	4222	62552	4272	63063
4023	60455	4073	60991	4123	61521	4173	62045	4223	62562	4273	63073
4024	60466	4074	61002	4124	61532	4174	62055	4224	62572	4274	63083
4025	60477	4075	61013	4125	61542	4175	62066	4225	62583	4275	63094
4026	60487	4076	61023	4126	61553	4176	62076	4226	62593	4276	63104
4027	60498	4077	61034	4127	61563	4177	62086	4227	62603	4277	63114
4028	60509	4078	61045	4128	61574	4178	62097	4228	62613	4278	63124
4029	60520	4079	61055	4129	61584	4179	62107	4229	62624	4279	63134
4030	60531	4080	61066	4130	61595	4180	62118	4230	62634	4280	63144
4031	60541	4081	61077	4131	61606	4181	62128	4231	62644	4281	63155
4032	60552	4082	61087	4132	61616	4182	62138	4232	62655	4282	63165
4033	60563	4083	61098	4133	61627	4183	62149	4233	62665	4283	63175
4034	60574	4084	61109	4134	61637	4184	62159	4234	62675	4284	63185
4035	60584	4085	61119	4135	61648	4185	62170	4235	62685	4285	63195
4036	60595	4086	61130	4136	61658	4186	62180	4236	62696	4286	63205
4037	60606	4087	61140	4137	61669	4187	62190	4237	62706	4287	63215
4038	60617	4088	61151	4138	61679	4188	62201	4238	62716	4288	63225
4039	60627	4089	61162	4139	61690	4189	62211	4239	62726	4289	63236
4040	60638	4090	61172	4140	61700	4190	62221	4240	62737	4290	63246
4041	60649	4091	61183	4141	61711	4191	62232	4241	62747	4291	63256
4042	60660	4092	61194	4142	61721	4192	62242	4242	62757	4292	63266
4043	60670	4093	61204	4143	61731	4193	62252	4243	62767	4293	63276
4044	60681	4094	61215	4144	61742	4194	62263	4244	62778	4294	63286
4045	60692	4095	61225	4145	61752	4195	62273	4245	62788	4295	63296
4046	60703	4096	61236	4146	61763	4196	62284	4246	62798	4296	63306
4047	60713	4097	61247	4147	61773	4197	62294	4247	62808	4297	63317
4048	60724	4098	61257	4148	61784	4198	62304	4248	62818	4298	63327
4049	60735	4099	61268	4149	61794	4199	62315	4249	62829	4299	63337
4050	60746	4100	61278	4150	61805	4200	62325	4250	62839	4300	63347

An example of the mathematical tables produced by the Scheutz Engine



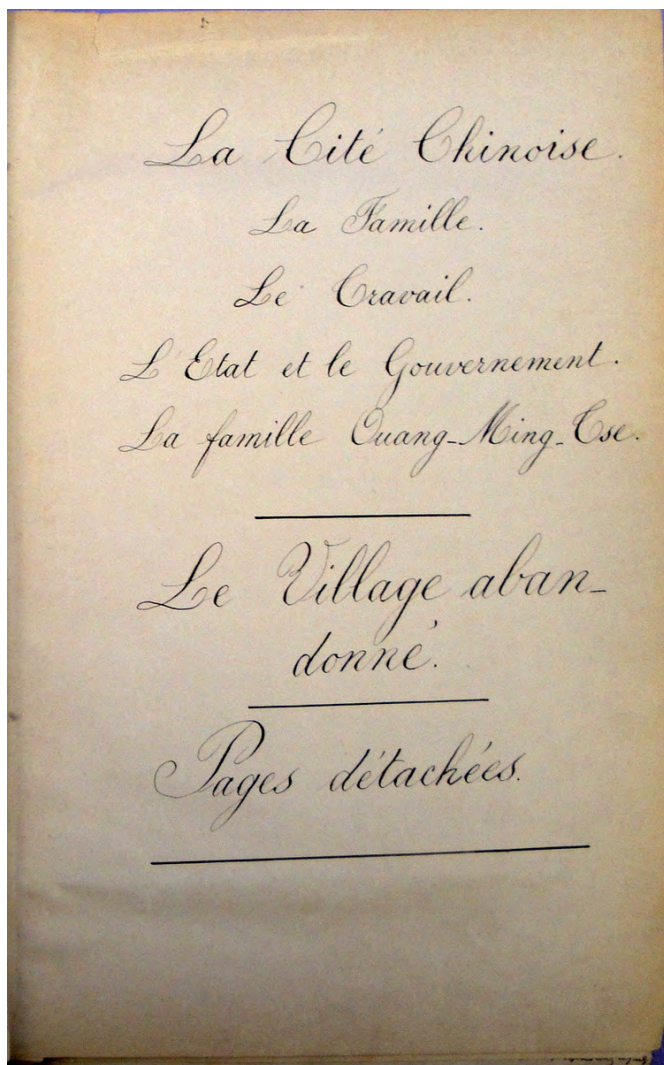
*Notes on Lectures Delivered by the Founder of the British School of Physiology*

**57. Sharpey, William** (1802–80). Notes of lectures on “physiology,” given at Univ. College . . . session 1859–60. Manuscript notes and drawings in the hand of a student, Thomas F. H. Green. 4 unnumbered leaves, 361 numbered pages, approximately 100 blank pages at the end. [London,] 1859–60. 227 x 189 mm. 19th century half leather, marbled boards, rebaked in cloth, light wear, original plain gray wrappers bound in. Very good. Small stamp of the Birmingham Medical Institute on 2 or 3 leaves.

\$1500

Sharpey was appointed professor of anatomy and physiology at University College in 1836; he was the first to teach a complete course of physiology and minute anatomy at an English medical school. He was the author of two classic papers on cilia and ciliary motion (see Garrison–Morton 600 and 603) and discovered the “fibers of Sharpey” in bone tissue (see Garrison–Morton 545); he also edited the fifth through eighth editions of Jones Quain’s *Elements of Anatomy*. Through his pupils Sharpey was the founder of the British school of physiology; his students included Michael Foster, first professor of physiology at Cambridge University, and John Burdon–Sanderson, the first to occupy the Waynflete Chair of Physiology at Oxford.

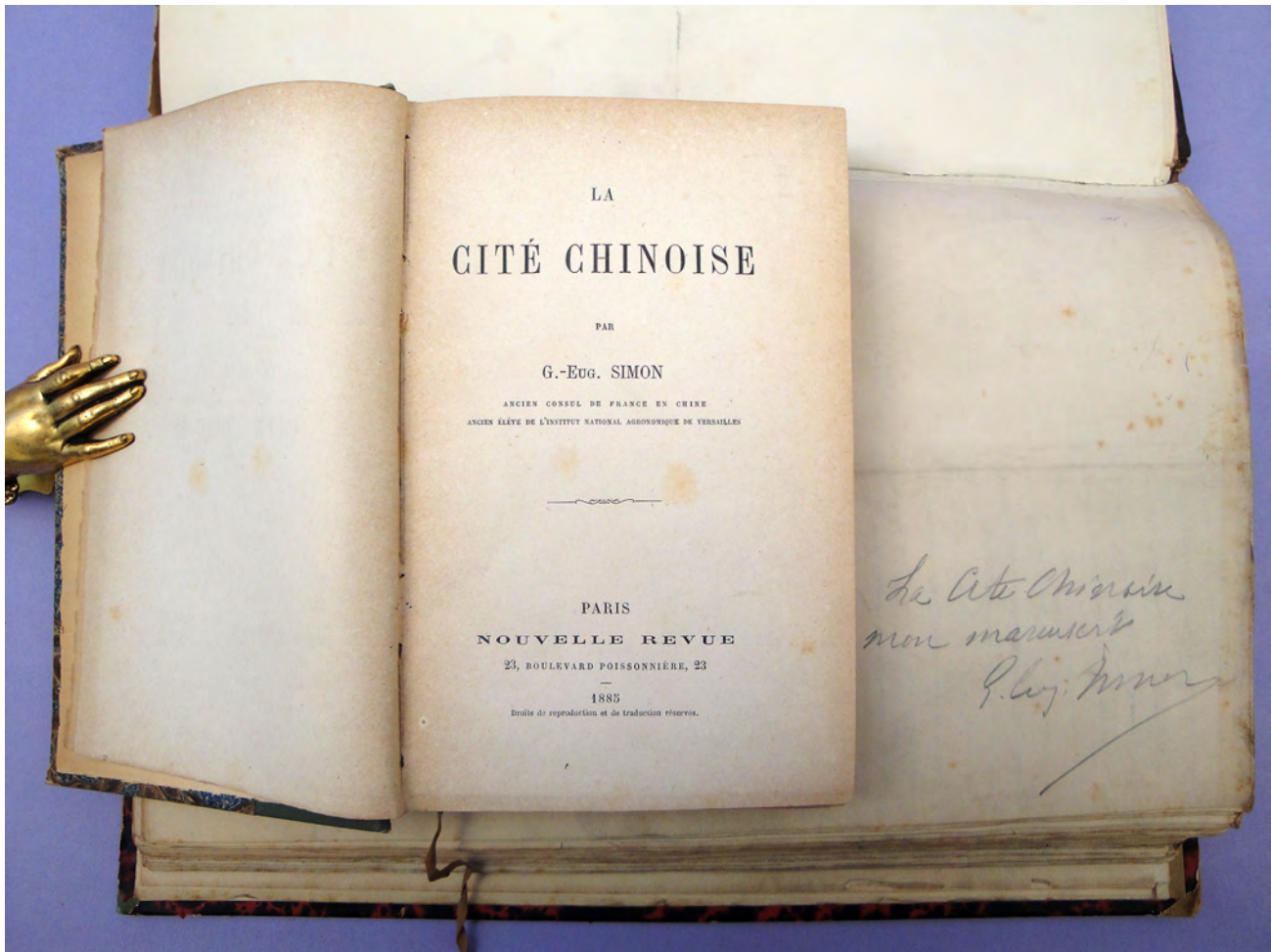
These lecture notes cover the blood, tissues of the body, vascular system, digestive system, respiration, brain and nervous system, organs of special senses and reproduction. The notes are written on rectos only; several versos contain neatly executed drawings in ink or pencil, many illustrating aspects of microanatomy. 42836



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

**58. Simon, G. Eugène** (1829-96). (1) Manuscripts. [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 ([www.atimes.com/atimes/China/HL09Ado6.html](http://www.atimes.com/atimes/China/HL09Ado6.html)). 34390



*First Book to Contain Images of Organisms Viewed through the Microscope*

**59. Stelluti, Francesco** (1577-1652). **Persius** (34-62 A.D.). Persio tradotto in verso schiolto e dichiarato da Francesco Stelluti Accad. Linceo da Fabriano . . . 4to. [24, including engraved title by Matthaeus Greuter], 218, [20]pp. Text engravings, including full-page image of the parts of a bee observed with the aid of a microscope (p. 52). Rome: Giacomo Mascardi, 1630. 210 x 150 mm. Limp vellum c. 1630, title in ink on spine. Minor dampstains throughout, light toning and occasional foxing, but very good. \$6500

**First Edition of the First Book to Contain Images of Organisms as Viewed through the Microscope.** The book's striking full-page image of a magnified bee (p. 52), showing minute details of the antennae, legs, sting, head and tongue, "still has the capacity to arouse the wonder of modern experts" (Freedburg, p. 189). On page 127 is a smaller illustration of a magnified grain weevil, including a detail of the tip of the insect's snout and mandibles.

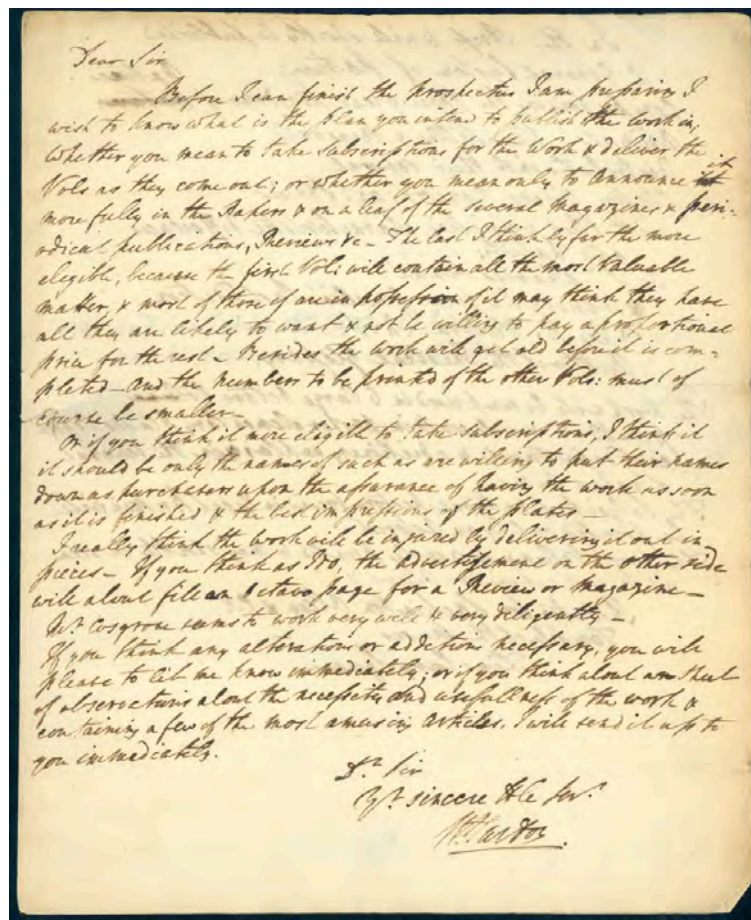
These remarkable scientific images are found, oddly enough, in Francesco Stelluti's translation of the works of the Latin poet Persius, dedicated to the powerful Cardinal Francesco Barberini in an attempt to gain the Cardinal's patronage for the Accademia dei Lincei. The "Academy of Lynxes," one of Europe's first scientific societies, had been founded by Stelluti, Federico Cesi and Johannes Eck in 1603; Stelluti's edition of Persius was **88**





intended for the most part as a means for advertising the Accademia's activities. "Whenever he possibly could, Stelluti took a word or phrase in Persius—almost any word or phrase—and used it as an excuse to refer to one or another aspect of the natural historical researches of the Linceans. The most insignificant reference in the elegies sparked long and short excursions on the Linceans' work" (Freedburg, p. 187). An obscure reference in Persius's first satire to what may have been the ancient town of Eretum gave Stelluti his pretext for including the bee images, since the former Eretum was now Monterotondo, seat of the Barberini country estate, and the Barberini family had adopted the bee as its emblem. Stelluti's weevil image was likewise prompted by a mention of that insect in another of Persius's poems.

Stelluti's bee image is similar, but not identical to, an earlier image showing magnified views of a bee, published as a broadsheet in 1625 under the title *Apiarium*; this broadsheet is extremely rare, with only two or three copies recorded. The *Apiarium* was intended to form part of a projected encyclopedia by Stelluti's fellow Lincean Cesi, but this project was never realized. In 1624 Cesi had been sent a microscope by Galileo, another Lincean, and it was most likely this instrument that Cesi and Stelluti used to prepare their pioneering images of insects under magnification. Ford, *Images of Science: A History of Scientific Illustration*, pp. 172-173, 179-180. Freedburg, *The Eye of the Lynx: Galileo, His Friends, and the Beginnings of Modern Natural History* (2003). 42732



*“I Wish to Know What is the Plan You Intend to Publish the Work In”*

**60. Turton, William** (1762-1835). Autograph letter signed to a member of the publishing firm of Lackington, Allen & Co. 2pp. plus integral address leaf. N.p., December 1800 (from postmark). 234 x 190 mm. Small lacuna in address leaf where seal was broken, not affecting text, light soiling, a few tiny marginal tears but very good. \$950

From British naturalist William Turton regarding the forthcoming publication of his translation of Linnaeus's *Systema Naturae*, which was issued in seven volumes by Lackington, Allen & Co. between 1802 and 1806 under the title *A General System of Nature*. Although trained as a physician, Turton devoted much of his leisure time to natural history; besides his translation of the *Systema Naturae*, he published several illustrated books on conchology and amassed an important collection of shells (now at the Smithsonian). The bivalve genus *Turtonia* is named for him.

Turton's letter discusses in detail the various ways of marketing and selling his translation of Linnaeus and includes the full text of his proposed advertisement for the work.

Before I can finish the prospectus I am preparing I wish to know what is the plan you intend to publish the work in, whether you mean to take subscriptions for the work & deliver the Vols. as they come out; or whether you mean only to announce it more fully in the papers & on a leaf of the several Magazines & periodical publications, Reviews &c. The last I think by far the more eligible. . .

Or if you think it more eligible to take subscriptions, I think it should be only the names of such as are willing to put their names down as purchasers upon the assurance of having the work as soon as it is finished & the best impressions of the plates.

In the Press & will shortly be published  
 A General System of Nature;  
 Comprehending the three great Kingdoms of ~~Nature~~ <sup>Nature</sup>  
 Animals, Vegetables & Minerals,  
 distributed into their several  
 Classes, Orders, Genera, and Species  
 with their cognitions, characteristic Differences  
 and Qualities;  
 By Sr. Charles Linné:  
 & translated from Gmelin's last Edition  
 by W. Turton, M.D.  
 Author of the Medical Glossary.

The work will be comprised in 6 large octavo Volumes  
 price £3. 3. & will contain proper elementary Plates before  
 each Department, & a dictionary explaining the several  
 Linnean terms.

The subjects of natural history found in Great Britain will  
 be pointed out by an Asterisk.

The first Volume is nearly printed & may shortly be seen  
 at Messrs. Lackington, Allen & Co.  
 Printers for Lackington Allen & Co.  
 Temple of the Muses  
 St. Pauls Church-yard.

I really think the work will be injured by delivering it out in pieces. If you think as I do, the advertisement on the other side [i.e., the next page of Turton's letter] will about fill an octavo page for a Review or Magazine. . .

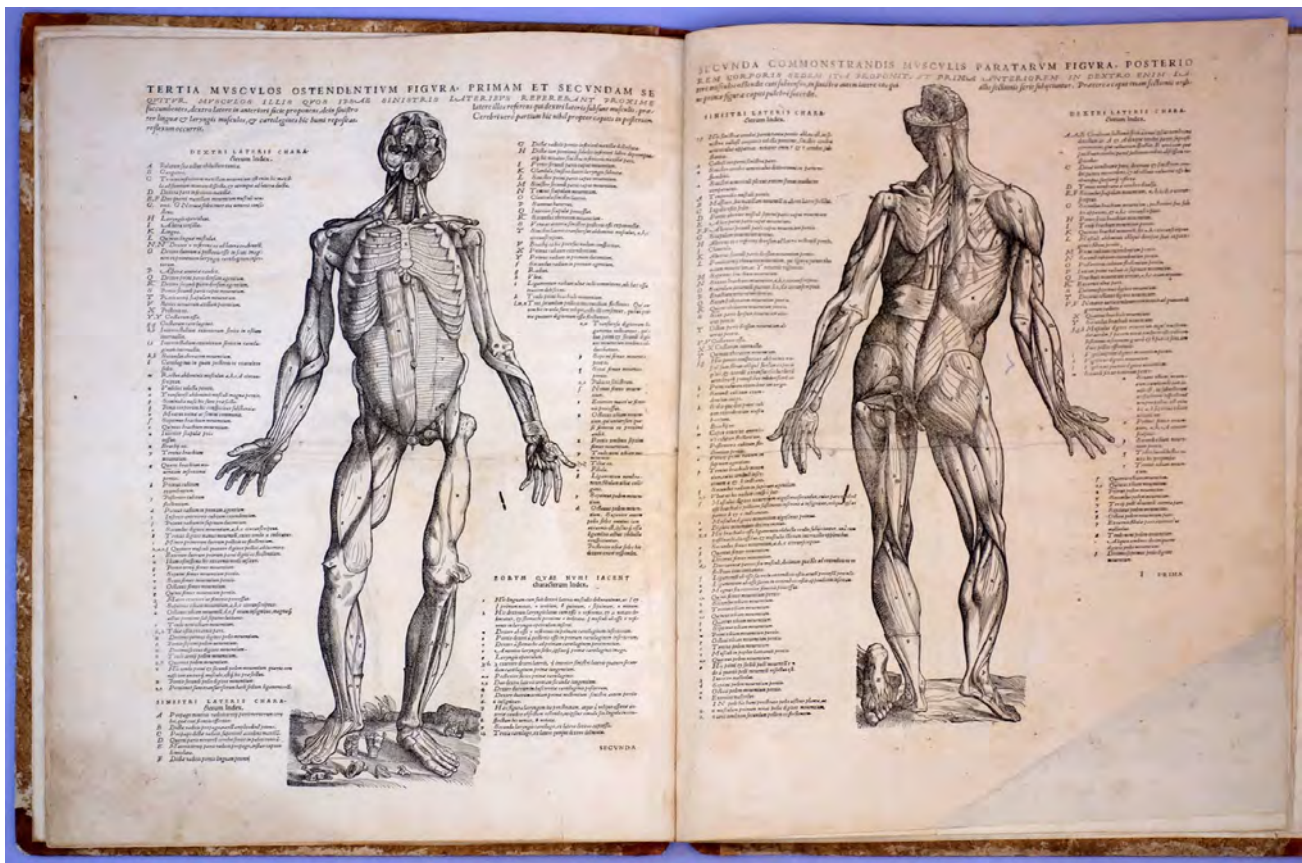
Turton's advertisement reads in part:

In the Press & will shortly be published  
 A General System of Nature,  
 Comprehending the three great Kingdoms of Nature . . .  
 By Sr. Charles Linné:  
 translated from Gmelin's last edition  
 by W. Turton, M.D. . . .

The book will be comprised in 6 large octavo Vols. price £3. 3. & will contain proper elementary plates before each department, & a dictionary explaining the several Linnean terms . . . The first volume is nearly printed & may shortly be seen at Messrs. Lackington Allen & Co. . . .

Although not issued until 1802, the first volume of Turton's translation was printed in 1800, a fact confirmed by this letter. See Soulsby, *Catalogue of the Works of Linnaeus*, no. 137. 42815





*Vesalius's Epitome*

**61. Vesalius, Andreas** (1514-64). *Suorum de humani corporis fabrica librorum epitome*. A-M1 [N]1-[O]1 ([N]1 bound between G1 and H1, [O]1 bound between L1 and M1); 15 unnumbered sheets tipped onto stubs. Folio. Late 18th century leather-backed boards, edges worn. 518 x 395 mm. Leaves creased latitudinally, as in all copies. Lower right corners of five leaves filled in, with a few words of text in the last lines expertly restored in a neat hand closely resembling the original type, added when the book was bound in the 18th century. (all woodcut illustrations unaffected and intact). Minor repair to margin of title and another leaf, minor worming, but on the whole a remarkably good, complete set of these ephemeral sheets. Early owner's manuscript notations in margins of text leaves. Small oval library stamp of the Medical Society of the County of Kings in lower margin of title page. A large copy wide margins. From the library of Isidore Norwich, South Africa, purchased from John Howell-Books and Jeremy Norman & Co. in 1981. Sold

**First Edition.** Shortly after publishing his encyclopedic *De humani corporis fabrica libri septem*, Andreas Vesalius issued his *Epitome* of the work, which was also printed at the press of Johannes Oporinus. This thin set of unnumbered leaves, each containing images and text, and published in large folio format even larger than the *Fabrica*, was an outline, or precis, or road-map of essential information contained in the *Fabrica*, including some different and spectacular larger images. This was the first time that the author of a revolutionary medical or scientific work issued a condensation of his essential information roughly simultaneously with the main publication.

Vesalius suggested that the large sheets of the *Epitome* might be mounted on the walls of dissection rooms as a guide to dissection. As a result, relatively few sets of the sheets were bound up as books, and only a small portion of the original printing survives.

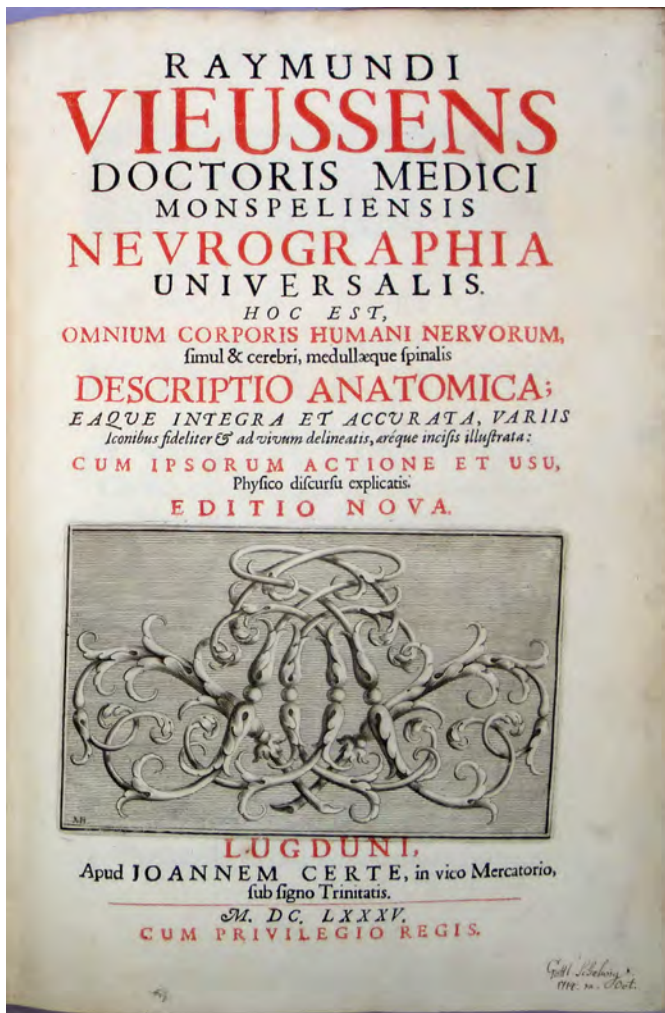
While the *Fabrica* was a very expensive encyclopedic work, Vesalius' *Epitome*, though larger in format, was a much less expensive work that presented essential anatomical information in a concise, comparatively easy to understand manner. It became far more widely published and distributed than the *Fabrica*. On August 9, 1543 Vesalius published a German translation of the *Epitome* in Basel, and many plagiarisms and adaptations of the *Epitome* were published in various European countries in a wide variety of formats throughout the sixteenth and seventeenth centuries. Because of its much wider publication and distribution, Vesalius' *Epitome*, even more than the *Fabrica*, was the publication that revolutionized the teaching and study of human anatomy.

The *Epitome's* nine anatomical woodcuts are divided into two skeletal, four muscular and two circulatory charts, plus a neurological chart, each drawn with great attention to the detail. The skeletal, muscular and one of the circulatory plates are similar, but not identical, to plates found in the *Fabrica*; the *Epitome's* plates are larger, the figures in slightly different attitudes and less space is devoted to background scenery (leaf K1 duplicates the *Fabrica's* celebrated thinking skeleton, but with the inscription on the pedestal changed). The remaining circulatory plate and the neurological plate are reproduced, with different text, on the two folding plates found in the *Fabrica*; the plate on M1 appears on leaf p4 of the *Fabrica*, and the plate on [N]1 (minus the accompanying organs) appears on the leaf m3. In addition to these nine anatomical plates, there are in the *Epitome* two stunning woodcuts of a nude male and nude female figure, accompanied by long descriptions of the surface regions of the body; nothing like them appears in the *Fabrica*. The *Epitome's* title-page woodcut and portrait of Vesalius are from the same blocks used in the earlier work.



Most known copies of the *Epitome* are incomplete. According to the final paragraph of leaf M1, the work was issued in separate sheets and not intended to be bound together. The last two unsigned sheets (Cushing's [N]1 and [O]1) are especially rare, as they were printed with individual parts of the body to be cut out and assembled into two figures, male and female. The copy offered preserves both of these fugitive sheets with all the various woodcuts intact.

Cushing located 22 copies of the *Epitome* (two of them printed on vellum), without, however, commenting on their completeness or otherwise. To these are to be added the three copies listed in Grolier, *Heirs of Hippocrates*, and Cockx Indestege's Belgian census. Undoubtedly a few additional copies exist. All copies of the *Epitome* (including the vellum copy in the British Museum) have sheets that bear traces of having been folded in half horizontally, as this is how the publisher sent the work's oversize single sheets to their recipients. Choulant-Frank, pp. 180-81. Cockx Indestege, *Vesalius*, 46 ("leaves L with the female nude and [O] with one set of figures to be cut out, wanting"). Cushing VI B-I. 42792



*Best 17th-Century Neurology*

**62. Vieussens, Raymond** (1641–1715). *Neurographia universalis*. Folio. [16], 252, [2, errata]pp. Engraved portrait of Vieussens and engraved arms of Cardinal de Bonsy, plus 30 superb copperplates (16 folding) by Beaudou after drawings by the author. Leiden: Certe, 1685. 345 × 230 mm. Vellum ca. 1685, a little soiled. Edges of one or two plates frayed, traces of bookplate on front free endpaper, upper corner of front free endpaper cut away, a few tears repaired, but very good. Signature of Gottlieb Schelwig (1683–1727), professor of philosophy and librarian at the Danzig Gymnasium, on the title; Schelwig’s handsomely penned presentation inscription to Aegidius Glagau M.D. (1648–1737), a disciple of Boerhaave, on the front flyleaf.

\$12,500

**First Edition**, second issue, dated 1685; identical, except for the date, to the extremely rare first issue of 1684. All copies, of whatever issue, read “editio nova” on the title, even though they are of the first edition. This copy has the engraved portrait of the author, which is often lacking.

Vieussens’s treatise, the result of ten years’ study and the dissection of 500 cadavers, is the best illustrated neurological monograph of the 17th century. “Vieussens is credited with the first description of the pyramids, the inferior olive, the centrum ovale and the semilunar ganglion. He also went into great detail describing the



peripheral nerves. Following the method of Variolus, he made some of the first successful attempts to tease out the internal structures of the brain, demonstrating the continuity of the corona radiata, the internal capsule, the cerebral peduncle, and the pyramidal fasciculi of the pons and medulla oblongata” (McHenry, *Garrison’s History of Neurology*, pp. 61–64). Vieussens’ magnificent copperplates, the largest of which extend to 109 × 58 cm., are among the most aesthetically appealing of all depictions of the greater nervous system. Garrison–Morton 1379. Norman 2153. 41486





(Reprinted from *Nature*, Vol. 171, p. 737, April 25, 1953)

*M.H. Franklin*  
*Francis Crick*

### MOLECULAR STRUCTURE OF NUCLEIC ACIDS

#### A Structure for Deoxyribose Nucleic Acid

WE wish to suggest a structure for the salt of deoxyribose nucleic acid (D.N.A.). This structure has novel features which are of considerable biological interest.

A structure for nucleic acid has already been proposed by Pauling and Corey.<sup>1</sup> They kindly made their manuscript available to us in advance of publication. Their model consists of three intertwined chains, with the phosphates near the fibre axis, and the bases on the outside. In our opinion, this structure is unsatisfactory for two reasons: (1) We believe that the material which gives the X-ray diagrams is the salt, not the free acid. Without the acidic hydrogen atoms it is not clear what forces would hold the structure together, especially as the negatively charged phosphates near the axis will repel each other. (2) Some of the van der Waals distances appear to be too small.

Another three-chain structure has also been suggested by Fraser (in the press). In his model the phosphates are on the outside and the bases on the inside, linked together by hydrogen bonds. This structure as described is rather ill-defined, and for this reason we shall not comment on it.

We wish to put forward a radically different structure for the salt of deoxyribose nucleic acid. This structure has two helical chains each coiled round the same axis (see diagram). We have made the usual chemical assumptions, namely, that each chain consists of phosphate diester groups joining 3'-deoxyribose residues with 5',3' linkages. The two chains that are their bases are related by a dyad perpendicular to the fibre axis. Both chains follow right-handed helices, but owing to the dyad the sequences of the atoms in the two chains run in opposite directions. Each chain loosely resembles Pauling's model No. 1; that is, the bases are on the inside of the helix and the phosphates on the outside. The configuration of the sugar and the atoms near it is close to Pauling's standard configuration, the sugar being roughly perpendicular to the attached base. There is a dyad on each chain every 3-4 Å, in the z-direction. We have assumed an angle of 36° between adjacent residues in the same

as distinct from that of crystalline insulin-protein. This confirms current ideas of piage structure.

Transforming principle (in collaboration with H. E. Frazer-Taylor). Active deoxypentose nucleates allowed to dry at ~60 per cent humidity has the same crystalline structure as certain samples<sup>2</sup> of sodium thymonucleate.

We wish to thank Prof. J. T. Randall for encouragement; Prof. E. Champetier, H. Singer, J. A. V. Butler and Drs. J. D. Watson, J. D. Smith, I. Hamilton, J. C. White and G. H. Wyatt for supplying material without which this work would have been impossible; also Drs. J. D. Watson and Mr. F. H. C. Crick for stimulation, and our colleagues R. E. Franklin, R. G. Gosling, G. L. Brown and W. E. Sells for discussion. One of us (H. R. W.) wishes to acknowledge the award of a University of Wales Fellowship.

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<sup>1</sup> ARNDY, W. T. *Proc. Soc. Exp. Biol. 1: Nucleic Acid (Washington)* 1947, 1947.

<sup>2</sup> BIRBY, D. F., and OSER, G. *Biochim. et Biophys. Acta* 7, 558 (1951).

<sup>3</sup> WILSON, H. R., F. GOSLING, R. G., and STOKES, A. R. *J. Chem. Phys.* 19, 178 (1951).

<sup>4</sup> ARNDY, W. T., and BIRBY, D. F. *Colloid Symp. Harb. Swan, Quant. Biol.* 6, 119 (1950).

<sup>5</sup> GOSLING, R. G., F. H. C., and VAND, V. *Acta Cryst.* 6, 561 (1950).

<sup>6</sup> WILSON, H. R., and RANDALL, J. T. *Biochim. et Biophys. Acta* 10, 181 (1952).

### Molecular Configuration in Sodium Thymonucleate

SODIUM THYMONUCLEATE fibres give two distinct types of X-ray diagram. The first corresponds to a crystalline form, structure A, obtained at about 25 per cent relative humidity; a study of this is described in detail elsewhere.<sup>1</sup> At higher humidities a different structure, structure B, showing a lower degree of order, appears and persists over a wide range of ambient humidity. The change from A to B is reversible. The water content of structure B fibres which undergo this reversible change may vary from 40-50 per cent to several hundred per cent of the dry weight. Moreover, some fibres never show structure A, and in those structure B can be obtained with an even lower water content.

with proteins can most easily be explained in this way. We are grateful to Prof. J. T. Randall for his interest and to Drs. F. H. C. Crick, A. R. Stokes and M. H. F. Wilkins for discussion. One of us (R. E. F.) acknowledges the award of a Turner and Newall Fellowship.

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\* Franklin, R. E., and Gosling, R. G. (in the press).

\* CRICK, F. H. C., and VAND, V. *Acta Cryst.* 6, 553 (1950).

\* FRANKLIN, R. E., and STOKES, A. R. *Proc. C.A.S. Nat. Acad. Sci.* 37, 358 (1951).

\* FRANKLIN, R. E., and GOSLING, R. G. *Proc. U.S. Nat. Acad. Sci.* 38, 81 (1952).

\* ARNDY, W. T. *Colloid Symp. Harb. Swan, Quant. Biol.* 12, 127 (1951).

\* FRANKLIN, R. E., and GOSLING, R. G. (to be published).

\* CRICK, F. H. C., and JORDAN, D. G. *Colloid Symp. Harb. Swan, Quant. Biol.* 12, 117 (1951).

\* CRICK, F. H. C., and PATTY, A. H. *Chem. Zvest.* 89, 1018 (1946).

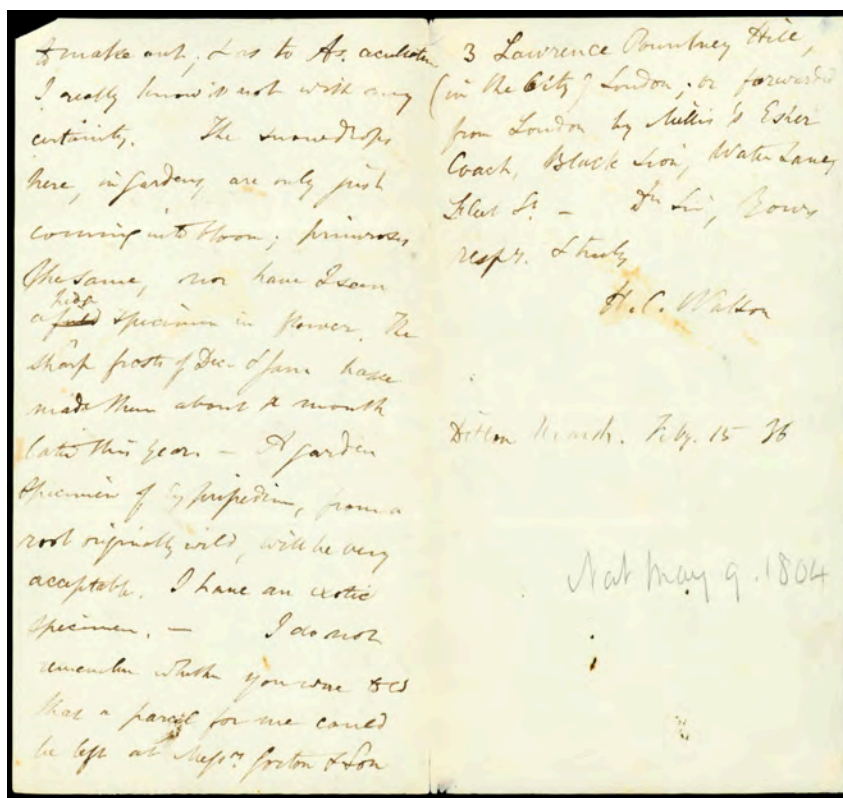
Printed in Great Britain by Fisher, Knight & Co., Ltd., St. Albans.

## DNA—The “Three-Paper” Offprint, Signed by Five of its Authors

**63. Watson, James D.** (1928- ) & **Crick, Francis H. C.** (1916-2004). Molecular structure of nucleic acids. A structure for deoxyribose nucleic acid. With: **Wilkins, Maurice** (1916- 2004); **Stokes, A. R.;** & **Wilson, H. R.** Molecular structure of deoxypentose nucleic acids. With: **Franklin, Rosalind** (1920-58) and **Gosling, R. G.** Molecular configuration in sodium thymonucleate. Together three papers in a single offprint from *Nature* 171, no. 4356 (April 25, 1953). 8vo. 13, [I]pp. 211 x 141 mm. Without wrappers as issued. Light toning, small chip in first leaf, otherwise very good. Signed by Francis Crick and Maurice Wilkins on the first page, by H. R. Wilson and A. R. Stokes on p. 9., and by Raymond Gosling on p. 14.

\$37,500

**First Separate Editions.** Watson and Crick’s discovery of the molecular structure of DNA is perhaps the most important medical and biological discovery of the second half of the twentieth century. Watson and Crick’s paper first appeared in the scientific journal *Nature*, grouped, under the general title “The molecular structure of nucleic acids,” with two other seminal papers on DNA: “Molecular structure of deoxypentose nucleic acids,” by Maurice Wilkins, A. R. Stokes and H. R. Wilson; and Rosalind Franklin and Raymond Gosling’s “Molecular configuration in sodium thymonucleate,” continuing Franklin’s famous x-ray photograph of DNA which supplied evidence crucial to Watson and Crick in their solution of the structure. In 1962, Watson, Crick and Wilkins shared the Nobel Prize in Physiology or Medicine. Garrison-Morton 256.3. Dibner 200. Grolier, *100 Books Famous in Medicine*, 99. Judson, *Eighth Day of Creation*, pp. 145-56. 38485



“Some 80 or 100 of Your Botl. Desiderata”

**64. Watson, Hewett Cottrell** (1804–81). Autograph letter signed to John Latham Jr. 2 – 1/2 pages; addressee’s name on verso of second leaf. Ditton March, February 15, 1836. 186 x 115 mm. Traces of sealing wax on verso of last leaf, but very good. \$850

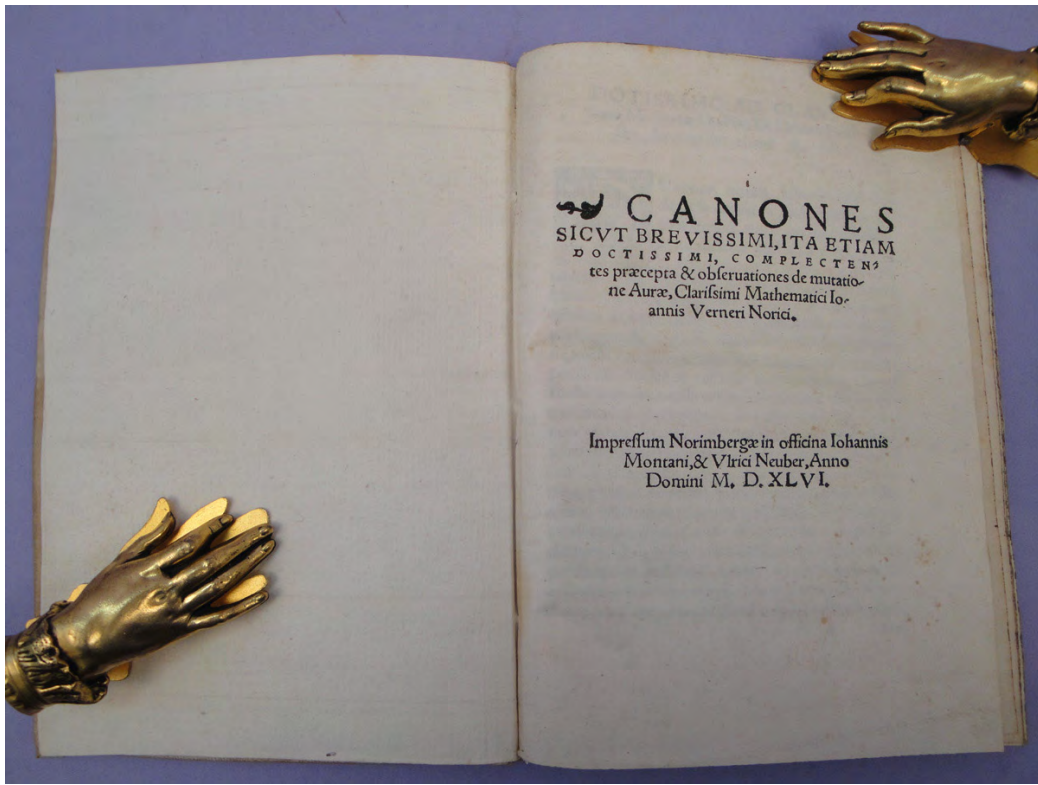
From British botanist and evolutionary theorist Hewett C. Watson, author of *Cybele Britannica* (1860–72) and other works on British plants, and a recognized authority on British plant species and their distribution. He introduced the system of biological vice-counties, a geographical division of the British Isles still used by botanists for biological recording and other scientific data-gathering. Watson supported the concept of species transmutation and corresponded with Darwin on the subject; in the *Origin of Species* Darwin acknowledged Watson several times as an important contributor of scientific information (see e.g. pages 48 and 53 of the 1859 edition of the *Origin*). On publication of the *Origin* Watson was one of the first to write to Darwin congratulating him on his achievement (see the Darwin Correspondence Project, letter 2540, dated 21 November [1859]).

Watson’s letter reads in part as follows:

Enclosed you will find some 80 or 100 of your botl. desiderata. Some few more, in all probability, I could supply if time allowed, but your letter came to hand only this day, & tomorrow I have occasion to be in town, & propose taking them in. At a future day, I may hope to send a few others.

The British *Aspidiums* [a species of fern], as you say, are very troublesome to make out, & as to *As. [?acuminatum]* I really know it not with any certainty. The snowdrops here, in gardens, are only just coming into bloom; primroses the same, nor have I seen a hedge specimen in flower. The sharp frosts of Dec. & Jan. have made them about a month later this year . . .

Watson’s correspondent was most likely either British physician John Latham (1761–1843), who served as president of the Royal College of Physicians and updated their pharmacopeia; or his son John (1787–1853), a magistrate and poet. The senior Latham’s father was also named John, so both men could equally be called John Latham Jr. 42816



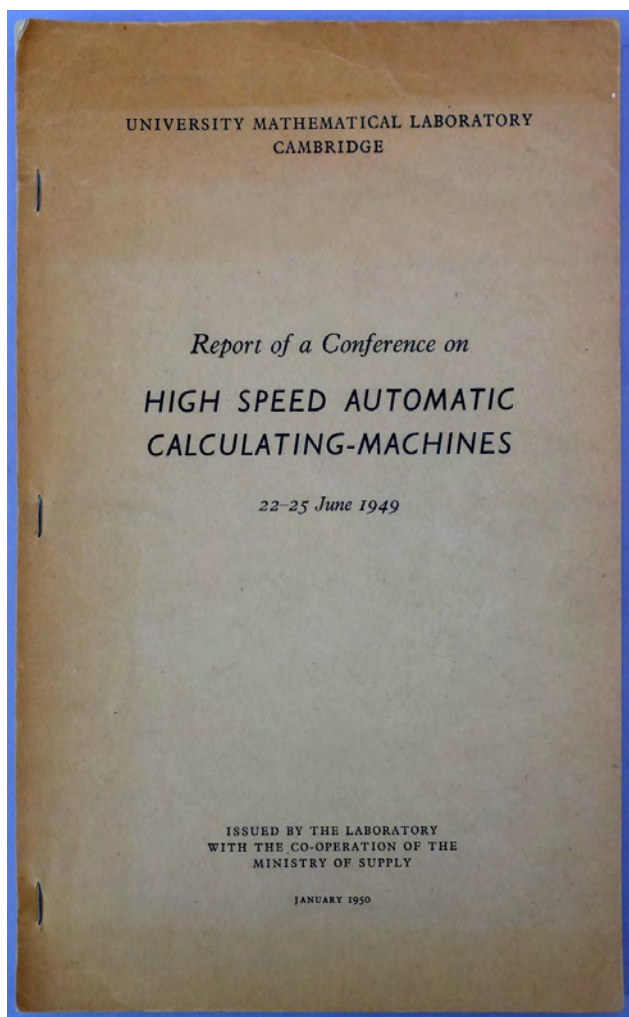
## *Pioneering Work on Environmental Science and Meteorology*

**65. 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 in 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



*The First Computer Conference in which a Stored-Program Computer Actually Operated*

**66.** [Wilkes, Maurice V. (1913-2010).] Conference on high speed automatic calculating-machines. Report of a conference on high speed calculating-machines, 22-25 June 1949. [6], 141 pp., irregularly numbered. 33 inserted illustrations / diagrams. Cambridge: University Mathematical Laboratory, January 1950. 327 x 200 mm. Original tan printed wrappers, stapled. Signed by Maurice V. Wilkes on the title-leaf. From the library of Andrew D. Booth (1918-2009), inventor of computer magnetic drum memory and builder of some of the first electronic computers in Britain, including the All Purpose Electronic Computer (APEC). \$8500

**First Edition.** The report of the first computer conference held in England. Its main significance was that it was the first computer conference in which a stored-program computer actually operated.

The conference was organized by Wilkes. Twenty-eight papers were presented at the conference, including Couffignal's "La machine de l'Institut Blaise Pascal," M. H. A. Newman's "Some routines involving large integers," and Alan Turing's "Checking a large routine". The texts of most of the papers, as well as of the discussions that followed, are reproduced in the report. The conference was attended by about one hundred people, whose names are listed on pages 1-4. A bibliography of over one hundred works on computers appears on pages 134-41 (see Randell 1982a, 541). This bibliography was relatively complete for the sparse literature available at the time.

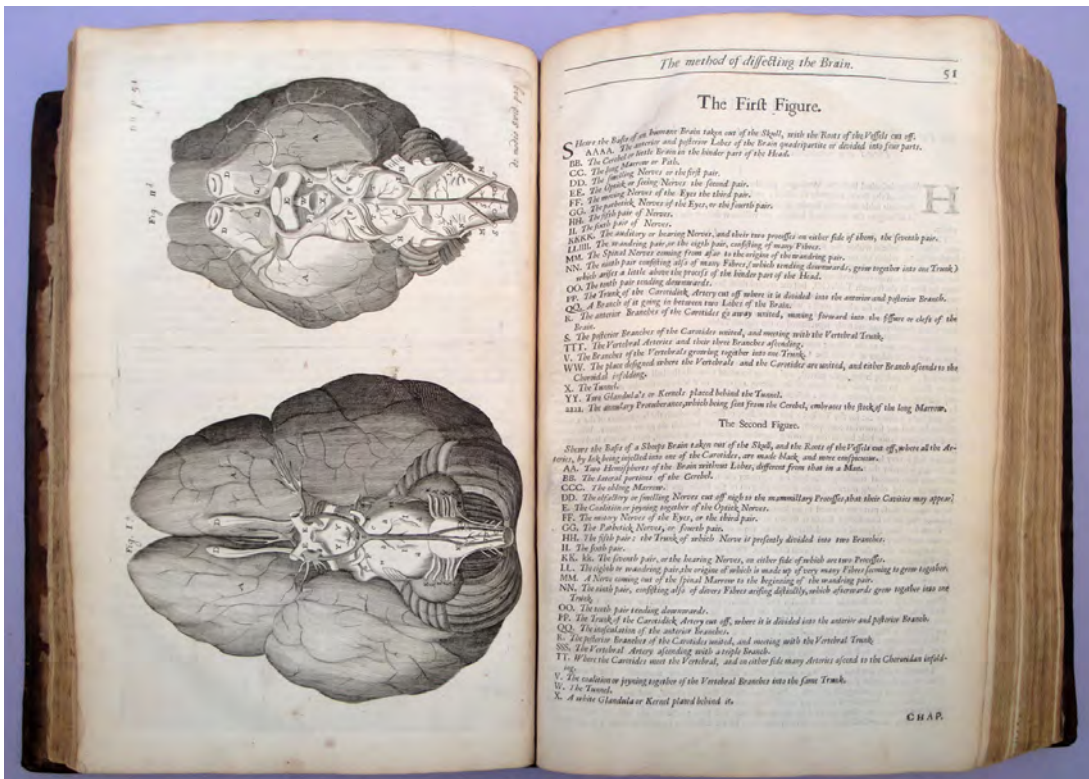
The EDSAC, which had become fully operational just a few weeks previously, was the star of the Cambridge conference. Immediately after the opening address (delivered by Douglas R. Hartree), Wilkes presented a paper on the EDSAC written by himself and his colleague William Renwick (pp. 9–11), which was followed by a demonstration of the machine (pp. 12–16):

“For the demonstration two short programs were run: the first, written by Wilkes, printed a table of squares; the second, written by David Wheeler, printed out prime numbers. David Wheeler . . . also gave a paper later in the conference on organising the program library for EDSAC [pp. 36–40]; this paper is interesting because it shows an early stage in the evolution of the EDSAC programming system that was later to be described in the classic textbook *The Preparation of Programs for an Electronic Digital Computer*” (Williams and Campbell-Kelly 1989, xiii). When we checked, OCLC cited three copies of this rare report. *Origins of Cyberspace* 1019. 39379

## *The First Textbook on Programming*

**67. Wilkes, Maurice W.** (1913–2010); **Wheeler, David J.** (1927– ); & **Gill, Stanley.** The preparation of programs for an electronic digital computer. 8vo. [14, incl. frontispieces], 167, [3]pp. Cambridge, MA: Addison-Wesley, [1951]. 228 x 152 mm. Original cloth, gilt lettering on spine (a bit faded). Former owner’s signature on front pastedown. Fine. \$950

**First Edition** of the first textbook on computer programming and software. Wilkes designed and built Cambridge University’s EDSAC—the first stored-program computer—and, with the assistance of Wheeler and Gill, invented for it a programming system based on subroutines. “EDSAC holds a prime place in the history of the world’s first computers, not only because it was the first full-scale operational electronic digital computer, but because its ability to construct programs from relocatable subroutines, and to link them together at load time, provided a model for almost all others to follow. The model was well explained by one of the most influential textbooks of this early era, *The Preparation of Programs for an Electronic Digital Computer*. . . The form of constructing programs and how they should be linked together to form a load module, as described in this book, reappears many times for different computers being constructed in different countries. It provided the basic ideas as to how one should go about creating a computing system” (Williams, *Hist. Computing Technology*, p. 337; see also pp. 331–38). Lee, *Computer Pioneers*, pp. 730–35. *Origins of Cyberspace* 1030. 42781



Only Complete Edition in English

**68. Willis, Thomas** (1621–75). Dr. Willis’s practice of physic, being the whole works of that renowned and famous physician . . . Folio. [26], 152, [14], 158, [4], 96, [8], 143, [8], 218, 145–160, [8], 96, 105–234, [8]pp. 36 plates on 35 plate leaves. London: T. Dring, C. Harper and J. Leigh, 1684. 312 x 195 mm. Calf c. 1684, rebounded, corners repaired. Marginal repairs to first and last few leaves, light soiling and toning, a few fox-marks, but very good. \$12,500

**First and Only Complete Edition of Willis’s Works in English**, translated by the poet Samuel Pordage; the collection includes the First Edition in English of Willis’s *De anima brutorum*. The volume is divided into six separately paginated sections, each with its own title-leaf. Included are English versions of Willis’s three great works on the brain—*Cerebri anatome*, *Pathologiae cerebri* and *De anima brutorum*—as well as his clinical and pharmaceutical treatises. In addition to his invaluable work in the anatomy and physiology of the nervous system, Willis was the first to distinguish true diabetes mellitus, and showed that the polyuria was not due to any disease of the kidneys. He anticipated the recognition of hormones in the circulation of his suggestion that the phenomena of puberty were due to a ferment distributed through the body from the genitals. He discovered the superficial lymphatics of the lungs, distinguished acute tuberculosis from the chronic fibroid type and gave the first clinical and pathological account of emphysema. Garrison-Morton notes that “the modern treatment of asthma really begins with Willis, who considered it to be of nervous origin” (Garrison-Morton 3165) and that “Willis was probably the first to report an epidemic of cerebrospinal fever” (Garrison-Morton 4673). Wing W-2854. 41473

