CATALOGUE 47

Rare Books, Manuscripts & Autographs in Science, Medicine & Technology

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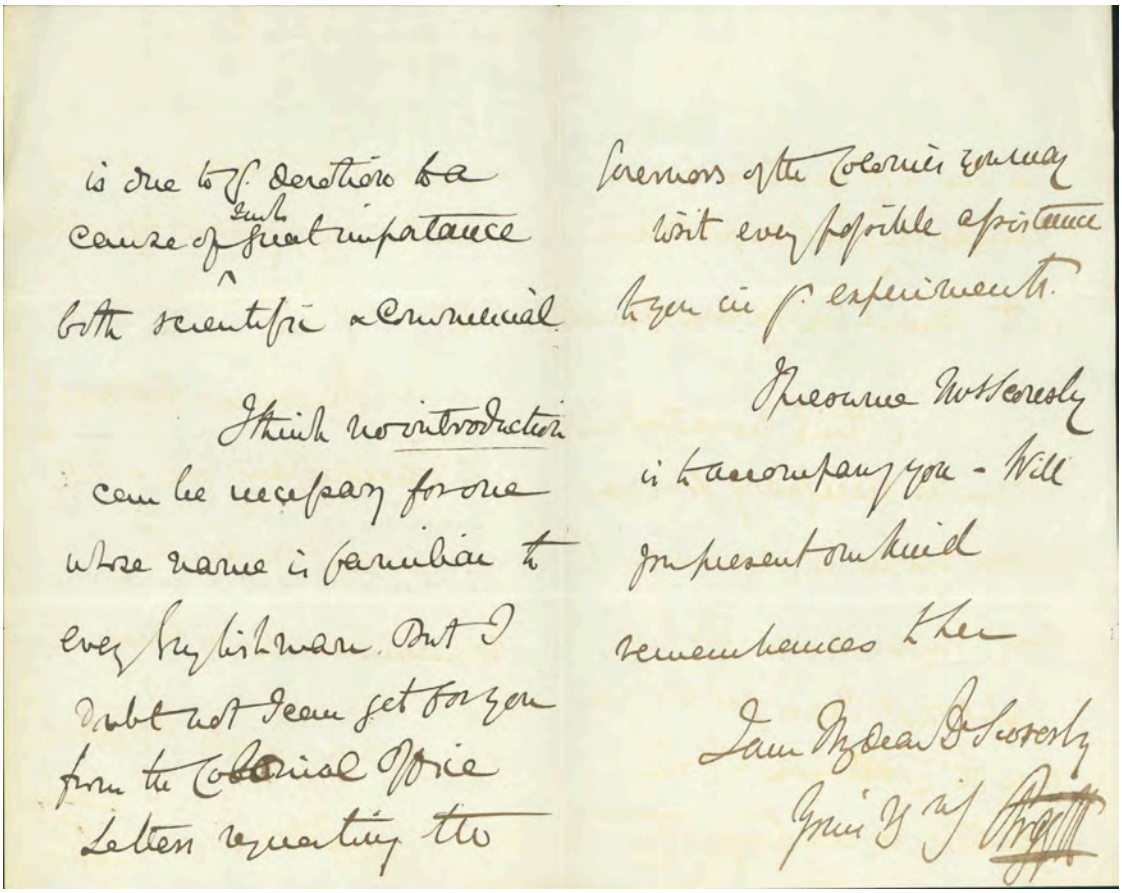


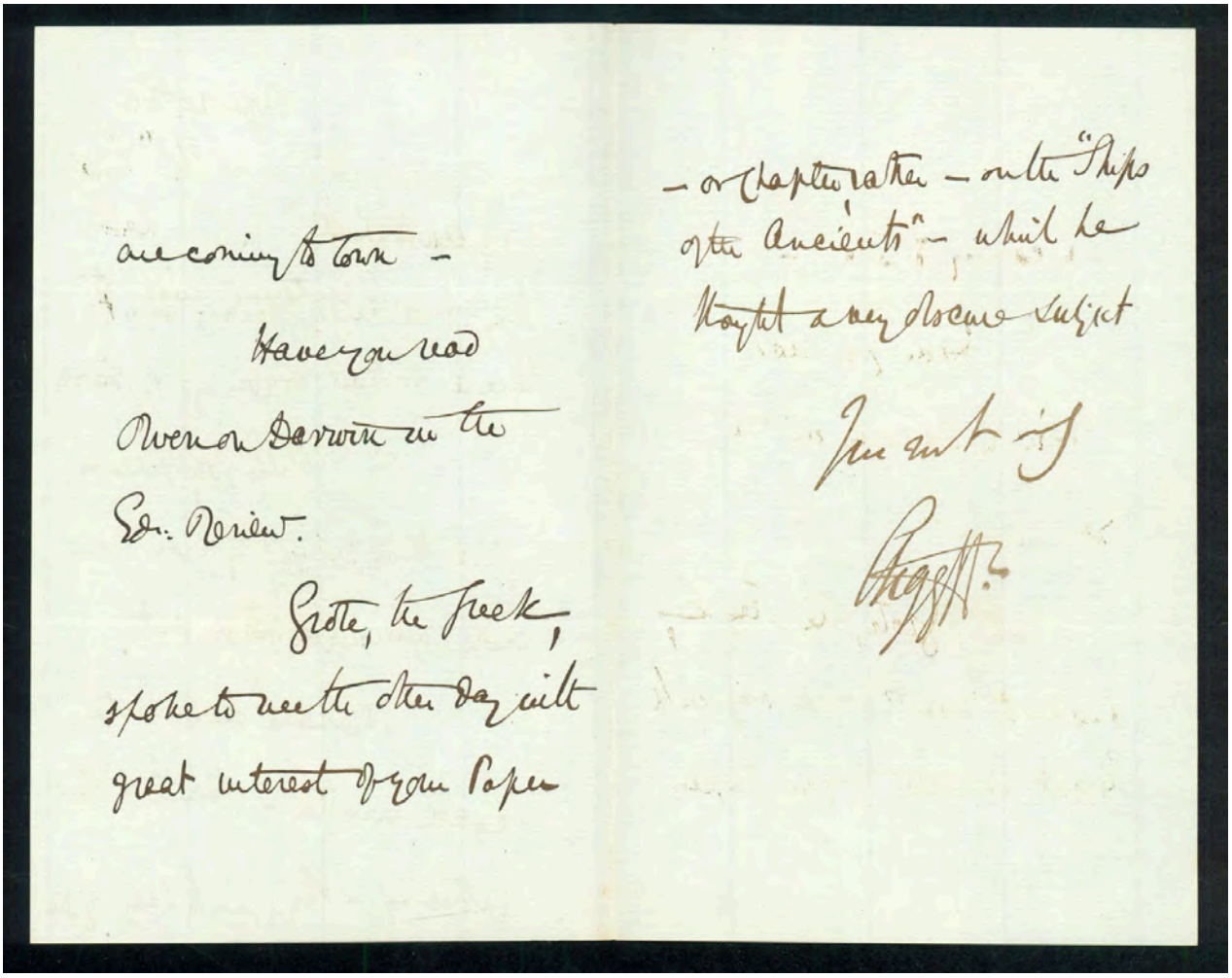
"Every Possible Assistance to You in Yr. Experiments"

1. Argyll [Campbell, George, Eighth Duke of Argyll (1823-1900).] Autograph letter signed to William Scoresby (1789-1857). 3 pages. London, December 17, 1855. 186 x 117 mm. Fine. $750

From George Campbell, eighth duke of Argyll, who held several important positions in the British government in the second half of the nineteenth century; he was also a noted writer on science and economics, and a leader in the scholarly opposition to Darwinism. His correspondent was British explorer and scientist William Scoresby, best known for his studies of terrestrial magnetism and its effects on navigation. In December 1855 the 66-year-old Scoresby was preparing for the scientific voyage recorded in his posthumous *Journal of a Voyage to Australia for Magnetical Research* (1859), undertaken to prove his claim that an iron ship changed its magnetic signature after crossing the magnetic equator. Scoresby had asked Argyll, who was then serving in the British Cabinet, for assistance in communicating his objectives to the Colonial Office; Argyll replied as follows:

> I am rather taken aback by yr. announcement that you are yourself going to undertake a voyage to Australia in order to correct & confirm yr. conclusions on the magnetism of iron ships. But I need hardly say that any assistance which I, or the Govt. can give you is due to yr. devotions to a cause of such great importance both scientific & commercial.
>
> I think no introduction can be necessary for one whose name is familiar to every Englishman. But I doubt not I can get for you from the Colonial Office letters requesting the Governors of the colonies you may visit every possible assistance to you in yr. experiments . . .

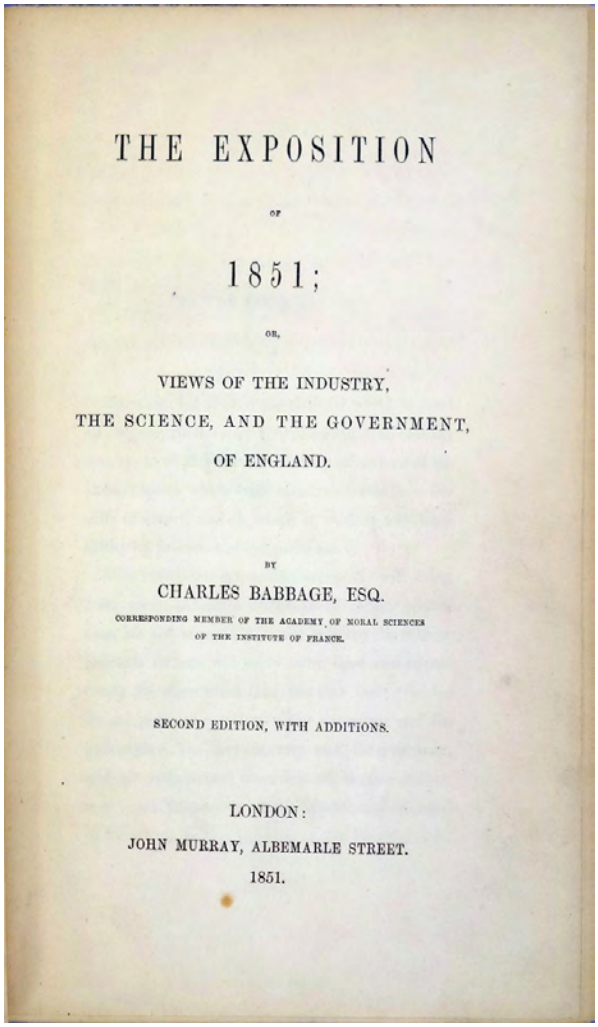
Scoresby acknowledged the help he received from Argyll in the first chapter of the *Journal of a Voyage to Australia*: "From each department, comprising the Admiralty, the Compass Department at Woolwich, and the Colonial Office, the communications with the last of which were kindly made for me by His Grace the Duke of Argyll, my several applications for furtherance or aid in my objects . . . were promptly and liberally responded to" (p. 9). 42856



"Have You Read Owen on Darwin in the Edn. Review"

2. Argyll [Campbell, George, Eighth Duke of Argyll (1823-1900).] Autograph letter signed to James Smith (1782-1867). 3 pages. N.p. [London], April 20, 1860. 178 x 113 mm. Fine. $500

From Argyll to Scottish geologist James Smith of Jordanhill, who made significant contributions to the post-Tertiary geology of Scotland; he was also was an authority on ancient ships and shipbuilding. In the letter Argyll asked Smith whether he had "read Owen on Darwin in the Edn. Review"; this refers to Owen's unfavorable notice of *On the Origin of Species* published in the April 1860 issue of the *Edinburgh Review*. As an anti-Darwinist Argyll would certainly have sympathized with Owen's critique of Darwin's theory of evolution by natural selection; he himself went on to publish several works arguing against Darwinian theory, including *The Reign of Law* (1867) and *Primeval Man: An Examination of Some Recent Speculations* (1869). Elsewhere in his letter to Smith, Argyll expressed his desire to "have a portrait of you by Mr. Gordon," referring to the Scottish portraitist John Watson Gordon (1788-1864), who painted Smith's portrait in the 1860s. He also mentioned Smith's "paper—or Chapter rather—on the 'Ships of the Ancients,'" referring to a chapter in Smith's *Voyage and Shipwreck of St. Paul* (1848). Bowler, *Evolution: The History of an Idea* (1989), pp. 225-226. *Oxford Dictionary of National Biography* (Smith). 42865



THE EXPOSITION

OF

1851;

OR,

VIEWS OF THE INDUSTRY,

THE SCIENCE, AND THE GOVERNMENT,

OF ENGLAND.

BY

CHARLES BABBAGE, ESQ.

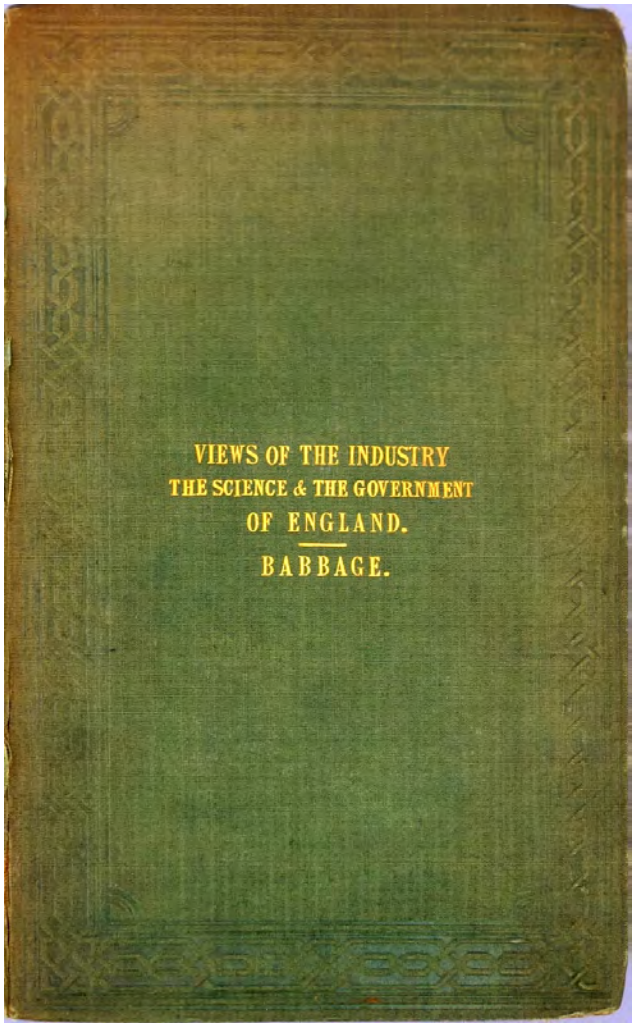
CORRESPONDING MEMBER OF THE ACADEMY OF MORAL SCIENCES OF THE INSTITUTE OF FRANCE.

SECOND EDITION, WITH ADDITIONS.

LONDON:

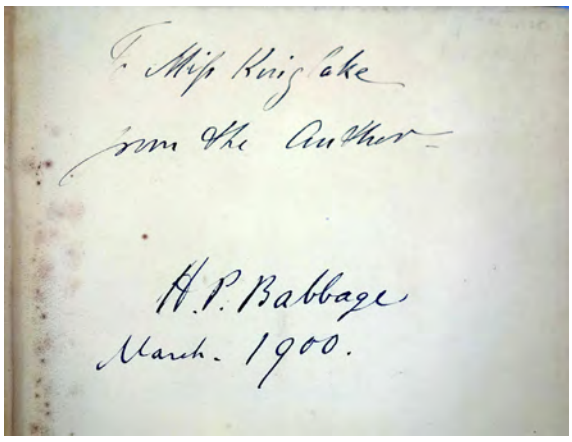
JOHN MURRAY, ALBEMARLE STREET.

1851.



Presentation Copy in the Original Binding, Inscribed by Both Babbage and His Son

3. Babbage, Charles (1791-1871). The exposition of 1851; or, views of the industry, the science, and the government, of England. xvi, 289, [5, incl. adverts.]pp.; 16-page publisher's catalogue bound in back. 227 x 142 mm. London: John Murray, 1851. Original green cloth stamped in gilt and blind, recased, spine repaired, light wear and fading. Very good copy. **Babbage's Presentation Inscription** on the front free endpaper: "To Miss Kinglake from the Author"; signature of Babbage's son H. P. [Henry Prevost] Babbage (1824-1918), dated March 1900, beneath; bookplate of the Cheltenham Public Library on rear pastedown noting H. P. Babbage's gift of this copy on November 23, 1903. Library bookplate, tag and withdrawal stamp on front endpapers. $7500

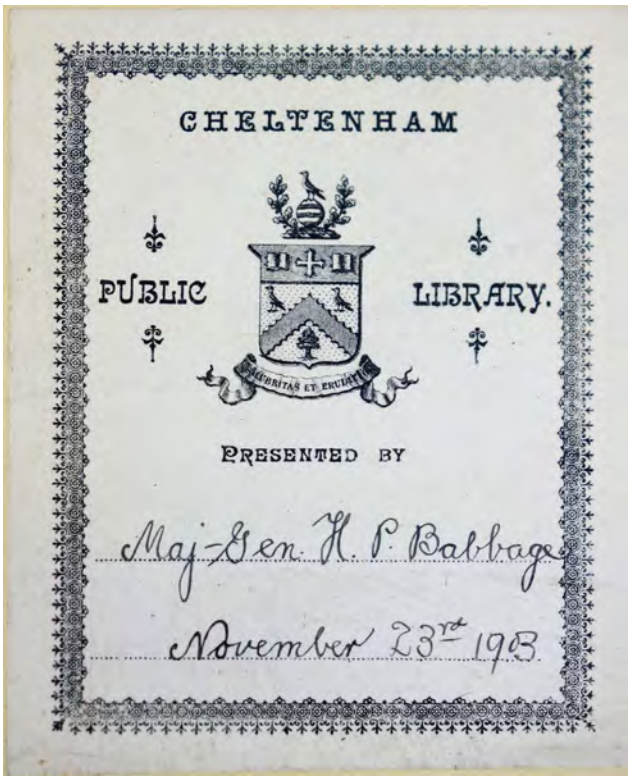


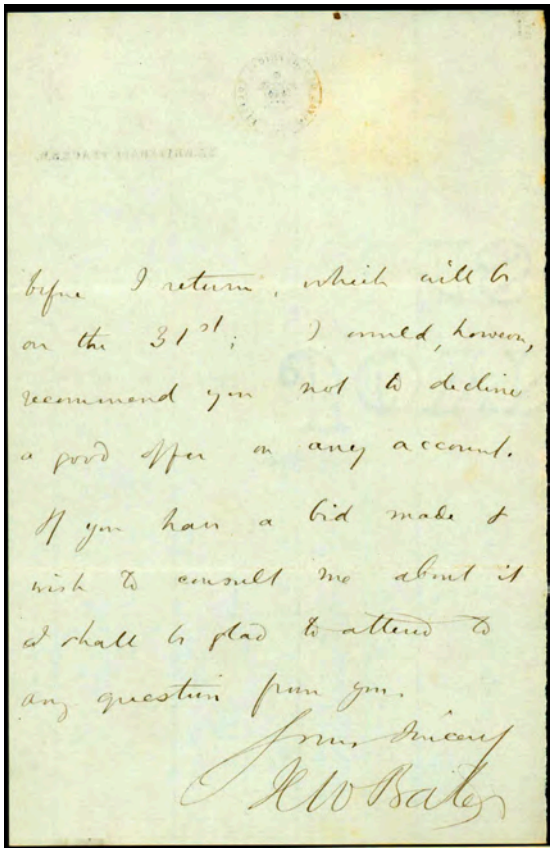
Second edition, expanded. *The only presentation copy we have ever seen of this work in its original binding, and the only example we have seen of a work inscribed by both Babbage and his son.* Miss

Kinglake, to whom Babbage inscribed this copy, was most likely the sister of Babbage's friend Alexander William Kinglake (1809-91), travel writer and historian of the Crimean War. This copy was subsequently owned by Henry Prevost Babbage, Babbage's youngest son, who worked with Babbage on the Difference and Analytical Engines. Henry continued his father's efforts to develop and publicize the Engines after Babbage's death, editing and publishing the comprehensive work, *Babbage's Calculating Engines*, in 1889.

The Great Exhibition of 1851, held at the specially constructed Crystal Palace in Hyde Park, London, was the first of the great international exhibitions held to celebrate progress in the world's arts and manufactures. Lyon Playfair, who played a leading role in organizing the exhibition, had originally suggested that Babbage be put in charge of the exhibition's Industrial Commission, but Playfair's suggestion was rejected by the British government, which was still at loggerheads with Babbage over funding for his calculating engines. Babbage was also refused permission to display the completed portion of his Difference Engine no. 1 at the exhibition, even though the exhibition's purpose was to display the latest advances in industry, and Babbage's machine, though built twenty years earlier, was arguably the finest product of precision mechanical engineering to date.

Angered at these slights, Babbage published this vitriolic history of the exhibition, in which he skewered the insularity and snobbism of its organizers, put forth his own ideas about how the exhibition should have been run, and sounded off on the corrupt state of science in England, much as he had two decades earlier. Chapter 13, entitled "Calculating engines," contains a description of the current state of development of his Analytical Engine. The expanded second edition, published a few months after the first, adds an extract from Charles R. Weld's History of the Royal Society, and also Augustus De Morgan's review of Weld's book, both of which give a supportive account of Babbage's Difference Engine project. Origins of Cyberspace 67. Van Sinderen 1980, no. 61. 42965





"A First Sight of Your Beetles"

4. Bates, Henry Walter (1825-92). Autograph letter signed to Edward Bartlett (1836-1908). 2 pages. Folkestone, July 22, 1869. 179 x 115 mm. Fine. $850

From British naturalist Henry Walter Bates, best known for the scientific exploration of the Amazon that he undertook with his friend Alfred Russel Wallace (1823-1913) beginning in 1848. The purpose of the voyage was in part to "gather facts towards solving the problem of the origin of species," as Wallace wrote in a letter to Bates prior to their departure. Bates spent 11 years in the Amazon, collecting specimens of over 14,000 native species (mostly insects), 8000 of which were new to European scientists. Upon his return to England, Bates published an account of his trip in *The Naturalist on the River Amazons* (1863). Bates's studies of Amazonian butterflies led him to develop the theory of mimicry, typified by a situation where a harmless species evolves to imitate the warning signals of a harmful species. This type of mimicry is now known as "Batesian mimicry." Most scientists now believe that Batesian mimicry provides evidence for the action of natural selection.

Bates wrote this letter to British ornithologist Edward Bartlett, who spent the years 1865 to 1869 in the Amazon basin and Peru collecting specimens; he later served as a museum curator at Borneo's Sarawak State Museum, established in 1888 with the help of Alfred Russel Wallace. It is likely that Bates sent this letter to Bartlett shortly after the latter's return to England from South America:

> . . . I am very sorry to have missed the opportunity of a first sight of your beetles; but perhaps you will not sell them all before I return, which will be on the 31st; I would, however, recommend you not to decline a good offer on any account. If you have a bid made & with to consult me about it I shall be glad to attend to any question from you.

Bates had a particular interest in beetles—they were the subject of his first paper, published when he was just 18. During his career he described over 700 previously unknown species of scarab beetle and made significant contributions to the taxonomy of cerambycids (longhorn beetles), carabids (ground beetles) and cicindelids (tiger beetles). 42849

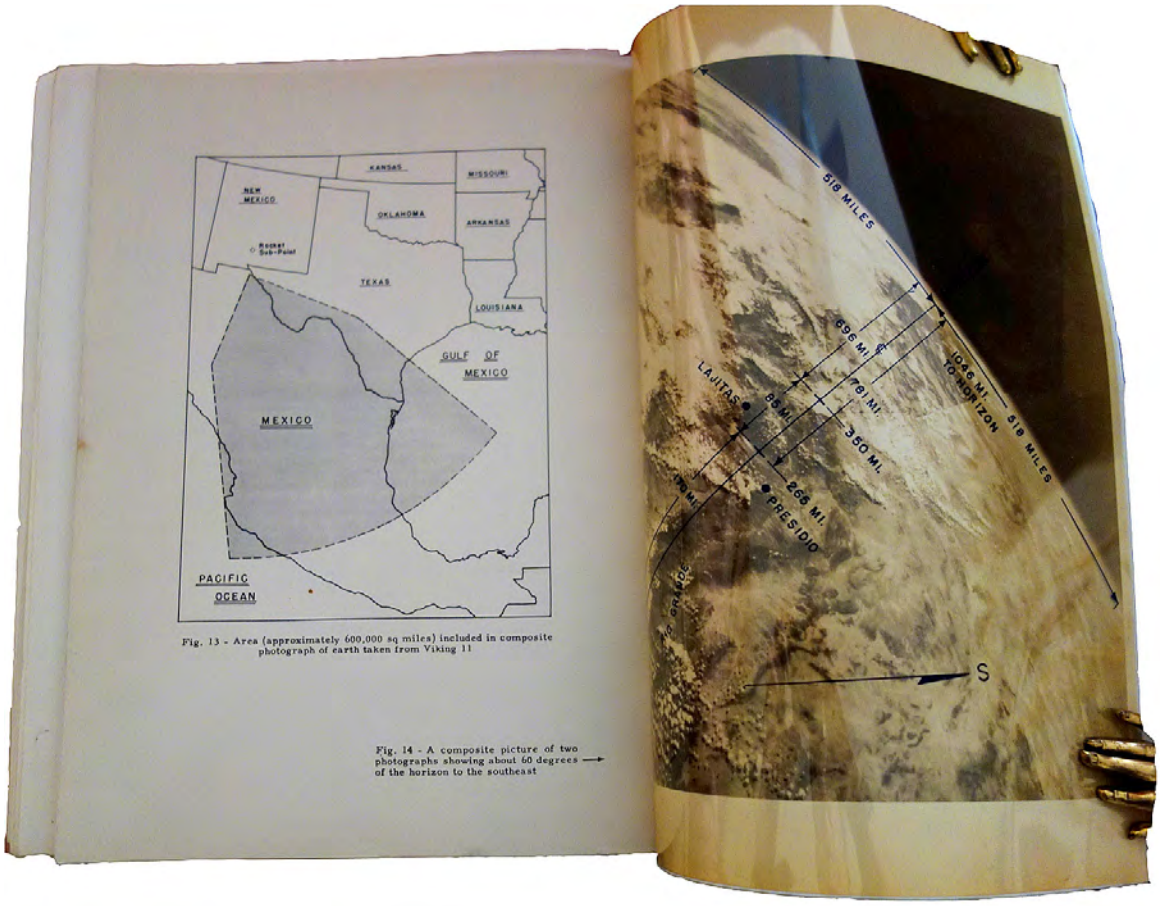


Fig. 13 - Area (approximately 600,000 sq miles) included in composite photograph of earth taken from Viking 11

Fig. 14 - A composite picture of two photographs showing about 60 degrees of the horizon to the southeast

Spectacular Images of the Earth from the Threshold of Outer Space

5. Baumann, R. C. and L. Winkler. (1) Photography from the Viking 11 rocket. An illustrated account of photography from the Viking 11 rocket during its record-breaking flight to 158.4 miles. Carbon typescript plus original photographs and other illustrations. [1], 8ff. (typescript). 11 original photographic prints plus 2 line diagrams on photo paper and 1 blueprint diagram. Washington, DC: Naval Research Laboratory, [1955]. 267 x 205 mm. Boxed. Tears in first leaf mended with clear tape, staple holes in the upper left corners of all leaves and illustrations. (2) NRL Report 4489. Rocket research report no. XVIII. Photography from the Viking 11 rocket at altitudes ranging up to 158 miles. iv, 8pp. 11 original photographic prints bound in as plates, each with printed plastic overlay and printed key facing. Sheet of printed catalogue cards bound in the back. Duplicates of 5 of the photographs and typewritten sheet of captions laid in. Washington, DC: Naval Research Laboratory, 1955. 266 x 203 mm. Original printed stiff wrappers, cloth backstrip, light fading, minor staining on back cover. (3) NRL Report 4489. Rocket research report no. XVIII. Photography from the Viking 11 rocket at altitudes ranging up to 158 miles. iv, 8pp. 11 halftone plates, each with printed key facing. Sheet of printed catalogue cards bound in the back. Washington, DC: Naval Research Laboratory, 1955. 263 x 202 mm. Original printed stiff wrappers, cloth backstrip, minor dampstain on front cover, ownership signature. Together 3 items. Very good to fine. $15,000

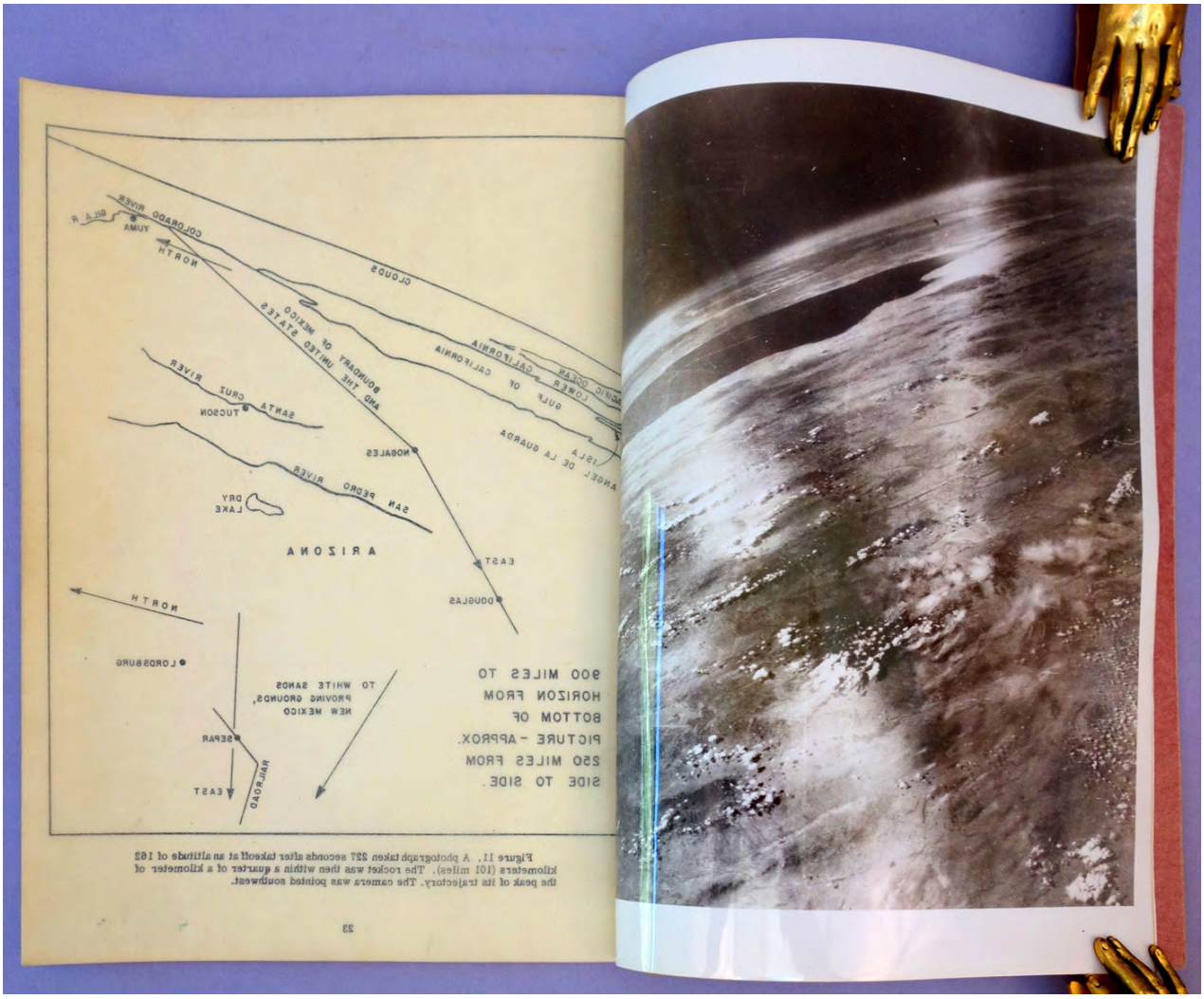
Extremely Rare Group of Materials Documenting the Record-Breaking Flight of the Viking 11 Rocket and the Spectacular High-Altitude Pictures of Earth Taken During the Flight. These materials include a carbon typescript of Baumann and Winkler's text (not including the "Future Program" and "Acknowledgement" sections at the end, which likely had not yet been written), the original photographic

prints and diagrams used for their report, an early published version of the report illustrated with photographic prints, and a later version illustrated with halftones. Baumann and Winkler's report is *extremely rare,* with only one copy recorded in OCLC (Stanford University).

On May 24, 1954, the Naval Research Laboratory launched the Viking 11 rocket from White Sands, New Mexico. The rocket rose to 158.4 miles above the Earth—an altitude record for a Western single-stage rocket up to that time—and the camera mounted to the rocket recorded spectacular images of the Earth from the threshold of outer space.

> Viking 11 broke the photographic altitude record on May 7, 1954, when it carried a fifteen-pound K-24 aircraft camera to 158 miles. Two basic kinds of pictures were taken by that rocket as it climbed straight up and then started to tumble back down. Most showed the terrain below in splendid detail. One, taken at the top of the trajectory, clearly showed El Paso, Las Cruces, the Rio Grande, and three railroad lines, all spread out beneath cotton-puff clouds whose shadows dappled the desert floor.
>
> Others, taken obliquely, captured terrain and clouds extending all the way to a gently curved horizon more than a thousand miles away. Two of the pictures, fitted together as a composite, made a portrait of sixty degrees of horizon southeast of White Sands. It showed a 1,036-mile-long crescent at the end of 600,000 square miles of parched land and, beyond, a mottled blanket of languid white vapor covering the Gulf of Mexico. Above the horizon, out beyond Earth's marvelously crisp edge, there was the stark blackness of deep space (Burrows, *This New Ocean: The Story of the First Space Age*, p. 135).

The rocket on which the camera was mounted was the eleventh in the series of twelve Viking rockets built and flown by the U. S. Navy between 1949 and 1955. The Viking rockets were the first large liquid-fueled rockets developed in the United States; they were intended to improve upon and replace the captured German V-2 rockets brought back to the U.S. after World War II. As far as we know, the Viking 11 was the first rocket to carry a camera since the V-2 rocket launched by the Navy from White Sands on March 7, 1947 (see following item by Bergstralh in this catalogue). That V-2 rocket reached an altitude of only 101 miles, and the pictures taken during that flight were not nearly as clear as those taken from the Viking 11. The Viking 12, which flew on February 4, 1955, also had a mounted camera; it reached an altitude of 143 miles. 43007

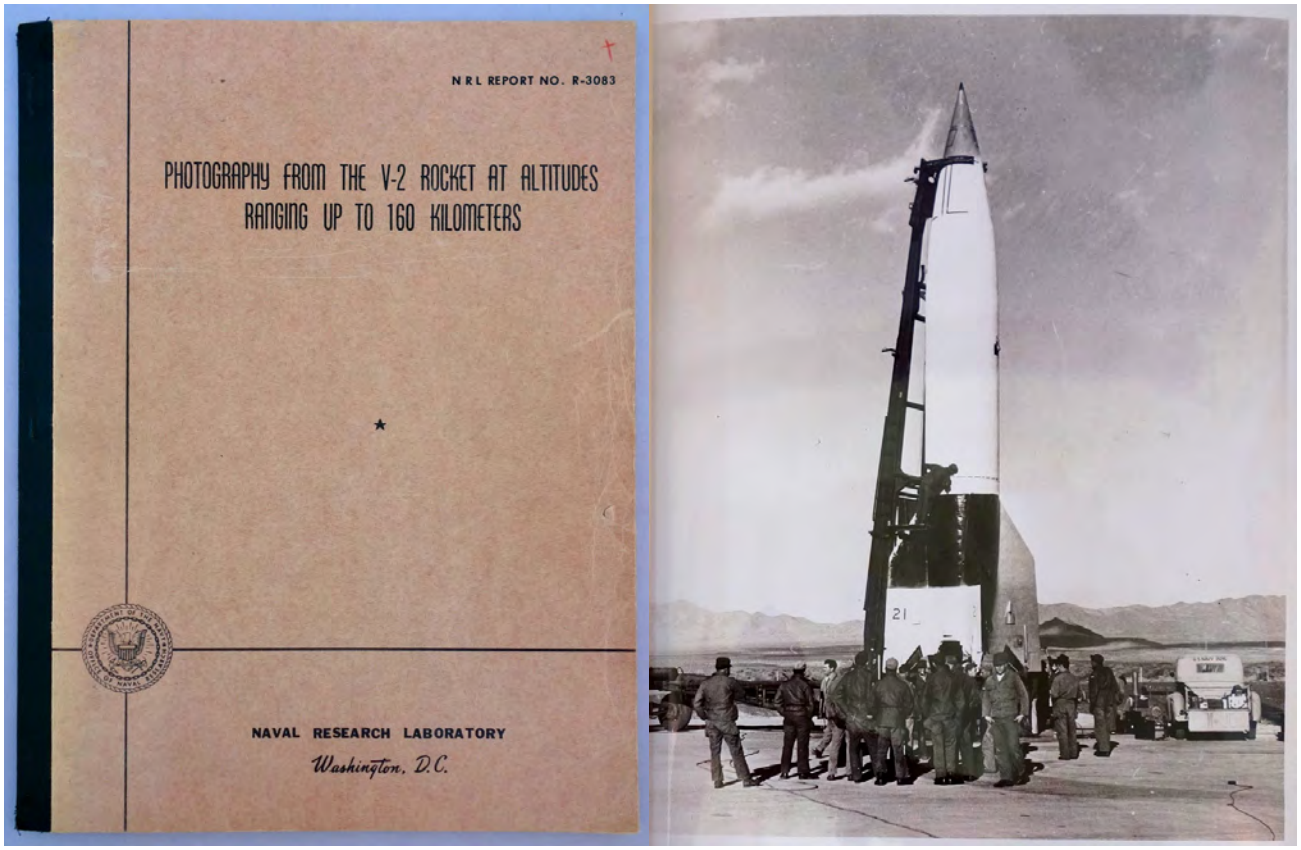


The First Published Photographs of the Earth Taken from Space

6. Bergstralh, T. A. Photography from the V-2 rocket at altitudes ranging up to 160 kilometers. N. R. L. report no. R-3083. [ii]-vi, 25pp., 12 original photographic prints included in pagination. 1 sheet of printed Library of Congress catalogue cards laid in. Washington, DC: Naval Research Laboratory, April 1947. 265 x 204 mm. Original printed wrappers, cloth backstrip, small marginal tear in front cover; boxed. Fine copy, one of only 47 produced. $30,000

First Edition of the first published photographs of the Earth from space—the first photographs to show the earth's curvature Extremely rare—the distribution list on p. iii of Bergstralh's report indicates that only 47 copies were prepared for various military, academic and private research institutions.

The photographs, which show a large portion of the American southwest, were taken from cameras mounted on a V-2 rocket launched from the proving ground at White Sands, New Mexico. The rocket, which bore the number 21 but was the 20th V-2 launched at White Sands after number 1 misfired, was one of over 60 V-2 rockets captured from the Germans at the end of World War II in 1945. At that time the German rocketry program was at least 20 years ahead of any other such program in the developed world. As part of Project Paperclip, the United States government brought both the captured V-2s and over 100 German rocketry experts (headed by Wernher von Braun) to America, where they began what is now the U. S. space program. In 1946 the Upper Atmosphere Research Panel (also known as the V-2 panel) was formed to oversee a program of high-altitude



experiments conducted using the V-2 rockets. On October 24, 1946 the research team was able to obtain photographs of the Earth taken from 65 miles above the surface; however, these photographs were not published until 1950 (see Newell, High Altitude Rocket Research p. 288).

The present report announces that photographs were taken from more than 100 miles above the earth. "On 7 March 1947 the twentieth V-2 to be launched in America took to the air from the Army Ordnance Proving Ground at White Sands, New Mexico. As on several of the previous flights, an attempt was made to obtain photographs of the features of interest on the rocket and, of course, of the earth. In this attempt the effort met with considerable success. Included among the group of pictures obtained are the first ever to be taken from altitudes greater than 160 kilometers (100 miles). The quality of the photographs is fairly good. For the first time, in pictures taken at such high altitudes, it is possible to recognize clearly many geographical features. In addition a large number and variety of cloud formations were recorded by the cameras and other information of meteorological value" (p. 1).

Photographs 11 and 12 are especially notable. Number 11 includes an overlay showing landmarks in New Mexico, Arizona and the Gulf of California. The caption to number 12 states that "this picture covers approximately 500,000 square miles of southwestern United States and northern Mexico. The photographs [making up the composite] do not match exactly due to the varying camera angles." Newell, *High Altitude Rocket Research* (1953), pp. 284-288. Krause, "High altitude research with V-2 rockets," *Proceedings of the American Philosophical Society* 91 (1947): 430-446. Reichhart, "The first photo from space," *Air & Space Magazine,* Smithsonian Institution, 1 Nov. 2006 (web). 43006


BIBLIOTHECA
BIGOTIANA.
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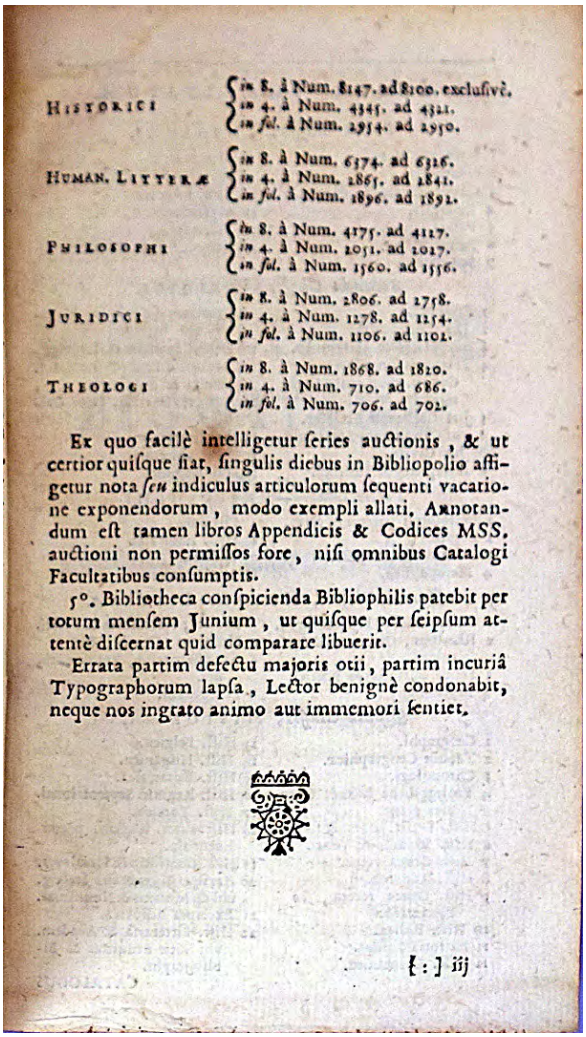
CATALOGUS LIBRORUM,
quos (dum viverent) summâ curâ & industriâ, ingentique sumptu congessêre Viri Clarissimi DD. uterque Joannes, Nicolaus, & Lud. Emericus BIGOTII, Domini de Sommesnil & de Cleuville, alter Prætor, alii Senatores Rothomagenses.
QUORUM PLURIMI MSS. ANTIQUÆ bonæ notæ tàm Græci quàm Latini; alii ipsorum BIGOTIORUM, nec-non & diversorum doctrinâ Illustr. Virorum manu & annotatis ornati.
Horum fiet AUCTIO
die 1. mensis Julii 1706. & seqq. à primâ pomeridianâ ad vesperam, Parisiis in Regiâ Gervasianâ, viâ Fœnicâ: vulgò College de Mre. Gervais rue du Foin.
Prostat Catalogus
PARISIIS,
Apud JOANNEM BOUDOT, CAROLUM OSMONT, GABRIELEM MARTIN, viâ Jacobæâ.
MDCCVI.

First Paris Book Auction for Which a Catalogue Was Printed

7. [Bigot.] Bibliotheca Bigotiana seu catalogus librorum, quos (dum viverent) summa cura & industria, ingentique sumptu congessere viri clarissimi DD. uterque Joannes, Nicolaus, & Lud. Emericus Bigotii . . . 12mo. [8], 72, [2], 73-220, [2], 248, 59, [1], 31, [1], 31pp. Paris: Apud Joannem Boudot, Carolum Osmont, Gabrielem Martin, 1706. 161 x 94 mm. Calf, gilt spine ca. 1706, light wear. Very good. A few marginal notes in ink and pencil, including possible prices realized. 19th century bookplates of the Car[dinal] de Beaurepaire and Germain Barré. $6750

First Edition. The Bigot library sale in 1706 was the first book auction conducted in Paris for which a catalogue was printed. The sale by auction of the Bigot family library was conducted by booksellers Jean Boudot, Charles Osmont and Gabriel Martin over the remarkably long duration of five months. This was Gabriel Martin's first catalogue, "and according to Bléchet, Jean-Pierre Nicéron was an editor" (North, *Printed Catalogues of French Book Auctions and Sales by Private Treaty 1643-1830 in the Library of the Grolier Club*, no. 12). Prior to this auction several auction catalogues for private libraries had been printed in Paris, but these libraries were sold privately and thus never went to auction.

Bookseller, publisher and writer Prosper Marchand organized and catalogued the sale for Boudot, Martin and Osmont. One of the ways in which the catalogue was notable was in its introduction into bookselling of the



HISTORICI { in 8. à Num. 8147. ad 8100. exclusivè. in 4. à Num. 4345. ad 4321. in fol. à Num. 2954. ad 2950.

HUMAN. LITTERÆ { in 8. à Num. 6374. ad 6316. in 4. à Num. 2865. ad 2841. in fol. à Num. 1896. ad 1892.

PHILOSOPHI { in 8. à Num. 4175. ad 4117. in 4. à Num. 2051. ad 2017. in fol. à Num. 1560. ad 1556.

JURIDICI { in 8. à Num. 2806. ad 2758. in 4. à Num. 1278. ad 1254. in fol. à Num. 1106. ad 1102.

THEOLOGI { in 8. à Num. 1868. ad 1820. in 4. à Num. 710. ad 686. in fol. à Num. 706. ad 702.

Ex quo facilè intelligetur series auctionis, & ut certior quisque fiat, singulis diebus in Bibliopolio affigetur nota *seu* indiculus articulorum sequenti vacatione exponendorum, modo exempli allati. Annotandum est tamen libros Appendicis & Codices MSS. auctioni non permissos fore, nisi omnibus Catalogi Facultatibus consumptis.

5°. Bibliotheca conspicienda Bibliophilis patebit per totum mensem Junium, ut quisque per seipsum attentè discernat quid comparare libuerit.

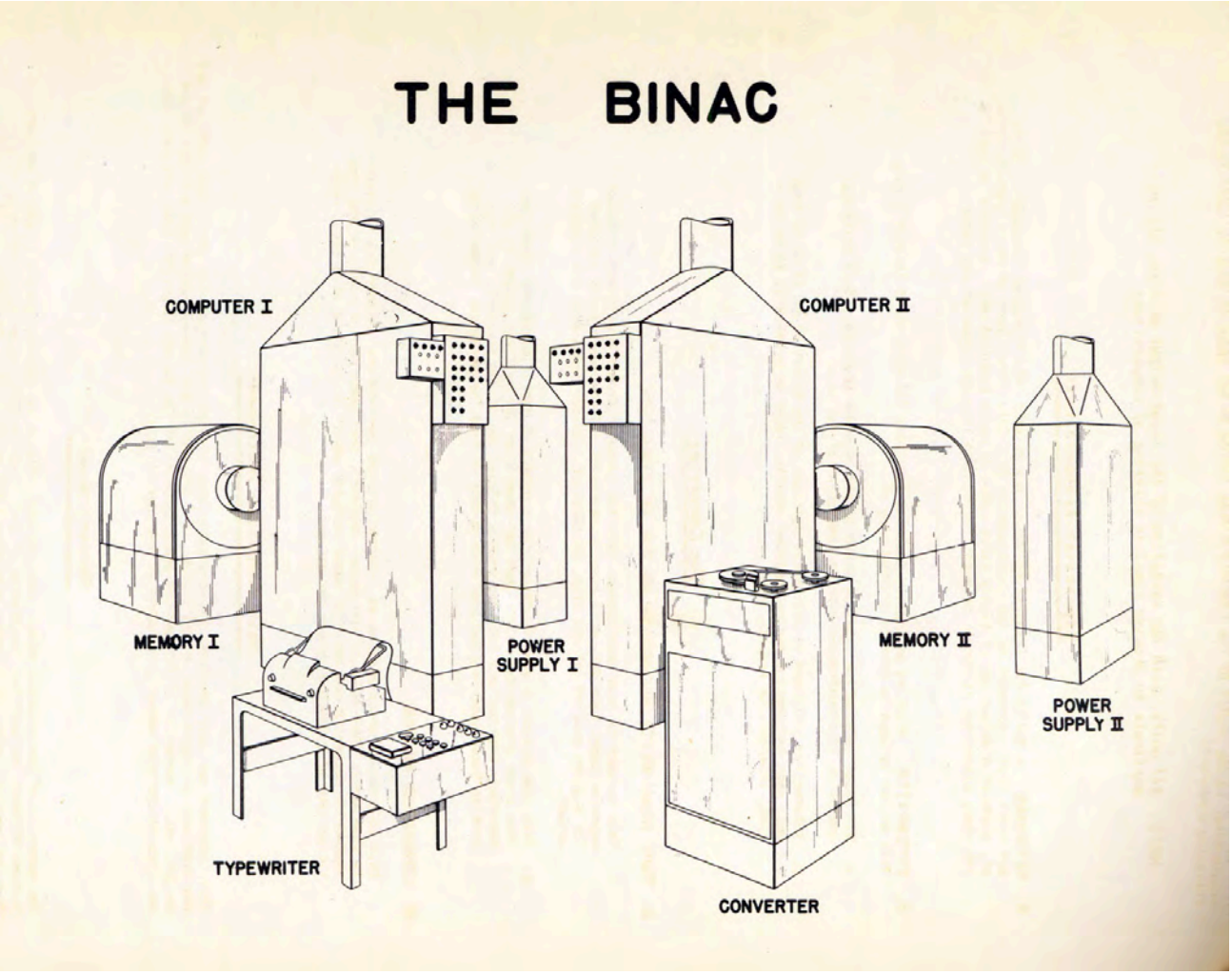
Errata partim defectu majoris otii, partim incuriâ Typographorum lapsa, Lector benignè condonabit, neque nos ingrato animo aut immemori sentiet.

[:] iij

classification scheme organizing information into five great divisions: Theology, jurisprudence, philosophy (i.e., sciences and arts), belles-lettres and history. Gabriel Martin, one of the auctioneers of the Bigot library, promoted this scheme, which originated in the seventeenth century and may have first been applied in the *Catalogus bibliothecae Thuanae* (1679), the catalogue of the library of French historian and bibliophile Jacques Auguste de Thou. Book auctions in France would follow this scheme throughout the 18th century, and in the early 19th century Jacques Charles Brunet elaborated on this basic scheme in his famous *Manuel du librairie et de l'amateur de livres* (1810).

The Bigot library was begun by Jean Bigot in the early 17th century, and continued by his son, Louis-Emery. It eventually passed to Robert Bigot, sieur de Monville, and was sold at his death in 1706. The library included that of Jean Henri Jacques de Mesmes, for whom Gabriel Naudé, de Mesmes' librarian, had written *Avis pour dresser une bibliothèque* in 1627. At the time of sale the Bigot library consisted of 450 manuscripts and over 15,000 printed books.

At the Bigot auction many books and all the manuscripts were purchased for the Bibliothèque du Roi. Over 150 years later the Bigot manuscripts were catalogued by Léopold Delisle as *Bibliotheca Bigotiana Manuscripta. Catalogue des manuscrits rassemblés aux XVIIe siecle par les Bigot, mis en vente au mois de juillet 1706, aujourdhui conservé aux Bibliothèque nationale* (1877). Albert, *Recherches sur les principes fondamentaux de la classification bibliographique . . .* (1847), pp. 17–19. 42893

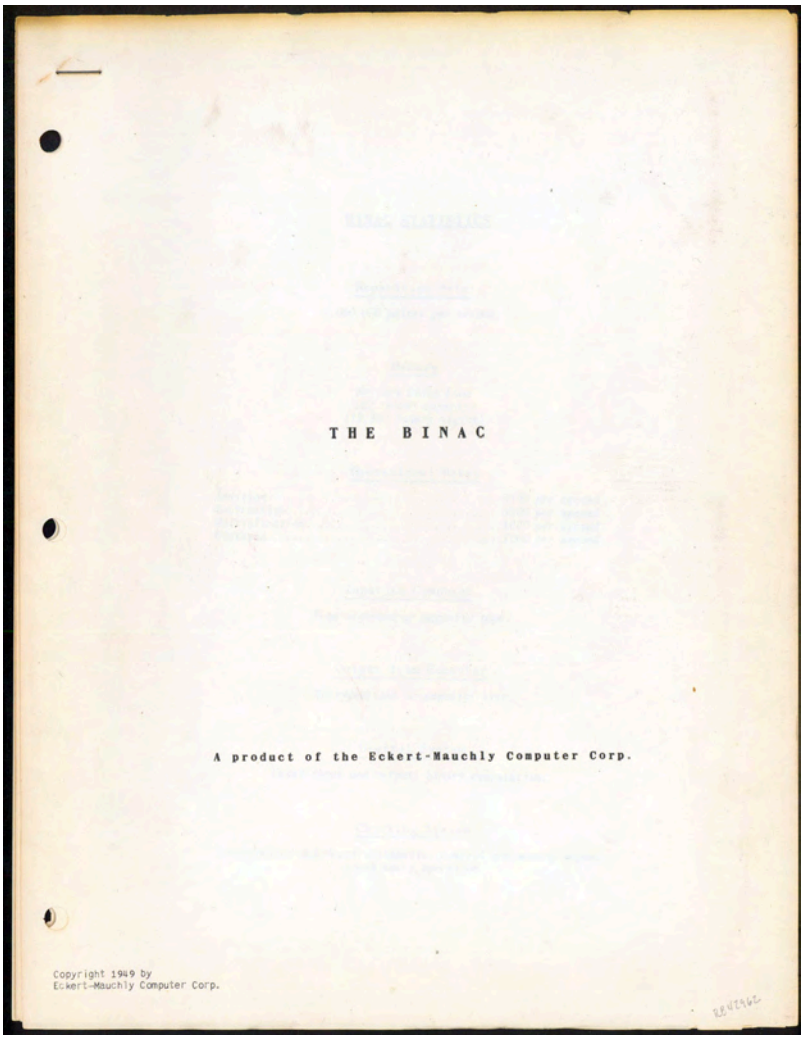


Rare Sales Brochure for America's First Stored-Program Computer: The First Electronic Computer Ever Sold

8. [BINAC.] The BINAC. A product of the Eckert-Mauchly Computer Corp. Reproduced typescript, stapled. 8 sheets, including full-page illustration. N.p.: Eckert-Mauchly Computer Corp., ©1949. 282 x 218 mm. Very slight wear at upper edge, but fine otherwise. $6500

Rare sales brochure for Eckert and Mauchly's BINAC, the first operational electronic stored-program computer in the United States, and the first such computer sold in this country. There are no copies of the brochure recorded in OCLC.

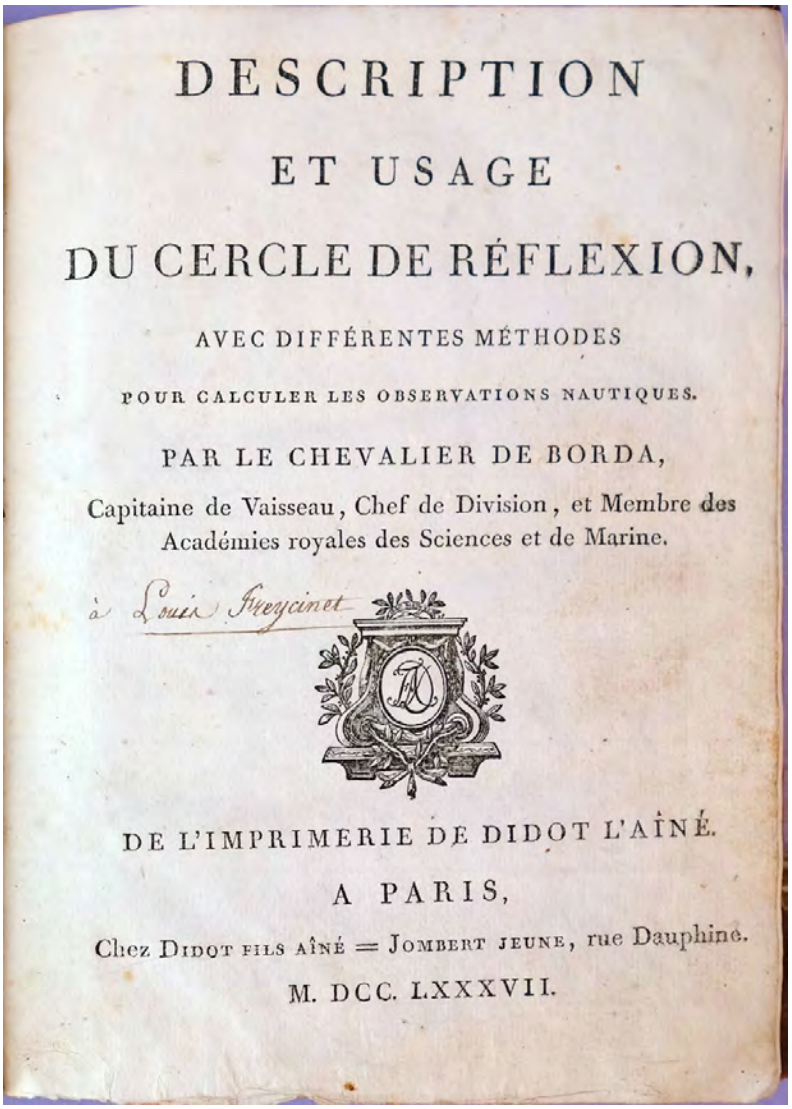
While developing the UNIVAC for the U. S. Census Bureau, Eckert and Mauchly contracted with the Northrop Aircraft Company in southern California to develop and construct a binary automatic computer (BINAC). The contract was signed in October 1947, with Northrop providing $80,000 up front; another $20,000 was due upon delivery of the machine. "Had it been finished on time [i.e., by May 15, 1948] it would have been in contention with the British computers at Manchester and Cambridge as the first working electronic stored-program computer. In reality it ran its first program in the late summer of 1949 and, as a conse-



quence, became the first operational computer in America but not in the world" (Williams, pp. 361–62). With both input and output in base 8 (a compact way of representing binary values), the BINAC's design made it very difficult to use; in addition BINAC's complex and delicate machinery suffered in the delivery from Philadelphia to California, so much so that it was never able to function effectively as a production machine. Only one BINAC was ever made.

Published the year BINAC was delivered, the flyer contains the computer's statistics, a brief outline of its elements and general characteristics, coding instructions, and a conversion table comparing decimal, coded decimal, binary, and octal numbers. A full-page illustration shows the various components of the system. The document was likely produced for distribution when the machine was being demonstrated to interested parties. It may be the only document extant that gives the complete instruction set (sixteen instructions) for the BINAC.

Few copies of this brochure would have been distributed, as only one machine was sold, and Eckert-Mauchly rapidly turned their attention to building the UNIVAC. *Origins of Cyberspace* 1145. Williams, *A History of Computing Technology* (1985). 42962



DESCRIPTION

ET USAGE

DU CERCLE DE RÉFLEXION,

AVEC DIFFÉRENTES MÉTHODES

POUR CALCULER LES OBSERVATIONS NAUTIQUES.

PAR LE CHEVALIER DE BORDA,

Capitaine de Vaisseau, Chef de Division, et Membre des Académies royales des Sciences et de Marine.

à Louis Freycinet

DE L'IMPRIMERIE DE DIDOT L'AÎNÉ.

A PARIS,

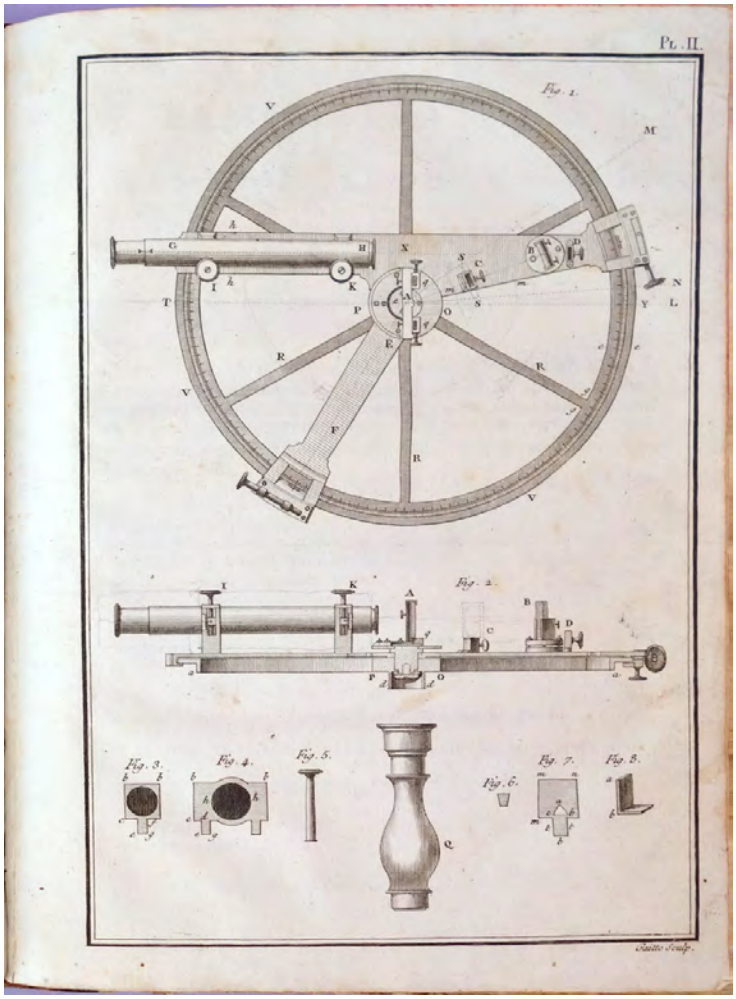
Chez DIDOT FILS AÎNÉ = JOMBERT JEUNE, rue Dauphine.

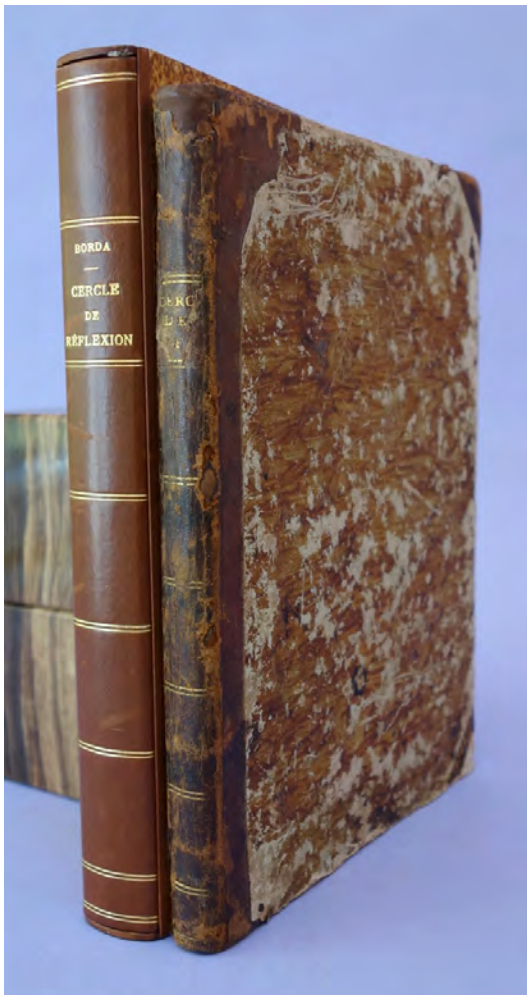
M. DCC. LXXXVII.

The Borda Circle—Freycinet's Copy

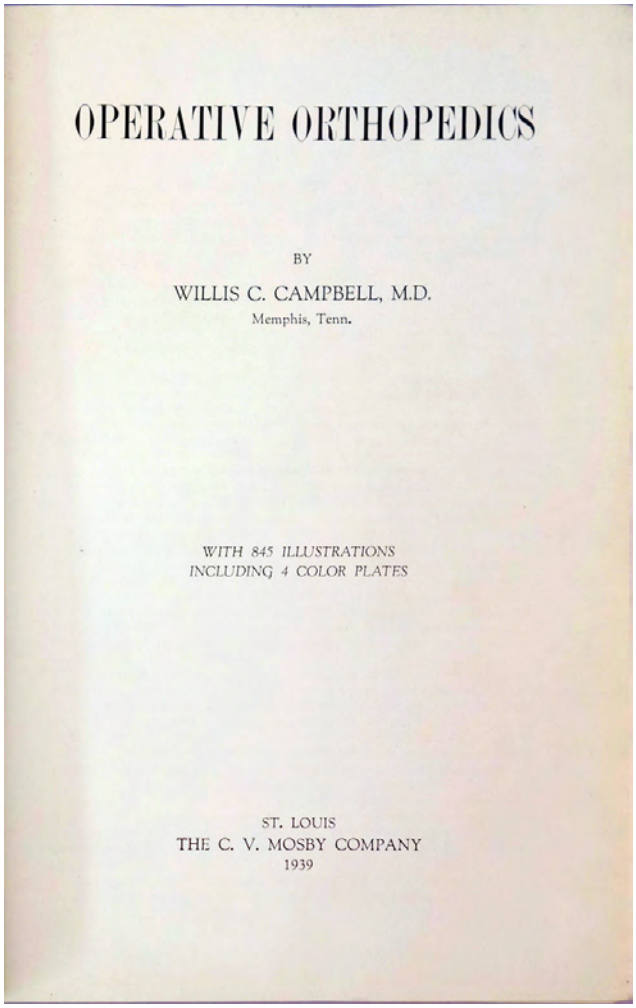
9. Borda, Jean-Charles (1733-99). Description et usage du cercle de réflexion avec différentes méthodes pour calculer les observations nautiques. 4to. 87, [1], 33pp. 3 engraved plates. Paris: Didot l'aîné, 1787. 220 x 163 mm. Half calf, paste paper boards ca. 1787, moderately worn and rubbed but sound; modern quarter calf slipcase by Laurenchet. One or two minor paper flaws, faint dampstains but a very good copy. Borda's presentation inscription ("à Louis Freycinet") on the title to the celebrated French navigator Louis de Freycinet (1779-1841); Freycinet's manuscript corrections and notes in the text; manuscript notes in another hand pasted to rear blank. $6000

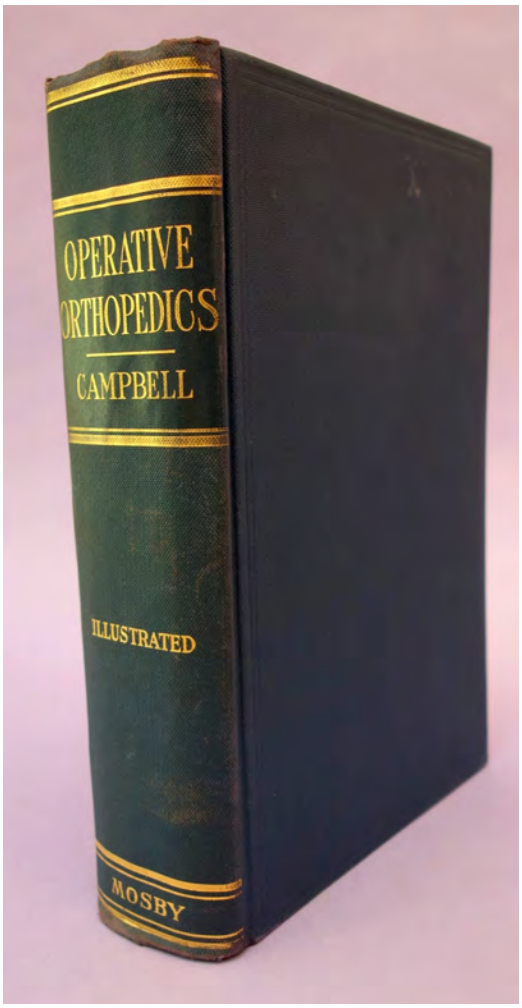
First Edition. Borda, a high-ranking officer in the French navy, developed the Borda reflecting circle for use in navigation and surveying. Based on an earlier but more cumbersome instrument designed by Tobias Mayer, Borda's reflecting circle consisted of an outer circle divided into half degrees and fractions, a smaller inner circle, a telescope and two mirrors. Angular measurements, such as between the moon and a fixed star, could be read from either side of the telescope. Borda circles were used throughout the nineteenth century for determining longitude by the lunar-distance method. They also contributed to the French success at the turn of the nineteenth century in measuring the length of the meridional arc for the purpose of establishing the length of the meter, the basic unit of measurement of the metric system.





This copy was presented to French navigator Louis de Freycinet, who joined the navy at the age of fourteen in 1793 and took part in several engagements against the British during the French Revolutionary Wars. In 1800 Louis took part along with his older brother Henri de Freycinet in the French expedition to explore the south and southwest coasts of Australia, and in 1811 he published the first map to show a full outline of the coast of that continent. Louis de Freycinet's notes and corrections in this copy can be seen on page 19, where he corrected two numbers and wrote a long pencil note in the margin, and on page 69, where he corrected two phrases. The manuscript notes in the back, in another hand, have to do with the use of Borda's circle. *Dictionary of Scientific Biography.* Andrewes, *The Quest for Longitude,* p. 46. 42840

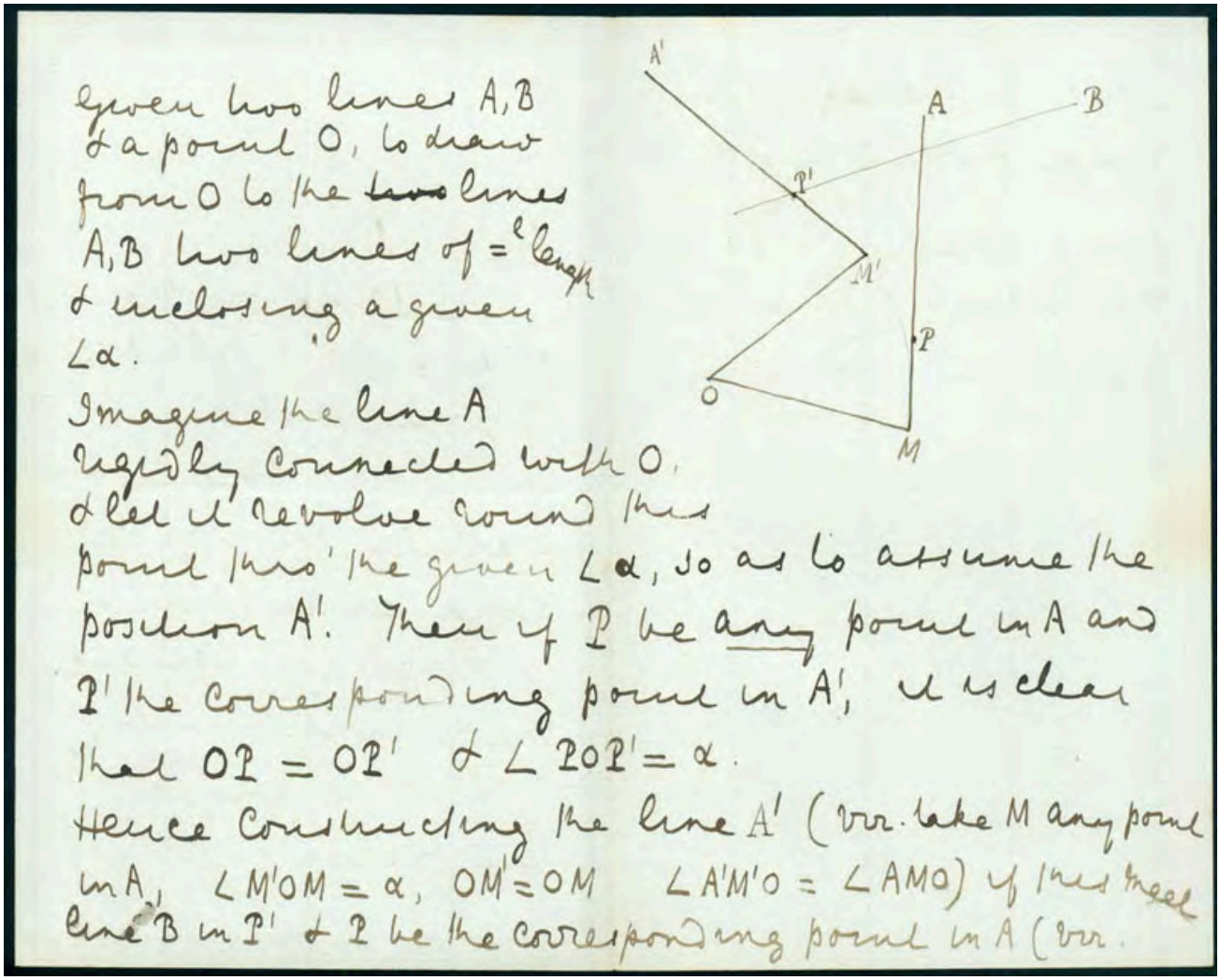




Campbell's Orthopedics

10. Campbell, Willis C. (1880-1941). Operative orthopedics. 8vo. xix, [1], 1154pp. 4 color plates, numerous text illustrations. St. Louis: C.V. Mosby, 1939. 253 x 172 mm. Original cloth, slightly shaken, endpapers a bit spotted. Very good to fine copy, with very small ownership stamp of W. H. Burnham, M.D. on inner cover and upper edge. $1500

First Edition. The most influential American orthopedics textbook of the 20th century, which remains in print over 70 years after its publication. It contains the best exposition of Campbell's technique of arthroplasty, the purpose of which, he emphasized, was to restore function to damaged joints. Garrison-Morton 4403.2. Le Vay, *History of Orthopaedics*, pp. 426-27. 42954

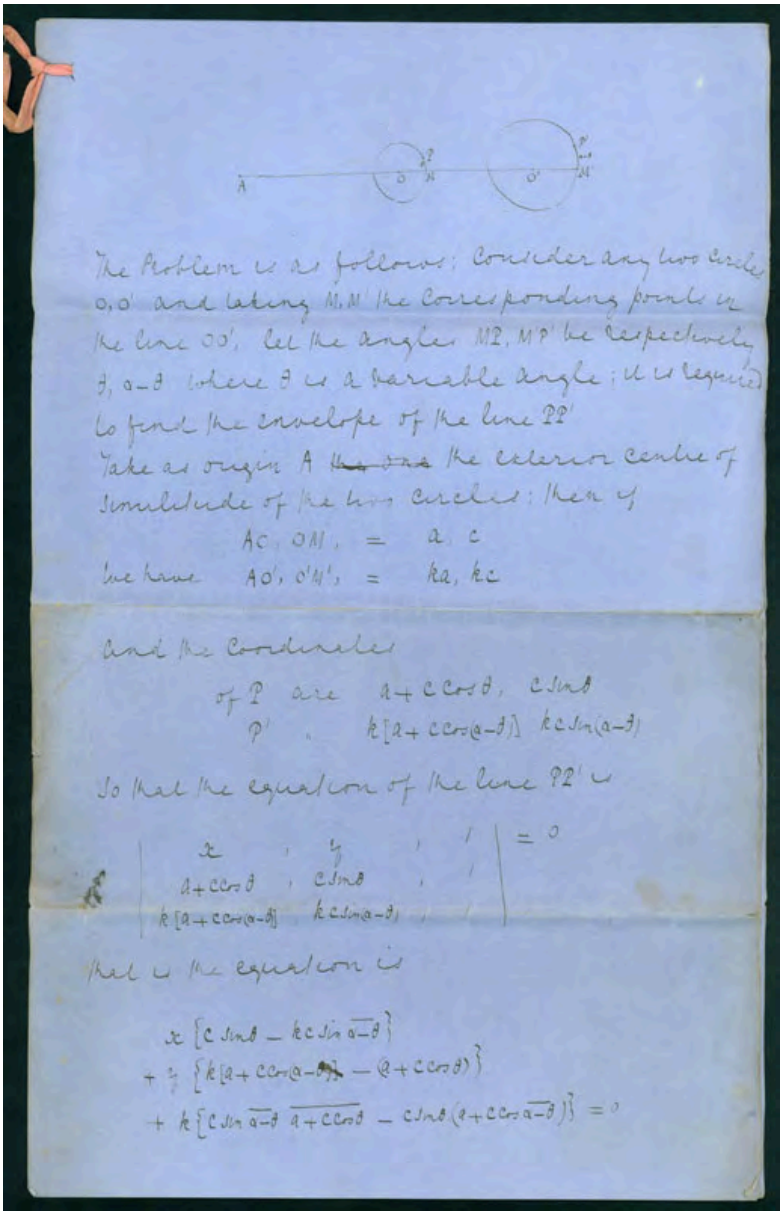


Three Mathematical Autograph Letters, Signed, Plus a Four-Page Autograph Mathematics Manuscript

11. Cayley, Arthur (1821-95). (1) Autograph letter signed ("A. C.") to Archibald Smith (1813-72), written in the margins of an autograph letter signed from Smith to Cayley. 1 page. London, 9 August 1863 [date of Smith's letter]. 280 x 226 mm. (2) Autograph letter signed to Smith. 3 – 1/2pp. Cambridge, 14 November 1866. 180 x 112 mm. (3) Autograph letter signed to Smith. 3pp. Cambridge, 19 October 1868. 180 x 112 mm. (4) Autograph manuscript (originally enclosed with Cayley's 19 Oct. 1868 letter). 4ff., tied with linen tape. 412 x 257 mm. N.p., n.d. [1868]. Together 4 items. Very minor marginal tears in nos. (1) and (4), otherwise very good. $22,500

Exceptionally rare mathematical correspondence from Arthur Cayley, one of the founders of the British school of pure mathematics, consisting of three autograph letters, all containing mathematics, plus an extensive 4-page mathematical proof written on four extra-large legal sheets. These are the first mathematical letters or manuscripts by Cayley that we have seen on the market in over forty years.

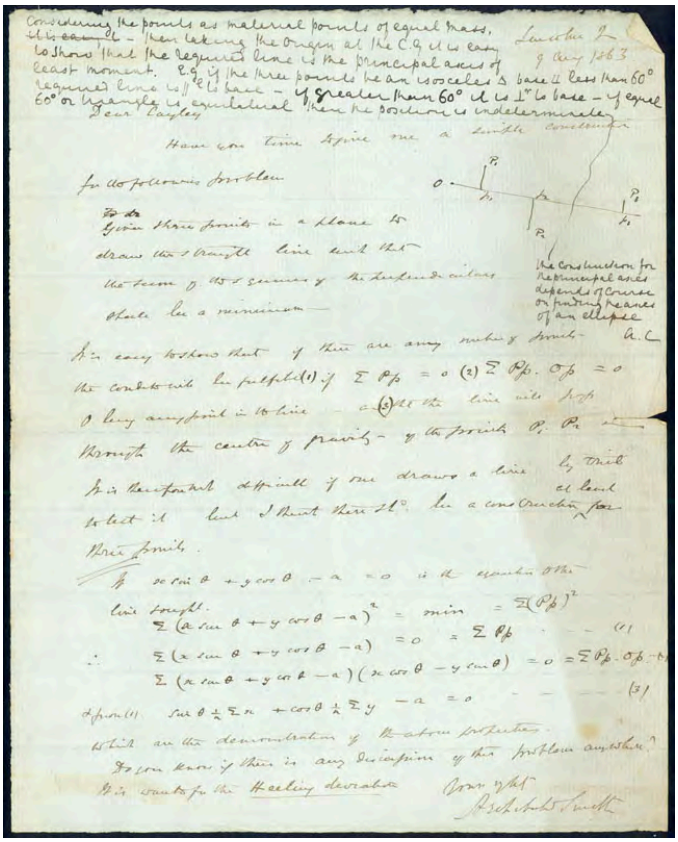
Cayley was the author of over 900 papers covering nearly every aspect of modern mathematics; his greatest contributions were his development of the algebra of matrices, his work in non-Euclidean geometry and n-dimensional geometry, and his contributions to invariant theory. A large number of mathematical constructs bear his name, including Cayley's theorem (group theory), the Cayley-Hamilton theorem (linear algebra),



Cayley's formula (graph theory) and the Cayley-Klein model (hyperbolic geometry). Cayley's correspondent was Archibald Smith, who in 1836 helped to found the *Cambridge Mathematical Journal,* the periodical in which Cayley had published his first mathematical paper (see Crilly, p. 68). Smith also made significant contributions to the study of magnetism and the Earth's magnetic field.

Both Cayley and Smith were alumni of Trinity College, Cambridge and both subsequently entered Lincoln's Inn to study law, with Smith being called to the bar in 1841 and Cayley in 1849. Cayley remained in the legal profession until 1863, at which time he left the bar to take the newly established Sadleirean professorship of pure mathematics at Cambridge. It is evident from our letters that Smith and Cayley had a cordial relationship based on their shared love for mathematics; Smith apparently was in the habit of sending Cayley mathematical problems and requesting his help in solving them. Letter (1) contains both Smith's query and Cayley's response; in it Smith asked Cayley to give him

> a simple construction for the following problem. Given three points in a plane to draw the straight line such that the sum of the squares of the perpendiculars shall be a minimum.



Cayley responded by writing his solution in the margins of Smith's letter:

> Considering the points as material points of equal mass, then taking the origin at the C. G. it is easy to show that the required line is the principal axis of least moment. E.g. if the three points be an isosceles Δ base […] less than 60° required line is [parallel] to base—if greater than 60° it is [perpendicular] to base—if equal 60° or triangle is equilateral there the position is indeterminate. The construction for the principal axes depends of course on finding the axes of an elliptic. A. C.

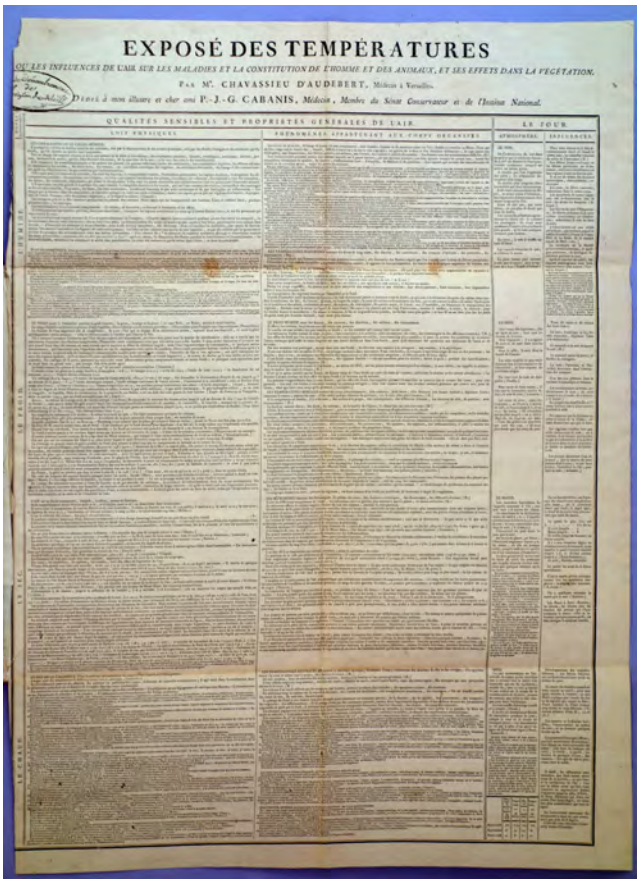
In letter (2), dated 1866, Cayley gave the solution to another of Smith's mathematical queries; "it comes out easily & prettily enough." Cayley stated the problem and solution as follows:

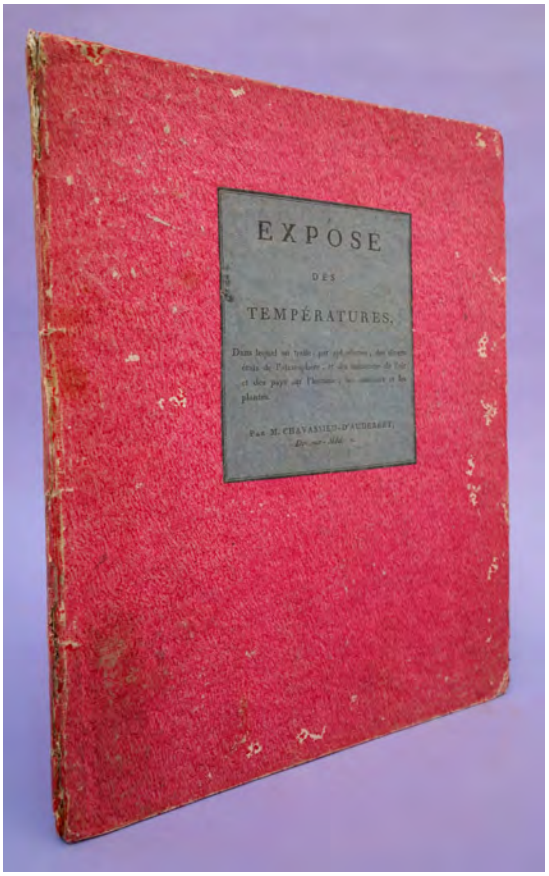
> Given two lines A, B & a point O, to draw from O to the lines A, B two lines of [equal] length & enclosing a given [angle] α. Imagine the line A rigidly connected with O and let it revolve round this point thro' the given [angle] α, so as to assume the position A'. Then if P be any point in A and P' the corresponding point in A', it is clear that OP = OP' & [angle] POP' = α . . .

In letter (3), dated 1868, Cayley enclosed the four-page autograph manuscript listed above under no. (4), containing "a solution, such as I have been able to obtain, of your problem, but the solution is I am afraid in a form which will not be of any use to you. May I send the problem—of course in your name—to the Educational Times; it is very likely that you will so obtain a solution of it in a more practical form; and at any rate, the problem, quà problem is an excellent one." In the manuscript Cayley stated the problem as follows:

> Considering any two circles O, O' and taking M, M' the corresponding points in the line OO', let the angles MP, M'P' be respectively θ, α – θ where θ is a variable angle; it is required to find the envelope of the line PP'.

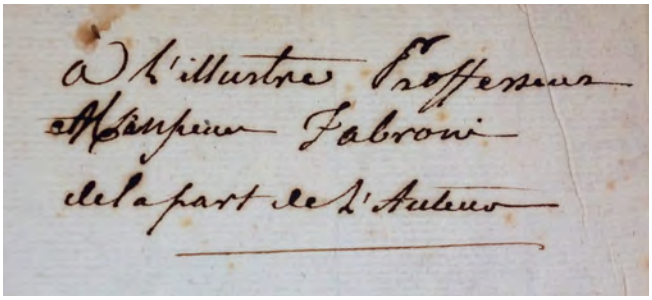
Cayley's solution covers four folio pages and includes several equations and two diagrams. Biggs et al., *Graph Theory*, ch. 3. *Dictionary of Scientific Biography.* Crilly, *Arthur Cayley: Mathematician Laureate of the Victorian Age,* pp. 68, 120-121. Kline, *Mathematical Thought from Ancient to Modern Times*, pp. 804-9. Ewald, *From Kant to Hilbert*, p. 542. 42843


EXPOSÉ DES TEMPÉRATURES

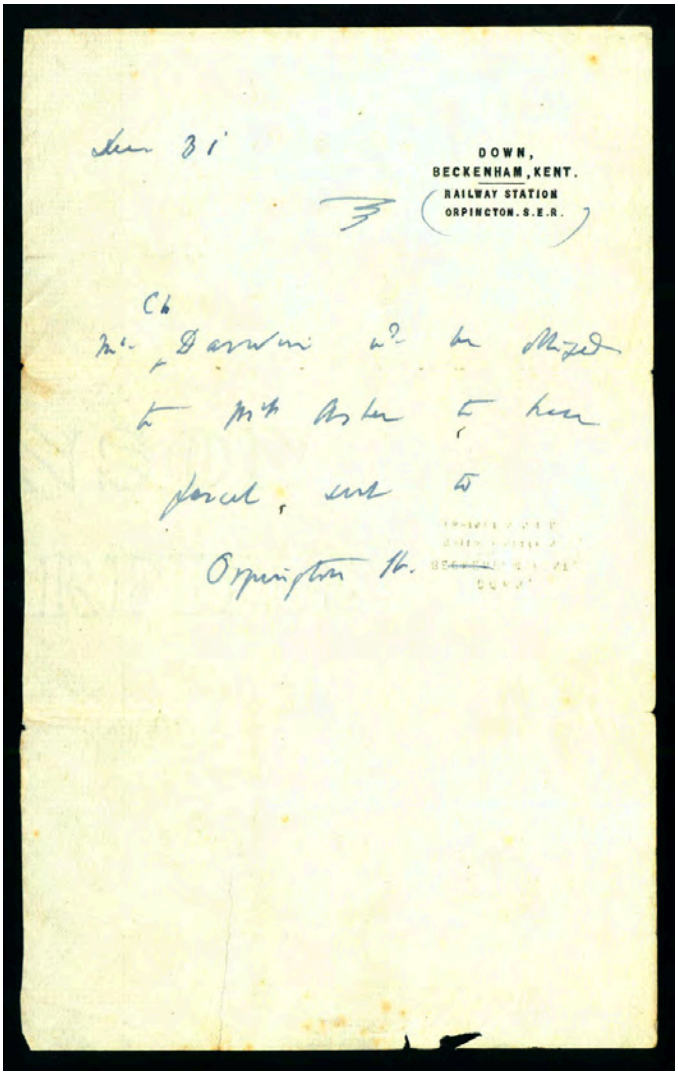


Early Study of the Effects of the Environment upon Health

12. Chavassieu-d'Audebert. Exposé des temperatures, dans lequel on traite, par aphorismes, des divers états de l'atmosphère, et des influences de l'air et des pays sur l'homme, les animaux et les plantes [cover title]. 3 large printed charts (671 x 495 mm.) folded to large 4to size and bound together. Versailles: Ph.-D. Pierres; Paris: Desenne . . . , 1802. Magenta paste paper boards, printed label on front cover, light rubbing & wear. Minor foxing, a few light stains, tear in front free endpaper. Very good copy, with the author's presentation inscription on the front endpaper: "A l'illustre Professeur Monsieur Fabroni de la part de l'Auteur." The recipient was most probably Italian physicist Giovanni Valentino Mattia Fabbroni (1752-1822); see *Dictionary of Scientific Biography.* $2250


A l'illustre Professeur
Monsieur Fabroni
de la part de l'Auteur

First Edition. Chavassieu-d'Audebert's charts present a thorough analysis in tabular form of the effects of temperature, atmospheric conditions and terrain on humans, animals and plants. The first chart displays the effects of temperature and humidity on health: for example, rainy weather was said to promote chronic fevers, epileptic attacks and paralysis in humans, and blight in crops. The second chart organizes temperature and climate information by month and season, describing effects on agriculture and health of various types of years (hot/dry, cold/wet, cold/dry, etc.). The third chart presents the phases of the moon and how they affect health, the effects of climate and terrain on native human, animal and plant populations, and a breakdown of the human species by geographical type. 38039



To His Bookseller

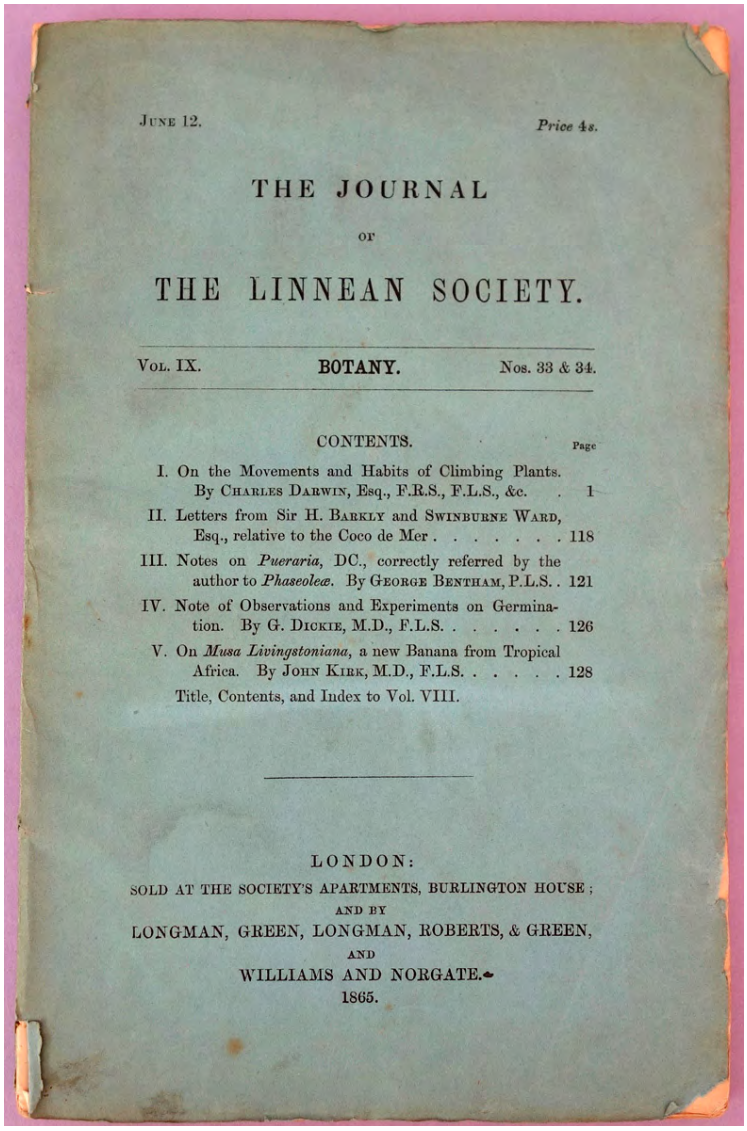
13. Darwin, Charles (1809-82). Autograph note to A. Asher & Co. Down, n.d. ("Sun. 31"). 1 sheet on Darwin's stationery. 202 x 126 mm. Tear and small chips in lower margin (not affecting text), but very good. $5000

Darwin's autograph note to the antiquarian bookselling firm of A. Asher & Co., which was founded by Adolph Asher in Berlin in 1830 and opened an office in Covent Garden in 1835. The firm, which is still in existence, notes on its website that A. Asher was the principal supplier to the British Museum and "also supplied many books to Alexander von Humboldt (1769-1859) and Charles Darwin" ("History." Asherbooks Rare Books. A. Asher & Co. B.V., 07 Aug. 2013. Web. Accessed 27 Aug. 2013). Darwin corresponded with Adolph Asher's son, Georg Michael (d. 1905), a historical writer and bibliographer; see the online Darwin Correspondence Project for the six letters G. M. Asher wrote to Darwin.

Darwin's note reads as follows:

> Mr. Ch. Darwin wd. be obliged to Messrs. Asher to have parcel sent to Orpington St.

Orpington Station on the South Eastern Railway was the railway station closest to Down House, Darwin's home in Kent. 43010



JUNE 12. *Price 4s.*

THE JOURNAL

OF

THE LINNEAN SOCIETY.

VOL. IX. **BOTANY.** Nos. 33 & 34.

CONTENTS. Page

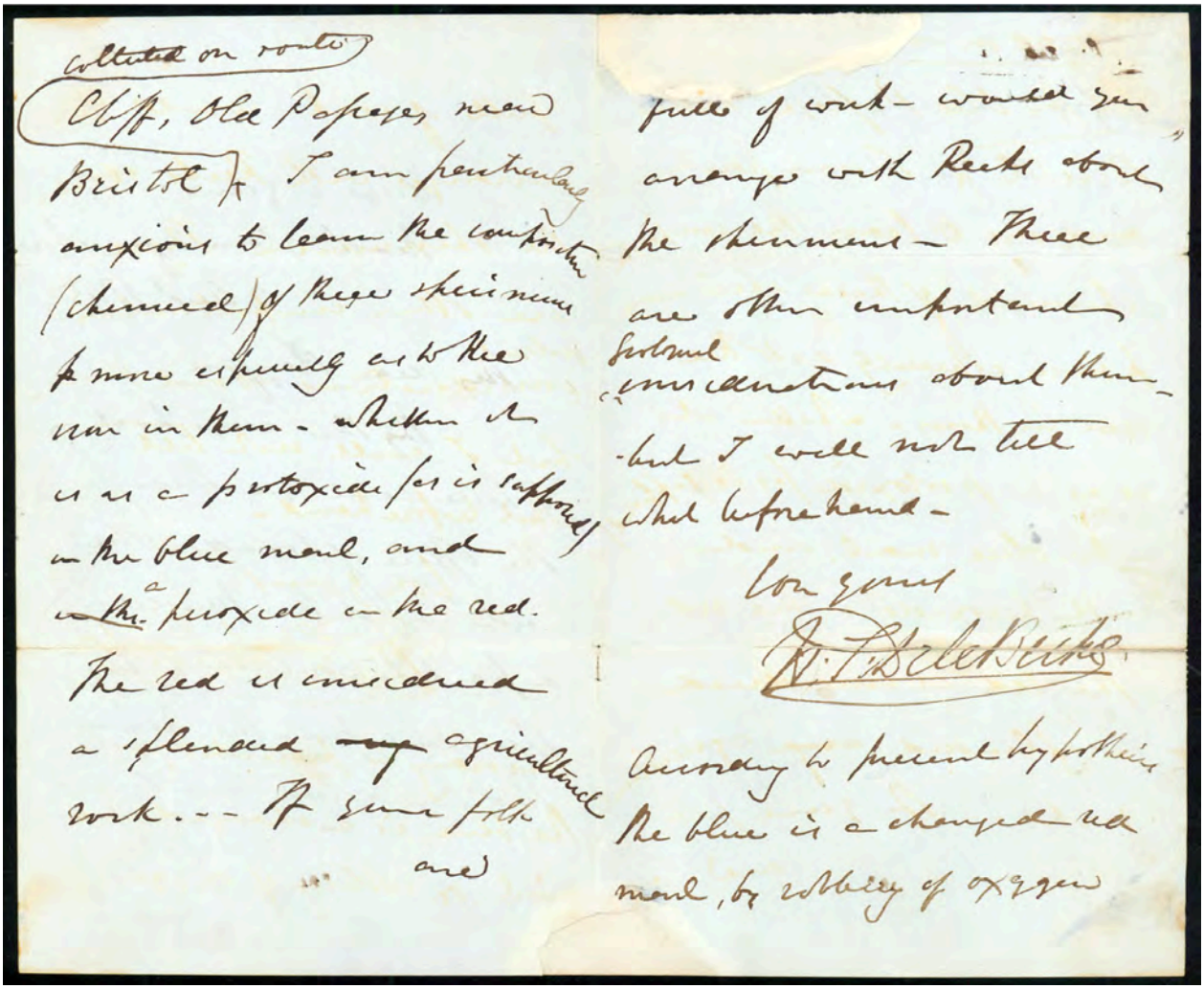
LONDON:
SOLD AT THE SOCIETY'S APARTMENTS, BURLINGTON HOUSE;
AND BY
LONGMAN, GREEN, LONGMAN, ROBERTS, & GREEN,
AND
WILLIAMS AND NORGATE.
1865.

Rare Journal Publication before Issue in Book Form

14. Darwin, Charles (1809-84). On the movements and habits of climbing plants. In *Journal of the Linnean Society* 9, nos. 33 & 34 (1865): 1-118. Text wood-engravings. Whole number. 128pp. 224 x 144 mm. (uncut and unopened). Original blue-green printed wrappers, a bit chipped at extremities, very minor spotting. Very good copy. Preserved in a cloth folding box. $7500

First Edition, journal issue of Darwin's book-length paper on climbing plants, containing the essence of his discoveries in this field. The book-form second edition published ten years later, by which his work on this subject is generally known, is actually a revision and enlargement of the above. Darwin found that climbing was the result of the bending in a revolving plane of the apex of a plant's stem while it grows. He later studied the mechanism of bending and showed that it was due to a substance that comes down from the apex when acted upon by light. This research laid the foundation of the science of growth hormones in plants.

The first printing of Darwin's monograph appeared in three forms, all from the same setting of type: the double number of the Linnean Society *Journal* (as above), which was issued to the Fellows; a commercial offprint for sale to the public; and an offprint for the author. It made its first appearance between hard covers in 1875. *Dictionary of Scientific Biography*. Freeman 833. Norman 596. 42842



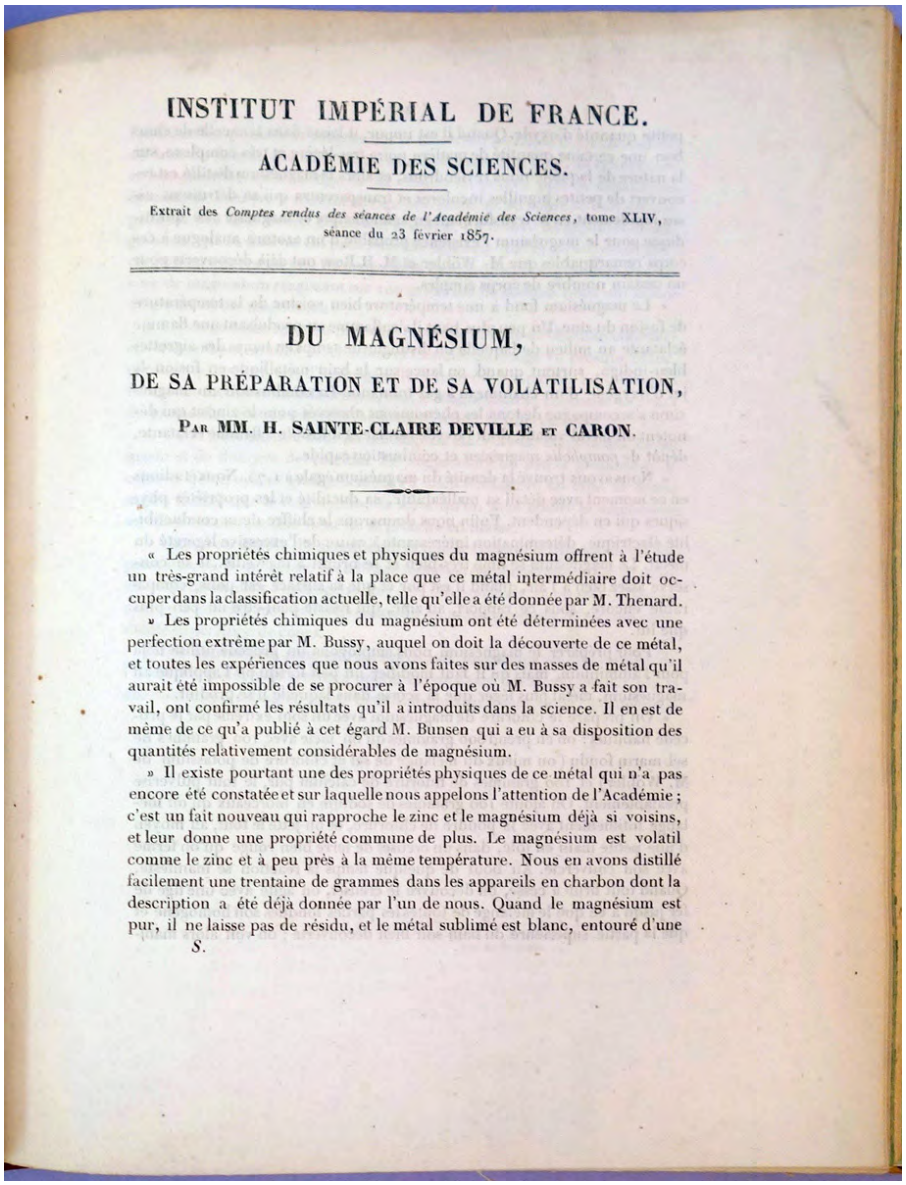
"Two Specimens from the New Red Sandstone"

15. De la Beche, Henry (1796-1855). Autograph letter signed to Lyon Playfair (1818-98). 3–1/2 pages. Neath, Glamorganshire, 2 August 1845. Repairs to upper and lower margins affecting 2 words, strip of gummed paper repairing a tear on verso of last leaf, otherwise very good. $475

From British geologist and paleontologist Henry De la Beche, first director of the Geological Survey of Great Britain and author of numerous works on geology (as well as some famous paleontological cartoons), to his colleague Lyon Playfair, chemist to the Geological Survey and professor at the School of Mines. De la Beche's letter discusses the chemical composition of certain geological specimens:

> By this day's post I have sent you . . . a packet containing two specimens from the New Red Sandstone marls of Aust Cliff, Old Progress [Road] near Bristol, collected on route. I am particularly anxious to learn the composition (chemical) of these specimens & more especially as to the iron in them, whether it is as a protoxide (as is supposed) in the blue marl, and a peroxide in the red . . . There are other important geological considerations about them but I will not tell what beforehand.

Aust Cliff in southwest England is an important geological and paleontological site. 42847



INSTITUT IMPÉRIAL DE FRANCE.

ACADÉMIE DES SCIENCES.

Extrait des *Comptes rendus des séances de l'Académie des Sciences*, tome XLIV, séance du 23 février 1857.

DU MAGNÉSIUM,

DE SA PRÉPARATION ET DE SA VOLATILISATION,

PAR MM. H. SAINTE-CLAIRE DEVILLE ET CARON.

« Les propriétés chimiques et physiques du magnésium offrent à l'étude un très-grand intérêt relatif à la place que ce métal intermédiaire doit occuper dans la classification actuelle, telle qu'elle a été donnée par M. Thenard.

» Les propriétés chimiques du magnésium ont été déterminées avec une perfection extrême par M. Bussy, auquel on doit la découverte de ce métal, et toutes les expériences que nous avons faites sur des masses de métal qu'il aurait été impossible de se procurer à l'époque où M. Bussy a fait son travail, ont confirmé les résultats qu'il a introduits dans la science. Il en est de même de ce qu'a publié à cet égard M. Bunsen qui a eu à sa disposition des quantités relativement considérables de magnésium.

» Il existe pourtant une des propriétés physiques de ce métal qui n'a pas encore été constatée et sur laquelle nous appelons l'attention de l'Académie ; c'est un fait nouveau qui rapproche le zinc et le magnésium déjà si voisins, et leur donne une propriété commune de plus. Le magnésium est volatil comme le zinc et à peu près à la même température. Nous en avons distillé facilement une trentaine de grammes dans les appareils en charbon dont la description a été déjà donnée par l'un de nous. Quand le magnésium est pur, il ne laisse pas de résidu, et le métal sublimé est blanc, entouré d'une

S.

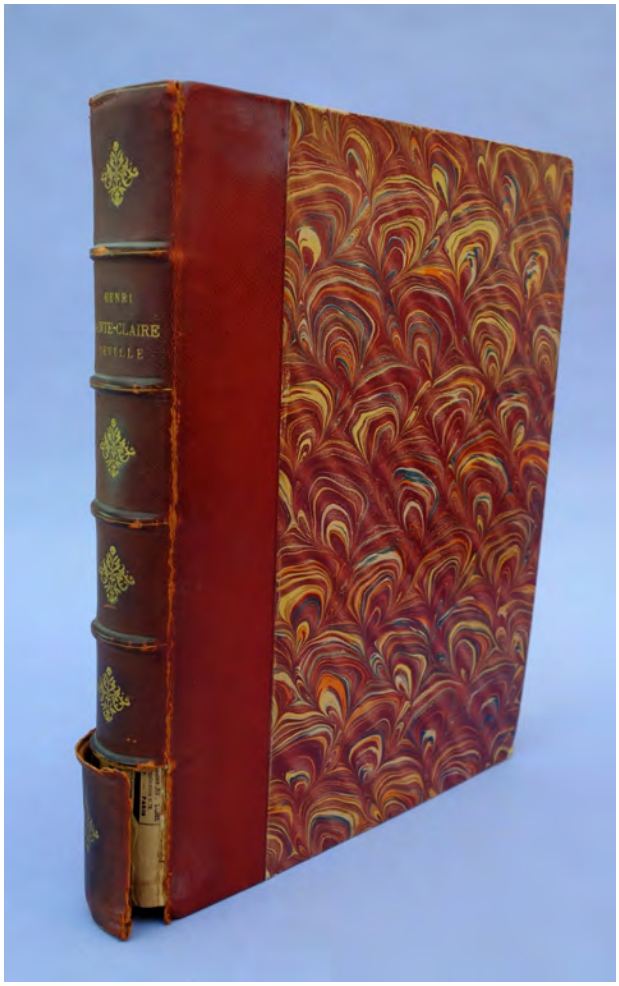
"Significant Developments in Physical Chemistry"

16. Deville, Henri Étienne Sainte-Claire (1818-81). 34 items by or relating to Deville, including offprints, pamphlets and two letters. 1843-1910. Various sizes (the largest measuring 268 x 208 mm.) bound in a single volume, quarter morocco gilt, marbled boards ca. 1910, lower portion of spine partially detached but present, light wear. Very good overall. Complete list available on request.

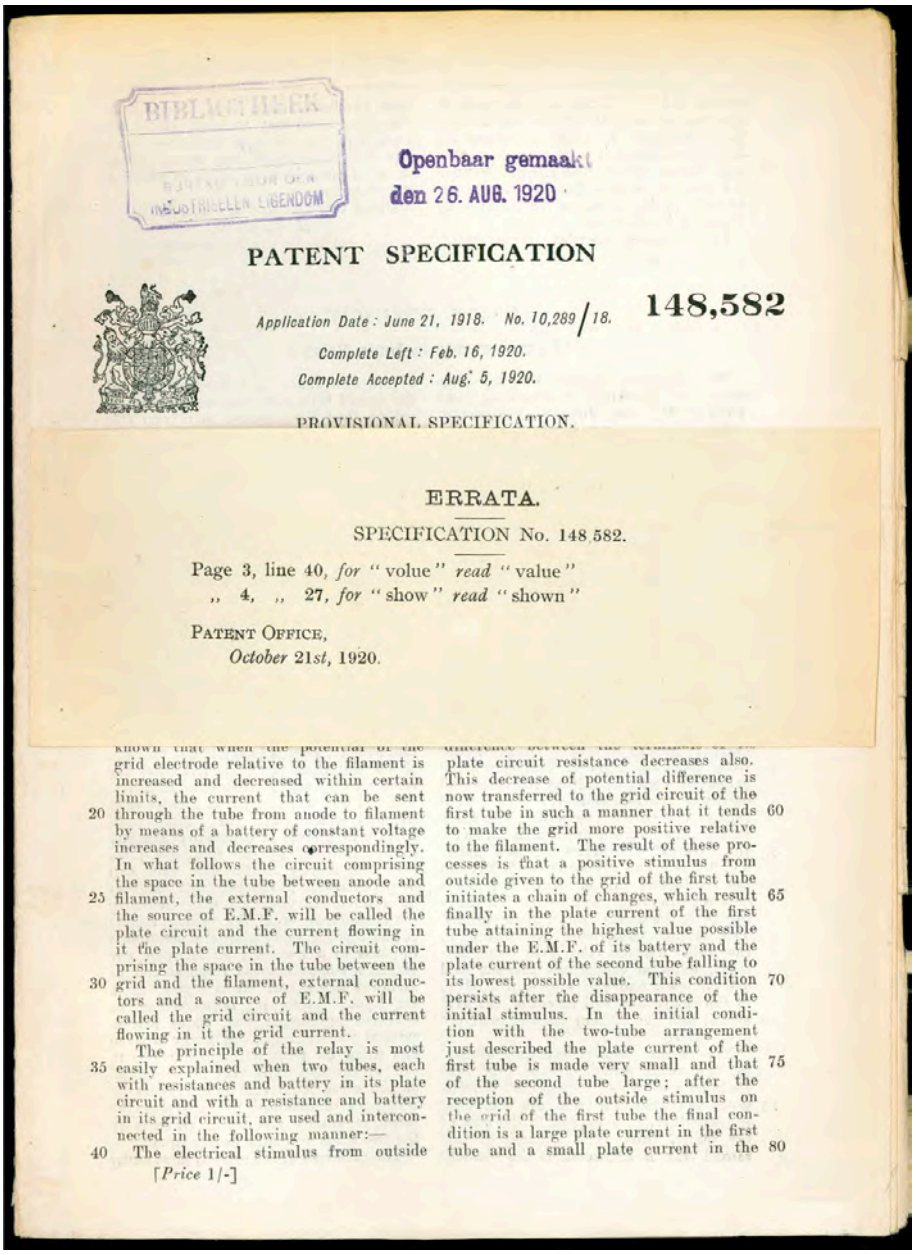
$2500

First Editions. A collection of rare materials by and relating to Deville, best known for developing the Deville process for extracting aluminum oxide from bauxite, which made possible the first economically feasible large-scale production of pure aluminum metal. Two of the pamphlets in this collection include Deville's brief accounts of his work on this process, which he described in detail in his "Mémoire sur la fabrication du sodium et d'aluminium" (*Annales de chimie et de physique*, 3rd series, 46 [1856]: 415-458; not included in this collection). Deville is also noted for his work on the platinum metals, including their use in the prototype of the international standard meter bar, and for his discovery of the dissociation of heated chemical compounds and their recombination at lower temperatures (reversible reactions). Many of the works in this collection cover Deville's researches in these fields.

"Deville was one of the most prolific and versatile chemists of the nineteenth century. . . . He began his laboratory studies at a time when organic chemistry was developing most actively, and his early work was in this field: investigations of turpentine, toluene, and acid anhydrides. However, his analytical skill and his important synthesis of nitrogen pentoxide in 1849 turned his attention to inorganic chemistry. He worked out a process for producing pure aluminum by reducing its salts with sodium. Deville's methods made both metals readily available and drastically reduced their cost . . . He used the sodium obtained by his method for the preparation of such elements as silicon, boron, and titanium. His investigations of the metallurgy of platinum led to honors from the Russian government. In many of his studies, such as those on the artificial production of natural minerals, Deville employed very high temperatures and became a recognized authority on the use of this technique. His measurements of the vapor densities of compounds at various temperatures helped to confirm Avogadro's hypothesis. These studies let Deville to his most notable discovery, the dissociation of heated chemical compounds and their recombination at lower temperatures. . . . This work led to a better understanding of the mechanism of chemical reactions and to significant developments in physical chemistry" (*Dictionary of Scientific Biography*).



This collection includes 26 offprints and pamphlets by Deville and 8 items relating to Deville, including biographies, his brother Charles St. Claire Deville's theses in physics and chemistry, and letters from his younger son, Emile, and his longtime collaborator Henri Debray. A complete list is available on request. 43002



BIBLIOTHEEK
BUREAU VOOR DEN INDUSTRIEELEN EIGENDOM

Openbaar gemaakt
den 26. AUG. 1920

PATENT SPECIFICATION

148,582

Application Date: June 21, 1918. No. 10,289/18.
Complete Left: Feb. 16, 1920.
Complete Accepted: Aug. 5, 1920.

PROVISIONAL SPECIFICATION.

ERRATA.

SPECIFICATION No. 148,582.

Page 3, line 40, *for* "volue" *read* "value"
,, 4, ,, 27, *for* "show" *read* "shown"

PATENT OFFICE,
October 21*st*, 1920.

known that when the potential of the grid electrode relative to the filament is increased and decreased within certain limits, the current that can be sent through the tube from anode to filament by means of a battery of constant voltage increases and decreases correspondingly. In what follows the circuit comprising the space in the tube between anode and filament, the external conductors and the source of E.M.F. will be called the plate circuit and the current flowing in it the plate current. The circuit comprising the space in the tube between the grid and the filament, external conductors and a source of E.M.F. will be called the grid circuit and the current flowing in it the grid current.

The principle of the relay is most easily explained when two tubes, each with resistances and battery in its plate circuit and with a resistance and battery in its grid circuit, are used and interconnected in the following manner:—

The electrical stimulus from outside

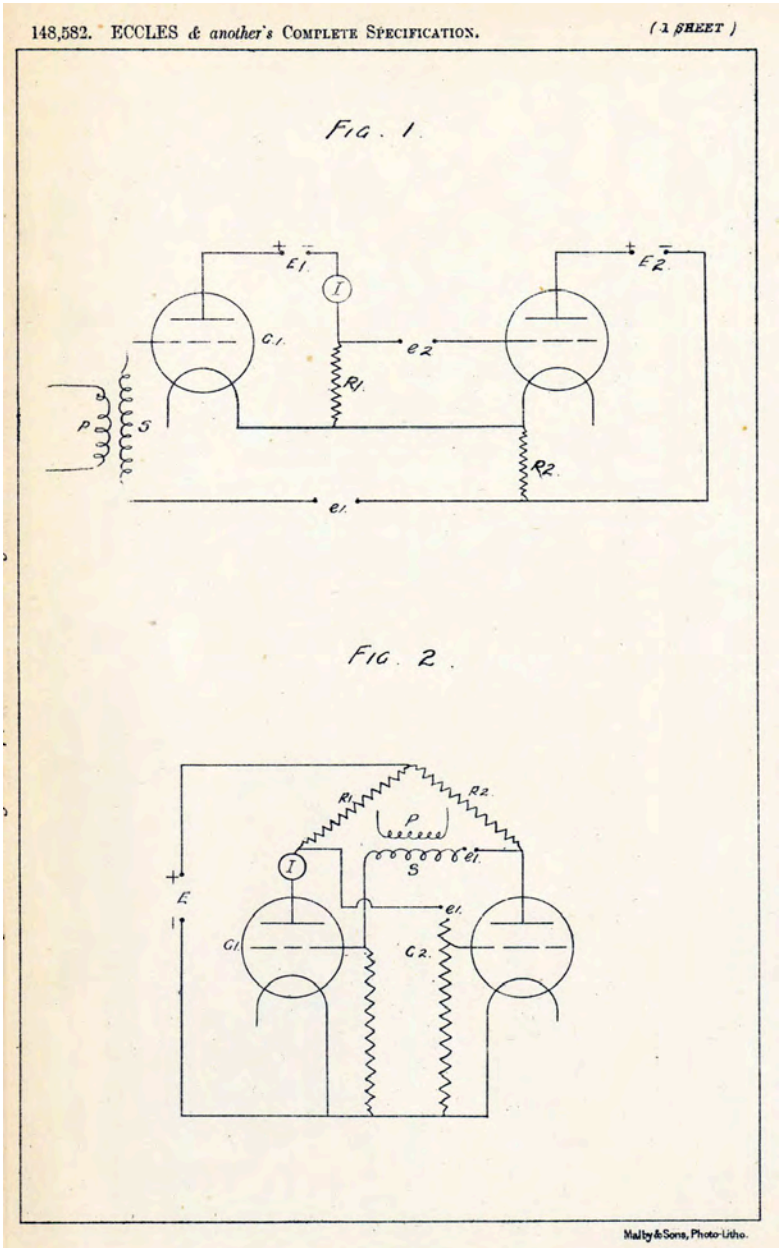
[*Price* 1/-]

difference between the terminals of the plate circuit resistance decreases also. This decrease of potential difference is now transferred to the grid circuit of the first tube in such a manner that it tends to make the grid more positive relative to the filament. The result of these processes is that a positive stimulus from outside given to the grid of the first tube initiates a chain of changes, which result finally in the plate current of the first tube attaining the highest value possible under the E.M.F. of its battery and the plate current of the second tube falling to its lowest possible value. This condition persists after the disappearance of the initial stimulus. In the initial condition with the two-tube arrangement just described the plate current of the first tube is made very small and that of the second tube large; after the reception of the outside stimulus on the grid of the first tube the final condition is a large plate current in the first tube and a small plate current in the

Patent for the Flip-Flop Circuit, the Basis for Electronic Memory

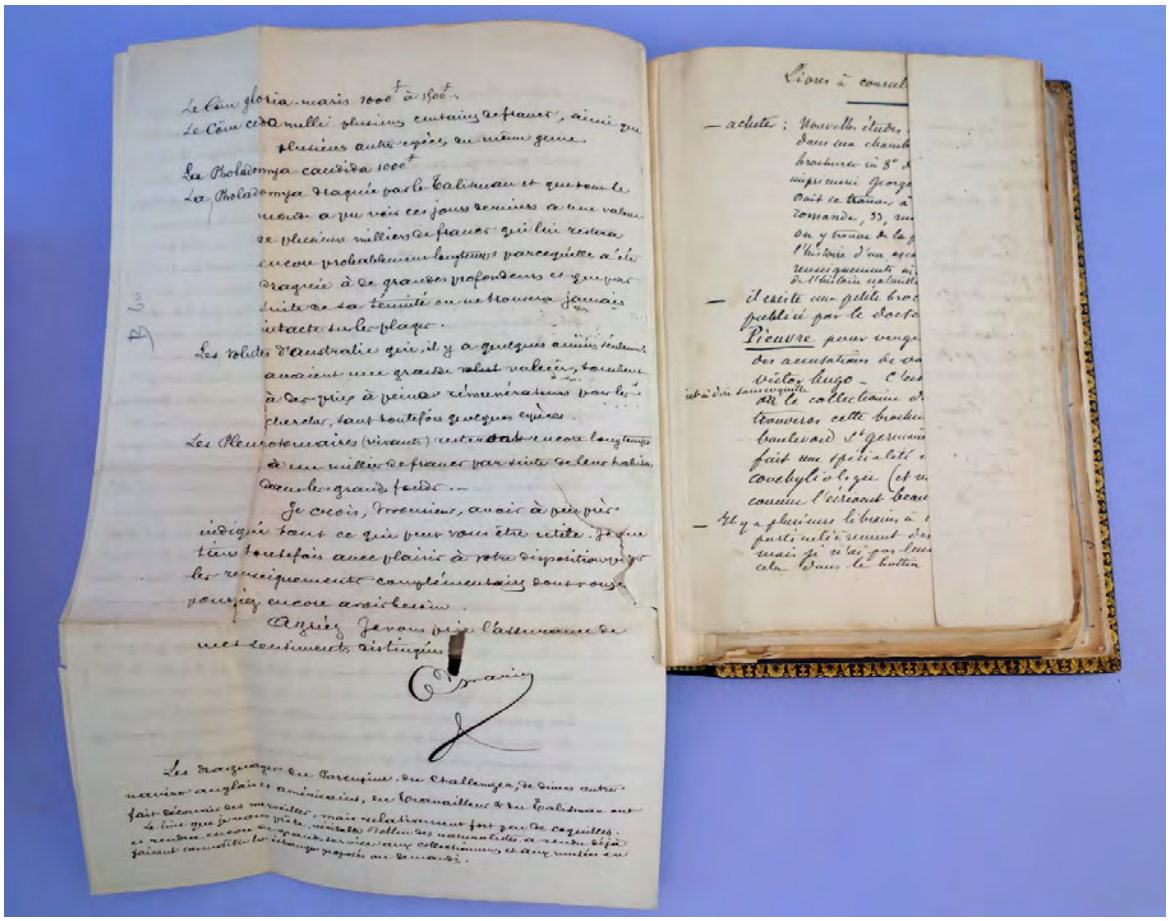
17. Eccles, William Henry (1875-1966) and Frank Wilfred Jordan (1882-). Patent specification 148,582 . . . improvements in ionic relays. [Redhill: Printed for His Majesty's Stationery Office by Love & Malcomson, Ltd., 1920.] 5pp. Folding plate. Errata slip tipped to first leaf. 267 x 195 mm. Unbound. Light wear along gutter margin and fore-edge, but very good. Stamps of the Belgian Bureau voor den Industrieelen Eigendom Bibliotheek. $4500

First Edition. On June 21, 1918 British physicists William Henry Eccles and Frank Wilfred Jordan, professors of engineering at London's City and Guilds Technical College, filed a patent for "Improvements in Ionic Relays"—the first flip-flop circuit. The device, originally called the Eccles–Jordan trigger circuit, consisted of two active elements (vacuum tubes). The schematic drawing illustrating Eccles and Jordan's patent shows two flip-flops, "one drawn as a cascade of amplifiers with a positive feedback path, and the other as a symmetric cross-coupled pair" (Wikipedia). The patent specification, no. 148,582, was first published in 1920.



Early flip-flops were known variously as trigger circuits or multivibrators. A flip-flop circuit has two stable states and, as Claude Shannon pointed out in his *Mathematical Theory of Communication* (1948), can be used to store one bit of information. Flip-flop circuits operate using Boolean algebra (AND, OR, NOT). Prior to the invention of electronic computing Eccles and Jordan viewed their invention as a "method of relaying or magnifying in electrical circuits for use in telegraphy and telephony." However, with the invention of electronic computing that used vacuum tubes as switches, flip-flops became the basic storage element in sequential logic used in digital circuitry, and the basis for electronic memory.

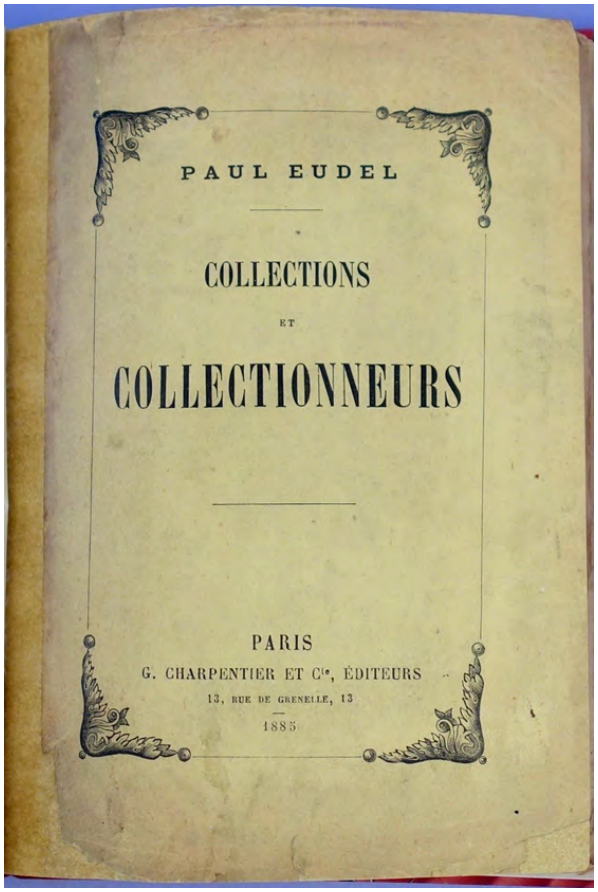
In September 1919 Eccles and Jordan described the flip-flop in a brief one-page paper, "A trigger relay utilizing three-electrode thermionic vacuum tubes" (*The Electrician*, 83, [September 19, 1919], p. 298). However, the patent, filed the previous year and consisting of 5 pages plus illustration, remains the first description of this invention. Very rare. 42964

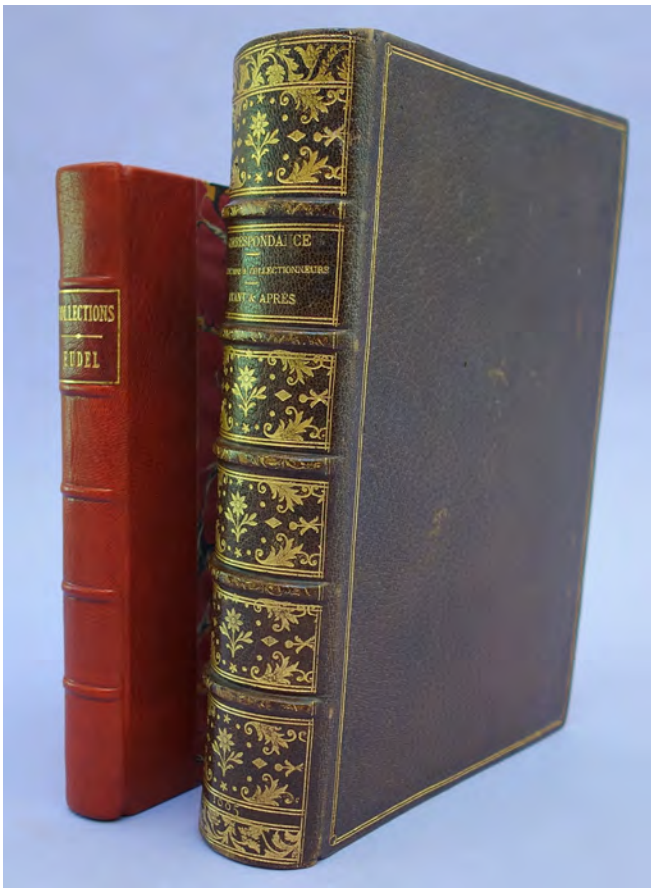


The Published Book and the Correspondence Leading to the Book

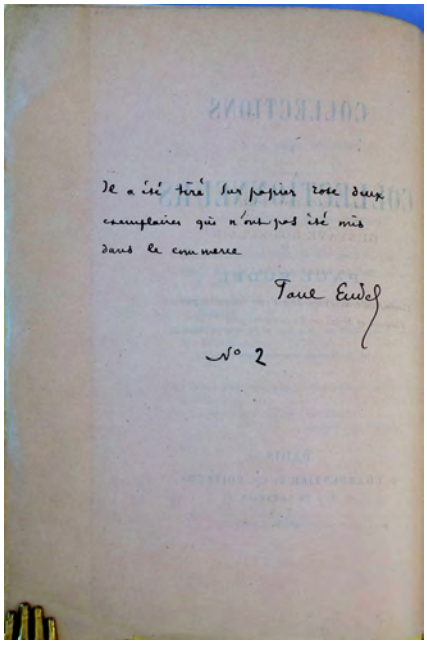
18. Eudel, Paul (1837-1911). (1) Collections et collectionneurs. [6], ii, 300pp. Paris: G. Charpentier et Cie., 1885. 195 x 147 mm. (uncut). Modern quarter morocco, marbled boards; original printed wrappers bound in (mended at gutter margins). Minor fraying at margins, but fine. One of only two copies printed on rose-colored paper, with Eudel's signed autograph inscription on the title verso: "Il a été tiré sur papier rose deux exemplaires qui n'ont pas été mis dans le commerce. Paul Eudel. No. 2" [There were two copies printed on pink paper that were not for sale. Paul Eudel. No. 2]. (2) Correspondance, Collections et collectionneurs, avant et après (spine title). Bound volume of correspondence containing over 80 manuscript letters and other materials relating to Eudel's *Collections et collectionneurs*. 1881-85. 223 x 151 mm. Bound, presumably for Eudel, in full morocco gilt, very slight wear at spine. Together two items. Minor marginal fraying, light toning but fine. $6500

First Edition of no. (1), one of only two copies printed on rose-colored paper, presumably for Eudel and with his signed limitation inscription on the verso of the title. Paul Eudel, one of the great French connoisseurs, bibliophiles and art critics of the nineteenth century, amassed important collections of antique jewelry, eighteenth-century prints, posters, rare books, bindings and other *objets d'art*. He also wrote prolifically on the subject of collecting, publishing both books and articles in newspapers such as *Le Figaro* and *Le Temps*; his reviews of the auction sales held at Paris's L'Hôtel Drouot were collected and published in nine volumes between 1882 and 1891. Eudel was the author of a famous exposé of artistic and literary forgeries titled *Le truquage* (1884), which did much to shape modern opinion on the subject. He was a patron of the arts and a friend of many artists and writers, including Victor Hugo, whom Eudel gave credit for having "convinced the French that antiques had value" (Auslander, p. 185).

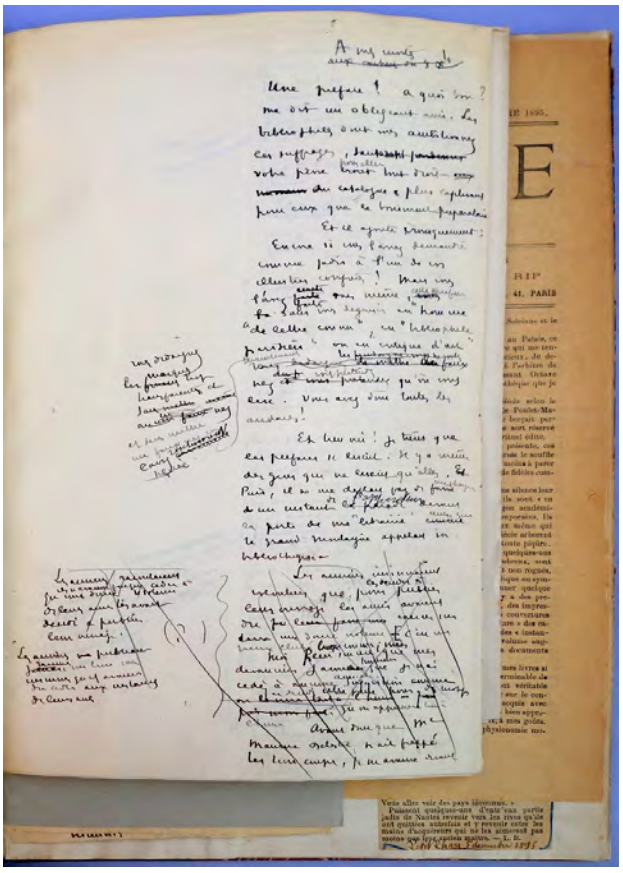




Eudel's *Collections et collectionneurs* contains eight articles on collecting and collectors that had previously appeared in periodicals, together with Eudel's preface written for the book-form edition. Included are articles on stamp collecting, shells, antique toys and puppets, together with profiles of collectors such as Baron Charles Davillier, fencing master and historian Arsène Vigeant, and Aimé Desmottes. We are offering one of two specially printed *hors de commerce* copies of this work, no doubt commissioned by Eudel, and signed by him.



Accompanying the work is Eudel's handsomely bound volume of correspondence relating to the production and reception of Collections et collectionneurs, containing over eighty letters (most with covers bound in) and other materials. Among the letters are seven from Arthur Maury (1844-1907), one of the pioneers of philately and author of the first stamp-collecting catalogues; three from Arsène Vigeant; four from Ad. Giraldon regarding the toy collection of Mme. Agar; two from pottery collector Gustave Gouellain, to whom Eudel dedicated *Collections et collectionneurs*; and eleven from the printing firm of P. Charaire et fils, who printed the work for publisher G. Charpentier. Also included in the volume is a 21-page manuscript document in French on shell collecting and collectors covering much of the material in Eudel's piece on the subject. We have not been able to identify the author, but it might have been written by Eudel's brother Émile, a noted shell collector. Auslander, "The gendering of consumer practices in nineteenth century France," in *Consumption: The History and Regional Development of Consumption,* ed. D. Miller (2001), pp. 157-189. 40914; 41107



Complete Documentation in Drawings, Paintings, Manuscript and Print

19. Eudel, Paul (1837-1911). Catalogue de livres et affiches [spine title]. Archive of materials relating to the auction of Eudel's art reference library and illustrated poster collection at the Hôtel Drouot, Paris, 9 – 11 December 1895, assembled by Eudel. Paris, 1895. 351 x 242 mm. Bound for Eudel in quarter cloth, marbled boards ca. 1895, leather spine label, slight edgewear. Small tear in one mount, but fine otherwise. $8500

Unique Archive Relating to the Sale of Eudel's Important Art Reference Library and Illustrated Poster Collection, which took place at the Hôtel Drouot auction house in Paris on the 9th through the 11th of December 1895. Paul Eudel, one of the great French connoisseurs, bibliophiles and art critics of the nineteenth century, amassed important collections of antique jewelry, eighteenth-century prints, posters, rare books, bindings and other objets d'art.

Eudel's meticulously assembled album documenting the sale catalogue of his books and posters provides a fascinating glimpse into the world of art collecting and auctions in Paris in the last decade of the nineteenth century. The catalogue listed 561 lots, including sales catalogues of paintings, objets d'art, books, autographs, drawings, prints and ceramics, as well as bibliographies, periodicals, histories, travel literature and books on the theater. Lots 452-557 described Eudel's collection of modern posters; this was one of the earliest sales of art posters and was watched closely by collectors.

This volume contains the following:

(1) Over 20 original drawings, proofs and design plans for the cover of the catalogue, including nine watercolors, by "Marc Mangin"(i.e., Marcel Paul Maurice Stéphane Mangin, 1853-1915);

(2) Eudel's seven-page autograph manuscript for the catalogue's preface, heavily revised, plus a proof of a portion of the catalogue bearing his autograph corrections;

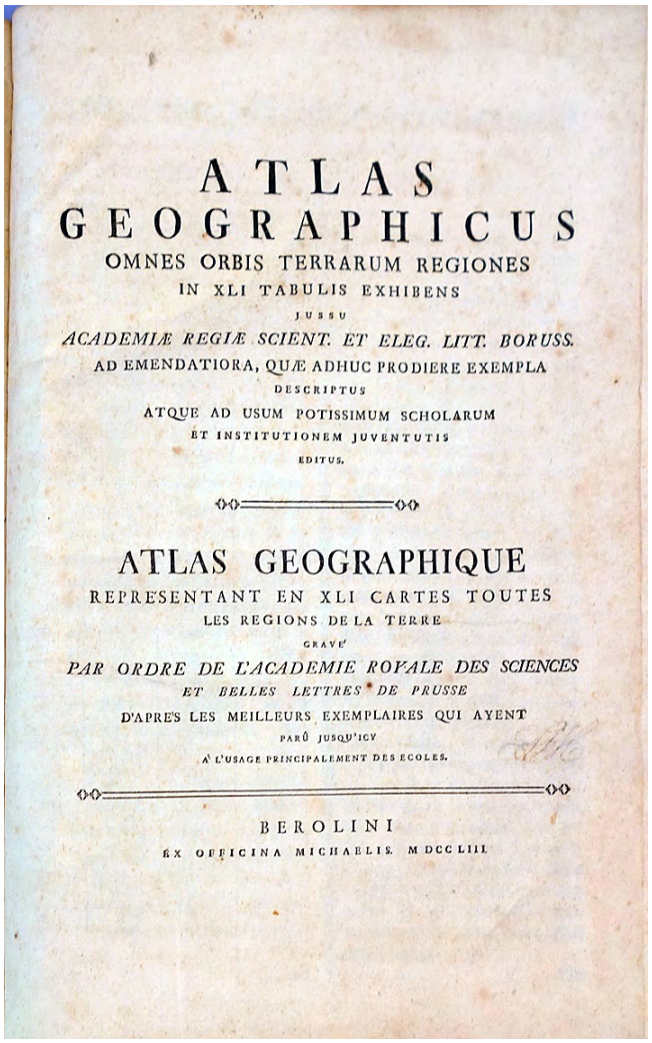
(3) The auction catalogue itself, titled *Catalogue de livres rares et curieux et d'affiches illustrées* (75pp., original printed wrappers), describing 561 lots;

(4) 15 cuttings from newspapers and journals of the period reviewing the sale, including one itemizing the prices realized for the posters; and

(5) Four letters to Eudel from artist Louis Abel-Truchet (1857-1918) regarding proofs of a poster he was designing for Eudel, presumably to advertise the auction. Abel-Truchet ended one of the letters with the statement "Et en même temps nous parlerons de Baudelaire" [At the same time we will talk about Baudelaire], possibly referring to the poet. 40233

One of the Rarest and Least Known of Euler's Publications

20. Euler, Leonhard (1707-83). Atlas geographicus omnes orbis terrarum regiones in XLI tabulis exhibens . . . Atlas géographique representant en XLI cartes toutes les regions de la terre . . . Folio. xii pp. plus 44 double-page hand-colored engraved maps, each bearing the small ink-stamp of the Berlin Akademie der Wissenschaften as called for. Parallel text in Latin and French. Berlin: Ex officina Michaelis, 1753. 355 x 225 mm. Wallet binding in blind-paneled sheep ca. 1753 with extended fore-edge flap, some wear along spine and front flap with minor loss at extremities, ties perished. Light toning, occasional offsetting from plates, ownership inscription neatly erased from title, but very good. Bookplate of noted American musicologist Donald M. McCorkle. $5500

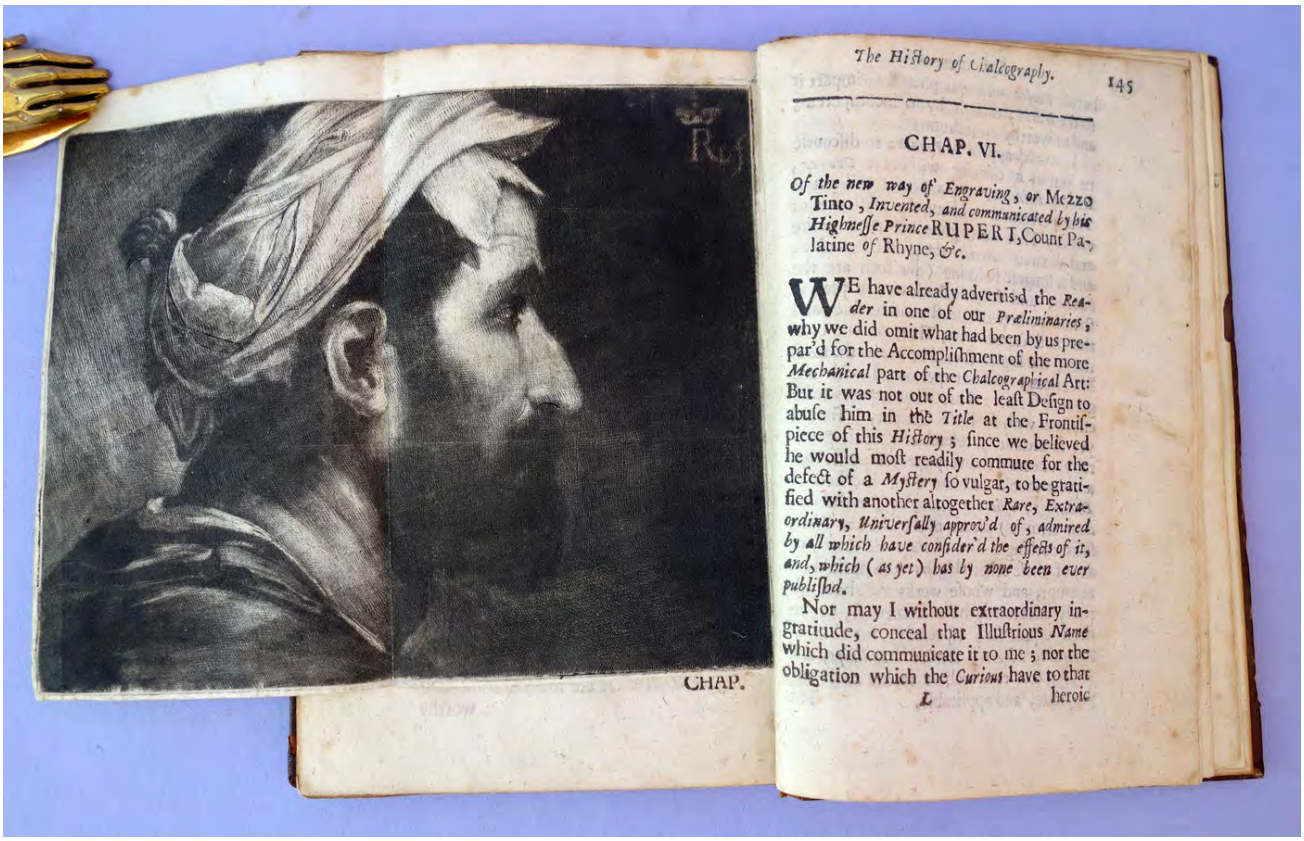


ATLAS
GEOGRAPHICUS
OMNES ORBIS TERRARUM REGIONES
IN XLI TABULIS EXHIBENS
JUSSU
ACADEMIÆ REGIÆ SCIENT. ET ELEG. LITT. BORUSS.
AD EMENDATIORA, QUÆ ADHUC PRODIERE EXEMPLA
DESCRIPTUS
ATQUE AD USUM POTISSIMUM SCHOLARUM
ET INSTITUTIONEM JUVENTUTIS
EDITUS.

ATLAS GEOGRAPHIQUE
REPRESENTANT EN XLI CARTES TOUTES
LES REGIONS DE LA TERRE
GRAVÉ
PAR ORDRE DE L'ACADEMIE ROYALE DES SCIENCES
ET BELLES LETTRES DE PRUSSE
D'APRE'S LES MEILLEURS EXEMPLAIRES QUI AYENT
PARÛ JUSQU'ICY
A L'USAGE PRINCIPALEMENT DES ECOLES.

BEROLINI
EX OFFICINA MICHAELIS. M DCC LIII

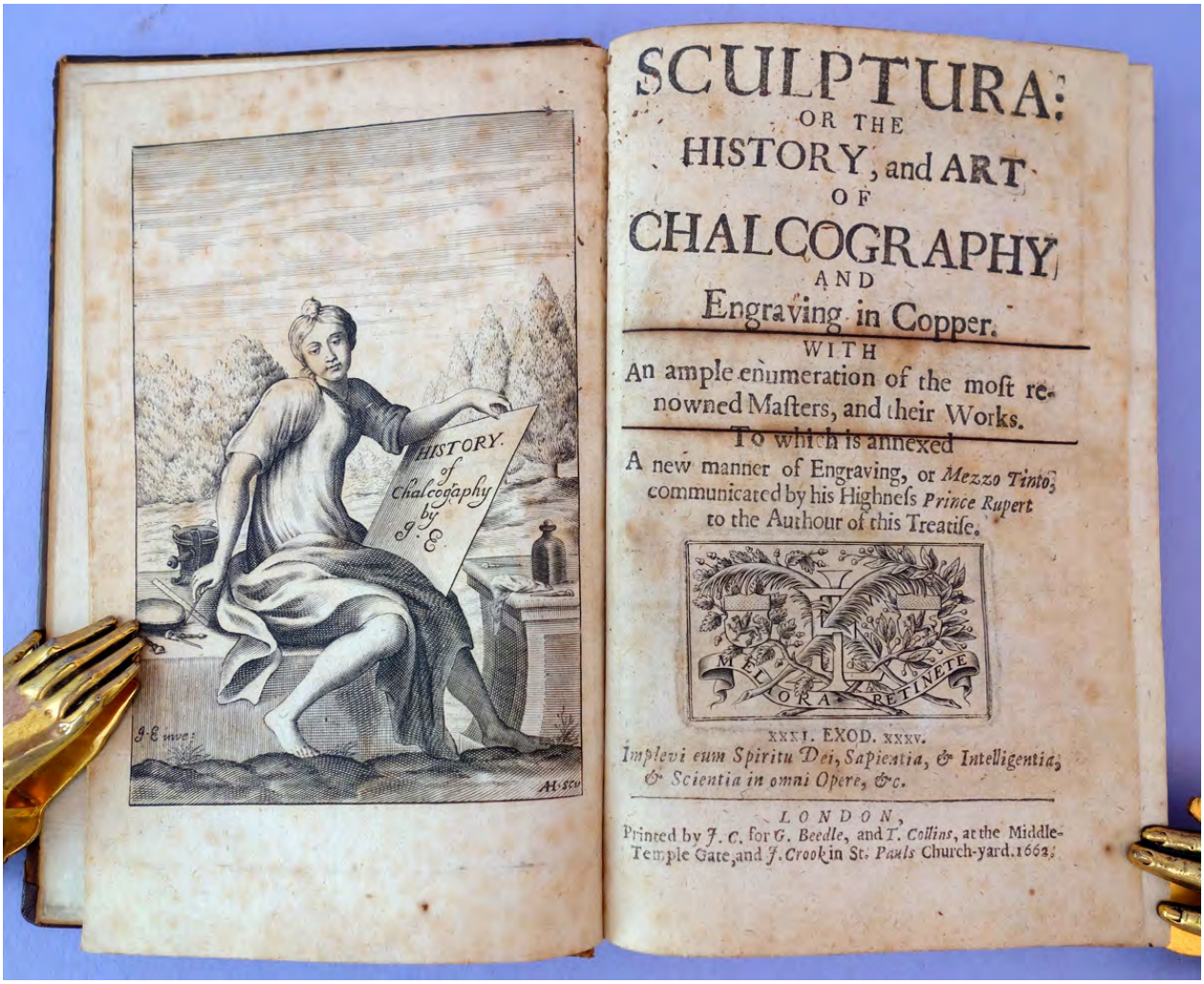
First Edition of One of the Rarest and Least Known of Euler's Publications. In 1744 the celebrated mathematician Leonhard Euler was appointed to several high administrative posts at the newly created Académie Royale des Sciences et de Belles Lettres de Berlin. Among his many duties was managing the publication of various calendars and maps issued by the Académie, the sale of which was a source of income for the institution. The present atlas of the world, edited by Euler and with a preface by him, was intended for use in schools; as such, very few copies have survived intact (OCLC notes several that are incomplete). Although the title indicates that the Atlas geographicus has 41 maps, it actually contains 44, all double-page and hand-colored. Bagrow, *History of Cartography* (2nd ed.), p. 243. *Dictionary of Scientific Biography*. Phillips, *Atlases*, III, no. 3500. 42960



First Mezzotint Published in England and the First Book to Announce the Mezzotint Process—The Fairfax Murray / Schlosser / Vershbow Copy

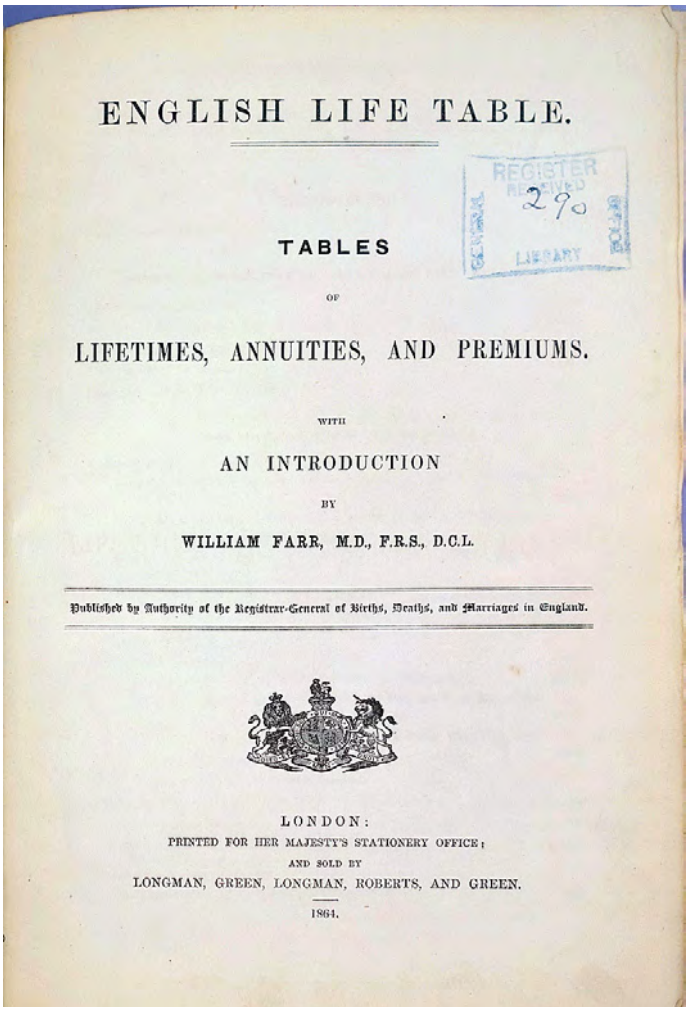
21. Evelyn, John (1620-1706). Sculptura: Or the history, and art of chalcography and engraving in copper to which is annexed a new manner of engraving, or mezzo tinto, communicated by his Highness Prince Rupert to the author of this treatise. 8vo. [32], 148, [3, advertisement]pp. Engraved frontispiece by A. Hertochs after Evelyn, engraving on p. 121, folding mezzotint by Prince Rupert of the Rhine (1619-82). London: J. C. for G. Beedle, T. Collins and J. Crook, 1662. 168 x 106 mm. Paneled calf gilt ca. 1662, rebacked, endpapers renewed. Light wear at spine. Light spotting and browning, offsetting on title from frontispiece, title-page with two horizontal rules in ink made at an early date. The Charles Fairfax Murray copy, with his bookplate; bookplate, duplicate stamp and perforated stamp (on leaf A2) of the Library of Congress; formerly owned by Leonard B. Schlosser (acquired via Marlborough Rare Books from his sale, Sotheby's New York, 18 June 1992, lot 456); bookplate of Arthur and Charlotte Vershbow. $16,500

The Fairfax Murray / Schlosser / Vershbow Copy of the First Edition of the First Book to Announce the Mezzotint Process, and containing the First Mezzotint published in England. This first English mezzotint, known as "The Head of the Executioner," can be found facing page 145 in Evelyn's treatise; it was executed by Prince Rupert of the Rhine, Charles II's cousin, who had brought the mezzotint technique with him when he settled in England after the Restoration of the English monarchy in 1660. From



Evelyn's diary and papers preserved in the British Library we know that Evelyn first learned of the mezzotint technique from Rupert on 24 February 1661. A few weeks later, under the date 13 March 1660/1, Evelyn wrote in his diary that "This afternoon Prince Rupert shew'd me with his owne hands the new way of graving call'd mezzo tinto, which afterwards by his permission I publish'd in my History of Chalcography; this set so many artists on worke that they soone arriv'd to that perfection it is since come, emulating the tenderest miniatures" (quoted in Keynes, p. 116). Although Evelyn mistakenly credited Rupert with the invention of mezzotint, the prince actually learned the technique from Ludwig von Siegen, a German officer who invented the mezzotint process in the 1640s (Evelyn later corrected the error in his *Numismata* [1697]). It was through John Evelyn and his *Sculptura* that the mezzotint process came to be highly regarded as a technique for the graphic arts in England. However, Rupert and Evelyn conspired to keep details of the process secret, lest it be "prostituted" at too cheap a rate.

Complete copies with the mezzotint are rare, since the plate was often removed from the volume by print collectors. This copy was once in the collection of Charles Fairfax Murray (1849-1919), the noted English painter, dealer, collector, benefactor and art historian; it was later owned by Leonard Schlosser, a historian of papermaking and printing. Keynes, *Evelyn* 33. Wing E-3513. Wax, *The Mezzotint: History and Technique* (1990), pp. 21-22. 42959



ENGLISH LIFE TABLE.

TABLES

OF

LIFETIMES, ANNUITIES, AND PREMIUMS.

WITH

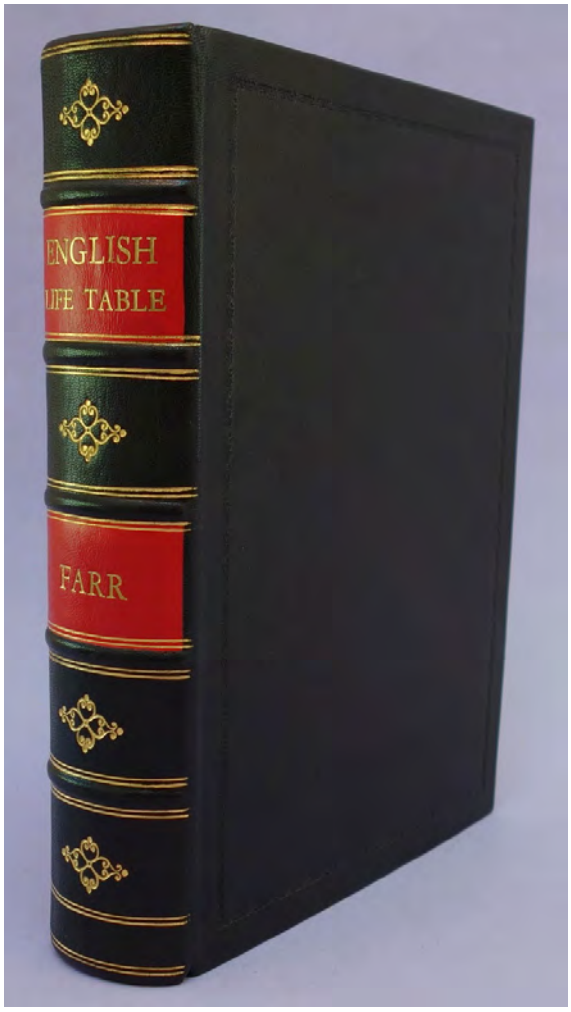
AN INTRODUCTION

BY

WILLIAM FARR, M.D., F.R.S., D.C.L.

Published by Authority of the Registrar-General of Births, Deaths, and Marriages in England.

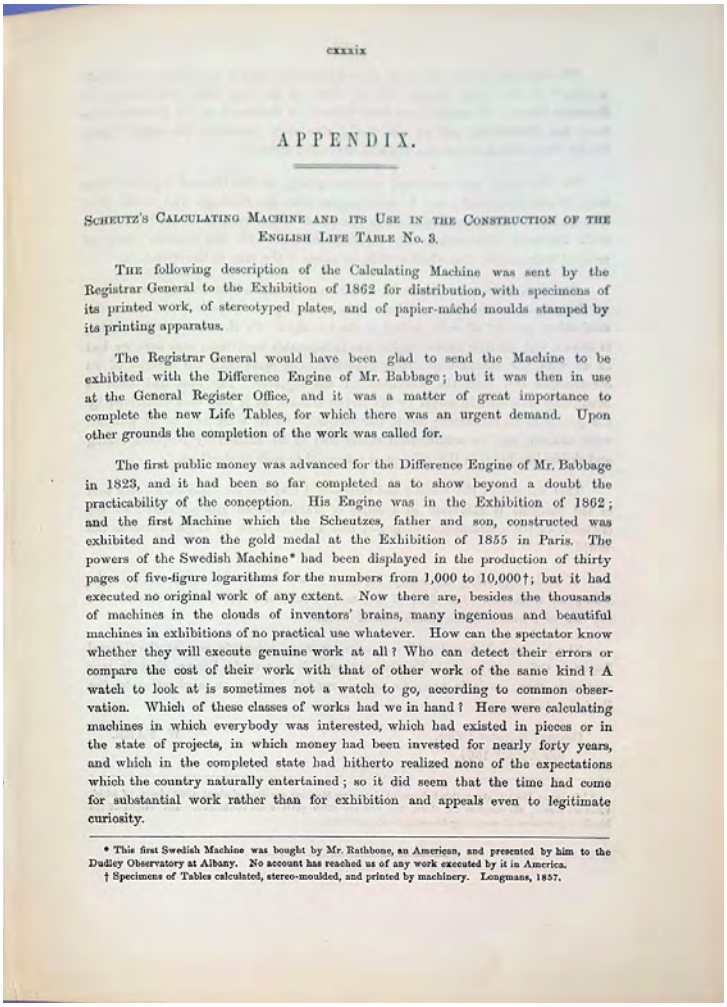
LONDON:
PRINTED FOR HER MAJESTY'S STATIONERY OFFICE;
AND SOLD BY
LONGMAN, GREEN, LONGMAN, ROBERTS, AND GREEN.
1864.



With Tables Produced by the Scheutz Printing Calculator

22. Farr, William (1807-83). English life table. Tables of lifetimes, annuities, and premiums. . . . Published by authority of the Registrar-General of births, deaths and marriages in England. London: H.M.S.O. & Longman, Green, Longman, Roberts and Green, 1864. Modern full morocco, gilt spine. Library stamp on title. [4], clv, 605pp. Text diagrams. 267 x 185 mm. The colophon leaf of this book indicates that 500 copies were printed. $8500

First Edition. The English Life Table contains a tremendous amount of data—6.5 million deaths sorted by age. Included in English Life Table no. 3 are the first lengthy working tables produced by the Scheutz printing calculator—the first instance of such a machine being used extensively to do original work. However, none of the hoped-for benefits of mechanizing the calculation of the tables were realized, since the Scheutz machine failed to include any of Babbage's security mechanisms to guard against mechanical error, and it required constant maintenance. Of the 600 pages of printed tables in the book, only 28 pages were composed entirely by the machine; a further 216 pages were partially composed by the machine, and the rest were typeset by hand. Nor was there the hoped-for savings from using the machine to prepare stereotype plates. Her Majesty's Stationery Office, printer of the volume, stated that having the machine set the entire book automatically would have saved only 10 percent over the cost of conventional typesetting (Swade, *The Cogwheel Brain: Charles Babbage and the Quest to Build the First Computer* [2000], pp. 203-8).



cxxxix

APPENDIX.

Scheutz's Calculating Machine and its Use in the Construction of the English Life Table No. 3.

The following description of the Calculating Machine was sent by the Registrar General to the Exhibition of 1862 for distribution, with specimens of its printed work, of stereotyped plates, and of papier-mâché moulds stamped by its printing apparatus.

The Registrar General would have been glad to send the Machine to be exhibited with the Difference Engine of Mr. Babbage; but it was then in use at the General Register Office, and it was a matter of great importance to complete the new Life Tables, for which there was an urgent demand. Upon other grounds the completion of the work was called for.

The first public money was advanced for the Difference Engine of Mr. Babbage in 1823, and it had been so far completed as to show beyond a doubt the practicability of the conception. His Engine was in the Exhibition of 1862; and the first Machine which the Scheutzes, father and son, constructed was exhibited and won the gold medal at the Exhibition of 1855 in Paris. The powers of the Swedish Machine* had been displayed in the production of thirty pages of five-figure logarithms for the numbers from 1,000 to 10,000†; but it had executed no original work of any extent. Now there are, besides the thousands of machines in the clouds of inventors' brains, many ingenious and beautiful machines in exhibitions of no practical use whatever. How can the spectator know whether they will execute genuine work at all? Who can detect their errors or compare the cost of their work with that of other work of the same kind? A watch to look at is sometimes not a watch to go, according to common observation. Which of these classes of works had we in hand? Here were calculating machines in which everybody was interested, which had existed in pieces or in the state of projects, in which money had been invested for nearly forty years, and which in the completed state had hitherto realized none of the expectations which the country naturally entertained; so it did seem that the time had come for substantial work rather than for exhibition and appeals even to legitimate curiosity.

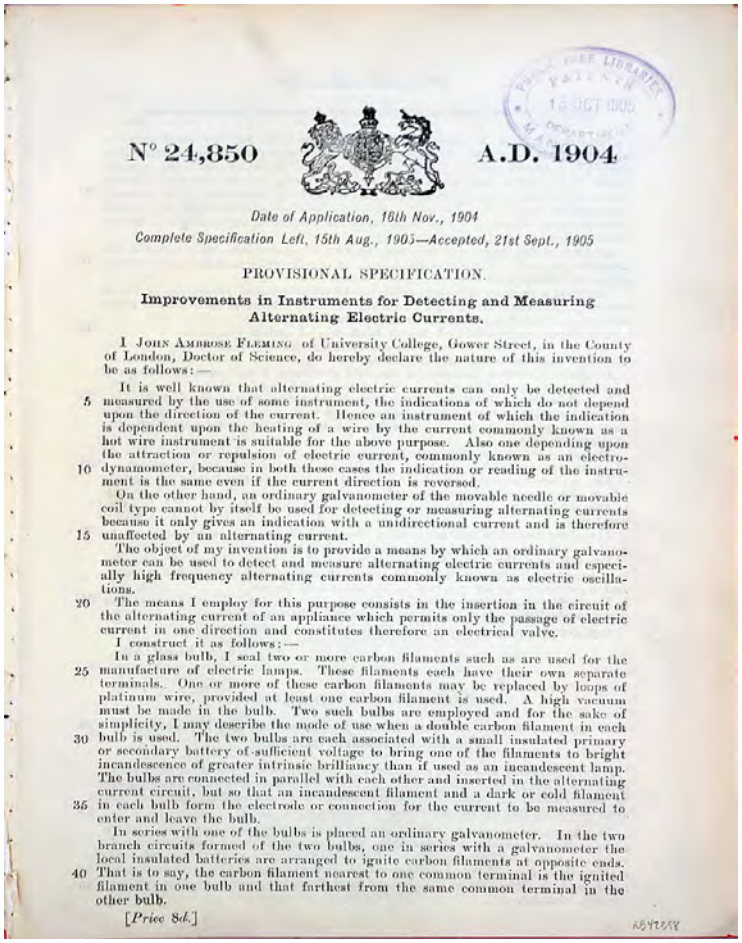
* This first Swedish Machine was bought by Mr. Rathbone, an American, and presented by him to the Dudley Observatory at Albany. No account has reached us of any work executed by it in America.
† Specimens of Tables calculated, stereo-moulded, and printed by machinery. Longmans, 1857.

Pages cxxxix-cxliv contain Farr's appendix entitled "Scheutz's calculating machine and its use in the construction of the English life table no. 3," in which he emphasized the usefulness of the new machine, but also the delicacy and skill necessary for its operation:

> The Machine required incessant attention. The differences had to be inserted at the proper terms of the various series, checking was required, and when the mechanism got out of order it had to be set right. Of the first watch nothing is known, but the first steam-engine was indisputably imperfect; and here we had to do with the second Calculating Machine as it came from the designs of its constructors and from the workshop of the engineer. The idea had been as beautifully embodied in metal by Mr. Bryan Donkin as it had been conceived by the genius of its inventors; but it was untried. So its work had to be watched with anxiety, and its arithmetical music had to be elicited by frequent tuning and skilful handling, in the quiet most congenial to such productions.
>
> This volume is the result; and thus—if I may use the expression—the soul of the Machine is exhibited in a series of Tables which are submitted to the criticism of the consummate judges of this kind of work in England and in the world (p. cxl)

Farr also noted Babbage's contribution to the venture—it was Babbage who "explained the principles [of the Scheutz calculator] and first demonstrated the practicability of performing certain calculations, and printing the results by machinery" (p. xiii).

Having invested so much time and money in the project while realizing only token gains, the British government showed little patience with the Scheutz calculating machine. The General Register Office soon reverted to manual calculations by human computers employing logarithms, continuing with this practice until the GRO's conversion to mechanical calculation methods in 1911. *Origins of Cyberspace* 85. 39027



N° 24,850 A.D. 1904

Date of Application, 16th Nov., 1904

Complete Specification Left, 15th Aug., 1905—Accepted, 21st Sept., 1905

PROVISIONAL SPECIFICATION.

Improvements in Instruments for Detecting and Measuring Alternating Electric Currents.

I JOHN AMBROSE FLEMING of University College, Gower Street, in the County of London, Doctor of Science, do hereby declare the nature of this invention to be as follows:—

It is well known that alternating electric currents can only be detected and measured by the use of some instrument, the indications of which do not depend upon the direction of the current. Hence an instrument of which the indication is dependent upon the heating of a wire by the current commonly known as a hot wire instrument is suitable for the above purpose. Also one depending upon the attraction or repulsion of electric current, commonly known as an electro-dynamometer, because in both these cases the indication or reading of the instrument is the same even if the current direction is reversed.

On the other hand, an ordinary galvanometer of the movable needle or movable coil type cannot by itself be used for detecting or measuring alternating currents because it only gives an indication with a unidirectional current and is therefore unaffected by an alternating current.

The object of my invention is to provide a means by which an ordinary galvanometer can be used to detect and measure alternating electric currents and especially high frequency alternating currents commonly known as electric oscillations.

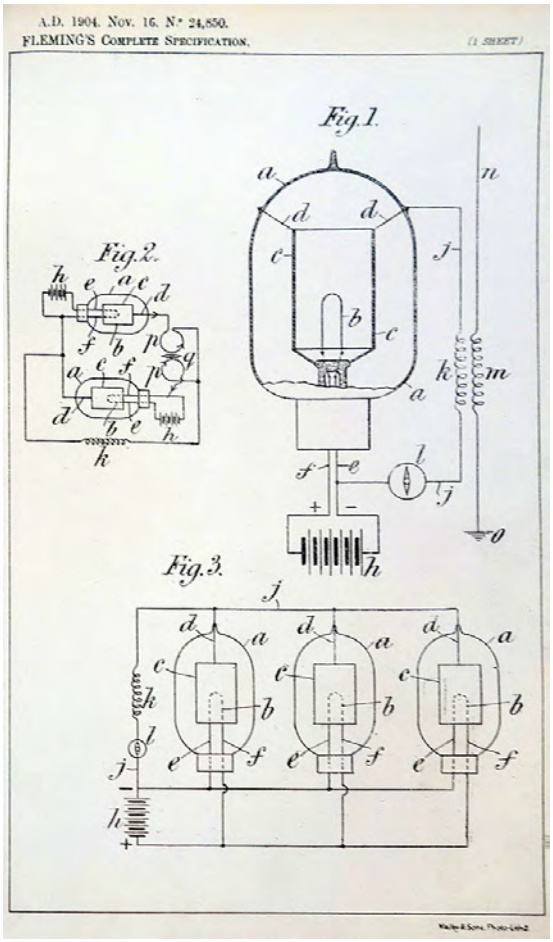
The means I employ for this purpose consists in the insertion in the circuit of the alternating current of an appliance which permits only the passage of electric current in one direction and constitutes therefore an electrical valve.

I construct it as follows:—

In a glass bulb, I seal two or more carbon filaments such as are used for the manufacture of electric lamps. These filaments each have their own separate terminals. One or more of these carbon filaments may be replaced by loops of platinum wire, provided at least one carbon filament is used. A high vacuum must be made in the bulb. Two such bulbs are employed and for the sake of simplicity, I may describe the mode of use when a double carbon filament in each bulb is used. The two bulbs are each associated with a small insulated primary or secondary battery of sufficient voltage to bring one of the filaments to bright incandescence of greater intrinsic brilliancy than if used as an incandescent lamp. The bulbs are connected in parallel with each other and inserted in the alternating current circuit, but so that an incandescent filament and a dark or cold filament in each bulb form the electrode or connection for the current to be measured to enter and leave the bulb.

In series with one of the bulbs is placed an ordinary galvanometer. In the two branch circuits formed of the two bulbs, one in series with a galvanometer the local insulated batteries are arranged to ignite carbon filaments at opposite ends. That is to say, the carbon filament nearest to one common terminal is the ignited filament in one bulb and that farthest from the same common terminal in the other bulb.

[Price 8d.]

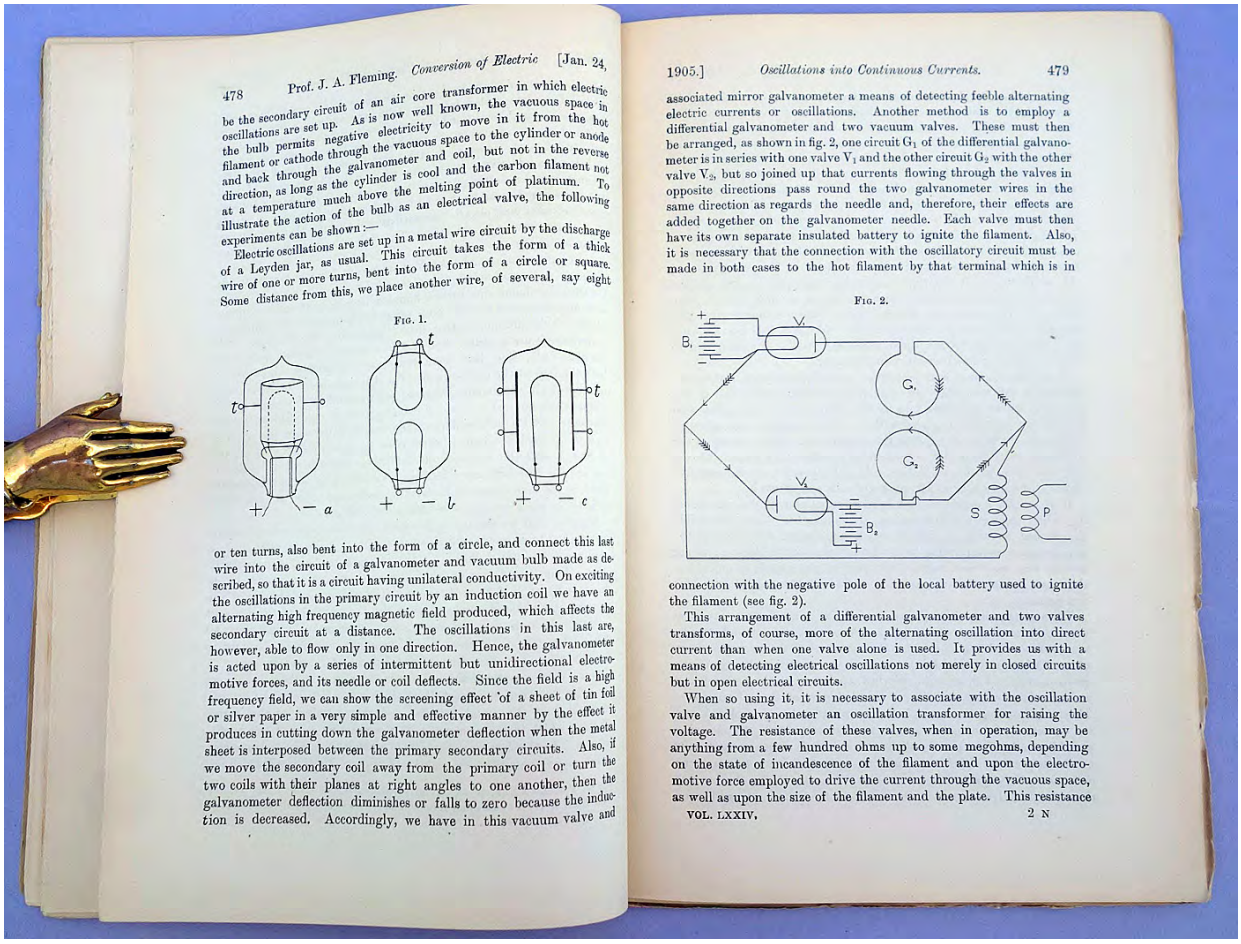


The Beginning of Electronics: Original Patent and First Paper

23. Fleming, John Ambrose (1849-1945). (1) No. 24,850 . . . Provisional specification. Improvements in instruments for detecting and measuring alternating electric currents. 5pp. Folding plate. [Redhill: H. M. Stationery Office, 1905.] 254 x 186 mm. Disbound. Stitching holes in left margin, library stamp on first leaf. (2) On the conversion of electric oscillations into continuous currents by means of a vacuum valve. In *Proceedings of the Royal Society* 74 (1905): 476-487. Whole number. 447-518pp. Text diagrams. 223 x 146 mm. Original printed wrappers, spine and margins a little chipped. Outer margins a bit frayed. Ownership stamp ("H. E. Annett") on the front wrapper. Boxed. Together two items. Very good. $6000

First Editions On November 16, 1904 Fleming applied for the patent on the vacuum tube (vacuum valve); he filed his complete specification on August 15, 1905. The patent (no. 1 above) also published in 1905, was granted on September 21. Between the date of filing the patent and filing the complete specification Fleming published his paper on the vacuum tube (no. 2 above) in the *Proceedings of the Royal Society.* As the original printed patent is very rare, this is an exceptional opportunity to acquire both Fleming's original specification in the patent and his first published paper on the invention that created the electronic industry.

Fleming, an electrical engineer and physicist who had worked with Thomas Edison's company in London, invented the two-electrode vacuum-tube or diode, an event that marks the beginning of the electronics age, enabling the development of radio and an exceptional range of other electronic inventions. Before the invention of the transistor, the vacuum tube was the first switch used in the earliest electronic computers. Using vacuum tubes as switches, the first general-purpose electronic computer, the ENIAC, was able to operate



478 Prof. J. A. Fleming. *Conversion of Electric* [Jan. 24,

be the secondary circuit of an air core transformer in which electric oscillations are set up. As is now well known, the vacuous space in the bulb permits negative electricity to move in it from the hot filament or cathode through the vacuous space to the cylinder or anode and back through the galvanometer and coil, but not in the reverse direction, as long as the cylinder is cool and the carbon filament not at a temperature much above the melting point of platinum. To illustrate the action of the bulb as an electrical valve, the following experiments can be shown:—

Electric oscillations are set up in a metal wire circuit by the discharge of a Leyden jar, as usual. This circuit takes the form of a thick wire of one or more turns, bent into the form of a circle or square. Some distance from this, we place another wire, of several, say eight

Fig. 1.

or ten turns, also bent into the form of a circle, and connect this last wire into the circuit of a galvanometer and vacuum bulb made as described, so that it is a circuit having unilateral conductivity. On exciting the oscillations in the primary circuit by an induction coil we have an alternating high frequency magnetic field produced, which affects the secondary circuit at a distance. The oscillations in this last are, however, able to flow only in one direction. Hence, the galvanometer is acted upon by a series of intermittent but unidirectional electromotive forces, and its needle or coil deflects. Since the field is a high frequency field, we can show the screening effect of a sheet of tin foil or silver paper in a very simple and effective manner by the effect it produces in cutting down the galvanometer deflection when the metal sheet is interposed between the primary secondary circuits. Also, if we move the secondary coil away from the primary coil or turn the two coils with their planes at right angles to one another, then the galvanometer deflection diminishes or falls to zero because the induction is decreased. Accordingly, we have in this vacuum valve and

1905.] *Oscillations into Continuous Currents.* 479

associated mirror galvanometer a means of detecting feeble alternating electric currents or oscillations. Another method is to employ a differential galvanometer and two vacuum valves. These must then be arranged, as shown in fig. 2, one circuit G_1 of the differential galvanometer is in series with one valve V_1 and the other circuit G_2 with the other valve V_2, but so joined up that currents flowing through the valves in opposite directions pass round the two galvanometer wires in the same direction as regards the needle and, therefore, their effects are added together on the galvanometer needle. Each valve must then have its own separate insulated battery to ignite the filament. Also, it is necessary that the connection with the oscillatory circuit must be made in both cases to the hot filament by that terminal which is in

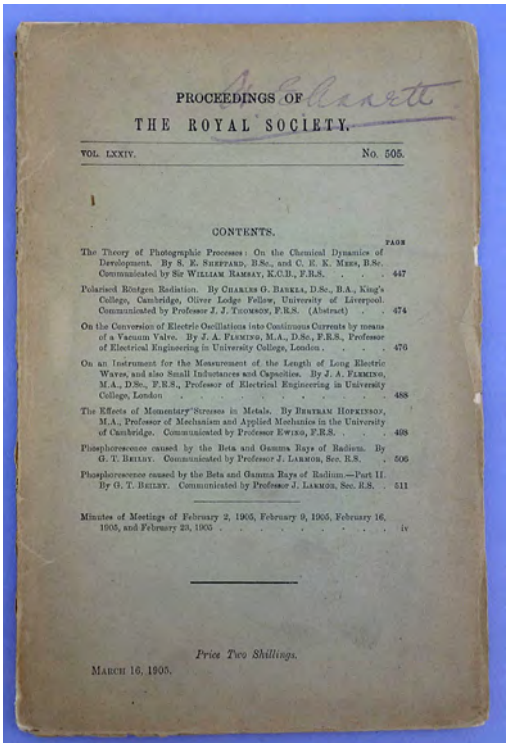
Fig. 2.

connection with the negative pole of the local battery used to ignite the filament (see fig. 2).

This arrangement of a differential galvanometer and two valves transforms, of course, more of the alternating oscillation into direct current than when one valve alone is used. It provides us with a means of detecting electrical oscillations not merely in closed circuits but in open electrical circuits.

When so using it, it is necessary to associate with the oscillation valve and galvanometer an oscillation transformer for raising the voltage. The resistance of these valves, when in operation, may be anything from a few hundred ohms up to some megohms, depending on the state of incandescence of the filament and upon the electromotive force employed to drive the current through the vacuous space, as well as upon the size of the filament and the plate. This resistance

10,000 times the speed of a human computer. By comparison, the Harvard Mark 1, which used electromechnical relays as switches, computed 100 times the speed of a human computer. Fleming's invention also paved the way for Lee DeForest and others to perfect the broadcasting of wireless signals.



PROCEEDINGS OF
THE ROYAL SOCIETY.

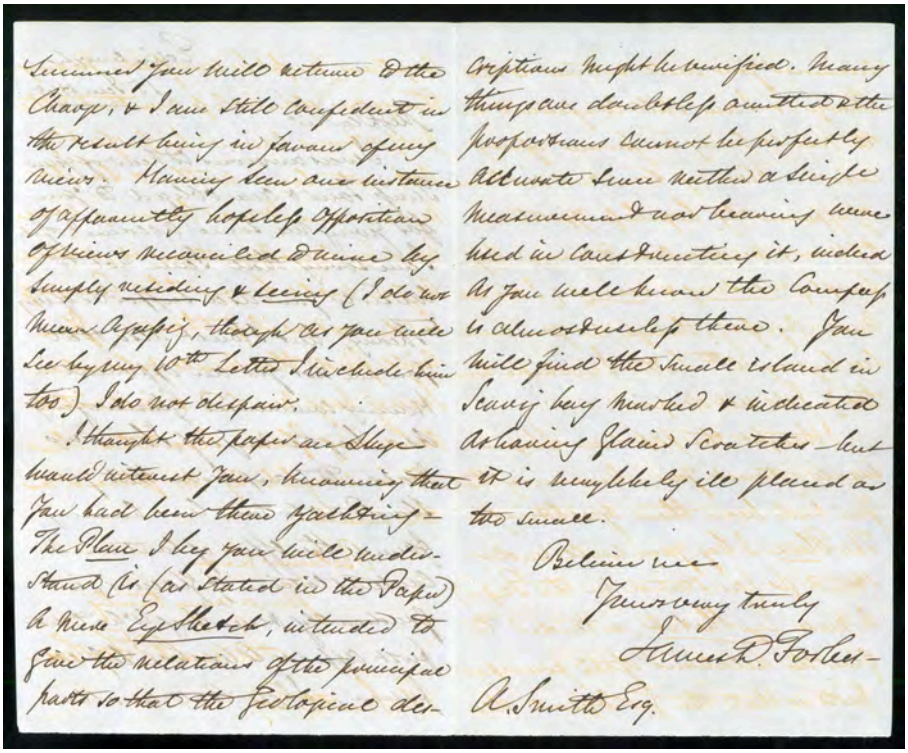
VOL. LXXIV. No. 505.

CONTENTS.

Price Two Shillings.

March 16, 1905.

Fleming had been aware since 1884 of the so-called "Edison effect" of "unilateral flow of particles from negative to positive electrode, and he repeated some of the experiments, with both direct and alternating currents, beginning in 1889. . . . [In 1904] he returned to his experiments on the Edison effect, with a view to producing a rectifier that would replace the inadequate detectors then used in radiotelegraphy. He named the resulting device a 'thermionic valve,' for which he obtained a patent in 1904 [sic]. This was the first electron tube, the diode, ancestor of the triode and the other multielectrode tubes which have played such an important role in both telecommunications and scientific instrumentation" (*Dictionary of Scientific Biography*). *Printing and the Mind of Man* 396. 42398



"The Effect of Continued Contemplation of Glaciers"

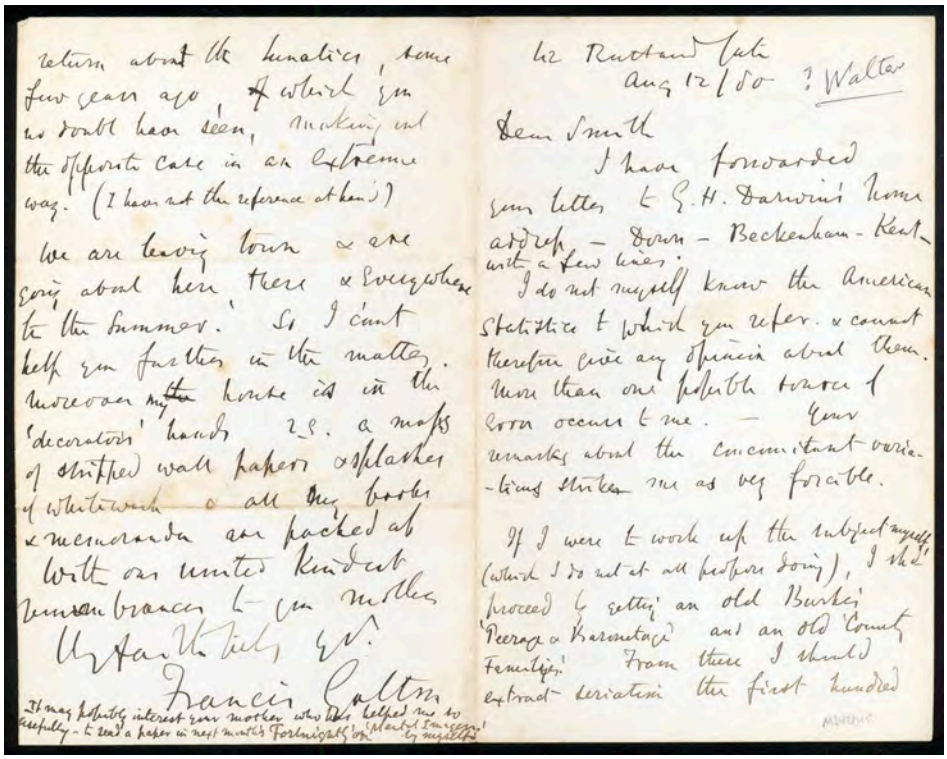
24. Forbes, James David (1809-68). Autograph letter signed to Archibald Smith (1813-72). 3 pages plus cover. Edinburgh, 15 January 1845 [i.e. 1846, as indicated by the postmark]. Fine. $650

From Scottish physicist and glaciologist James Forbes, whose detailed studies of glaciers helped to establish modern theories of their formation and movement. His correspondent was Scottish mathematician Archibald Smith, who co-founded the *Cambridge Mathematical Journal* and made significant contributions to the study of magnetism, in particular on the effect of a ship's iron content on compass readings.

Forbes became interested in glaciers after Agassiz announced in 1840 that the British Isles had once been buried under a huge layer of snow and ice. He carried out detailed studies of the glaciers of the Alps and of Norway, and in 1845 he visited the Isle of Skye in the Inner Hebrides of Scotland, where he found evidence of former glaciation. In December of that year he presented evidence of his findings in a paper titled "Notes on the topography and geology of the Cuchullin Fills in Skye and on the traces of ancient glaciers which they present" (Edinburgh New Philosophical Journal 40 [1846]), which his biographer called "the most detailed and satisfactory account which had yet been given of the proofs that the Highlands of Britain once nourished groups of glaciers" (Shairp et al., *Life and Letters of James David Forbes* [1873], p. 489). Forbes discussed this important paper in his letter to Smith:

> . . . I thought the paper on Skye would interest you, knowing that you had been there yachting. The Plan, I beg you will understand, is (as stated in the Paper) a mere Eye Sketch, intended to give the relations of the principal parts so that the Geological descriptions might be verified. Many things are doubtless omitted & the proportions cannot be perfectly accurate since neither a single measurement nor bearing were used in constructing it, indeed as you well know the compass is almost useless there. You will find the small island in Scavig [i.e., Scavaig] Bay marked & indicated as having Glacier scratches . . .

Earlier in the letter Forbes expressed his regret that Smith did not support glacier theory, "but I trust also that you are not yet an opponent. Having commenced Glacierizing as a sceptic myself, I have no reason to complain that you should do so too, but having found the effect of continued contemplation of Glaciers, in gradually revealing what at first appears to be hopeless confusion, . . ." 42868



"I Lately Spent a Happy Day Among the Idiots at Earlswood"

25. Galton, Francis (1822-1911). Autograph letter signed to the Rev. Walter Edward Smith. 4 pages. [London] 42 Rutland Gate, 1880. 181 x 114 mm. Fine apart from minor spotting. $1500

From Victorian polymath Francis Galton, founder of the eugenics movement and noted for his fundamental contributions to statistical analysis, psychology and the study of human heredity, to the Rev. Walter E. Smith, son of mathematician and barrister Archibald Smith. Walter Smith had written to Galton on the question of marriage between first cousins and asked Galton to forward his query to George H. Darwin, Charles Darwin's son and a well-known mathematician and astronomer, who in 1875 had published two statistical papers on marriages between first cousins in England and Wales. Galton began his letter to Smith as follows:

> I have forwarded your letter to G. H. Darwin's home address—Down—Beckenham—Kent—with a few lines.

Vol. 3 of Pearson's *Life of Francis Galton* (1930) reprints on page 470 the letter Galton wrote to George Darwin enclosing Smith's inquiry; the letter notes that "I knew [Smith's] people well, especially his father, Archy Smith."

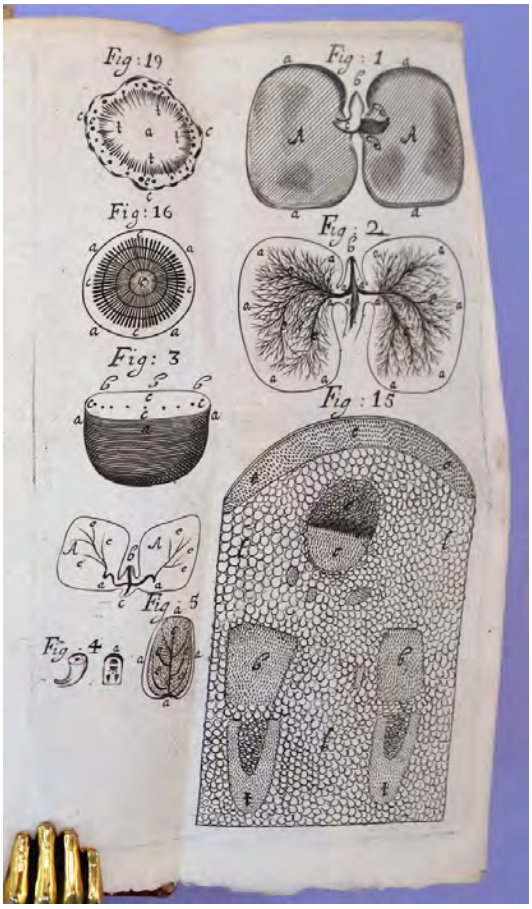
Further in the letter Galton described how one might go about investigating the question of cousin-marriages and their effects on heredity:

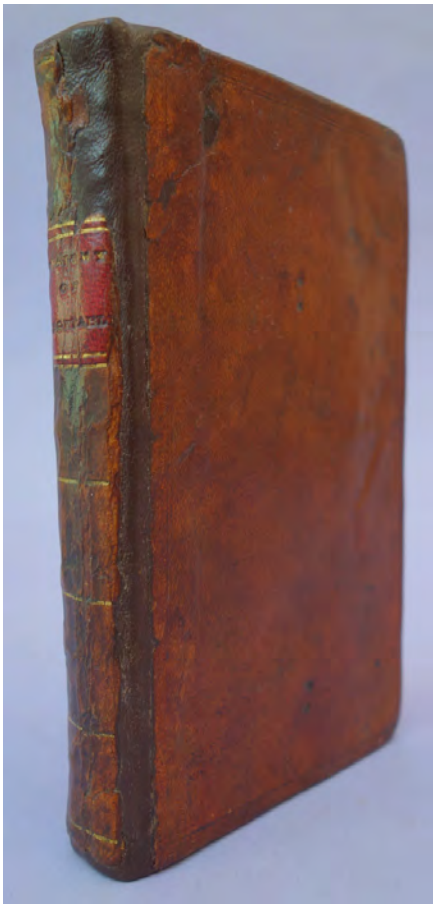
> If I were to work up the subject myself (which I do not at all propose doing), I shd proceed by getting an old Burke's "Peerage & Baronetage" and an old "County Families." From there I should extract seriatim the first hundred cousin marriages I came across & a supplementary list of 50 more to supply deficiencies . . . Then partly by the aid of subsequent editions & principally by verbal inquiries of gossips about aristocratic families, I should compare the results.

Galton also mentioned his current "psychological research":

> I spent lately a happy day among the idiots at Earlswood [the first hospital designed specifically for the mentally disabled, founded in 1855] . . . Their very intelligent medical director Dr. Graham makes regular entries of the parentage of the newly received idiots, especially asking as to the relationship of parents. He told me that his conclusions entirely corroborated those of G. H. Darwin & he had briefly stated the same in print . . .

McLean, Stuart, "The Smiths of Jordanhill." Jordanhill Local History. N.p., 17 Mar. 2005. Web. Accessed 24 July 2013. 42845





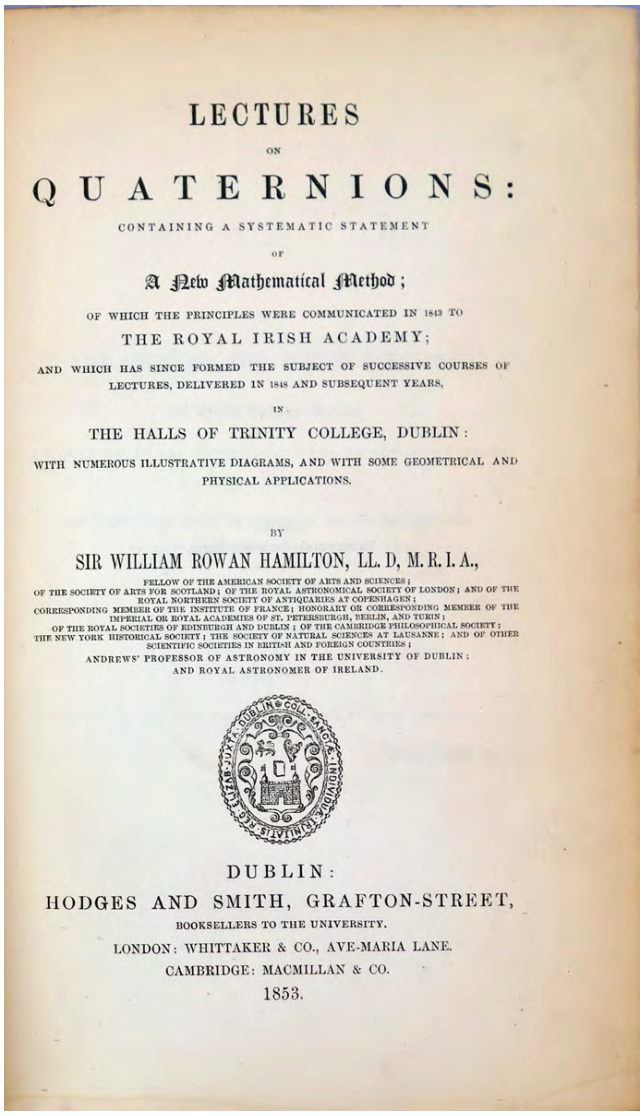
Very Large Copy

26. Grew, Nehemiah (1641-1712). The anatomy of vegetables begun, with a general account of vegetation founded thereon. 8vo. [32], 186, [22]pp. 3 folding engraved plates. London: Spencer Hickman, 1672. 163 x 96 mm. Contemporary sheep, red leather spine label, rebacked, corner repaired. Small area of edgewear on back cover, light toning, but a very good and unusually tall copy. Bookplates of the High Legh Library, Edward Neville da Costa Andrade (1887-1971) and Haskell F. Norman.

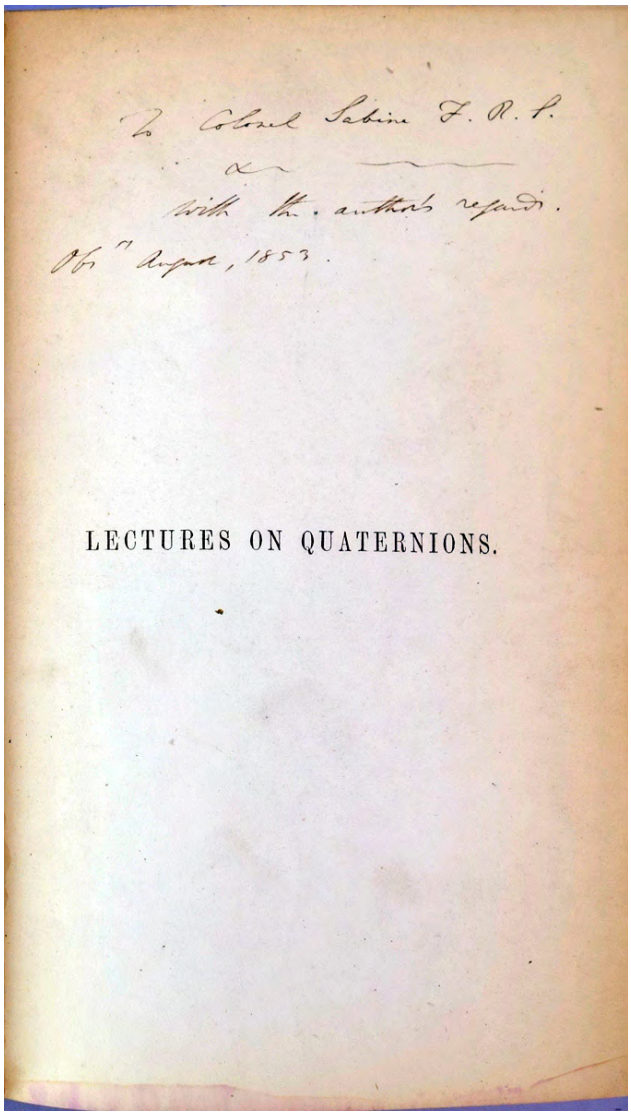
$6000

First Edition. Along with Malpighi, Grew is considered the founder of plant anatomy; his pioneering investigations into how organs and tissues are formed during plant growth marked the beginning of efforts to link plant structure and development. As a physician, Grew was originally interested in the structures of animal life, but turned to plant anatomy because, unlike animal anatomy, it had not yet been investigated. Anatomy of Vegetables, his first book, contained accurate observations of the structures of wood, bark and roots, and introduced the term "parenchyma." Grew also described fruits, seeds and flowers, distinguishing in the last the calyx, stamen and pistils, and he was the first to observe that plants had two sexes. The title-page gives 1672 as the date of publication, but the printing was completed by 7 December 1671, when four copies were delivered to the Royal Society for presentation.

This copy was once owned by British physicist E. N. da C. Andrade, Quain Professor of Physics at University College, London, who collaborated with Ernest Rutherford on experiments to determine the wavelengths of gamma rays from radium. During his lifetime Andrade amassed an important collection of British 17th-century science texts. Dibner, *Heralds of Science*, 21. Henrey, *British Botanical and Horticultural Literature* 163; pp. 135-138.. Morton, *History of Baotnical Science,* pp. 178-195. Norman 944.. Wing G-1946. 42936



LECTURES
ON
QUATERNIONS:
CONTAINING A SYSTEMATIC STATEMENT
OF
A New Mathematical Method;
OF WHICH THE PRINCIPLES WERE COMMUNICATED IN 1843 TO
THE ROYAL IRISH ACADEMY;
AND WHICH HAS SINCE FORMED THE SUBJECT OF SUCCESSIVE COURSES OF
LECTURES, DELIVERED IN 1848 AND SUBSEQUENT YEARS,
IN
THE HALLS OF TRINITY COLLEGE, DUBLIN:
WITH NUMEROUS ILLUSTRATIVE DIAGRAMS, AND WITH SOME GEOMETRICAL AND
PHYSICAL APPLICATIONS.
BY
SIR WILLIAM ROWAN HAMILTON, LL.D, M.R.I.A.,
FELLOW OF THE AMERICAN SOCIETY OF ARTS AND SCIENCES;
OF THE SOCIETY OF ARTS FOR SCOTLAND; OF THE ROYAL ASTRONOMICAL SOCIETY OF LONDON; AND OF THE
ROYAL NORTHERN SOCIETY OF ANTIQUARIES AT COPENHAGEN;
CORRESPONDING MEMBER OF THE INSTITUTE OF FRANCE; HONORARY OR CORRESPONDING MEMBER OF THE
IMPERIAL OR ROYAL ACADEMIES OF ST. PETERSBURGH, BERLIN, AND TURIN;
OF THE ROYAL SOCIETIES OF EDINBURGH AND DUBLIN; OF THE CAMBRIDGE PHILOSOPHICAL SOCIETY;
THE NEW YORK HISTORICAL SOCIETY; THE SOCIETY OF NATURAL SCIENCES AT LAUSANNE; AND OF OTHER
SCIENTIFIC SOCIETIES IN BRITISH AND FOREIGN COUNTRIES;
ANDREWS' PROFESSOR OF ASTRONOMY IN THE UNIVERSITY OF DUBLIN;
AND ROYAL ASTRONOMER OF IRELAND.
DUBLIN:
HODGES AND SMITH, GRAFTON-STREET,
BOOKSELLERS TO THE UNIVERSITY.
LONDON: WHITTAKER & CO., AVE-MARIA LANE.
CAMBRIDGE: MACMILLAN & CO.
1853.



To Colonel Sabine F. R. S.
&
with the author's regards.
Obsr (?) August, 1853.

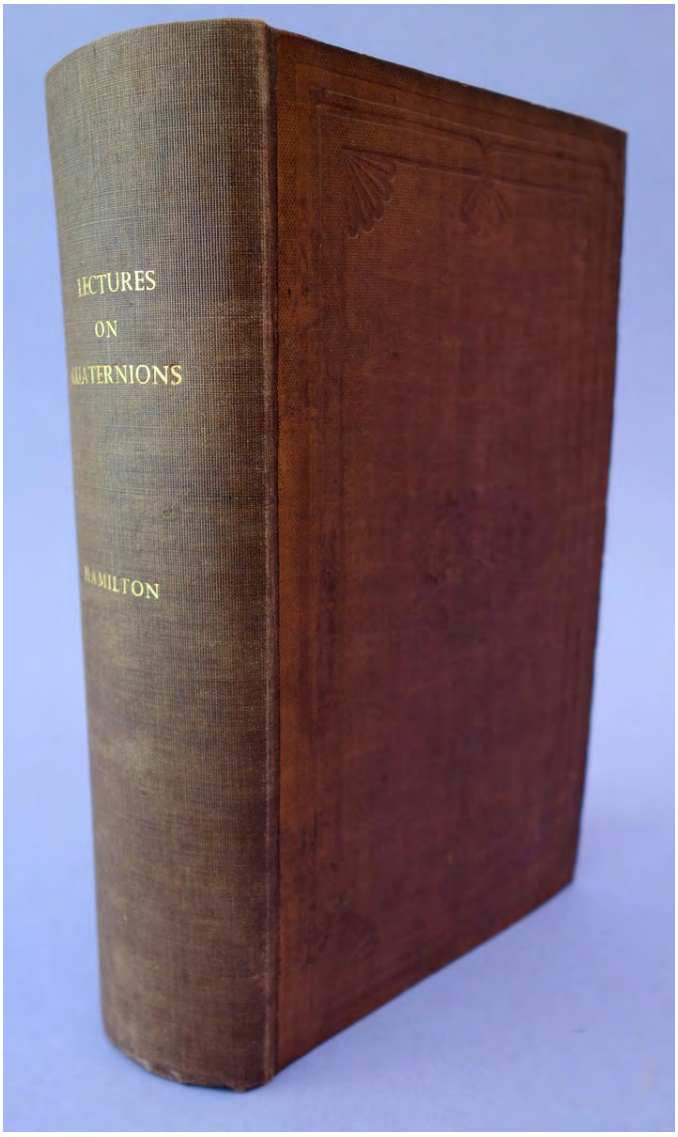
LECTURES ON QUATERNIONS.

The Only Presentation Copy to a Known Recipient that We Have Ever Seen

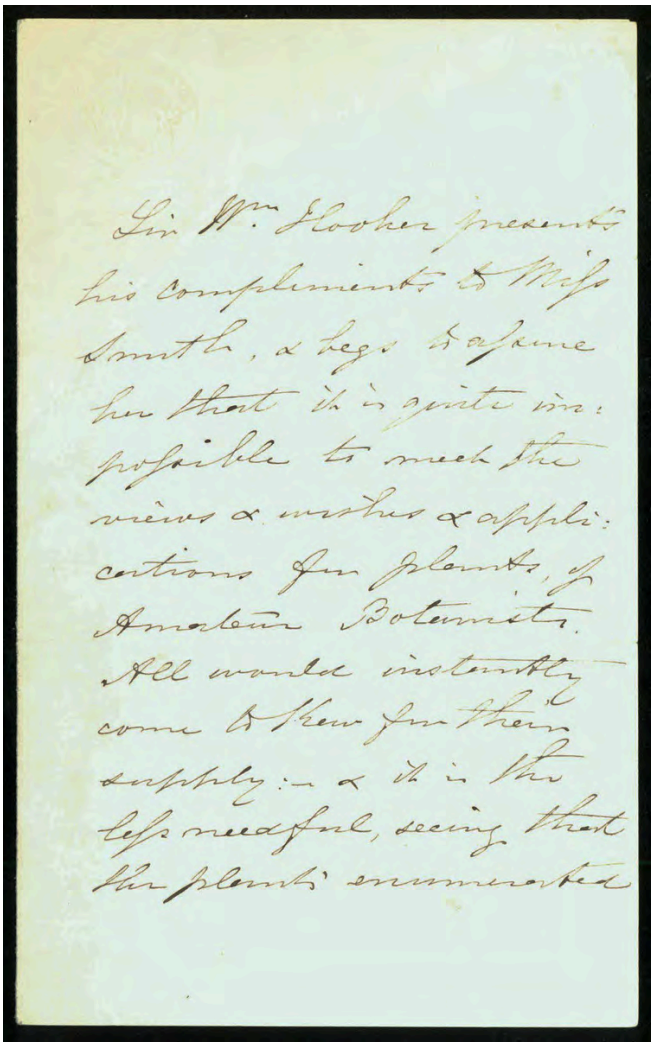
27. Hamilton, William Rowan (1805-65). Lectures on quaternions. 8vo. [6], (64), [ix]-lxxii, 736, [2, including errata]pp. Text diagrams. Dublin: Hodges & Smith, 1853. 224 x 142 mm. (uncut and unopened). Original cloth, rebacked, corners repaired, endpapers renewed. Very good. *Presentation Copy, inscribed by Hamilton* to Col. Edward Sabine (1788-1883) on the half-title: "To Colonel Sabine F. R. S. with the author's regards. Obsr (?) August, 1853." $10,000

First Edition. The Irish mathematician William Rowan Hamilton discovered quaternion algebra in an intuitive flash on October 16, 1843, after having spent years searching for a means of writing hypercomplex numbers that would give a "natural" algebraic representation of three-dimensional space independent of coordinate systems. His revolutionary insight was that it was possible to sacrifice the commutative law of multiplication (i.e., $ab = ba$) and still maintain a consistent and meaningful algebra. Hamilton's quaternions were adopted by James Clerk Maxwell, who used them in his *Treatise on Electricity and Magnetism* (1873), and they were significant in the development of later noncommutative algebras such as matrices and vector analysis.

Hamilton presented this copy to fellow Anglo-Irish scientist Col. (later General) Edward Sabine, an astronomer, geophysicist and explorer best remembered for his researches on Earth's magnetic field and for his determina-



tion of the length of the seconds pendulum (a pendulum whose period is precisely two seconds). Sabine was in charge of the British government's magnetic survey of the Earth, the data from which led to his discovery that the Sun's 11-year sunspot cycle is identical to the Earth's 11-year geomagnetic cycle. His pendulum researches enabled him to make the most accurate calculation then possible of the shape of the Earth. Sabine was an important member of the British scientific establishment, serving as president of the Royal Society from 1861 to 1871. This is the only copy of Hamilton's *Quaternions* presented to a known recipient that we have seen or heard of in over four decades in the trade. Since it is an unopened copy it is evident that its recipient, Sabine, never attempted to read it. *Dictionary of Scientific Biography*. Kline, *Mathematical Thought from Ancient to Modern Times,* pp. 779-82. Norman 985. *Printing and the Mind of Man* 334. 42841


Sir Wm. Hooker presents his compliments to Miss Smith, & begs to assure her that it is quite impossible to meet the views & wishes & applications for plants, of Amateur Botanists. All would instantly come to Kew for their supply:— & it is the less needful, seeing that the plants enumerated

"All Would Instantly Come to Kew"

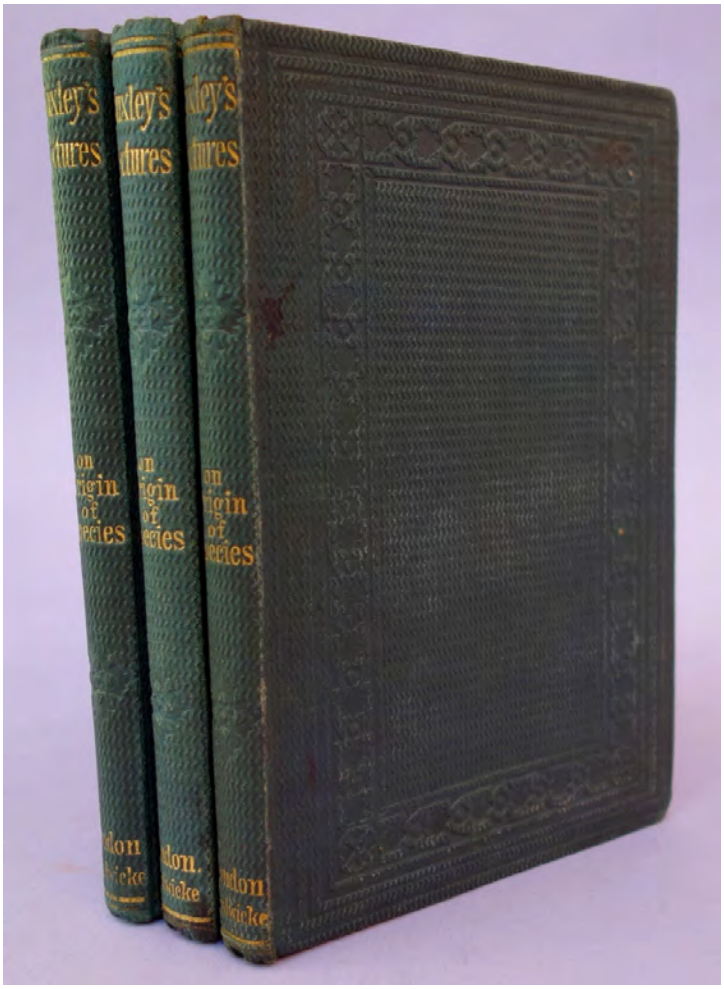
28. Hooker, William Jackson (1785-1865). Autograph letter signed in the third person to "Miss Smith." Kew Gardens, July 26, 1860. 2pp. plus integral blank. 184 x 114 mm. Traces of mounting and mounting removal on verso of blank leaf, but very good otherwise. $850

From botanist William J. Hooker, the first full-time director of the Royal Botanic Gardens at Kew and author of over two dozen works on botany. Hooker was appointed head of the Royal Botanic Gardens in 1841; under his leadership Kew grew from eleven acres to its present size of nearly 300 acres, and its collections vastly increased, largely due to a network of Hooker's former students who brought in specimens from around the world.

In this letter, written in his capacity as director of the Royal Botanic Gardens, Hooker refuses "Miss Smith's" request for plant specimens:

> Sir Wm. Hooker presents his compliments to Miss Smith, & begs to assure her that it is quite impossible to meet the views & wishes & applications for plants, of Amateur Botanists. All would instantly come to Kew for their supply:—& it is the less needful, seeing that the plants enumerated in the enclosed list are provided by Nurserymen, & their stock increased, for the express purpose of supplying the public with what they need.

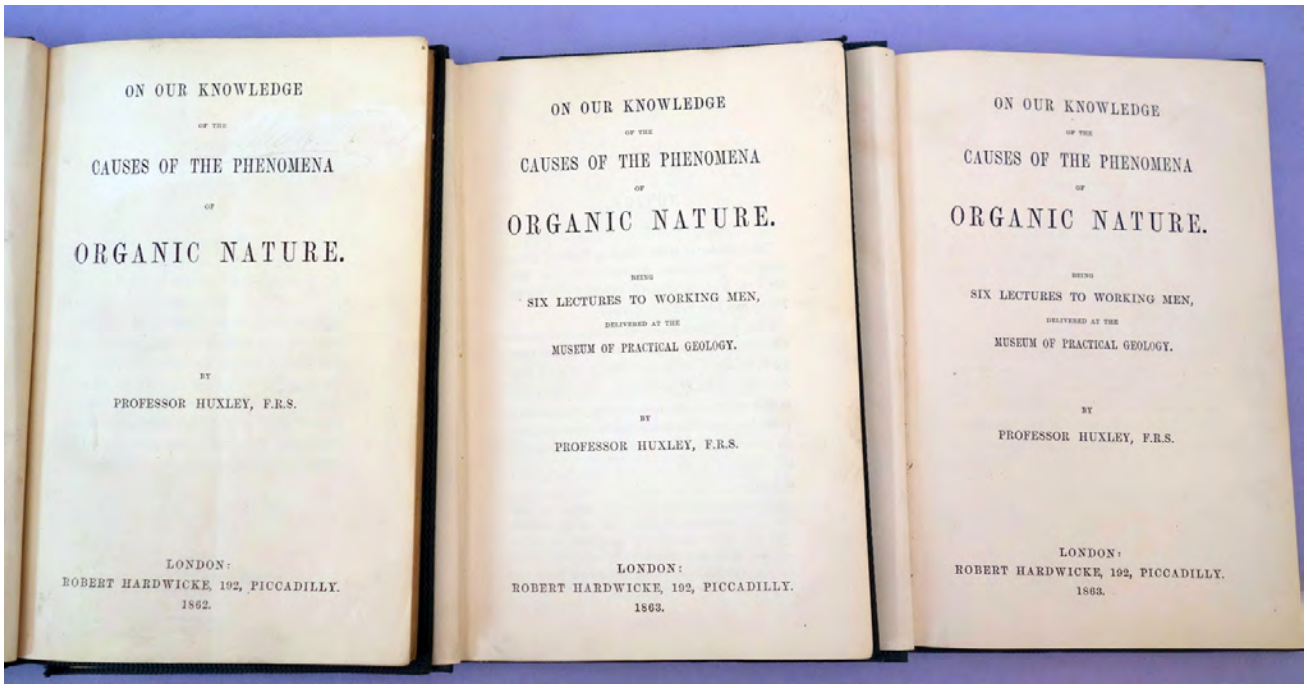
43011



Huxley's First Book on Evolution—The First Three States in Book Form

29. Huxley, Thomas Henry (1825-95). (1) On our knowledge of the causes of the phenomena of organic nature [first issue, bound from the original parts]. [4], 157, [3, including adverts.]pp. London: Robert Hardwicke, 1862. 183 x 123 mm. Original green blindstamped cloth, gilt-lettered title on spine. (2) On our knowledge of the causes of the phenomena of organic nature [second issue]. 156, [4, adverts.]pp. London: Robert Hardwicke, 1863. 184 x 122 mm. Original green blindstamped cloth, gilt-lettered title on spine. (3) On our knowledge of the causes of the phenomena of organic nature [third issue]. [4], 156pp., plus 32-page publisher's catalogue. London: Robert Hardwicke, 1863. 183 x 123 mm. Original green blindstamped cloth, gilt-lettered title on spine. Together 3 items. Fine. Former owners' names on front endpaper and half-title of no. (3). $1750

First Edition in Book Form, First, Second and Third Issues of Huxley's six enormously popular "lectures to working men" on the Darwinian theory of evolution by natural selection—his first book on the subject. The six lectures collected here are: "The present condition of organic nature"; "The past condition of organic nature"; "The method by which the causes of the present and past conditions of organic nature are to be discovered"; "The perpetuation of living beings, hereditary transmission and variation"; "The conditions of existence as affecting the perpetuation of living beings"; and "A critical examination of the position of Mr. Darwin's work, 'On the Origin of Species,' in relation to the complete theory of the causes of the phenomena of organic nature." Huxley delivered these lectures before live audiences and originally had no intention of putting



them into print, but the hack publisher Robert Hardwicke obtained bootleg transcriptions from a shorthand reporter and began issuing them in fourpenny weekly parts and later in book form (the first issue of the book-form edition is bound up from the original parts). A "Notice" after the title of the book-form edition indicates that Huxley did grant Hardwicke permission to publish, but he received no money from Hardwicke's sales and later regretted that he had not published the lectures himself.

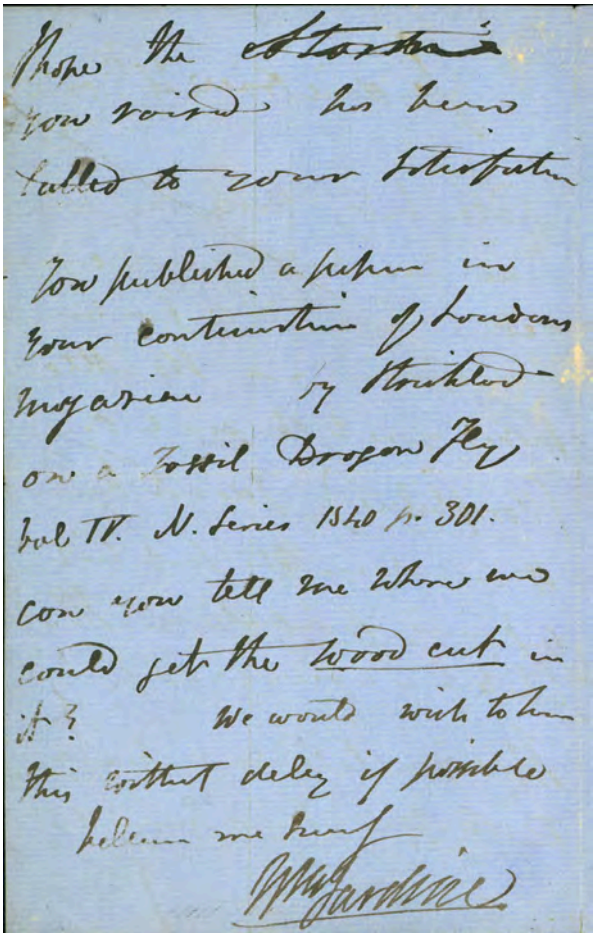
The printed versions of Huxley's lectures proved to be as popular as the live ones: "No one seemed put off by the top-heavy title, *On Our Knowledge of the Causes of the Phenomena of Organic Nature.* Huxley was making the profoundest science exciting to workers" (Desmond, p. 310). After Darwin read the lectures he wrote to Huxley, "What is the good of my writing a thundering big book, when everything is in this green little book so despicable for its size? In the name of all that is good and bad I may as well shut up shop altogether" (quoted in Desmond, p. 311).

We are offering the first three issues of the first book-form edition, which differ slightly in pagination and publisher's advertisements as described above; in addition, the second issue has the "Notice" printed on the verso of the title, while in the first and third issues it appears on the leaf following the title. The bindings of all three issues are similar; each has a spine title reading "on Origin of Species." It is extremely uncommon to find the first three issues of Huxley's lectures offered together. Desmond, *Huxley: From Devil's Disciple to Evolution's High Priest,* pp. 302-311. 42977

With the Scarce Supplementary Volume

30. Huxley, Thomas Henry (1825-95). The scientific memoirs . . . Edited by Professor Michael Foster . . . and by Professor E. Ray Lankester. 5 volumes (Vols. I – IV plus supplementary volume). 140 plates, including frontispieces in Vols. I – IV, 2 folding maps in Vol. III. London: Macmillan, 1898-1903. 258 x 174 mm. Original cloth, gilt-lettered spines (slightly faded), light wear to extremities, a few corners bumped. Small circular library stamp of the College of Preceptors on several leaves in all volumes, occasional faint foxing, but a very good set. $1500

First Edition of Huxley's collected scientific works, containing virtually all of his important papers arranged in chronological order, as well as reports of his Royal Institution Friday Evening Discourses. With the rare supplemental volume containing the remainder of Huxley's survey memoir on fossil fishes, along with three papers not collected elsewhere. 43003



"The Little Parrot You Took Me to See"

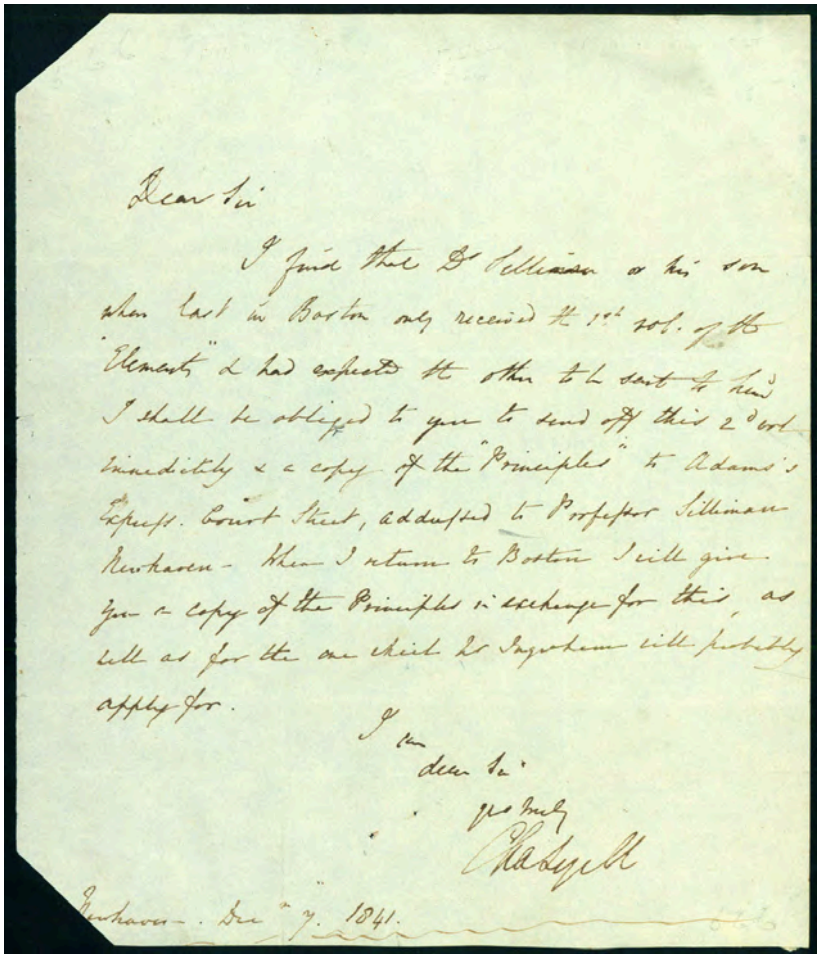
31. Jardine, William (1800–1874). Autograph letter signed to Edward Charlesworth (1813–93). 2 pages. Jardine Hall, 28 October 1857. 183 x 113 mm. Fine apart from light soiling. $375

From Scottish naturalist William Jardine, editor of the highly popular *Naturalist's Library* (40 vols., 1833–43), which made natural history accessible to all levels of Victorian society. His correspondent is not named in the letter, but can be identified as Edward Charlesworth, paleontologist and editor of *Loudon and Charlesworth's Magazine of Natural History*. In the 1840s Charlesworth's periodical merged with two others to form the (still-published) *Magazine of Natural History*, with Jardine as one of its editors.

The letter reads in part:

> . . . The little parrot you took me to see (Coriphilus) I do not know it is not in the last list of Prince Bonaparte—I should like to have a description of it. . . .
>
> You published a paper in your continuation of Loudon's Magazine by Strickland on a fossil dragon fly vol. IV. N. Series 1840 p. 301. Can you tell me where we could get the wood cut in it? We would wish to have this without delay if possible.

"Prince Bonaparte" refers to French ornithologist Charles Lucien Bonaparte (1803–57), the nephew of Napoleon. In the second quoted paragraph Jardine refers to British naturalist, ornithologist and geologist Hugh Edwin Strickland (1811–53), and specifically to Strickland's paper "On the occurrence of a fossil dragon-fly in the lias of Warwickshire," published in 1840 in *Charlesworth's Magazine*. The "wood cut," illustrating the dragon-fly's wing, appeared on page 302. Strickland had married Jardine's daughter, Catherine, in 1845; she drew many of the illustrations for his works. 42966



Dear Sir

I find that Dr Silliman or his son when last in Boston only received the 1st vol. of the "Elements" & had expected the other to be sent to him. I shall be obliged to you to send off this 2d vol. immediately & a copy of the "Principles" to Adams's Express. Court Street, addressed to Professor Silliman New Haven. When I return to Boston I will give you a copy of the Principles in exchange for this, as well as for the one which Mr Ingraham will probably apply for.

I am
dear Sir
yrs truly
Chas Lyell

New Haven. Dec.r 7. 1841.

"I Will Give You a Copy of the Principles in Exchange"

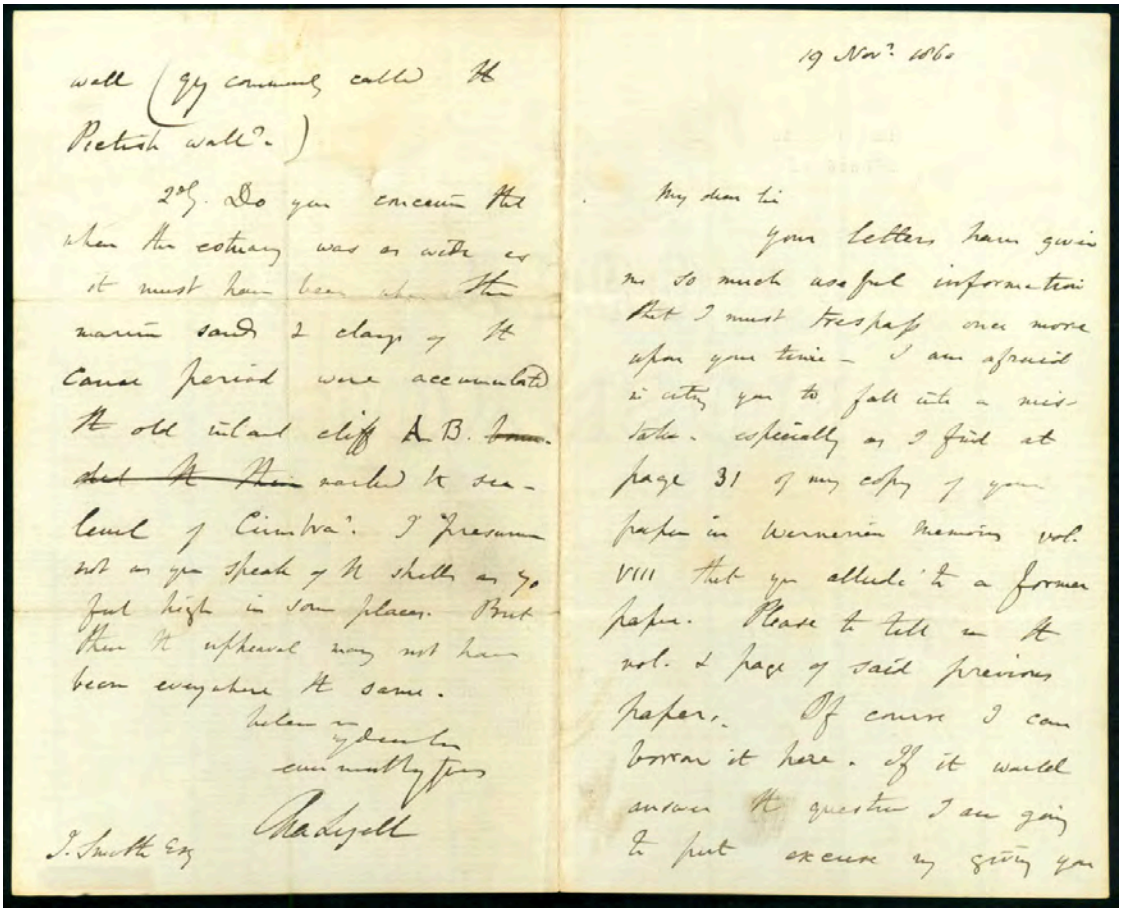
32. Lyell, Charles (1797-1875). Autograph letter signed to an unidentified correspondent, either a bookseller or the publishing firm of Hilliard & Gray. 1 page. New Haven, Dec. 7, 1841. 234 x 201 mm. Upper and lower left corners clipped slightly affecting one word, but very good otherwise.

$950

Brief but significant letter by the founder of modern geological science, mentioning both his *Principles of Geology* (1830-33) and *Elements of Geology* (1838). The letter was written during Lyell's first trip to the United States (1841-42), where he toured the country studying its geological formations, giving numerous lectures and meeting with a number of distinguished American scientists. Among those he met was chemist and geologist Benjamin Silliman (1779-1864), professor of science at Yale and founder / editor of the *American Journal of Science*, the leading American scientific journal of its day. Lyell and his wife stayed with Silliman for a few days in New Haven in August 1841, and with Silliman's son, Benjamin Silliman junior, in December of the same year. It was this latter visit that prompted Lyell to write the present letter:

> Dear Sir, I find that Dr. Silliman or his son when last in Boston only received the 1st vol. of the "Elements" & had expected the other to be sent to him. I shall be obliged to you to send off this 2nd vol. immediately & a copy of the "Principles" to Adams's Express, Court Street, addressed to Professor Silliman New Haven. When I return to Boston I will give you a copy of the Principles in exchange for this, as well as for the one which Mr. Ingraham will probably apply for. I am dear Sir yrs. truly Chas. Lyell.

Lyell was most likely referring to the second American edition of *Elements of Geology* (1841; 2 vols.), published by Hilliard & Gray in Boston and based on the second London edition issued the same year. He may also have



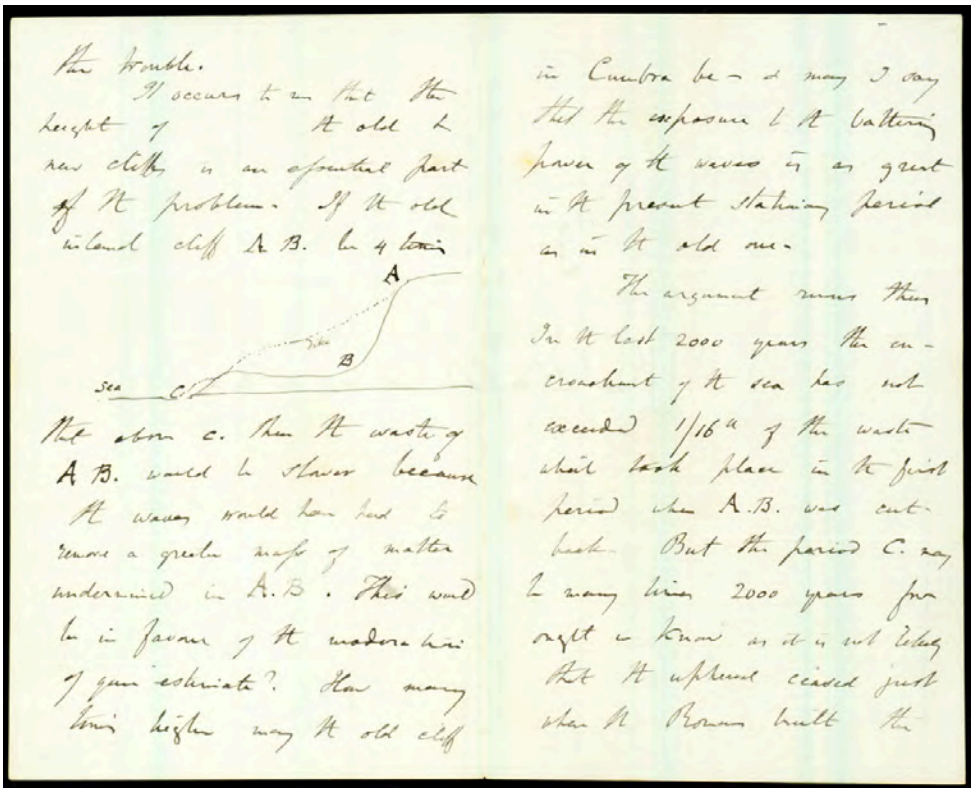
No. 33

been referring to the sixth and most recent London edition of his *Principles of Geology* (1841), since the American version of this edition, also issued by Hilliard & Gray, was not published until 1842. Lyell's promise to his correspondent to "give you a copy of the Principles in exchange" suggests that the correspondent was either a bookseller or possibly a representative of Hilliard & Gray. "Mr. Ingraham" can be identified as Boston printer and educator Joseph W. Ingraham (1799-1848), who had shown Lyell early descriptions and drawings of Niagara Falls from his private library (see Wilson, p. 44). Wilson, *Lyell in America* (1998), *passim*. 42837

"The Height of the Old & New Cliffs is an Essential Part of the Problem"

33. Lyell, Charles (1797-1875). Autograph letter signed to James Smith (1782-1867). 4pp. London, 19 November 1860. 180 x 112 mm. Slight soiling but fine otherwise. $1500

From Lyell to Scottish geologist James Smith of Jordanhill, who made significant contributions to the post-Tertiary geology of Scotland. Smith was the first to provide material evidence that a colder climate had existed before the present era, presenting his first paper on this subject in 1836; in 1839 he published his landmark paper, "The late changes of the relative levels of land and sea in the British islands," in vol. 8 of the Wernerian Society's *Memoirs.* Smith's work corroborated Agassiz's glacial theory (1840), and he was one of the few British geologists to maintain support for glacial theory throughout the following two decades when most of his colleagues were hostile to the idea of a Pleistocene "ice age" in Britain. Lyell, initially one of the doubters, came to accept the validity of glacial theory, devoting a large section to it in his *Antiquity of Man* in which he cited Smith's work on British land and sea levels.



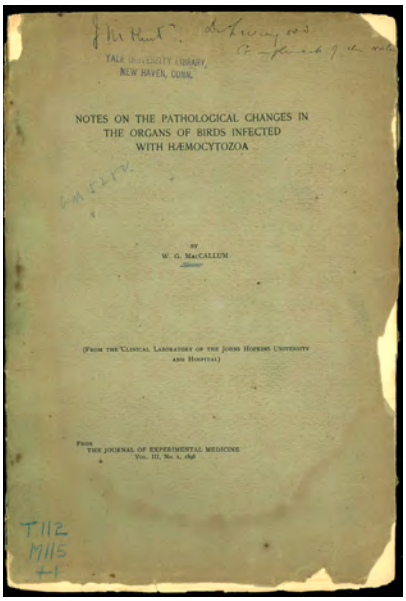
In the present letter, written three years before the publication of *Antiquity of Man*, Lyell expressed his gratitude for the "much useful information" Smith had provided in his letters, and referred to Smith's two papers mentioned above as being important to his own research:

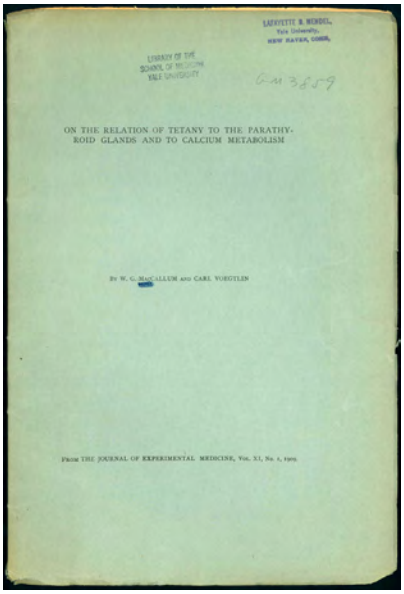
> I am afraid in citing you to fall into a mistake, especially as I find at page 31 of my copy of your paper in Wernerian Memoirs vol.VIII that you allude to a former paper. Please to tell me the vol. & page of said previous paper.

Lyell then went on to pose a detailed scientific question, complete with sketch, about island cliff levels near the Antonine Wall, an old Roman fortification spanning the central belt of Scotland between the Firth of Forth and the Firth of Clyde:

> It occurs to me that the height of the old & new cliffs is an essential part of the problem. If the old island cliff A.B. be 4 times [sketch] that above C. then the waste of A.B. would be slower because the waves would have had to remove a greater mass of matter undermined in A.B. This would be in favour of the modern time of your estimate? . . .
>
> The argument runs thus. In the last 2000 years the encroachment of the sea has not exceeded 1/16th of the waste which took place in the first period when A.B. was cut back. But the period C. may be many times 2000 years for ought we know as it is not likely that the upheaval ceased just when the Romans built the [Antonine] wall (qy commonly called the Pictish wall?) . . .

Lyell's conclusions regarding this question can be found on page 55 of the fourth edition (1873) of *Antiquity of Man*, in which he dated the cliff upheaval to the Bronze Age. He had initially believed that the upheaval might have taken place in Roman times, but "I am now convinced that the balance of evidence is strongly in favour of no alteration having occurred in the relative level of land and sea, in the central district of Scotland, since the construction of the Roman or Pictish wall (the "Wall of Antonine") . . . The late Mr. Smith, of Jordanhill, had always held this opinion . . ." Hoffman, "A history of neoproterozoic glacial geology, 1817-1997," in Arnaud *et al.*, eds., *The Geological Record of Neoproterozoic Glaciations* (2011), pp. 17-38. *Oxford Dictionary of National Biography* (re Smith). 42846





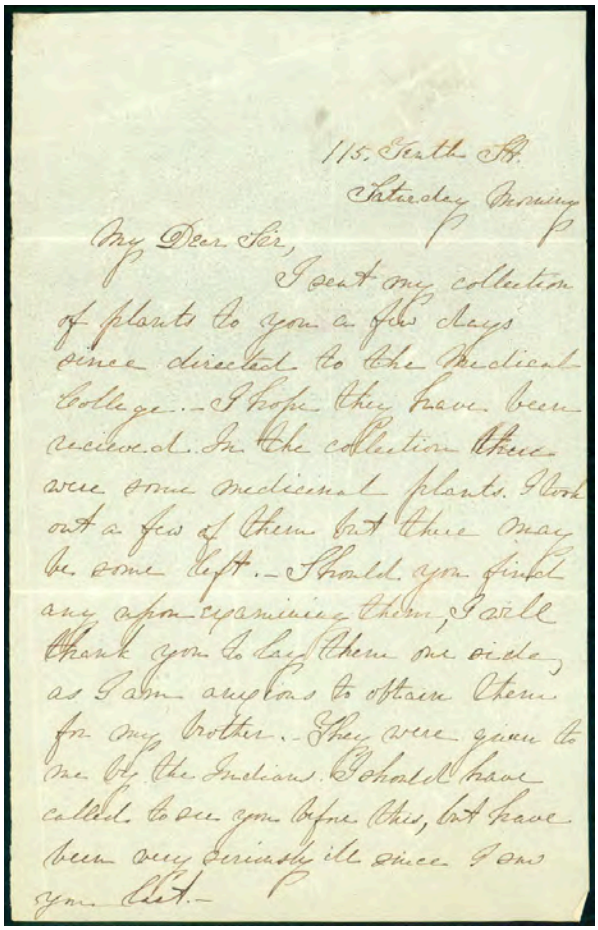
Early Discoveries at Johns Hopkins

34. MacCallum, William George (1874-1944). (1) Notes on the pathological changes in the organs of birds infected with haemocytozoa. Offprint from *Journal of Experimental Medicine* 3 (1898). 103-116pp. 2 plates. 261 x 178 mm. Original printed wrappers, chipped, small splits at spine. Presentation Copy, inscribed by MacCallum to Louis Eugene Livingood (1868-98) on the front wrapper: "Dr. Livingood / Compliments of the writer." Signature of J. M. Hunt and stamp of Yale University Library on the front wrapper. (2) (with Carl Voegtlin). On the relation of tetany to the parathyroid glands and to calcium metabolism. Offprint from *Journal of Experimental Medicine* 11 (1909). [1], 118-151pp. 265 x 182 mm. (uncut and unopened). Original printed wrappers, small chip in back wrapper. Stamp of biochemist Lafayette B. Mendel (1872-1935) on front wrapper, together with stamp of the Yale University School of Medicine Library. (3) (with Karl M. Vogel). Further experimental studies in tetany. Offprint from *Journal of Experimental Medicine* 18 (1913). [1], 618-650pp. 264 x 181 mm. Original printed wrappers, a little chipped. Signature of pathologist Arnold Rice Rich (1893-1968) on the front wrapper. Together three items. Very good. $1500

First Editions, Offprint Issues. MacCallum, a member of the first class to graduate from Johns Hopkins Medical School, trained as a pathologist under William Henry Welch and under F. J. Marchand in Leipzig. He spent most of his career at Johns Hopkins, serving as Hopkins' first professor of pathological physiology and succeeding Welch as chair of pathology in 1917. He also spent nine years at Columbia University, where he was professor of pathology from 1909 to 1917.

MacCallum is best known for his discovery (with fellow JHMS classmate Eugene Opie) of the sexual phase of malarial parasites, recorded in no. (1) above. He is also known for proving that the parathyroid glands control calcium metabolism, demonstrating in no. (2) above that tetany (involuntary contraction of muscles) caused by removal of the parathyroid could be relieved by calcium injections; no. (3) is a continuation of this work.

MacCallum presented this copy of his 1898 offprint to fellow Hopkins pathologist Louis Eugene Livingood, who died in a shipwreck the same year. The 1909 offprint is from the library of Lafayette B. Mendel (1872-1935), best known for his discovery of Vitamin A and water-soluble Vitamin B; the 1913 offprint is from the library of Arnold R. Rich (1893-1968), who served as chairman of the department of pathology at Johns Hopkins from 1944 to 1958 and did important work on tuberculosis. Garrison-Morton 5250 (no. [1]); 3859 (no. [2]). 43005



115. Tenth St.
Saturday Morning
My Dear Sir,
I sent my collection of plants to you a few days since directed to the Medical College.—I hope they have been recieved. In the collection there were some medicinal plants. I took out a few of them but there may be some left.—Should you find any upon examining them, I will thank you to lay them one side, as I am anxious to obtain them for my brother.—They were given to me by the Indians. I should have called to see you before this, but have been very seriously ill since I saw you last.—

"They Were Given to Me by the Indians"

35. Marcy, Randolph Barnes (1812–87). Autograph letter signed to John Torrey (1796–1873). 1+ pages. [New York] 115 Tenth St., n.d. [1853 prior to August 10]. 158 x 101 mm. Fine. $950

From Captain Randolph B. Marcy, leader of the 1852 U. S. expedition that was the first to reach the headwaters of both forks of the Red River (a major tributary of the Mississippi), and author of *The Prairie Traveler: A Handbook for Overland Expeditions* (1859), which played a critical role in making possible the great Western overland migration of U. S. settlers in the last half of the nineteenth century. His correspondent was John Torrey, the leading American botanist of the 19th century, professor of chemistry and botany at New York's College of Physicians and Surgeons and author of numerous important works on American plants including *A Flora of the Northern and Middle United States* (1824) and *The Flora of North America* (1838–43).

Upon his return from the Red River expedition Marcy sent the plant specimens collected on the expedition to Torrey, who described them in a 30-page appendix to Marcy's *Exploration of the Red River of Louisiana, in the Year 1852* (1854), the official government report of the expedition. Marcy's letter reads in part as follows:

> I sent my collection of plants to you a few days since directed to the Medical College. I hope they have been received. In the collection there were some medicinal plants. I took out a few of them but there may be some left. Should you find any upon examining them, I will thank you to lay them one side, as I am anxious to obtain them for my brother. They were given to me by the Indians . . .

Torrey's letter to Marcy of August 10, 1853 regarding the Red River plant collection is reprinted on page 266 of *Exploration of the Red River*; in it Torrey noted that the collection "is an interesting addition to the geography of North American plants, and serves to mark more clearly the range of many western species." 42892

No. 36A. Archibald Alison

No. 36B. Edward Hodges Baily

Rare Maull & Polyblank "Cabinet-Size" Photographic Portraits of Victorian Celebrities

36. Maull, Henry (1829-1914) and Polyblank, George Henry. 22 cabinet-size portraits from the series *Photographic Portraits of Living Celebrities* (London: Maull & Polyblank, 1856-59), as listed below. All are original albumin prints mounted on heavy paper printed with gilt borders and the photographers' imprint: "Photographed by Maull & Polyblank, 55, Gracechurch Street and 187A Piccadilly, London." Photographs measure 200 x 148 mm.; mounts measure 297 x 248 mm. Archivally matted. Fine, with photographs in excellent unfaded condition; see list for individual condition notes and prices.

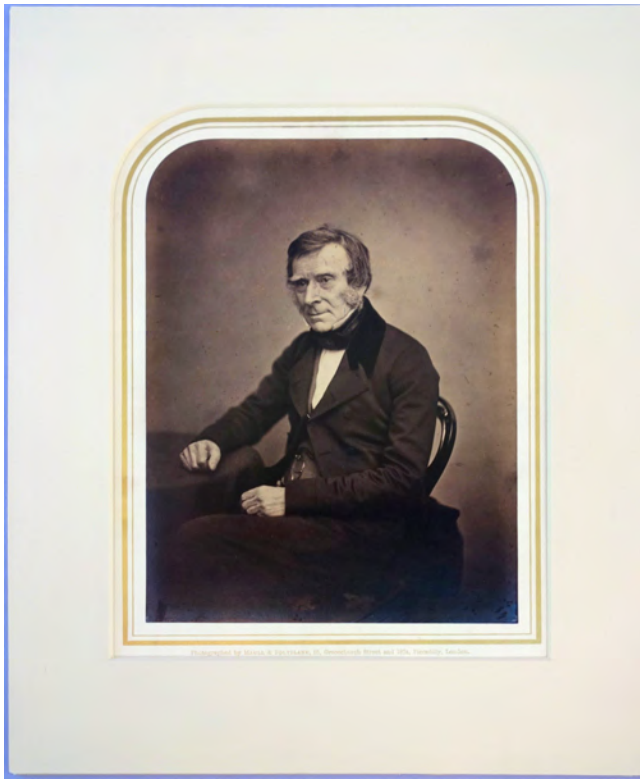
Henry Maull, a London photographer specializing in portraits, set up his first photographic studio in 1864 in partnership with George Henry Polyblank. Maull and Polyblank's most famous work, *Photographic Portraits of Living Celebrities*, was initially issued in parts to subscribers over 41 months between 1856 and 1859. The work consisted of 40 portraits of celebrated Victorians—scientists, statesmen, artists, actors, churchmen and other mid-nineteenth century notables. All of Maull and Polyblank's photographic portraits are very rare on the market.

We are offering the following individual photographs from *Photographic Portraits of Living Celebrities.* This is the largest group of cabinet-size Maull & Polyblank portraits that we can recall being offered. For many of the figures involved, the photographs offered below represent the finest photographic portraits:

A. Alison, Archibald (1792-1867). Lawyer and historian; author of the *History of Europe from the Commencement of the French Revolution to the Restoration of the Bourbons* (1833-43), the first scholarly English-language study of the French Revolution. 1858. 200 x 148 mm.; mount measures 297 x 248 mm. 42986 $450

B. Baily, Edward Hodges (1788-1867). Sculptor and member of the Royal Academy whose numerous works include the famous statue of Lord Nelson at the top of Nelson's Column in Trafalgar Square. 1856. 200 x 148 mm.; mount measures 297 x 248 mm. 42980 $500

No. 36C. William Sterndale Bennett



No. 36D. Benjamin Collins Brodie

C. Bennett, William Sterndale (1816-75). Composer, conductor, pianist and music educator, called "the most distinguished composer of the early Victorian era" (Temperley, *Lectures on Musical Life—William Sterndale Bennett* [2006], p. 3); professor of music at the University of Cambridge; friend of Mendelssohn and Schumann; founding president of the Bach Society. 1858. 200 x 148 mm.; mount measures 297 x 248 mm. 42985 $450

D. Brodie, Benjamin Collins, ***2nd Baronet*** **(1817-80).** Chemist who discovered and named cerotic acid, cerotin and melissic acid; opponent of Dalton's atomic theory (which he described as a "thoroughly materialistic bit of joiner's work") and creator of the "calculus of chemical operations" as a non-atomic alternative. 1856. 200 x 148 mm.; mount measures 297 x 248 mm. 42981 $1250

E. Brougham, Henry, ***1st Baron Brougham and Vaux*** **(1778-1868).** Politician who served as Lord Chancellor of Great Britain from 1830 to 1834; a founder of University College London and of the Society for the Diffusion of Useful Knowledge; supporter of education reform and of abolition of the slave trade; designer of the four-wheeled horse-drawn carriage named for him (the brougham). 1857. 200 x 148 mm.; mount measures 297 x 248 mm. 42992 $450

F. Campbell, John, ***1st Baron Campbell*** **(1779-1861).** Lawyer and politician; appointed Chief Justice of the Queen's Bench in 1850; later served as Lord Chancellor of Great Britain. 1857. 200 x 148 mm.; mount measures 297 x 248 mm. One corner of mount slightly creased. 42998 $450

G. Cruikshank, George (1792-1878). Caricaturist and book illustrator, most notably of the works of Charles Dickens; Victorian England's most popular satirical artist; creator of nearly 10,000 prints, illustrations and plates. 1857. 200 x 148 mm.; mount measures 297 x 248 mm. 42997 $950

H. Frith, William Powell (1819-1909). Most successful, popular and highly paid artist of the Victorian era, described as the "greatest British painter of the social scene since Hogarth" ("William Powell Frith: Painting the Victorian Age." Harrogate Borough Council. N.p., 2007. Web. Accessed 09 Aug. 2013). 1857. 200 x 148 mm.; mount measures 297 x 248 mm. 42995 $750

No. 36E. Henry Brougham

No. 36F. John Campbell

No. 36G. George Cruikshank

No. 36H. William Powell Frith

No. 36I. John Gibson

No. 36J. William Ewart Gladstone

I. Gibson, John (1790-1866). Neoclassical sculptor; creator of famous sculptures such as Queen Victoria Supported by Justice and Clemency (in the Houses of Parliament), the statue of William Huskisson in Pimlico Gardens and the monument to the Countess of Leicester; introduced the use of color in statues. 1857. 200 x 148 mm.; mount measures 297 x 248 mm. 42990 $500

J. Gladstone, William Ewart (1809-98). Politician; longtime leader of England's Liberal party who served as Prime Minister four separate times (more than any other person) and also as Chancellor of the Exchequer; famous for his oratory and his rivalry with Conservative leader Benjamin Disraeli. 1858. 200 x 148 mm.; mount measures 297 x 248 mm. 42987 $750

K. Graham, Thomas (1805-69). Scottish chemist best known for his discovery of dialysis and for his articulation of "Graham's Law" of the diffusion of gases; founder of the Chemical Society of London. 1856. 200 x 148 mm.; mount measures 297 x 248 mm. 43000 $1250

L. Hill, Rowland (1795-1879). Reformer who originated the basic concepts of the modern postal service, including the postage stamp; author of Post Office Reform (1837; Printing and the Mind of Man 306a), which resulted in a comprehensive reform of the British postal service. 1857. 200 x 148 mm.; mount measures 297 x 248 mm. 42996 $950

M. Kean, Charles (1811-68). Actor; son of the great tragedian Edmund Kean. 1858. 200 x 148 mm.; mount measures 297 x 248 mm. 42988 $500

N. Macaulay, Thomas Babington, *1st Baron Macaulay* **(1800-1859).** Politician and historian; holder of several important government posts including Secretary of War (1839-41); author of *The History of England* (1848-55), which epitomized what is now known as the Whig interpretation of history, emphasizing the inevitable march of human progress toward enlightenment. 1856. 200 x 148 mm.; mount measures 297 x 248 mm. 42984 $650

No. 36K. Thomas Graham

No. 36L. Rowland Hill

No. 36M. Charles Kean

No. 36N. Thomas Babington Macaulay

No. 36O. William Parsons

No. 36P. John Arthur Roebuck

O. Parsons, William, *3rd Earl of Rosse* **(1800-1867).** Astronomer who named the Crab Nebula and discovered the spiral nature of some galaxies; builder of the Leviathan 72-inch telescope, the largest telescope in the world until the early 20th century. 1857. 200 x 148 mm.; mount measures 297 x 248 mm. 42989 $950

P. Roebuck, John Arthur (1802-79). Politician, Member of Parliament, known for his support of reform causes; presided over a parliamentary committee of inquiry into the mismanagement of the Crimean War. 1856. 200 x 148 mm.; mount measures 297 x 248 mm. A few tiny spots on mount. 42982 $450

Q. Stephenson, Robert (1803-59). Civil engineer and founder of the first railway locomotive factory in the world; partner with his father, George Stephenson, on railway projects including the Stockton and Darlington Railway (the world's first publicly subscribed passenger railway); designer of the innovative "Rocket" and "Planet" locomotive engines. 1856. 200 x 148 mm.; mount measures 297 x 248 mm. Tiny crease in one corner of mount. 42983 $750

R. Tupper, Martin Farquhar (1810-89). Poet; author of the popular *Proverbial Philosophy* (1837), which went through forty editions in the following three decades; satirized by W. S. Gilbert in his Bab Ballads. 1857. 200 x 148 mm.; mount measures 297 x 248 mm. Faint smudge in lower margin of mount. 42991 $500

S. Ward, Edward Matthew (1816-79). Artist and painter best known for his historical murals in the Palace of Westminster and for his opposition to the Pre-Raphaelite movement. 1857. 200 x 148 mm.; mount measures 297 x 248 mm. Tiny crease in one corner. 42999 $450

T. Warren, Samuel (1807-77). Lawyer, Member of Parliament, author of popular novels including the best-selling *Ten Thousand A-Year* (1841). 1856. 200 x 148 mm.; mount measures 297 x 248 mm. 43001 $450

No. 36Q. Robert Stephenson

No. 36R. Martin Farquhar Tupper

No. 36S. Edward Matthew Ward

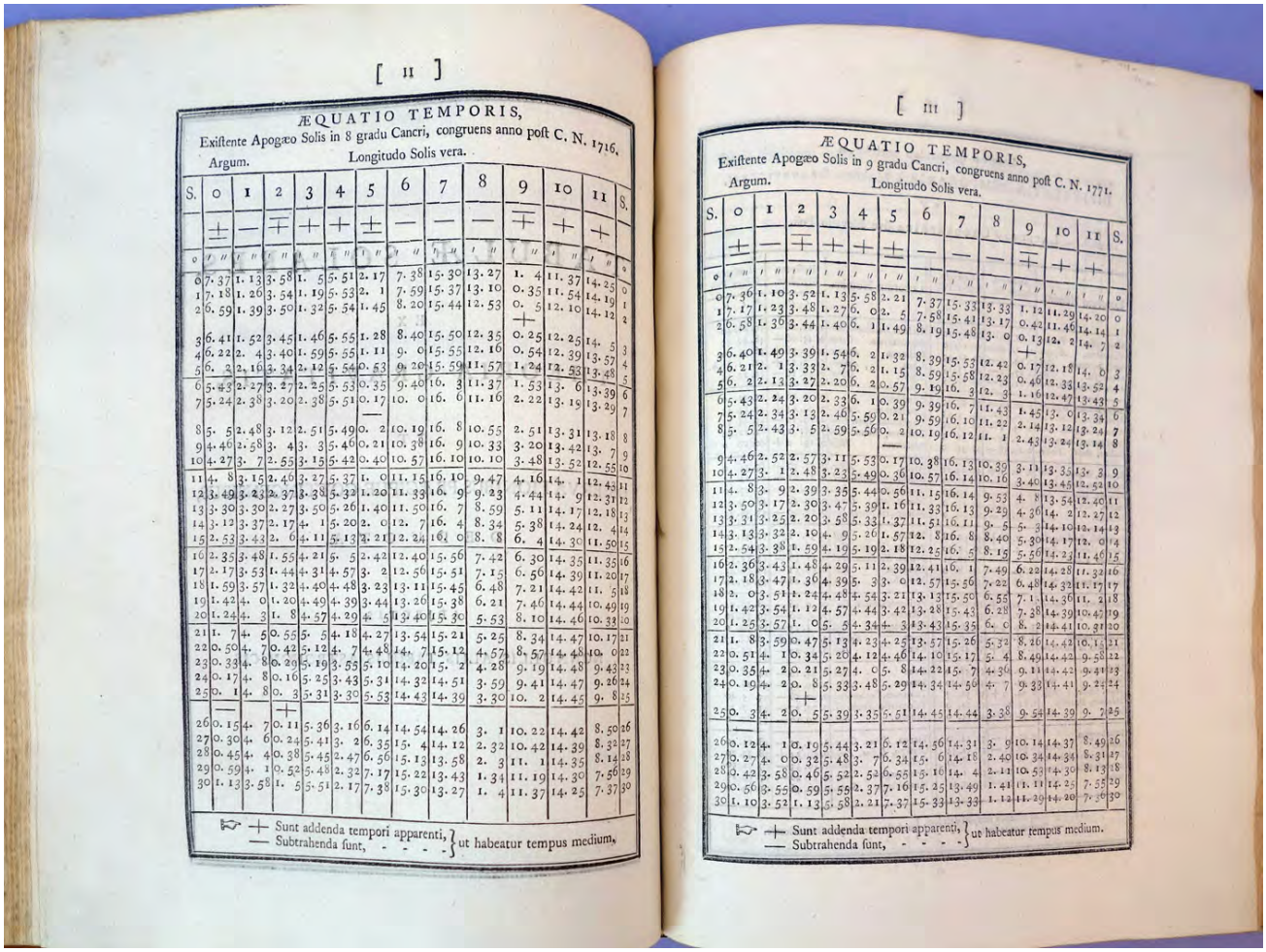
No. 36T. Samuel Warren

No. 36U. William Fenwick Williams

No. 36V. Cardinal Nicholas Wiseman

U. Williams, William Fenwick (1800-1883). Military leader and war hero best known for his defense of the Turkish city of Kars during the Crimean War (1855); Member of Parliament from 1856 to 1859; first Lieutenant Governor of Nova Scotia. 1857. 200 x 148 mm.; mount measures 297 x 248 mm. 42993 $450

V. Wiseman, Nicholas, *Cardinal* **(1802-65).** Influential Roman Catholic leader in England; appointed first Archbishop of Westminster by Pope Pius IX after the re-establishment of the Catholic hierarchy in England and Wales in 1850; author of numerous works, including the enormously popular pro-Catholic novel *Fabiola* (1854). 1857. 200 x 148 mm.; mount measures 297 x 248 mm. Faint soiling in lower margin of mount. 42994 $450



[II]

ÆQUATIO TEMPORIS,

Exiſtente Apogæo Solis in 8 gradu Cancri, congruens anno poſt C. N. 1716.

Argum. Longitudo Solis vera.

S.	0	1	2	3	4	5	6	7	8	9	10	11	S.
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1	7. 18	1. 26	3. 54	1. 19	5. 53	2. 1	7. 59	15. 37	13. 10	0. 35	11. 54	14. 19	1
2	6. 59	1. 39	3. 50	1. 32	5. 54	1. 45	8. 20	15. 44	12. 53	0. 5	12. 10	14. 12	2
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3	6. 41	1. 52	3. 45	1. 46	5. 55	1. 28	8. 40	15. 50	12. 35	0. 25	12. 25	14. 5	3
4	6. 22	2. 4	3. 40	1. 59	5. 55	1. 11	9. 0	15. 55	12. 16	0. 54	12. 39	13. 57	4
5	6. 3	2. 16	3. 34	2. 42	5. 54	0. 53	9. 20	15. 59	11. 57	1. 24	12. 53	13. 48	5
6	5. 43	2. 27	3. 27	2. 25	5. 53	0. 35	9. 40	16. 3	11. 37	1. 53	13. 6	13. 39	6
7	5. 24	2. 38	3. 20	2. 38	5. 51	0. 17	10. 0	16. 6	11. 16	2. 22	13. 19	13. 29	7
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8	5. 5	2. 48	3. 12	2. 51	5. 49	0. 2	10. 19	16. 8	10. 55	2. 51	13. 31	13. 18	8
9	4. 46	2. 58	3. 4	3. 3	5. 46	0. 21	10. 38	16. 9	10. 33	3. 20	13. 42	13. 7	9
10	4. 27	3. 7	2. 55	3. 15	5. 42	0. 40	10. 57	16. 10	10. 10	3. 48	13. 52	12. 55	10
11	4. 8	3. 15	2. 46	3. 27	5. 37	1. 0	11. 15	16. 10	9. 47	4. 16	14. 1	12. 43	11
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13	3. 30	3. 30	2. 27	3. 50	5. 26	1. 40	11. 50	16. 7	8. 59	5. 11	14. 17	12. 18	13
14	3. 12	3. 37	2. 17	4. 1	5. 20	2. 0	12. 7	16. 4	8. 34	5. 38	14. 24	12. 4	14
15	2. 53	3. 43	2. 6	4. 11	5. 13	2. 21	12. 24	16. 0	8. 8	6. 4	14. 30	11. 50	15
16	2. 35	3. 48	1. 55	4. 21	5. 5	2. 42	12. 40	15. 56	7. 42	6. 30	14. 35	11. 35	16
17	2. 17	3. 53	1. 44	4. 31	4. 57	3. 2	12. 56	15. 51	7. 15	6. 56	14. 39	11. 20	17
18	1. 59	3. 57	1. 32	4. 40	4. 48	3. 23	13. 11	15. 45	6. 48	7. 21	14. 42	11. 5	18
19	1. 42	4. 0	1. 20	4. 49	4. 39	3. 44	13. 26	15. 38	6. 21	7. 46	14. 44	10. 49	19
20	1. 24	4. 3	1. 8	4. 57	4. 29	4. 5	13. 40	15. 30	5. 53	8. 10	14. 46	10. 33	20
21	1. 7	4. 5	0. 55	5. 5	4. 18	4. 27	13. 54	15. 21	5. 25	8. 34	14. 47	10. 17	21
22	0. 50	4. 7	0. 42	5. 12	4. 7	4. 48	14. 7	15. 12	4. 57	8. 57	14. 48	10. 0	22
23	0. 33	4. 8	0. 29	5. 19	3. 55	5. 10	14. 20	15. 2	4. 28	9. 19	14. 48	9. 43	23
24	0. 17	4. 8	0. 16	5. 25	3. 43	5. 31	14. 32	14. 51	3. 59	9. 41	14. 47	9. 26	24
25	0. 1	4. 8	0. 3	5. 31	3. 30	5. 53	14. 43	14. 39	3. 30	10. 2	14. 45	9. 8	25
			+										
26	0. 15	4. 7	0. 11	5. 36	3. 16	6. 14	14. 54	14. 26	3. 1	10. 22	14. 42	8. 50	26
27	0. 30	4. 6	0. 24	5. 41	3. 2	6. 35	15. 4	14. 12	2. 32	10. 42	14. 39	8. 32	27
28	0. 45	4. 4	0. 38	5. 45	2. 47	6. 56	15. 13	13. 58	2. 3	11. 1	14. 35	8. 14	28
29	0. 59	4. 1	0. 52	5. 48	2. 32	7. 17	15. 22	13. 43	1. 34	11. 19	14. 30	7. 56	29
30	1. 13	3. 58	1. 5	5. 51	2. 17	7. 38	15. 30	13. 27	1. 4	11. 37	14. 25	7. 37	30

☞ + Sunt addenda tempori apparenti, } ut habeatur tempus medium,
— Subtrahenda ſunt, - - - -

[III]

ÆQUATIO TEMPORIS,

Exiſtente Apogæo Solis in 9 gradu Cancri, congruens anno poſt C. N. 1771.

Argum. Longitudo Solis vera.

S.	0	1	2	3	4	5	6	7	8	9	10	11	S.
	±	−	∓	+	+	±	−	−	−	∓	+	+	
°	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	′ ″	°
0	7. 36	1. 10	3. 52	1. 13	5. 58	2. 21	7. 37	15. 33	13. 33	1. 12	11. 29	14. 20	0
1	7. 17	1. 23	3. 48	1. 27	6. 0	2. 5	7. 58	15. 41	13. 17	0. 42	11. 46	14. 14	1
2	6. 58	1. 36	3. 44	1. 40	6. 1	1. 49	8. 19	15. 48	13. 0	0. 13	12. 2	14. 7	2
										+			
3	6. 40	1. 49	3. 39	1. 54	6. 2	1. 32	8. 39	15. 53	12. 42	0. 17	12. 18	14. 0	3
4	6. 21	2. 1	3. 33	2. 7	6. 2	1. 15	8. 59	15. 58	12. 23	0. 46	12. 33	13. 52	4
5	6. 2	2. 13	3. 27	2. 20	6. 2	0. 57	9. 19	16. 3	12. 3	1. 16	12. 47	13. 43	5
6	5. 43	2. 24	3. 20	2. 33	6. 1	0. 39	9. 39	16. 7	11. 43	1. 45	13. 0	13. 34	6
7	5. 24	2. 34	3. 13	2. 46	5. 59	0. 21	9. 59	16. 10	11. 22	2. 14	13. 12	13. 24	7
8	5. 5	2. 43	3. 5	2. 59	5. 56	0. 2	10. 19	16. 12	11. 1	2. 43	13. 24	13. 14	8
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9	4. 46	2. 52	2. 57	3. 11	5. 53	0. 17	10. 38	16. 13	10. 39	3. 11	13. 35	13. 3	9
10	4. 27	3. 1	2. 48	3. 23	5. 49	0. 36	10. 57	16. 14	10. 16	3. 40	13. 45	12. 52	10
11	4. 8	3. 9	2. 39	3. 35	5. 44	0. 56	11. 15	16. 14	9. 53	4. 8	13. 54	12. 40	11
12	3. 50	3. 17	2. 30	3. 47	5. 39	1. 16	11. 33	16. 13	9. 29	4. 36	14. 2	12. 27	12
13	3. 31	3. 25	2. 20	3. 58	5. 33	1. 37	11. 51	16. 11	9. 5	5. 3	14. 10	12. 14	13
14	3. 13	3. 32	2. 10	4. 9	5. 26	1. 57	12. 8	16. 8	8. 40	5. 30	14. 17	12. 0	14
15	2. 54	3. 38	1. 59	4. 19	5. 19	2. 18	12. 25	16. 5	8. 15	5. 56	14. 23	11. 46	15
16	2. 36	3. 43	1. 48	4. 29	5. 11	2. 39	12. 41	16. 1	7. 49	6. 22	14. 28	11. 32	16
17	2. 18	3. 47	1. 36	4. 39	5. 3	3. 0	12. 57	15. 56	7. 22	6. 48	14. 32	11. 17	17
18	2. 0	3. 51	1. 24	4. 48	4. 54	3. 21	13. 13	15. 50	6. 55	7. 14	14. 36	11. 2	18
19	1. 42	3. 54	1. 12	4. 57	4. 44	3. 42	13. 28	15. 43	6. 28	7. 38	14. 39	10. 47	19
20	1. 25	3. 57	1. 0	5. 5	4. 34	4. 3	13. 43	15. 35	6. 0	8. 2	14. 41	10. 31	20
21	1. 8	3. 59	0. 47	5. 13	4. 23	4. 25	13. 57	15. 26	5. 32	8. 26	14. 42	10. 15	21
22	0. 51	4. 1	0. 34	5. 20	4. 12	4. 46	14. 10	15. 17	5. 4	8. 49	14. 42	9. 58	22
23	0. 35	4. 2	0. 21	5. 27	4. 0	5. 8	14. 22	15. 7	4. 36	9. 11	14. 42	9. 41	23
24	0. 19	4. 2	0. 8	5. 33	3. 48	5. 29	14. 34	14. 56	4. 7	9. 33	14. 41	9. 24	24
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25	0. 3	4. 2	0. 5	5. 39	3. 35	5. 51	14. 45	14. 44	3. 38	9. 54	14. 39	9. 7	25
			—										
26	0. 12	4. 1	0. 19	5. 44	3. 21	6. 12	14. 56	14. 31	3. 9	10. 14	14. 37	8. 49	26
27	0. 27	4. 0	0. 33	5. 48	3. 7	6. 34	15. 6	14. 18	2. 40	10. 34	14. 34	8. 31	27
28	0. 42	3. 58	0. 46	5. 52	2. 52	6. 55	15. 16	14. 4	2. 11	10. 53	14. 30	8. 13	28
29	0. 56	3. 55	0. 59	5. 55	2. 37	7. 16	15. 25	13. 49	1. 41	11. 11	14. 25	7. 55	29
30	1. 10	3. 52	1. 13	5. 58	2. 21	7. 37	15. 33	13. 33	1. 12	11. 29	14. 20	7. 36	30

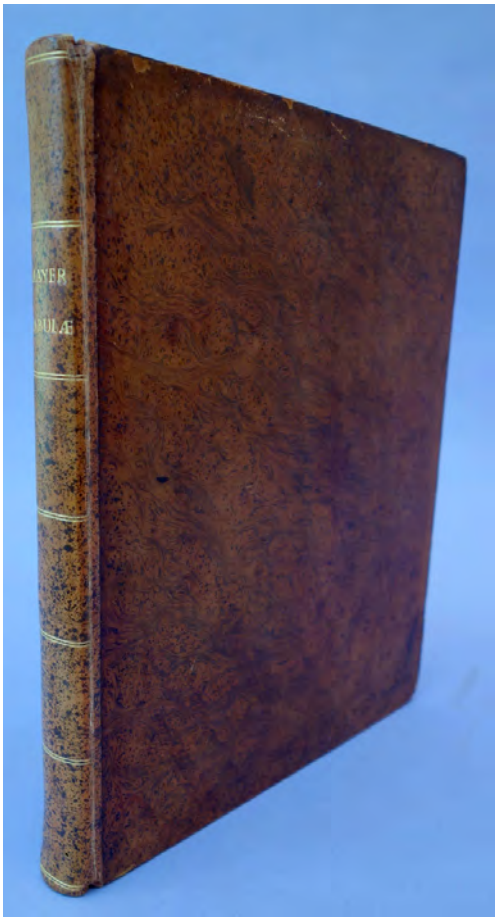
☞ + Sunt addenda tempori apparenti, } ut habeatur tempus medium.
— Subtrahenda ſunt, - - - -

The First Tables Accurate Enough to Find the Longitude at Sea— Nevil Maskelyne's Copy

37. Mayer, Johann Tobias (1723-1762). Tabulae motuum solis et lunae novae et correctae. . . quibus accedit methodus longitudinum promota, eodem auctore. Edited by Nevil Maskelyne (1732-1811). 4to. vii, 136, cxxx, [2]pp. 2 folding engraved plates. London: William and John Richardson for John Nourse, John Mount and Thomas Page, 1770. 270 x 217 mm. Contemporary tree calf (rebacked). Fine copy. Bookplate of Margaret Maskelyne (1786-1858), the only child of Nevil Maskelyne, on front pastedown. Bookplate of Haskell F. Norman. $9500

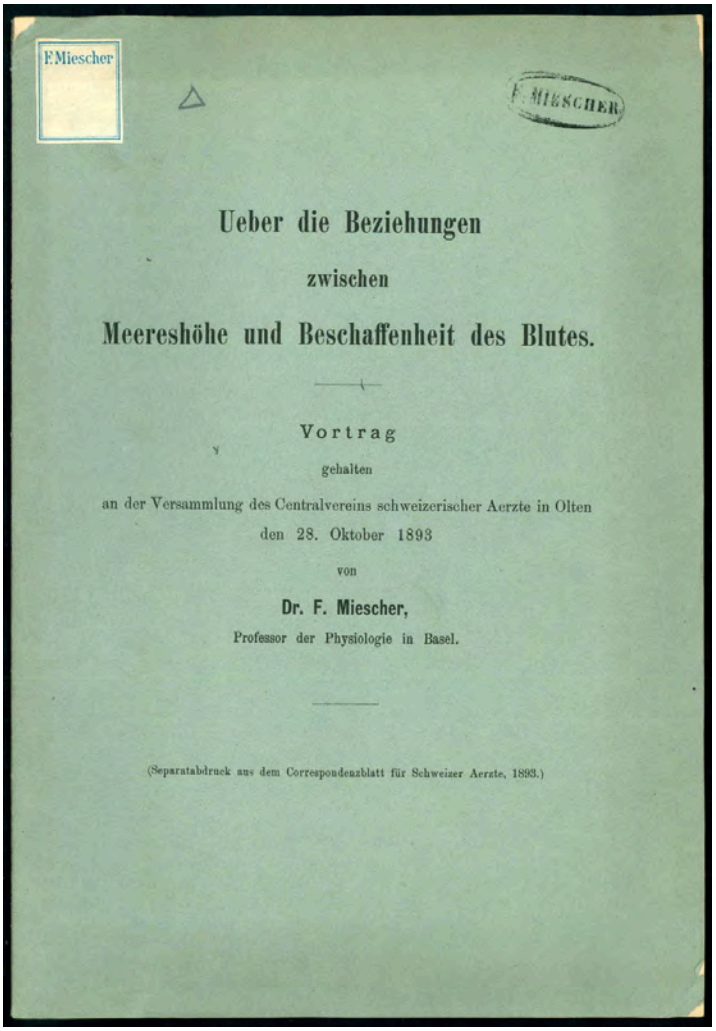
First Edition of Mayer's highly accurate lunar tables, which were the first to allow mariners to calculate longitude at sea to within a degree (60 miles). For these tables Mayer's widow received £3000 of the British Admiralty's prize established by the Act of Parliament of 12 November 1713 to "such person or persons as shall discover the longitude at sea." The Yorkshire clockmaker John Harrison, inventor of the marine chronometer, received between £8000 and £9000 of the same prize money some years later for his contribution to the longitude-finding problem.

A preliminary version of Mayer's tables was published in the proceedings of the Göttingen Scientific Society in 1753; meanwhile, Mayer continued to improve the tables until his death in 1762. In 1763 Mayer's widow sent a copy of the improved tables to the Board of Longitude in application to the prize. The tables were first edited for publication seven years later by Nevil Maskelyne, the Astronomer Royal, who had tested Mayer's earlier



tables with positive results on a voyage to St. Helena in 1761. Maskelyne used Mayer's tables to compute the lunar and solar ephemerides in the early editions of his Nautical Almanac, and since he was on the Board of Longitude we may assume that he was influential in having a portion of the prize awarded to Mayer's widow. Appended to Mayer's tables are two short tracts, one on determining longitude by lunar distances, together with a description of the reflecting circle (invented by Mayer in 1752), and the other on a formula for atmospheric refraction, which applies a remarkably accurate correction for temperature.

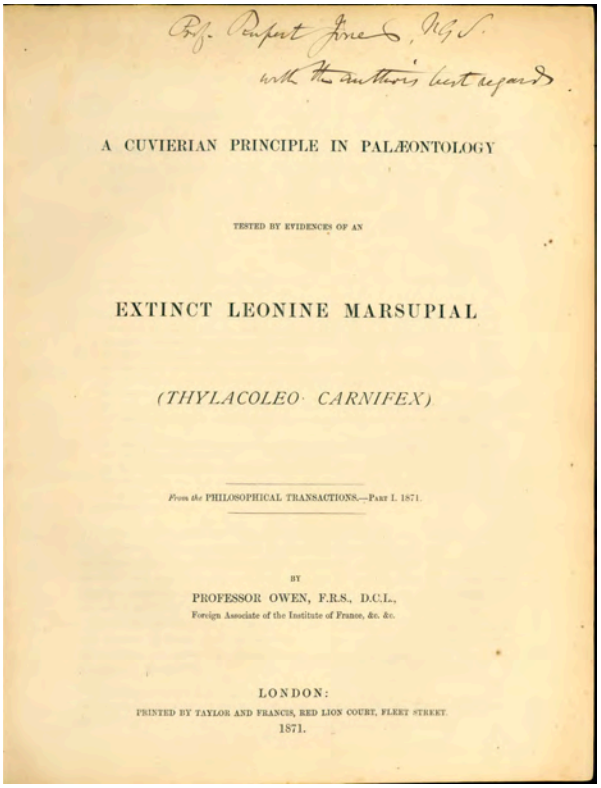
This copy bears the bookplate of Nevil Maskelyne's only child, Margaret, who was not an astronomer and would not have otherwise had a reason to own these tables except as an inheritance from her father. *Dictionary of Scientific Biography.* Norman 1468. Wepster, *Between Theory and Observations: Tobias Mayer's Explorations of Lunar Motion* (2010), pp. 33-40. 42935



Miescher's Own Copy

38. Miescher, Johann Friedrich (1844-95). Ueber die Beziehungen zwischen Meereshöhe und Beschaffenheit des Blutes. Offprint from *Correspondenzblatt für Schweizter Aerzte* (1893). 809-832pp. Text diagrams. 249 x 174 mm. Original printed wrappers, one corner a little chipped. Fine. Miescher's copy, with his stamp on the front wrapper and title and printed label on the front wrapper. $1500

First Edition, Offprint Issue. The Swiss physiologist Miescher is best known for being the first to isolate and identify what we now know as DNA. Toward the end of his life, suffering from the tuberculosis that would eventually kill him at age 51, he began researching the effect and possible health benefits of high altitude on the composition of the blood. He confirmed that at 6000 feet above sea level the number of red blood cells per cubic centimeter is eight million as compared with five million at sea level. In the present work, the text of an address delivered before the Congress of Swiss Physicians in 1893, Miescher stated that "climate on high mountains is the best which most effectually restores health and by which a maximum activity in the production of new blood is set up, with a minimum of discomfort in the process of acclimatization" (quoted in Mosso, *Life of Man in the High Alps* [1898], p. 277). 42955


Prof. Rupert Jones, NGS.
with the author's best regards.

A CUVIERIAN PRINCIPLE IN PALÆONTOLOGY

TESTED BY EVIDENCES OF AN

EXTINCT LEONINE MARSUPIAL

(THYLACOLEO CARNIFEX)

From the PHILOSOPHICAL TRANSACTIONS.—PART I. 1871.

BY

PROFESSOR OWEN, F.R.S., D.C.L.,
Foreign Associate of the Institute of France, &c. &c.

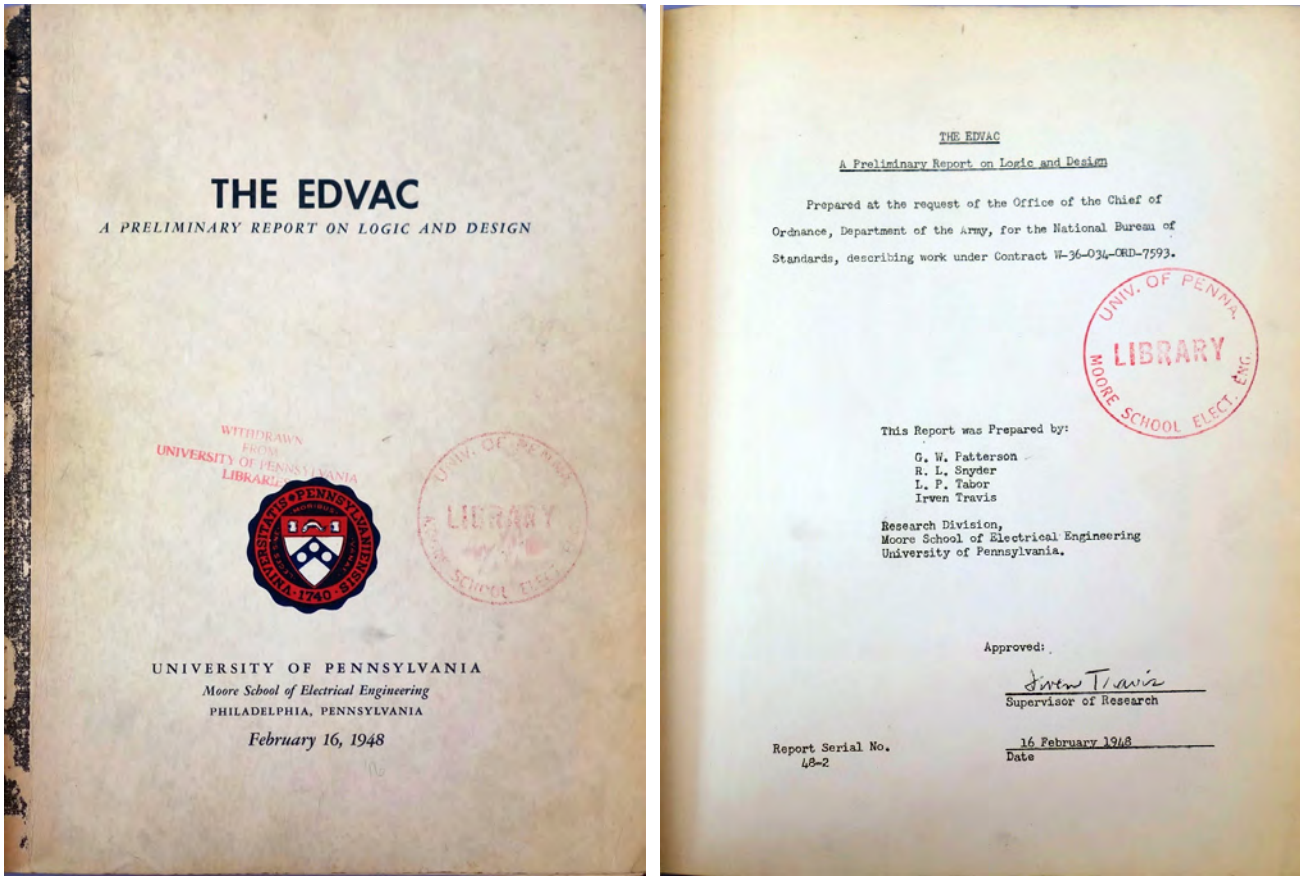
LONDON:
PRINTED BY TAYLOR AND FRANCIS, RED LION COURT, FLEET STREET.
1871.

Inscribed to Rupert Jones

39. Owen, Richard (1804-92). A Cuvierian principle in palaeontology tested by evidences of an extinct leonine marsupial (*Thylacoleo carnifex*). Offprint from *Philosophical Transactions* 161 (1871). [2], 213-266pp. 4 lithographed plates. 275 x 211 mm. Disbound. Very good copy. Inscribed by Owen on the title: "Prof. Rupert Jones NGS with the author's best regards." $750

First Edition, Offprint Issue. *Thylacoleo carnifex,* or the "marsupial lion," was a carnivorous marsupial that lived in Australia between 2 million and 46 thousand years ago; it was first described in 1859 by Owen in his "On the fossil mammals of Australia, part I" (*Phil. Trans.* 149: 309-322). Owen classified the extinct animal as a carnivore based on the structure of its lower jaw, but other naturalists, including William Flower and Hugh Falconer, disagreed, and "the issue of the carnivorousness of *Thylacoleo carnifex* became one of the bitterest paleontological controversies of the 1860s. Falconer denounced Owen's line of reasoning as 'facile' and Owen's Darwinian foes, in particular the zoologist W. H. Flower, at the time conservator of the Hunterian Museum, joined in the highly personal attack . . . Owen yielded nothing, turning the controversy into a test case of Cuvierian functionalism and issuing a separate booklet on the controversy: *A Cuvierian Principle in Palaeontology, Tested by Evidences of an Extinct Leonine Marsupial (Thylacoleo carnifex)*" (Rupke, pp. 86-87). It appears that this "separate booklet" is in fact the offprint of the fourth part of Owen's "On the fossil mammals of Australia" (*Phil. Trans.* 161 [1875]: 213-266), as this is the title that appears on the leaf following the offprint title-page, and the pagination of the separate offprint is identical to that of the article in the *Philosophical Transactions*.

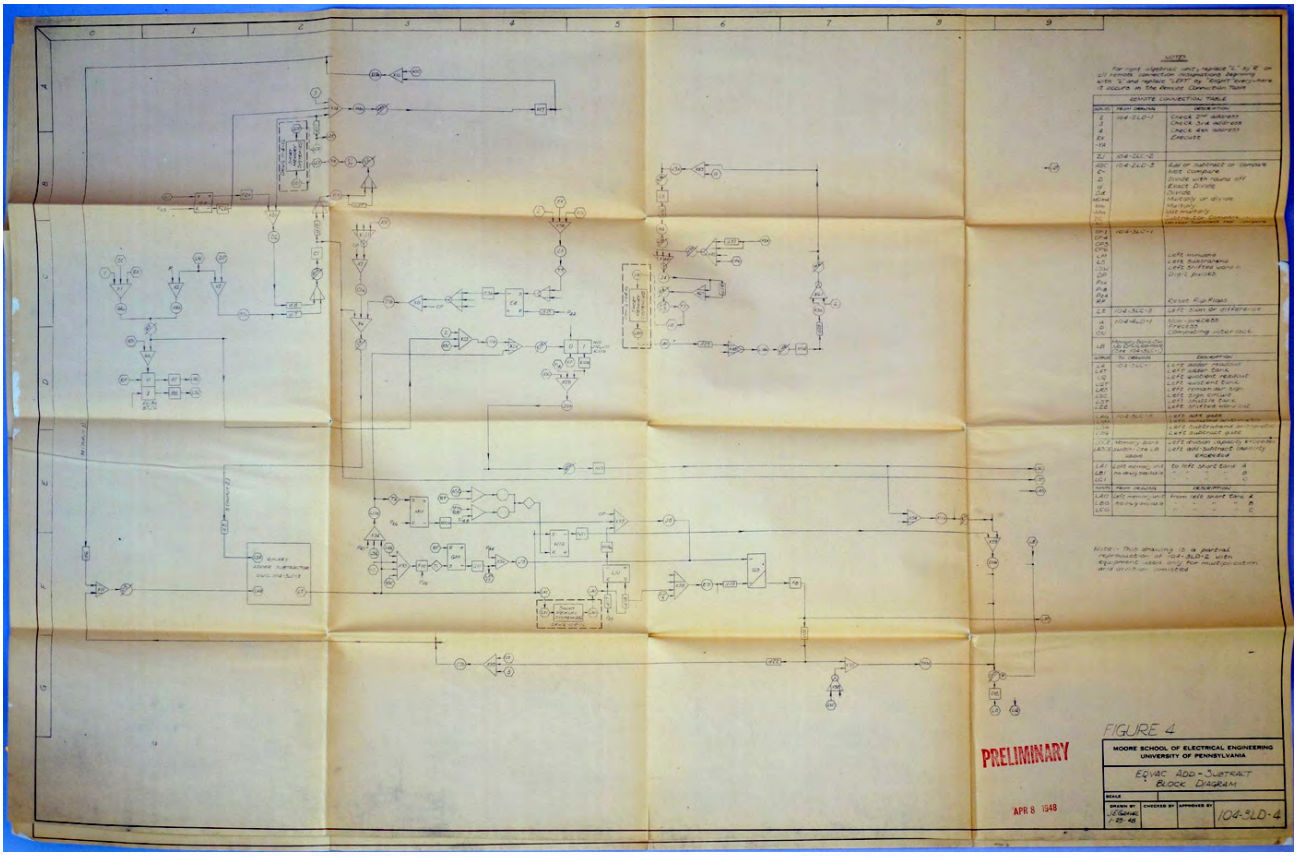
Owen presented this copy to British paleontologist Thomas Rupert Jones (1811–1911), the editor of Lartet and Christy's *Reliquiae Aquitanicae* (1875), which recorded the discovery of Cro-Magnon man. Rupke, Richard *Owen, Victorian Naturalist*, pp. 85-87. 42975



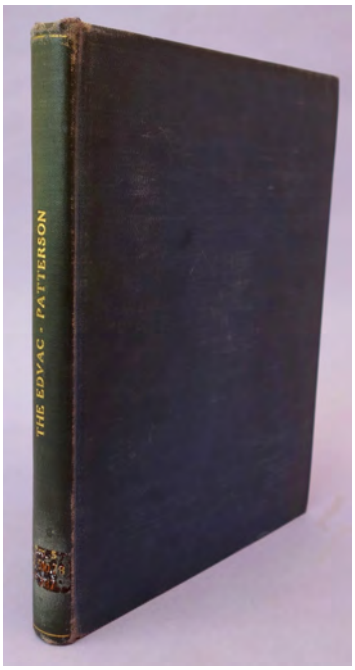
From the Moore School Library, Where the EDVAC Originated

40. Patterson, George W. *et al.* The EDVAC: A preliminary report on logic and design. [1], iii, 100 (i.e. 102)ff. 2 diagrams inserted in text; 3 large folding blueprint plans in pocket at rear: "Figure 3: EDVAC control panel assembly," "Figure 4: EDVAC add-subtract block diagram," and "Figure 5: Standard symbols for block diagrams." Philadelphia: University of Pennsylvania, Moore School of Electrical Engineering, February 16, 1948. 277 x 214 mm. Library buckram, original front wrapper bound in. Folding plans date-stamped April 8 and April 9, 1948; Figure 3 stamped "Restricted" and "Preliminary"; Figures 4 and 5 stamped "Preliminary." Small tears along folds of 1 or 2 blueprints, but very good. Stamps / bookplates of the Moore School of Electrical Engineering and of the University of Pennsylvania Libraries. $9500

First Edition, published in a very small edition, probably 100 copies or fewer. The EDVAC (short for Electronic Discrete Variable Automatic Computer) was the first planned stored-program electronic computer. The EDVAC was conceived during World War II by Presper Eckert and John Mauchly during the time that they were designing and constructing the ENIAC at the University of Pennsylvania's Moore School of Engineering. The EDVAC's construction was proposed in August 1944, and the theoretical basis for the machine was described in John von Neumann's famous and unfindable *First Draft of a Report on the EDVAC* (1945), the first account of the machine's stored-program design and architecture. However, the EDVAC's construction was delayed and it did not become operational until 1951, due in part to dispute over patent rights between Eckert and Mauchly and the University of Pennsylvania, which resulted in Eckert and Mauchly's resignation from the Moore School in 1946 to form their own commercial computer company.

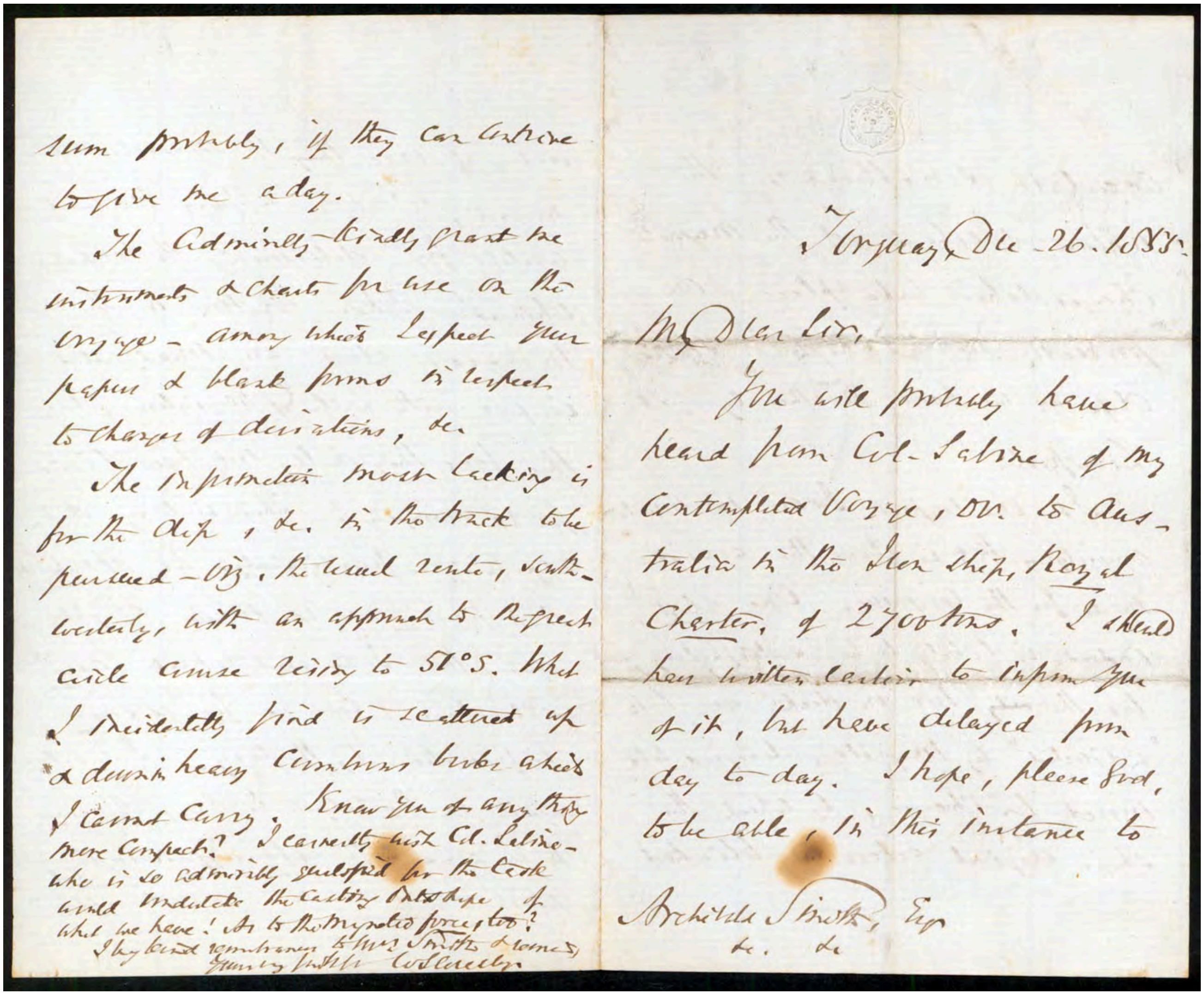


After Eckert and Mauchly's departure from the Moore School in 1946 the EDVAC project was taken over by other engineers at the school, including George Patterson (editor of the Moore School lectures), R. L. Snyder, L. P. Tabor and Irven Travis. The present report, prepared by these four men, describes the design of a pilot model of the EDVAC named the EDVAC 1.5B, which incorporated automatic addition, subtraction, multiplication, division, and internal checking. "Emphasis is placed on the overall logic, the basic engineering design, and on the principles of operation of the EDVAC" (f. 3).



The EDVAC's 1944 inception date falls three years before the start dates of the other early stored-program computers—Eckert and Mauchly's BINAC (1947), the Manchester Baby (1947-48), Cambridge University's EDSAC (1947), and Australia's CSIRAC (1948). In 1948, when the present report was published, none of these stored-program computers was operational. Patterson's report therefore contains some of the first blueprints of stored-program computer architecture to be issued before the stored-program electronic computer era began.

Very Scarce—OCLC locates five copies (Univ. of PA; Univ. of FL; Univ. of MN; Wayne State Univ.; Brown Univ.). This copy was originally in the library of the Moore School of Engineering, where the EDVAC was invented, designed and constructed. Not in *Origins of Cyberspace*. 42919


sum probably, if they can contrive
to give me a day.
The Admiralty kindly grant me
instruments & Charts for use on the
voyage – among which I expect your
paper & blank forms in respect
to change of deviations, &c.
The information most lacking is
for the dip, &c. in the track to be
pursued – viz. the usual route, south-
westerly, with an approach to the great
circle course rising to 51°S. What
I practically find is scattered up
& down in heavy cumbrous books which
I cannot carry. Know you of anything
more compact? I earnestly wish Col. Sabine –
who is so admirably qualified for the task
would undertake the casting into shape of
what we have! As to the magnetic forces, too?
[illegible] kind remembrances to Mrs Smith & yours,
[illegible] W. Scoresby

Torquay Dec 26. 1855.
My Dear Sir,
You will probably have
heard from Col. Sabine of my
contemplated Voyage, on to Aus-
tralia in the Iron ship, Royal
Charter, of 2700 tons. I should
have written earlier to inform you
of it, but have delayed from
day to day. I hope, please God,
to be able, in this instance to
Archibald Smith, Esq
&c. &c

"I Hope . . . to Ascertain Something of the Nature & Extent of the Magnetic Changes"

41. Scoresby, William (1789-1857). Autograph letter signed to Archibald Smith (1813-72). 4 pages. Torquay, December 26, 1855. A few small stains, but very good. $950

From British explorer and scientist William Scoresby, best known for his studies of terrestrial magnetism and its effects on navigation, to Archibald Smith, who made important contributions to the same field and also edited Scoresby's posthumous *Journal of a Voyage to Australia for Magnetical Research* (1859).

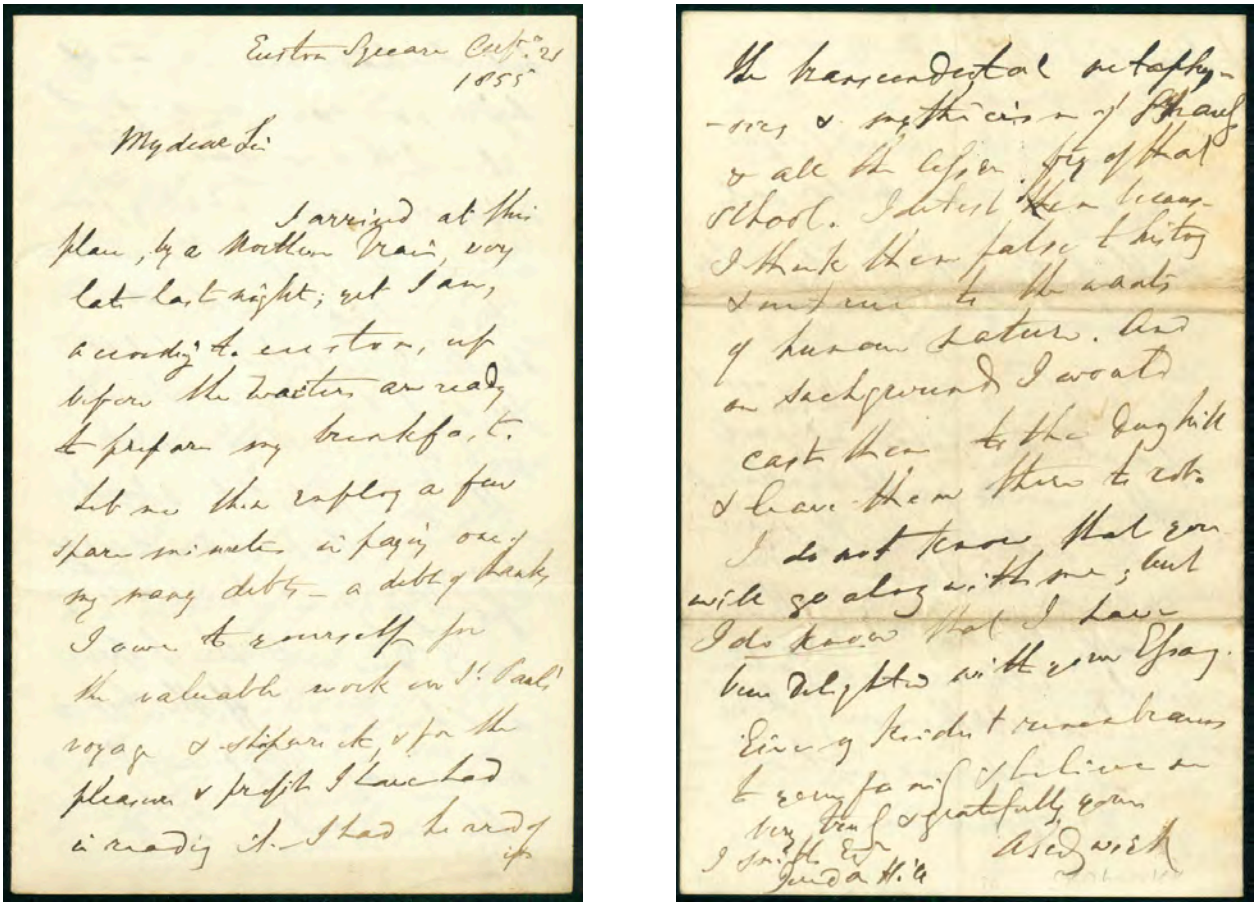
Scoresby wrote this letter to Smith on the eve of his Australian voyage, which took place in 1856 on the iron ship Royal Charter. Scoresby's objective in making the voyage was to prove his claim that an iron ship changed its magnetic signature after crossing the magnetic equator; to do so he had several compasses specially installed on board. Scoresby's letter contains a detailed discussion of these preparations, some of which were giving him trouble:

> You probably have heard from Col. Sabine of my contemplated voyage, on to Australia in the iron ship, Royal Charter, of 2700 tons. . . . I hope, please God, to be able, in this instance to ascertain something of the nature & extent of the magnetic changes which take place on proceeding to as high a southerly [magnetic] dip as we have northerly at Liverpool.

> In one respect I am in much anxiety—that is about the arrangements for the compasses. One aloft, indeed, is likely to be satisfactory; but the two on deck are both "adjusted" by magnets, designed to be moved for changes, by which the ship's original action is blinked and, if once the magnets are moved, the whole affair rendered useless for determining the compass changes! I have written to the managers about an unadjusted compass with Table of Deviations; but they fear they shall not have time for re-swinging! This is very disappointing—particularly as speed & short passage is so much sought after, that I cannot expect any alterations of course for gaining information by the way . . .
>
> The Admiralty kindly grant me instruments & charts for use on the voyage—among which I expect your papers & blank forms in respect to changes of deviations, &c. . . .

"Col. Sabine" refers to Edward Sabine (1788-1883), one of the key figures in research on terrestrial magnetism in the 19th century; he was responsible for establishing a system of magnetic observatories throughout the British Empire. "Re-swinging" refers to the operation called "swinging the compass," in which compass headings taken aboard ship are compared to the actual magnetic headings. The "papers and blank forms" mentioned in the last quoted paragraph may have included Smith's tables for correcting magnetic compass observations made on board ship.

Scoresby's mission was successful: "During the passage to Australia, Scoresby measured the hull's magnetism and noticed, with some satisfaction, that the iron hull plates started to change polarity after crossing the magnetic equator. On the last leg of the passage . . . the hull plates showed even stronger northern polarity, while all vertical iron (stanchions, an anchor stock standing upright, and capstans) 'had all changed their original magnetism—the tops now having northern polarity instead of southern'" (Gurney, *Compass: A Story of Exploration and Innovation,* p. 221). 42854



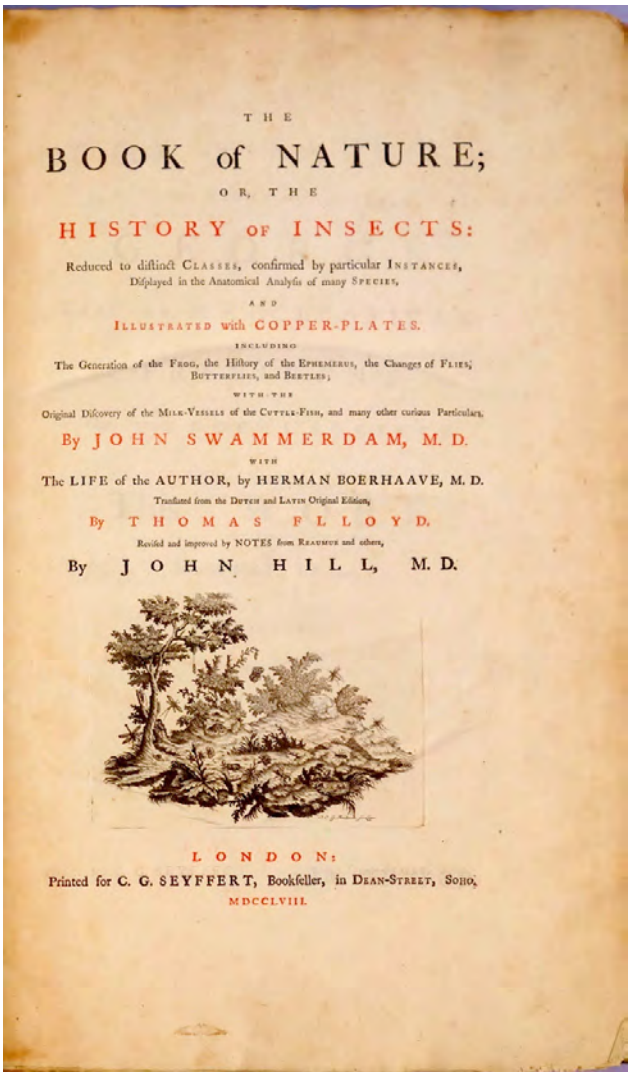
"A Mischievous Form of Infidelity"

42. Sedgwick, Adam (1785-1873). Autograph letter signed to James Smith of Jordanhill (1782-1866). 8 pages. [London] Euston Square, October[?] 21, 1855. 158 x 101 mm. Light soiling along folds, but fine otherwise. $750

From eminent British geologist Adam Sedgwick, who defined the Devonian and Cambrian ages in the geological time scale, to Scottish geologist and biblical scholar James Smith of Jordanhill. Smith had sent Sedgwick a copy of his *Voyage and Shipwreck of St. Paul* (1848), which "remains a standard work on biblical history, ancient shipbuilding, and navigation" (*Oxford Dictionary of National Biography*). Sedgwick began his letter by thanking Smith for the gift "and for the pleasure and profit I have had in reading it." Sedgwick was a deeply religious man, and much of his letter is concerned with defending Christian belief against what he believed to be the dangers of skepticism:

> I do not think that atheism can ever do much general mischief—though this is the form that the infidelity of this day is putting on. It is rank atheism under the form of pantheism. But a philosophical scepticism, and a disbelief of the supernatural, and a disposition to resolve biblical history and the gospels into a succession of myths indicating successive conditions of the human inventive mind, is a very prevalent and I think a mischievous, form of infidelity.

Sedgwick compared Smith's *Voyage and Shipwreck of St. Paul* favorably to William Paley's *Horae Paulinae* (1790), stating that he "would put it side by side with [Paley's work] as a demonstrative proof, so far as it goes, of the historical truth of the gospel narrative." Sedgwick's letter to Smith is reprinted in Vol. 2, pp. 298-300 of Clark and Hughes's *Life and Letters of the Reverend Adam Sedgwick* (1890); however, the printed version silently omits a few lines found on page 6 of the autograph letter, probably because they are very difficult to read. 42863


THE

BOOK of NATURE;

OR, THE

HISTORY OF INSECTS:

Reduced to diſtinct CLASSES, confirmed by particular INSTANCES, Diſplayed in the Anatomical Analyſis of many SPECIES,

AND

ILLUSTRATED with COPPER-PLATES.

INCLUDING

The Generation of the FROG, the Hiſtory of the EPHEMERUS, the Changes of FLIES, BUTTERFLIES, and BEETLES;

WITH THE

Original Diſcovery of the MILK-VESSELS of the CUTTLE-FISH, and many other curious Particulars.

By JOHN SWAMMERDAM, M. D.

WITH

The LIFE of the AUTHOR, by HERMAN BOERHAAVE, M. D.

Tranſlated from the DUTCH and LATIN Original Editions,

By THOMAS FLLOYD.

Revised and improved by NOTES from REAUMUR and others,

By JOHN HILL, M. D.

LONDON:

Printed for C. G. SEYFFERT, Bookſeller, in DEAN-STREET, SOHO.

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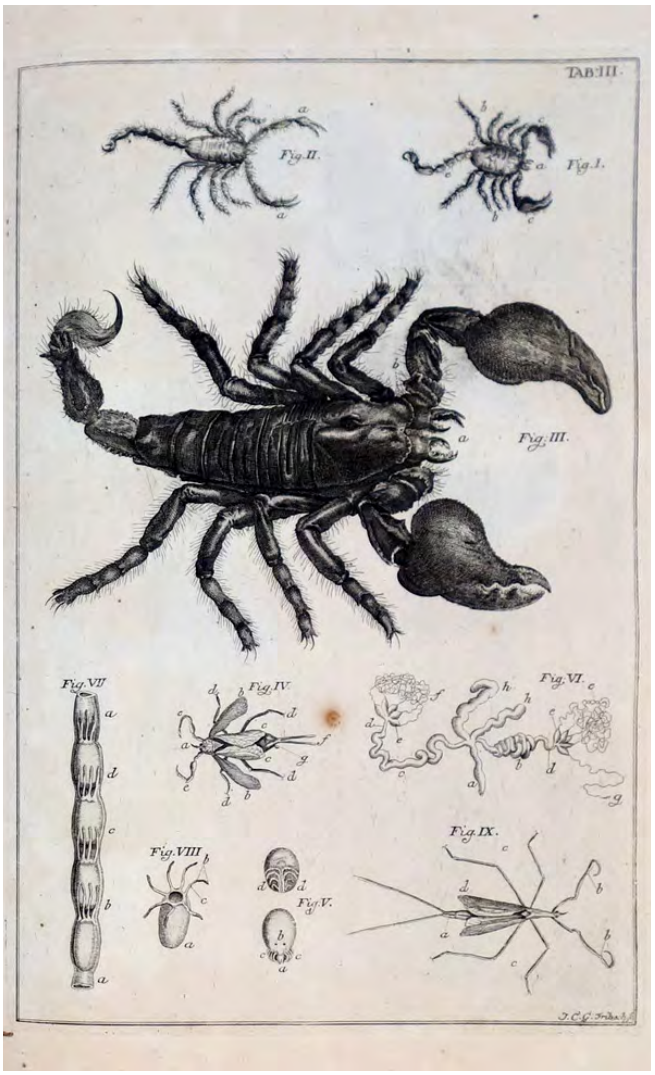
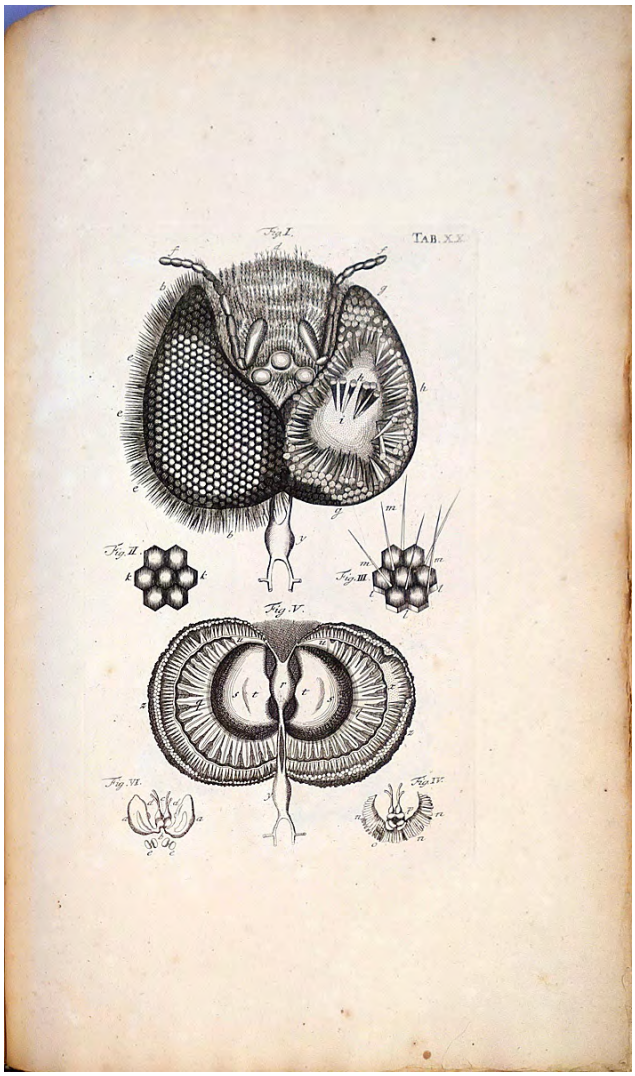
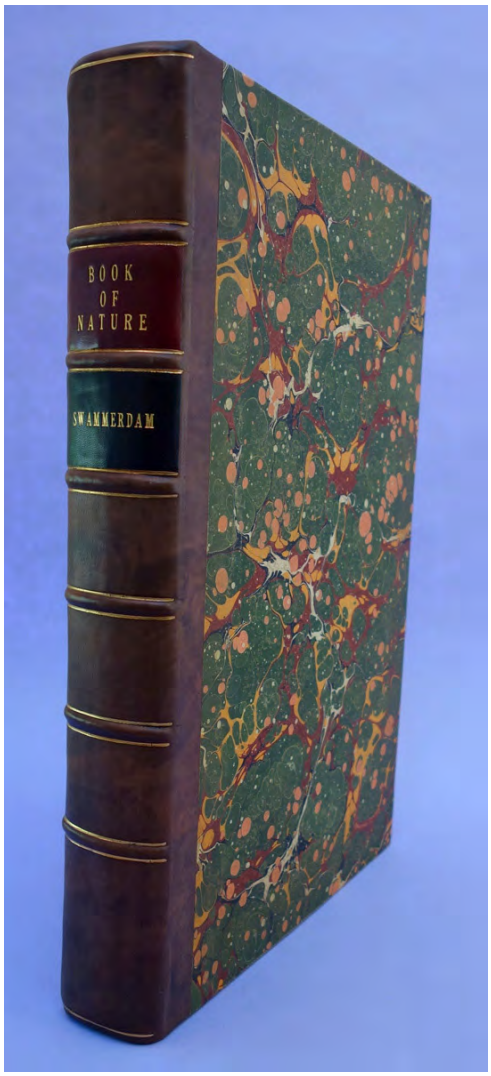


First English Edition of Swammerdam's "Biblia Natura"

43. Swammerdam, Jan (1637-80). The book of nature; or, the history of insects. . . . With the life of the author, by Herman Boerhaave. Translated from the Dutch and Latin original edition, by Thomas Flloyd. Revised and improved by notes from Reaumur and others by John Hill, M.D. 2 parts in 1, folio. [6], xx, [6], 236; 153, lxiii, [12]pp. 53 engraved plates, a few by Swammerdam. London: C. G. Seyffert, 1758. 440 x 274 mm. (uncut). Quarter calf, marbled boards in period style. Edges a bit frayed, light toning, but very good. $3750

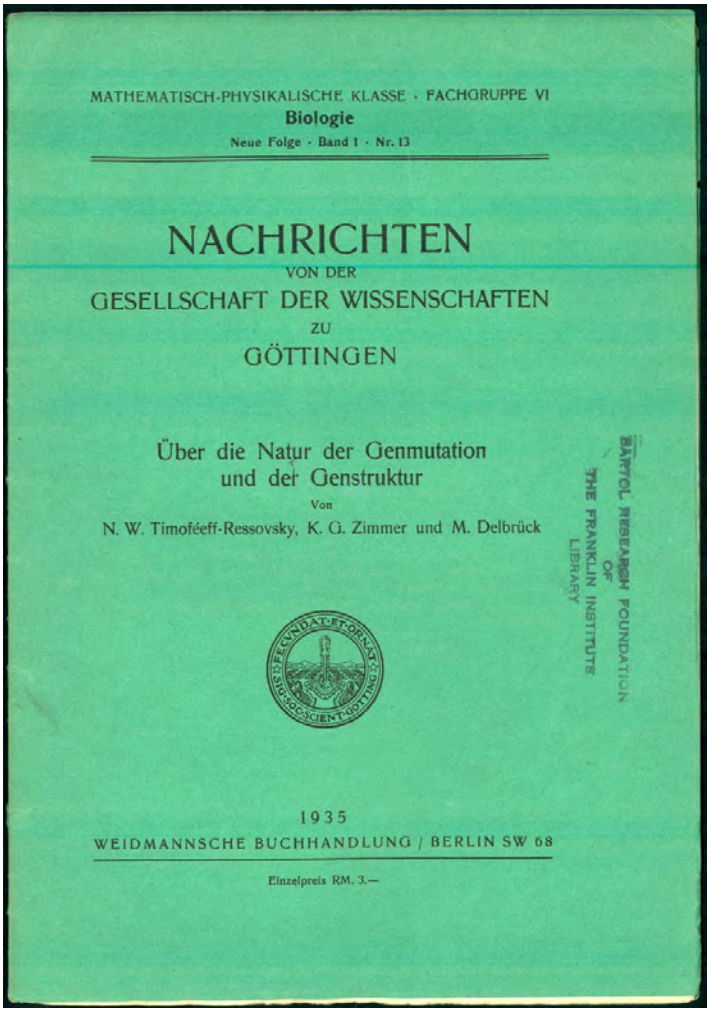
First Edition in English. Despite a scientific career that lasted only a dozen years, Swammerdam was one of the outstanding comparative anatomists of the seventeenth century. His most remarkable work was in the field of insect anatomy, which he undertook in order to disprove Aristotle's claims that insects lack internal anatomy, develop by metamorphosis (sudden and complete transformation) and arise from spontaneous generation. By refining his techniques of microdissection and injection to the point where he could use them on the smallest and most delicate anatomical parts, Swammerdam was able to illustrate for the first time the complex internal structures of insects, including their reproductive organs; and to demonstrate the gradual development of an insect's adult form throughout all its larval stages. These observations are "indubitably the foundation of





our modern knowledge of the structure, metamorphosis and classification of insects" (Cole, p. 285). In addition, Swammerdam performed valuable investigations of crustaceans, mollusks and frogs, and was the first to prove experimentally that muscles do not increase in bulk when contracted via nerve stimulation.

The *Biblia natura*, Swammerdam's major work, was published fifty-seven years after his death by Herman Boerhaave (1668-1738), who assembled it from unpublished manuscript materials integrated with a slightly revised version of Swammerdam's Historia insectorum generalis (1669). Boerhaave's biography of the author, which prefaces the work, remains the chief published source of information about Swammerdam's life. The English translation of *Biblia natura* was prepared by the physician John Hill (1716?-75), author of several botanical treatises (including the monumental *Vegetable System* [1759-75]) and a host of miscellaneous works. See Dibner, *Heralds of Science*, 191. Brazier, *Neurophysiology in the 17th and 18th Centuries,* pp. 40-45. Cole, H*istory of Comparative Anatomy*, pp. 270-305; *Library of Early Medicine & Zoology,* 731. 42737



A Key Conceptual Paper in the History of Molecular Biology

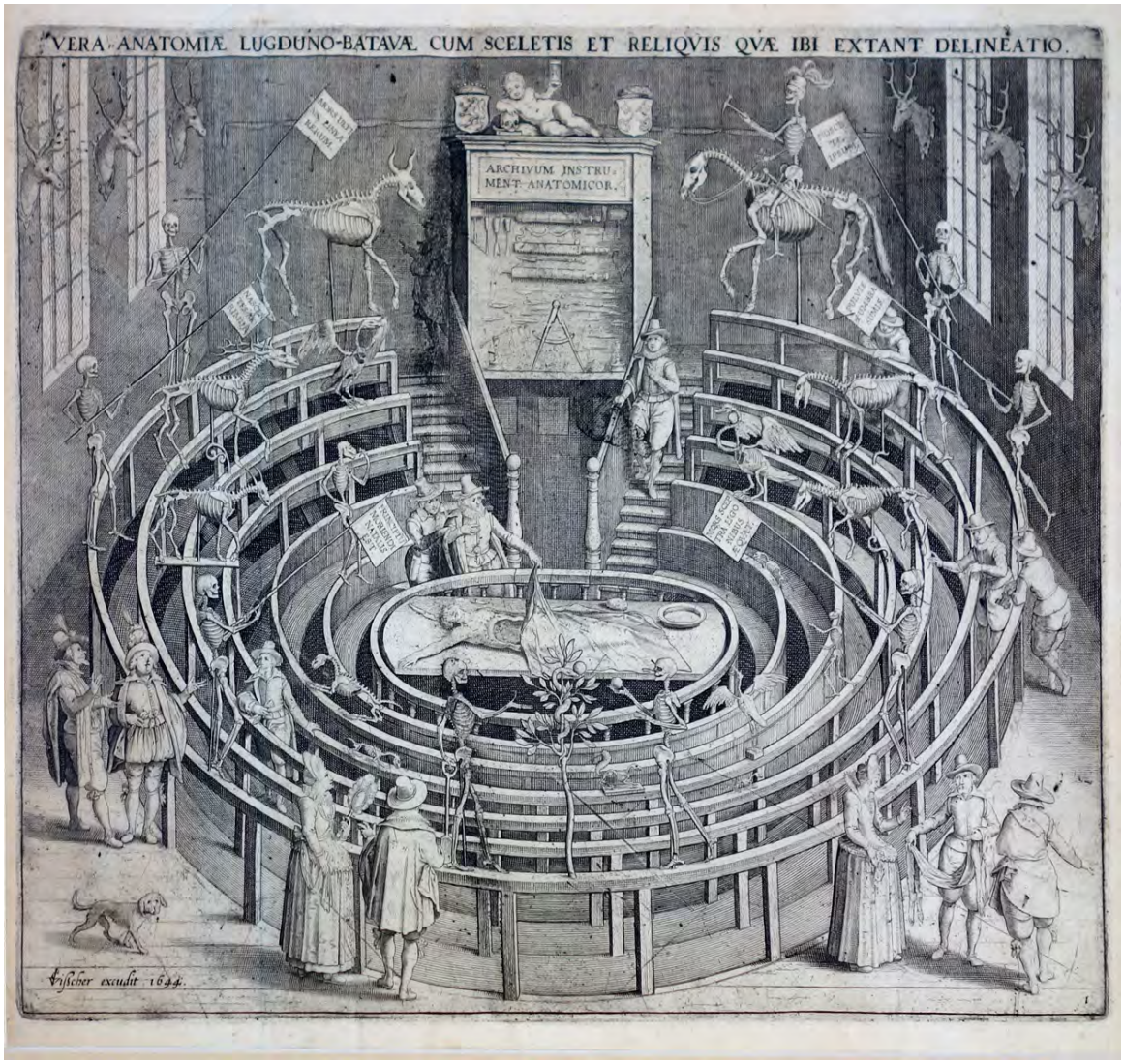
44. Timofeeff-Ressovsky, Nikolai Vladimirovich (1900-1981), K. G. Zimmer and Max Delbrück (1906-81). Ueber die Natur der Genmutation und der Genstruktur. Whole number of *Nachr. Ges. Wiss. Göttingen, math-fis. Kl., Fachgr.* 6, 1 (1935). 8vo. [189]-245pp. Berlin: Weidmannsche Buchhandlung, 1935. 253 x 178 mm. Original green printed wrappers. Stamp of the Bartol Research Foundation of the Franklin Institute Library on front wrapper Fine. $4500

First Edition. One of the key conceptual papers in the early history of molecular biology. This paper represented the debut in genetics of the physicist Max Delbrück, a student and lifelong friend of Niels Bohr. Delbrück turned from quantum physics to biology after being inspired by Niels Bohr's speculations, in his 1935 lecture "Light and life," about the application of quantum mechanics to problems in biology. Delbrück won a share of the Nobel Prize for physiology or medicine in 1969 for his discoveries concerning the replication mechanism and the genetic structure of viruses.

"Ueber die Natur der Genmutation und der Genstruktur" (often referred to as "the green paper" after the color of its wrappers, or the "Dreimänner" [three-man] paper after the number of its authors) is divided into four sections. The first, by Timoféeff-Ressovsky, describes the mutagenic effects of x-rays and gamma rays on Drosophila melanogaster; the second part, by Zimmer, analyzes Timoféeff-Ressovsky's results theoretically. The third and most remarkable section, by Delbrück, puts forth a model of genetic mutation based on atomic physics that "shows the maturity, judgment and breadth of knowledge of someone who had been in the field for years

. . . its carefully worded predictions have stood the test of time" (Perutz, p. 557). The three authors of the paper "concluded that a mutation is a molecular rearrangement within a particular molecule, and the gene a union of atoms with which a mutation, in the sense of a molecular rearrangement or dissociation of bonds, can occur. The actual calculations of the size of the gene, deduced from calculations on the assumption of a spherical target, were not cogent, as Delbrück wryly admitted in his Nobel Prize lecture, but the entire approach to the problem of mutation and the gene adopted by the three collaborators was highly stimulating to other investigators" (*Dictionary of Scientific Biography* [suppl.]).

The Timoféeff-Zimmer-Delbrück paper provided much of the material for Erwin Schrödinger's book *What is Life?* (1944), a work that takes a "naive physicist's" approach to the problems of heredity and variation; it is often cited as having inspired Watson, Crick, Wilkins and others to focus their careers on the problems of molecular biology. The relationship between Schrödinger's book and the Timoféeff-Zimmer-Delbrück paper is examined in detail in Max Perutz's 1987 paper "Physics and the riddle of life," which points out, among other things, that the two most important chapters in Schrödinger's book were paraphrased from "Ueber die Natur der Genmutation und der Genstruktur." "In retrospect, the chief merit of *What is Life?* is its popularization of the Timoféeff, Zimmer and Delbrück paper that would otherwise have remained unknown outside the circles of geneticists and radiation biologists" (Perutz, p. 558). Garrison-Morton 254.1. Perutz, "Physics and the riddle of life," *Nature* 326 (1987): 555-559. 38569

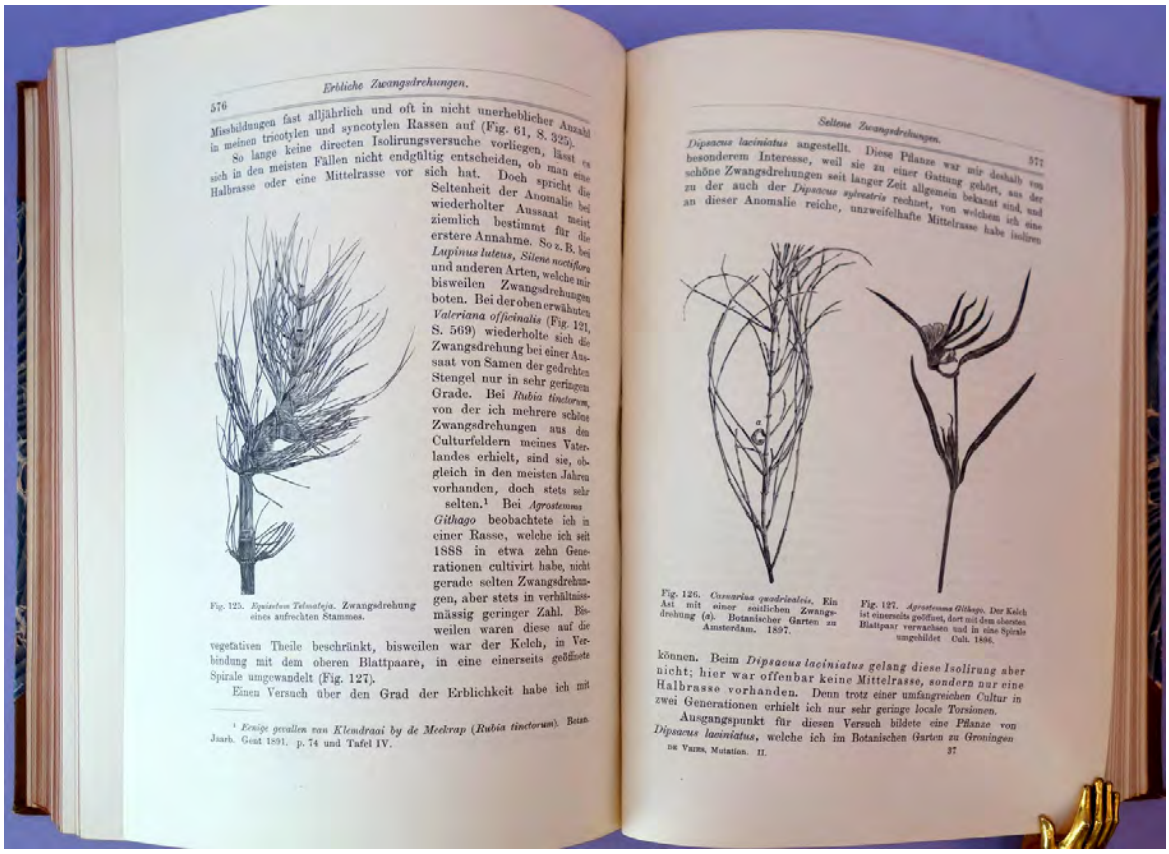


17th-Century Engraving of an Anatomical Theater

45. Visscher, Claes Janszoon (1587-1652). Vera anatomicae Lugduno-Batavae cum sceletis et reliquis quae ibi extant delineatio. Engraved print. N.p., 1644. 427 x 441 mm.; plate mark measures 328 x 390 mm. Matted. Very good. $2750

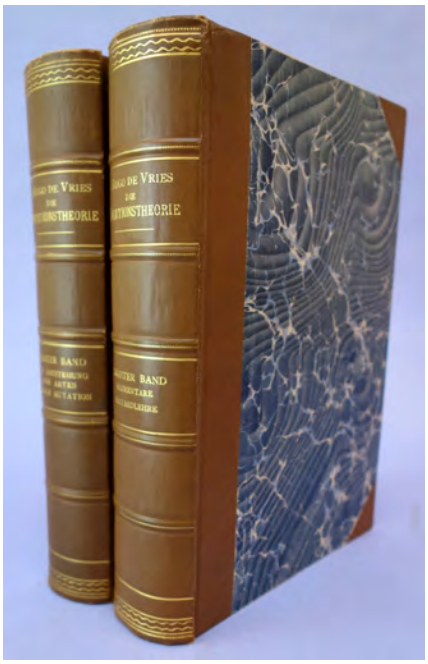
Later strike of one of the largest seventeenth-century engravings of an anatomical theater. The plate, originally engraved by Willem Swanenburgh after a drawing by Jan Corneliszoon van't Woud (1570-1615), was first published in 1610 as one in a series of views of Leiden University. In 1644 the Dutch mapmaker and publisher Claes Jansz. Visscher reissued the plate, removing van't Woud and Swanenburgh's names and the original publication date from the lower left corner and replacing them with his own name and the later date. He also removed the original publisher's name from the lower right corner and added the numeral "1".

The engraving shows the Leiden University anatomical theater as it would have appeared in the summer, empty of students but with a few fashionably dressed visitors gazing curiously at the many human and animal skeletons on display throughout the room. At the lower right a man shows the flayed skin of a corpse to a prosperous-looking couple. On the demonstration platform in the center is a half-dissected cadaver—a bit of artistic license, since anatomical demonstrations were not normally performed during the hot summer months. See Wolf-Heidegger and Cetto, *Die anatomische Sektion in bildlicher Darstellung*, no. 302 (1610 version). 42933



Mutation Theory

46. Vries, Hugo de (1848–1935). Die Mutationstheorie. 8vo. xii, 648; adverts., xiv, 752pp. 12 color plates & text illustrations. Leipzig: Veit, 1901–3. 2 vols. 246 x 168 mm. Original publisher's binding of half cloth, gilt spines, marbled boards, slight edgewear. Very good copy apart from some slight rusting to original wire stitching, as in all copies in this binding. $2000



First Edition. In 1886 De Vries began studying and experimenting with Oenothera lamarckiana, a species of evening primrose, after discovering a number of variants of this species; over the years several new forms appeared, most of which bred true. De Vries called these new forms "mutations" and formulated a series of theses—the Laws of Mutation—in which he postulated that new elementary species arose through a process of discrete steps ("mutations" or "saltations"), and usually remained constant from their moment of origin. "De Vries's experimental work in the 1890s led to the rediscovery of Mendel's laws and the discovery of the phenomenon of mutation . . . The results of his more than ten years of experimentation and study were laid down in de Vries's *Die Mutationstheorie* . . . in which he described in detail his work on the segregation laws, on phenomena of variation, and on plant mutations [as the basis of evolution]. The book made him famous, and he was recognized as one of the foremost botanists of his time" (*Dictionary of Scientific Biography*). The principle of mutation, or sudden change in species, remains a cornerstone of evolution theory. Garrison-Morton 240. Horblit 73b. Dibner 36. Norman 2169. 42961