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First Edition of the First English Sex Manual—
One of Three Known Complete Copies

1. [Pseudo-Aristotle]. Aristoteles master-piece, or the secrets of generation displayed in all the parts thereof . . . 12mo. [4, including woodcut frontispiece], 190, [2, blank], [12, including 6 woodcut illustrations, one a repeat of the frontispiece]pp. Title leaf is a cancel. London: Printed for J. How, 1684. 144 x 85 mm. Early sheep, worn, binding separating from text block; preserved in a cloth box. Occasional worming and staining, edges frayed, woodcuts with holes, tears and chips slightly affecting images, last woodcut with marginal loss affecting a few words of text, a few leaves slightly cropped, but a good, unsophisticated copy of a book that was mostly read out of existence. $65,000

First Edition. *Aristotle's Masterpiece* (neither by Aristotle nor a masterpiece) was the first sex manual in English, providing its readers with practical advice on copulation, conception, pregnancy and birth. This anonymous, inexpensively printed work proved to be enormously popular: At least three editions were issued by J. How in 1684 (see ESTC and below in our description), and it went through well over 100 editions in the following two centuries. Versions even continued to be published into the early twentieth century, with one appearing as late as 1930! Although *Aristotle's Masterpiece* was not intended as pornography, its frank discussion of sex and reproduction was seen as unfit for polite society; the book was often issued under false imprints and sold "under the table." The publication history of the work is discussed in some detail in Roy Porter and Lesley Hall's *The Facts of Life* (pp. 54-64) and Mary Fissell's "Hairy Women and Naked Truths" (p. 47); it should be noted, though, that Porter and Hall were unaware of the 1684 editions of the *Masterpiece*.

(118)

fect, for in the middle way themſelves into two branches, different in magnitude, for one be- greater than the other, paſſes to the Stones conveying matter for compoſition of Seed, and the leſſer to the Womb, ſcat- tering their ſuch Nutriment as it extracts from other parts of the Body; as for the Arteries, they afford the Blood which is more full of Spirit to perfect the Seed.

The Stones in Women are greatly uſe- ful, for where they are defective, Genera- tion is at an end, by reaſon they operate in preparing the Seed, as thoſe in Men, and by reaſon the Woman is colder than the Man, therefore they are ſeated within, that they ſhould have the more heat to cheriſh them; and for that cauſe are they covered only with one Tunicle, that the heat may have the eaſier acceſs, though by reaſon of their ſoftneſs they cannot perfect ſo ſubſtantial a Seed as thoſe of Men, as be- ing cheriſhed with leſs heat, that the re- mainder might ſupply the inferiour parts.

Their figure is not exactly round but de- preſſed, that the ſmall meanders of the veins diſperſed through the Members, from the Stones to the different Veſſels, might have more room to be inſerted for the attracti- on of the Seed, by the Subſtance of the Stones,

(119)

Stones, the inequality contributing to the longer ſtay of the Seed in thoſe meandring Veſſels, nor is rugedneſs or unevenneſs of them leſs conducing thereto.

CHAP. XVI.

Of Conception, and the infallible Signs thereof; as alſo whether it be a Male or Female, that is conceived, or both at once, commonly called Twins.

THE next thing convenient to be ob- ſerved in this Treatiſe, and as it falls in courſe, is Conception and its Symp- toms, very material and worthy of note, not only by Midwives, but all young Wo- men. Now the ſigns of Conception three or four days after convenient and ſatisfa- ctory Copulation, are

Pains in the Head, Virtigo and dimneſs of the Eyes, the Apples of the Eyes decreaſe, the Eyes themſelves ſwell, and become of a dull or dark colour, their veins waxing red and ſhut with Blood: Again, if the Eyes ſink, the Eybrows grow looſe, various co- lours appear in the Eyes, and little red Pim-

"The subject of *Aristotle's Master-Piece* is reproduction. That both men and women will long to copulate, that passion will not prove delusory or destructive, that there is an esteem and respect between the sexes which transcends brute lust—all these are taken for granted, requiring no special pleading, syllogisms or learned foot- notes. . . . *Aristotle's Master-Piece* feels under no obligation to vindicate to its readers the pleasures of heterosexual intercourse; it will merely instruct them in how to do it well" (Porter & Hall, p. 42). On a darker note, the *Mas- terpiece* also contains a discussion of the then-mysterious problem of "monsterous births," attributed variously to maternal imagination, witchcraft, human-animal copulation or a disorder of the womb. The woodcut illustra- tions—all depicting "monsters"—are copied from the English edition of Ambroise Paré's *Workes* (1634), which included a translation of Paré's *Des monstres et prodigies* (1573). The frontispiece woodcut, which makes another appearance at the end of the book, shows a naked woman covered in hair and a black child born to white par- ents; the remaining illustrations show conjoined twins, a "half man half dog" and other severe deformities.

The first editions of *Aristotle's Masterpiece*, published by J. How, appeared in 1684; each has its own distinct set- ting of type, and no priority has been established among them. The editions can be distinguished by their title pages. In the edition we are offering, the title leaf is a cancel, with the imprint at the foot of the title reading "London: Printed for J. How, and are to be sold / next door to the Anchor Tavern in Swee- / things-Rents in Cornhil"; line 11 of the title ends with the word "both" and line 18 ends in "Ge-". ESTC has recently identified another edition with the "Swee- / things" imprint in which line 18 ends in "Geni-"; see their catalogue entries at http://estc.bl.uk/R504793 and http://estc.bl.uk/R4283. Another 1684 edition, also with a cancel title, has an

imprint reading "London: Printed for J. How, and are to be sold next / door to the Anchor Tavern in Sweetings Rents / in Cornhil." Line 11 in this edition ends in "Sexes" and line 18 ends in "Con-"; see the ESTC description at http://estc.bl.uk/R236899. Until very recently ESTC had stated that line 11 of the "Swee- / things" imprints ends in "reasons," an error that they have since corrected based on information we supplied them.

We have located the following 12 copies:

Swee- / things (both versions)

Our copy (complete)
Yale (copy 1). Imperfect ("trimmed with slight loss of text")
N.Y. Acad. Med. Lacks last leaf with woodcut
U. Penn. Lacks last leaf with woodcut
Johns Hopkins. Lacks last leaf with woodcut

Sweetings

Maggs copy (complete). Sold to Yale in 2011
Yale (copy 2). Lacks pp. 53-68
University of North Carolina (complete)
NLM. Pp. 65-72 and 101-102 mutilated

Undetermined

British Lib. Lacks final sheet with woodcuts.
Royal College of Surgeons. Lacks final sheet with woodcuts
Guildhall Library, London. Lacks some of the final leaves

As can be seen from this list, our copy is the only known complete example to have the "Swee-/things" imprint. Fissell, "Hairy Women and Naked Truths: Gender and the Politics of Knowledge in *Aristotle's Masterpiece*," *William and Mary Quarterly, 3rd* series, 60 (2003): 43-74. Gilman, *Sexuality: An Illustrated History*, pp. 109-111. Porter and Hall, *The Facts of Life: The Creation of Sexual Knowledge in Britain*, 1650-1950, pp. 33-64. Wing A3697fA. 43344

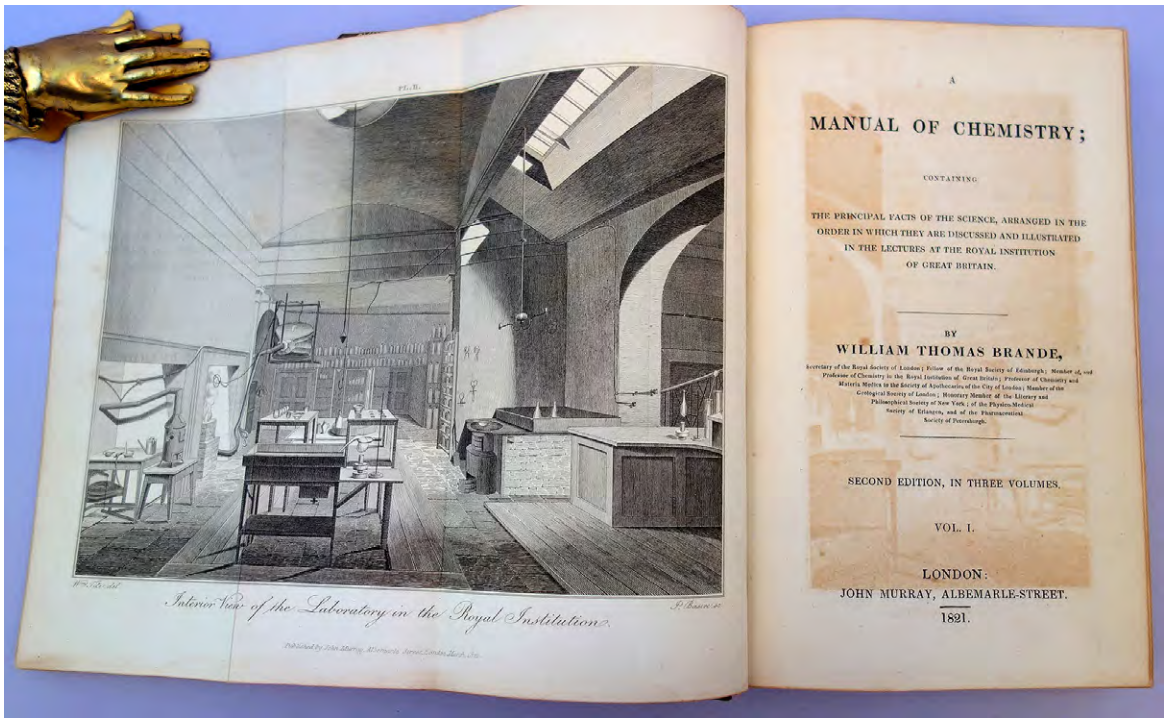
2. Berzelius, Jöns Jacob (1779-1848). Jacobus Berzelius. Medal in bronze showing a right-facing bust of Berzelius on the obverse with his birth and death dates in roman numerals; the reverse with a standing winged figure and the seated figure of Hygeia along with text in Latin. Signed "P. H. Lundgren fec. – C. G. Quarnstroem inv." N.p., n.d. [1848]. 57 mm. diameter. A few minor scratches and dings, but very good. $950

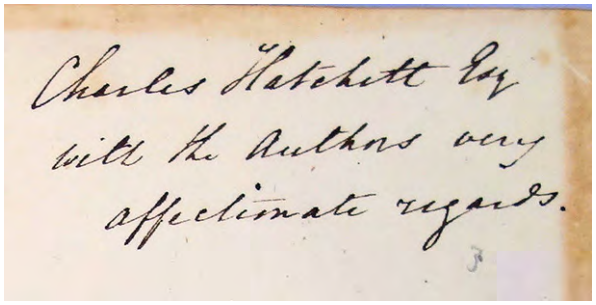
The Berzelius Medal was commissioned by the Royal Swedish Academy of Sciences in memory of the famous Swedish chemist. Berzelius invented the current system of chemical symbols, originated the duality theory of chemical affinity classing chemical elements as either electronegative or electropositive (an ancestor of 20th century electron theories of bonding), developed new and important methods of chemical synthesis and analysis, and discovered the elements cerium, selenium and thorium.

The Latin motto above the figures on the reverse reads "Naturam jussit vires proferre latentes" (He commanded forth the secrets of nature). The text below the figures reads "Fundatorum supremo lugens [in deepest mourning]/ Medic. Suec. Societas." The medal was issued in silver, bronze and Berlin iron; this is an example of the bronze. Storer, *Medicina in Nummis,* no. 337. 43385

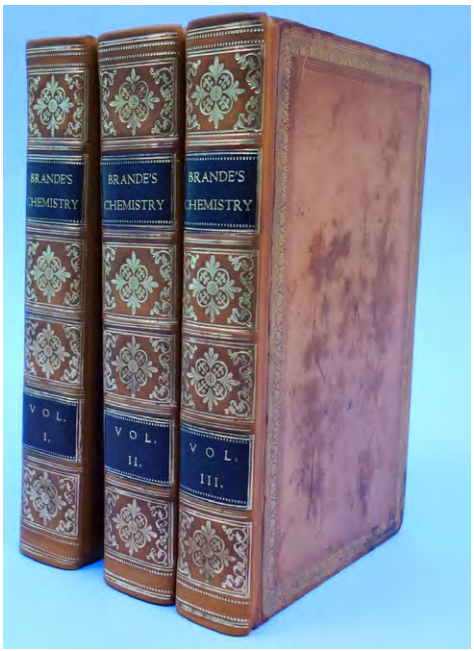
The Dedication Copy

3. Brande, William Thomas (1788-1866). A manual of chemistry; containing the principal facts of the science . . . 3 vols. xvi, 470, [2]; vii, 546, [2]; viii, 350, [106, index]pp. Frontispiece engraving and 3 engraved plates; wood-engraved text illustrations. London: John Murray, 1821. 216 x 133 mm. Calf gilt ca. 1821, skillfully rebacked. Light toning throughout, some offsetting from plates, small ink-stains on one index page obscuring a few words of text, but very good. *The Dedication Copy, Inscribed by Brande to dedicatee Charles Hatchett (1765-1847)* on the flyleaf of the first volume: "Charles Hatchett Esq. with the Authors very affectionate regards." $1850

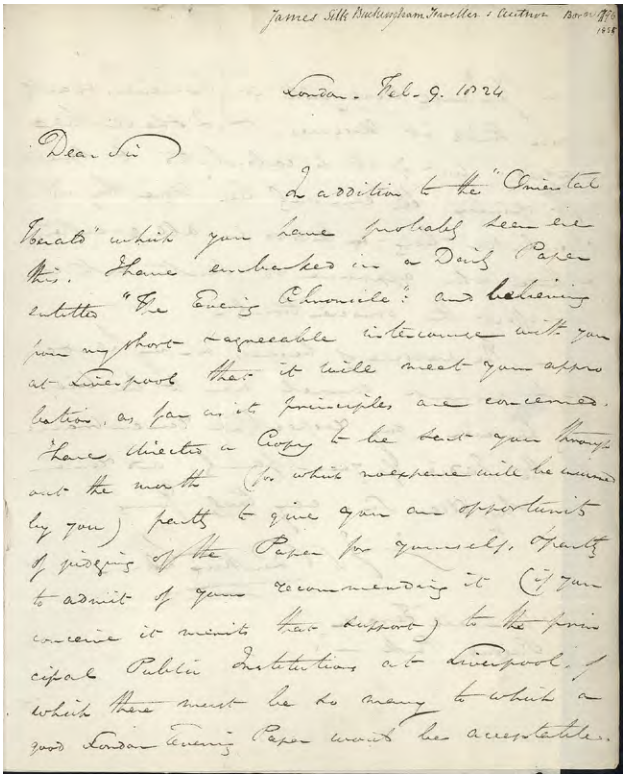




Inscribed Dedication Copy of the second edition of Brande's *Manual of Chemistry,* greatly enlarged from the one-volume first edition (1819). Brande dedicated this edition to his father-in-law, the British chemist and mineralogist Charles Hatchett, who had introduced Brande to the study of chemistry when the latter was in his early teens; Brande's dedication, dated May 1, 1821, is on the leaf following the title in Vol. I. Hatchett is best known for his discovery in 1801 of the metallic element columbium (now known as niobium); Brande's description of that element in his *Manual* notes that it "was first discovered by Mr. Hatchett in a mineral from North America" (Vol. II, p. 229).



Brande had a long and distinguished career as a chemist, educator and science writer. In 1813 he succeeded Humphry Davy as professor of chemistry at the Royal Institution, a post he held until 1852; while at the RI he developed a close working relationship with Michael Faraday, who served for some years as Brande's assistant. Brande also was superintendent of the Royal Mint's die department from the mid-1820s, and in 1854 became chief officer of the Mint's coinage department. His *Manual of Chemistry* went through six editions and was the leading chemistry textbook of its day; he also wrote two well-regarded works on pharmacy, and edited the *Dictionary of Science, Literature and Art* (1842). 43338

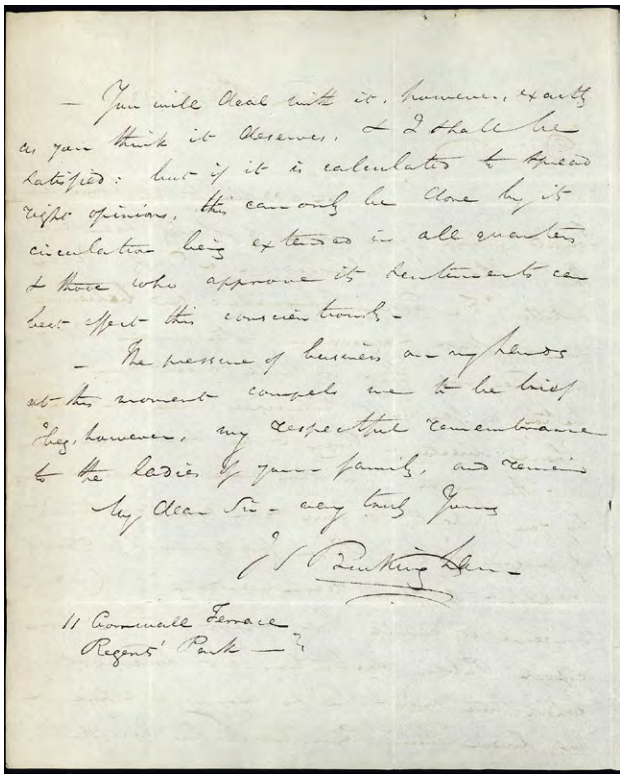


James Silk Buckingham, Traveller & Author. Born 1786. Died 1855.

London. Feb. 9. 1824

Dear Sir

In addition to the "Oriental Herald" which you have probably seen ere this, I have embarked in a Daily Paper entitled "The Evening Chronicle": and believing from my short acquaintance with you at Liverpool that it will meet your approbation, as far as its principles are concerned, I have directed a Copy to be sent you twice a week for the month (for which no charge will be made by you) partly to give you an opportunity of judging of the Paper for yourself, & partly to admit of your recommending it (if you conceive it merits that support) to the principal Public Institutions at Liverpool, of which there must be so many to which a good London Evening Paper would be acceptable.



— You will deal with it, however, exactly as you think it deserves, & I shall be satisfied: but if it is calculated to spread right opinions, this can only be done by its circulation being extensive in all quarters & those who approve its sentiments can best effect this consummation.

— The pressure of business on my hands at the moment compels me to be brief. Beg, however, my respectful remembrance to the ladies of your family, and remain

My dear Sir — very truly Yours

J S Buckingham

11 Cornwall Terrace
Regent's Park

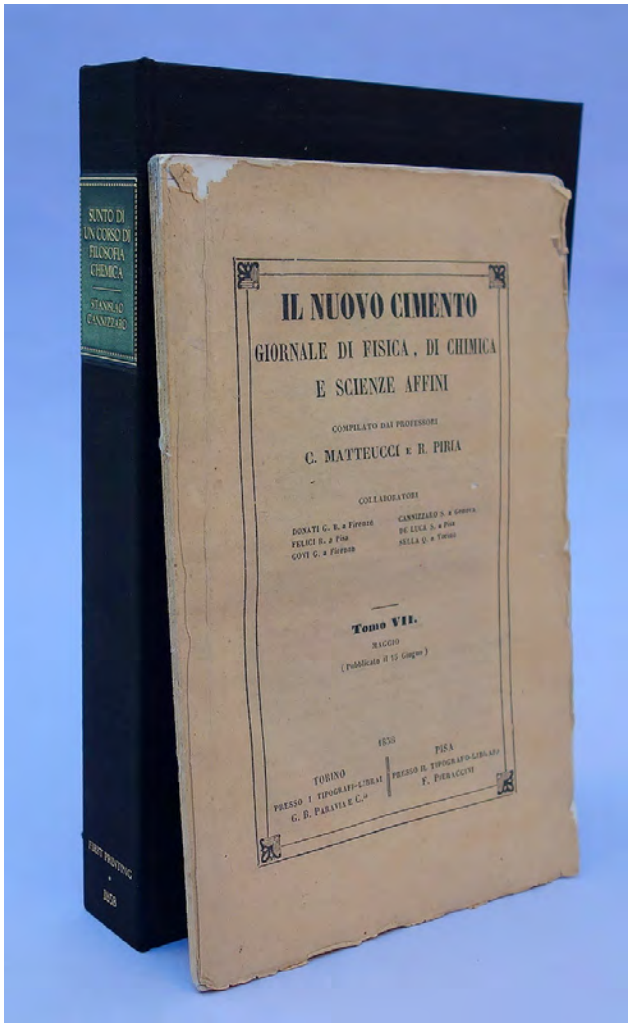
"On the Countries of the East"

4. Buckingham, James Silk (1786–1855). Three autograph letters signed to William Rathbone (1787–1868). 10pp. total. London, Feb. 9, 1824; Dec. 22, 1828; and Dec. 14, 1830. Approx. 250 x 210 mm. Small lacuna in one letter where seal was broken (not affecting text), but very good. $950

James Silk Buckingham, a British travel writer and social reformer, first came into public notice when he founded a newspaper in Calcutta and began publishing articles critical of the colonial government; this led to the government seizing Buckingham's newspaper and expelling him from the country in 1823. On his return to England he established several newspapers devoted to politics and to news about Britain's Eastern colonies, the most successful of these being the "Oriental Herald." After serving four years in Parliament, Buckingham left politics and traveled widely in the United States and Europe, publishing several books on his travels and establishing a career as a public lecturer. He was deeply interested in social reform, serving as president of the London Temperance League and developing a plan for the construction of model towns, which he described in his best-known work, *National Evils and Practical Remedies* (1849). Although never realized, Buckingham's model town plan influenced the ideas of Ebenezer Howard, founder of the Garden City movement.

The three letters we are offering here were all written to William Rathbone, member of a wealthy and prominent Liverpool family of merchants long associated with philanthropy and public service. Like Buckingham, Rathbone was interested in social reform, and Buckingham relied on Rathbone's influence and financial support in promoting his newspapers, lectures and other ventures. In his letter of Feb. 9, 1824 Buckingham informs Rathbone of his plan to found a daily newspaper called "The Evening Chronicle," hoping that Rathbone would see fit to recommend it "to the principal Public Institutions at Liverpool, of which there must be so many to which a good London Evening Paper would be acceptable." In the Dec. 22, 1828 letter Buckingham describes his plan to give a series of lectures in Liverpool to promote free trade to China and India, and asks for Rathbone's help in publicizing the lectures and securing a suitable venue. In his letter of Dec. 14, 1830 Buckingham discusses another upcoming lecture tour "on the Countries of the East" and "the India Question," which he proposed to begin in Liverpool "as the wealthiest, & most public spirited, and therefore the best to set an example." 43370

The Determination of Atomic Weights—One of the Greatest Rarities in Chemical Literature



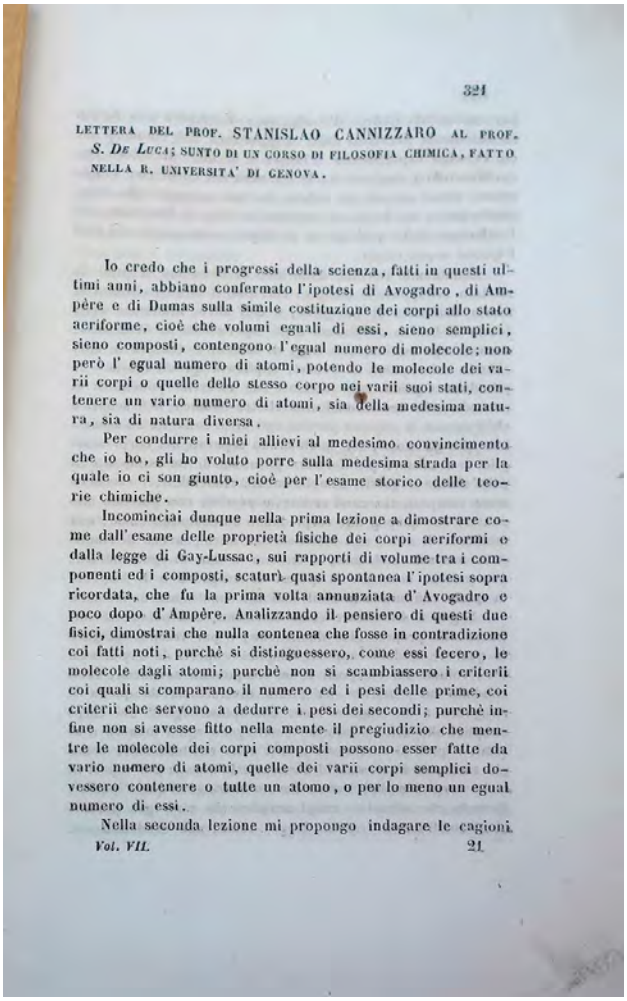
5. Cannizzaro, Stanislao (1826-1910). Sunto di un corso di filosofia chimica fatto nella Reale Università di Genova. In *Il nuovo cimento* 7 (1858): 321-366. Whole number. 321-400pp. 232 x 152 mm. (uncut and mostly unopened). Original printed wrappers, a little frayed and chipped, but a very fine copy. Boxed. $25,000

First Edition of one of the greatest rarities in chemical literature. Cannizzaro was an editor of *Il nuovo cimento*; his Sunto appeared in the journal issue we are offering, and as a separate offprint. This is the first copy of either version that we have seen on the market in fifty years. More significantly, our late client, Roy Neville, who was just about the most determined collector we ever knew, could never obtain a copy of either version in the roughly forty years he spent collecting his comprehensive library on the history of chemistry. There are no copies of either version in the auction records, and while the journal publication cannot be as rare as the offprint in absolute terms, the rarity of the original separate issue of the journal in the original fragile printed wrappers, uncut and mostly unopened, may be nearly as great.

Of the major collectors in the history of chemistry only Dennis Duveen, whose library is now at the University of Wisconson, owned a copy, charactering it in his catalogue as "Very rare." Duveen almost certainly obtained his copy from Ernst Weil, who listed a copy in the 1940s in his Catalogue 10, item 64 with the note, "Of singular rarity, the second copy I have seen in 25 years." Duveen was one of Weil's best customers, and Weil published the catalogue of Duveen's library, *Bibliotheca Alchemica et Chemica,* in 1949. A great connoisseur, Weil was the leading specialist in science and medicine at a time when many of the books that are very hard to find today were relatively common, so his statements regarding rarity are particularly meaningful. It is also of note that Weil considered even the second edition of Cannizaro's *Sunto* published in 1880 "very rare." (As an aside, I met Dr. Weil in London with my father in 1958 when I was 13 years old. At that time I had no expectation of the career that followed.)

Cannizzaro's famous "Sketch of a course of chemical philosophy" paved the way for the systematization of chemistry in the 1860s. His reintroduction and defense of Avogadro's hypothesis, which had largely been ignored by chemists for the previous fifty years, inspired other chemists such as Lothar Meyer and Dmitri Mendeleev, who used the concept of true atomic weight to develop the periodic table of the elements at the end of the 1860s.

In 1811 Avogadro published his famous paper in which he clearly distinguished between atoms and molecules and hypothesized that equal volumes of gas at the same pressure and temperature contained equal numbers of molecules. Had Avogadro's ideas gained currency at the time of their publication, the concept of "atomic weight" might have been adopted in the 1810s rather than the 1860s, but Avogadro's paper was so far ahead of its time that it was little understood; moreover, Avogadro's hypothesis was rejected outright by Jöns Berzelius and



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LETTERA DEL PROF. STANISLAO CANNIZZARO AL PROF. S. DE LUCA; SUNTO DI UN CORSO DI FILOSOFIA CHIMICA, FATTO NELLA R. UNIVERSITA' DI GENOVA.

Io credo che i progressi della scienza, fatti in questi ultimi anni, abbiano confermato l'ipotesi di Avogadro, di Ampère e di Dumas sulla simile costituzione dei corpi allo stato aeriforme, cioè che volumi eguali di essi, sieno semplici, sieno composti, contengono l'egual numero di molecole; non però l' egual numero di atomi, potendo le molecole dei varii corpi o quelle dello stesso corpo nei varii suoi stati, contenere un vario numero di atomi, sia della medesima natura, sia di natura diversa.

Per condurre i miei allievi al medesimo convincimento che io ho, gli ho voluto porre sulla medesima strada per la quale io ci son giunto, cioè per l'esame storico delle teorie chimiche.

Incominciai dunque nella prima lezione a dimostrare come dall'esame delle proprietà fisiche dei corpi aeriformi e dalla legge di Gay-Lussac, sui rapporti di volume tra i componenti ed i composti, scaturì quasi spontanea l'ipotesi sopra ricordata, che fu la prima volta annunziata d'Avogadro e poco dopo d'Ampère. Analizzando il pensiero di questi due fisici, dimostrai che nulla contenea che fosse in contradizione coi fatti noti, purchè si distinguessero, come essi fecero, le molecole dagli atomi; purchè non si scambiassero i criterii coi quali si comparano il numero ed i pesi delle prime, coi criterii che servono a dedurre i pesi dei secondi; purchè infine non si avesse fitto nella mente il pregiudizio che mentre le molecole dei corpi composti possono esser fatte da vario numero di atomi, quelle dei varii corpi semplici dovessero contenere o tutte un atomo, o per lo meno un egual numero di essi.

Nella seconda lezione mi propongo indagare le cagioni

Vol. VII. 21

Jean-Baptiste Dumas, the leading chemical authorities in the first half of the nineteenth century. This rejection led to several decades of confusion, as without the notion of atomic weight there was no way to determine a uniform standard of measurement in chemistry, and several conflicting systems arose.

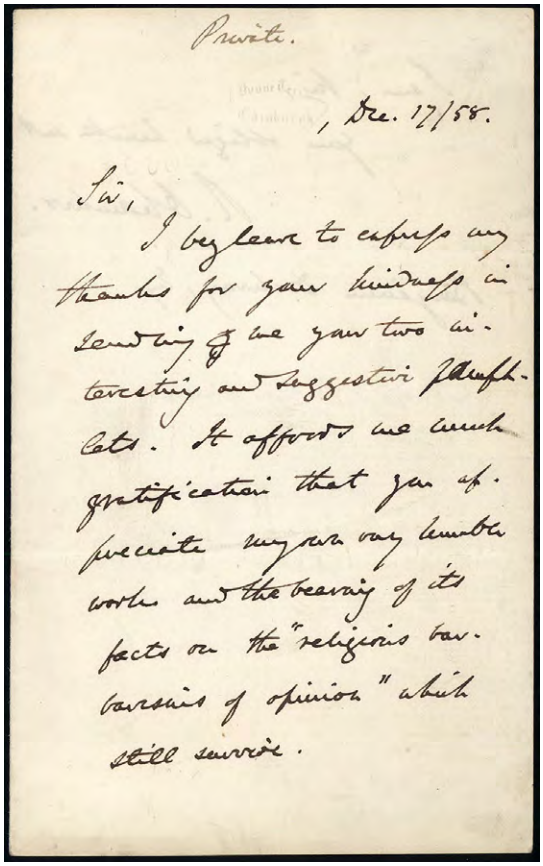
Thus, when Cannizzaro wrote the "Sunto," there was no agreement among chemists as to what values should be adopted for atomic, molecular, or equivalent weights; no possibility of systematizing the relationship of the various elements; and no unanimity as to how organic compounds should be formulated . . .

[In his paper] Cannizzaro began by stressing the distinction between atoms and molecules made by Avogadro. . . . He then explained the theories of Berzelius and how they had misled the master analyst. He also showed how Dumas had felt forced to conclude that there were different rules governing inorganic and organic chemistry. . . . He stressed that since all atomic weights are relative, one standard weight had to be chosen with which all other values could be compared. He chose hydrogen as this standard, but since he knew it to be diatomic, he used "half a molecule of hydrogen" as unity. . . .

Cannizzaro next told his students, "Compare the various quantities of the same element contained in the molecule of free substance and in those of all its different compounds, and you will not be able to escape the following law: The different quantities of the same element contained in different molecules are all multiples of one and the same quantity, which, always being entire, has the right to be called an atom." This he called the law of atoms, and Partington says that it deserves to be called the Cannizzaro principle. . . .

Thus in his "Sunto" Cannizzaro not only called attention once more to Avogadro's hypothesis, made the distinction between atoms and molecules fully clear, and showed how vapor densities could be used to determine molecular weights (and atomic weights), but he laid to rest completely the idea that inorganic and organic chemistry functioned by different rules. As Tilden summed up his work in the Cannizzaro Memorial Lecture to the Chemical Society, "There is, in fact, but one science of chemistry and one set of atomic weights" (*Dictionary of Scientific Biography).*

Duveen, *Bibliotheca Alchemica et Chemica,* p. 115 ("Very rare"). Not in Neville, *The Roy G. Neville Historical Chemical Library.* Not in the Haskell Norman Library. 43328

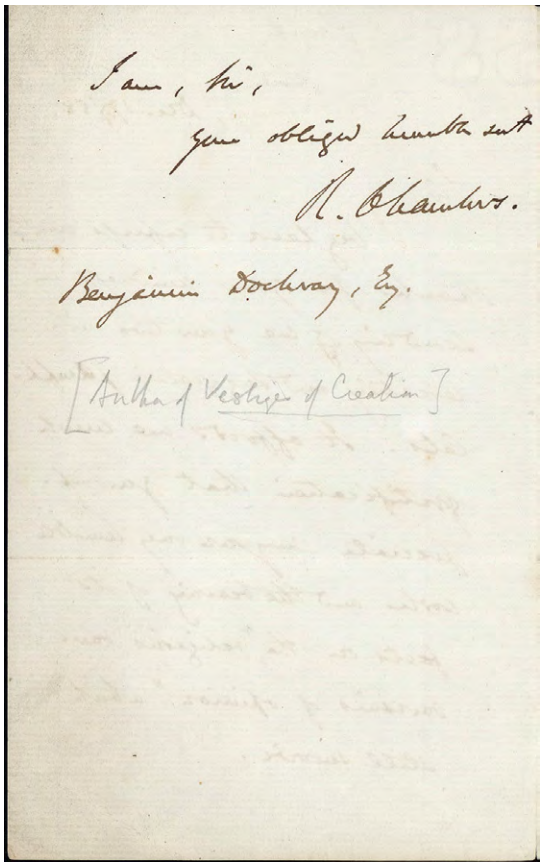


Private.

, Dec. 17/58.

Sir,

I beg leave to express my thanks for your kindness in sending me your two interesting and suggestive pamphlets. It affords me much gratification that you appreciate my very humble work and the bearing of its facts on the "religious barbarisms of opinion" which still survive.



I am, Sir,
your obliged humble servt
R. Chambers.

Benjamin Dockray, Esq.

[Author of Vestiges of Creation]

Tacit Acknowledgment of Authorship of "Vestiges"?

6. Chambers, Robert (1802-71). Autograph letter signed to Benjamin Dockray (1786-1861). 1-1/2pp. plus integral blank. Edinburgh, December 17, 1858. 186 x 116 mm. Traces of mounting on verso of blank leaf, but very good. $950

Intriguing letter from Scottish publisher Robert Chambers, best known as the anonymous author of *Vestiges of the Natural History of Creation* (1844), the first full-length exposition in English of an evolutionary theory of biology and the most sensational book on its subject to appear prior to Darwin's *On the Origin of Species*. Chambers's work was one of the greatest scientific best sellers of the Victorian age, going through at least twelve large editions in England, numerous American editions, and several foreign-language translations. Chambers decided to publish the *Vestiges* anonymously because he feared that the ensuing controversy over its inflammatory subject would hurt his publishing business. Only a very few people were in on the secret during Chambers' lifetime, and it was not until several years after his death that his authorship of the *Vestiges* was revealed to the public.

Chambers' letter to Dockray suggests that Dockray might possibly have been "in the know" about the *Vestiges.* Dockray, a Quaker, had published two pamphlets in the 1820s and 1830s supporting Catholic emancipation and religious liberty, and it appears that he sent copies of them to Chambers. Chambers responded as follows:

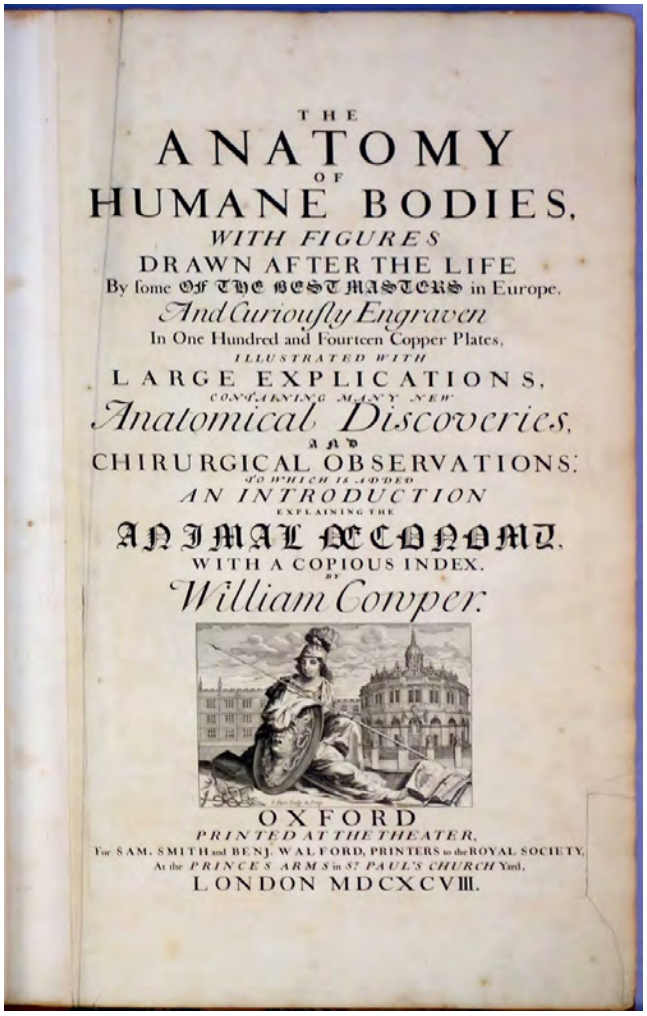
> I beg leave to express my thanks for your kindness in sending me your two interesting and suggestive pamphlets. It affords me much gratification that you appreciate my own very humble work and the bearing of its facts on the "religious barbarisms of opinion" which still survive.

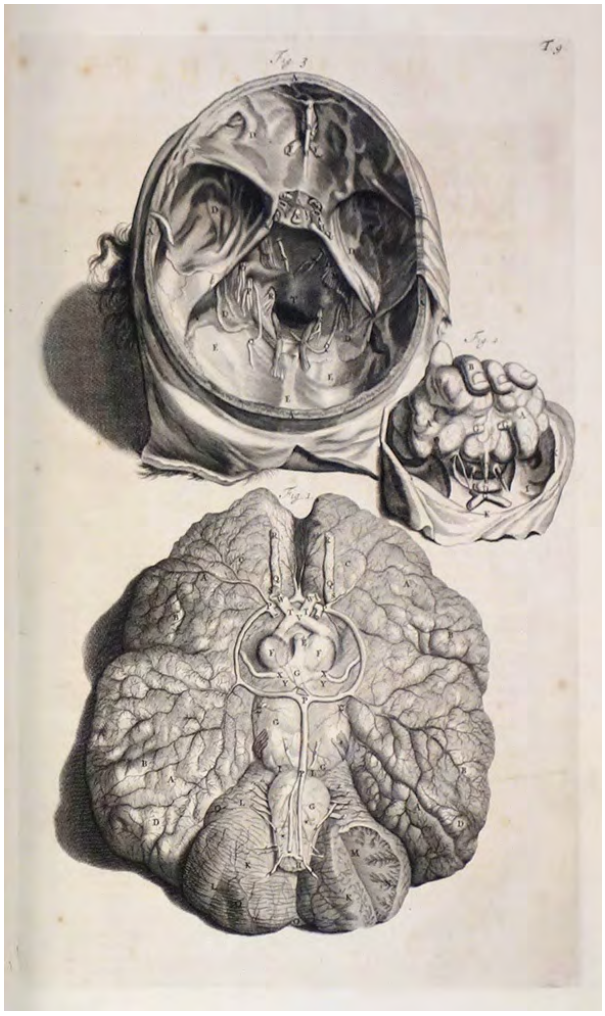
Apart from the *Vestiges*, Chambers wrote or published nothing that could be said to challenge "religious barbarisms of opinion," so it is tempting to think that he is referring here to that work. This speculation is strengthened by the fact that Dockray was both a religious nonconformist and a political liberal, the sort of freethinking reader who would find Chambers' evolutionary ideas appealing. 43346

Baroque Anatomy

7. Cowper, William (1666–1709). The anatomy of humane bodies. . . . Folio. [72]ff. including mezzotint portrait by Smith after Closterman (mounted as in all copies), allegorical engraved title attributed to Abraham Bloteling (1640–90) with pasted-on English title in cartouche as usual, second engraved title with vignette by Sturt. 114 plates (2 folding, 105 designed by Gérard de Lairesse [1640–1711] & probably engraved by Bloteling, 9 mostly drawn & engraved by M. van der Gucht. London: Sam. Smith & Benj. Walford, 1698 [printed at the Sheldonian Theater, Oxford]. 640 x 402 mm. 19th century half calf, marbled boards, rebacked, endpapers renewed, light wear to corners. Gutter margins of all leaves skillfully repaired, old repair to margin of title, first few leaves creased, some foxing, but a very good clean copy with unusually large margins. $9500

First Edition in English of the original plates designed for Govard Bidloo by Gérard de Lairesse, a painter who rivaled Rembrandt in popularity in his time. Garrison-Morton 385 cites the original issue of the plates with Latin text by Bidloo in 1685. Bidloo's text, however, was widely criticized, and possibly because of this Cowper obtained 300 sets of the original plates to illustrate an entirely new text in English. This reissue was *limited to 300 copies.* The new English text was clearly superior, and the basis for later Latin editions, and Cowper commissioned nine new plates for the edition. However, Cowper did not acknowledge Bidloo, even going so far as to paste over Bidloo's name with his own in the cartouche on the engraved allegorical title. This action

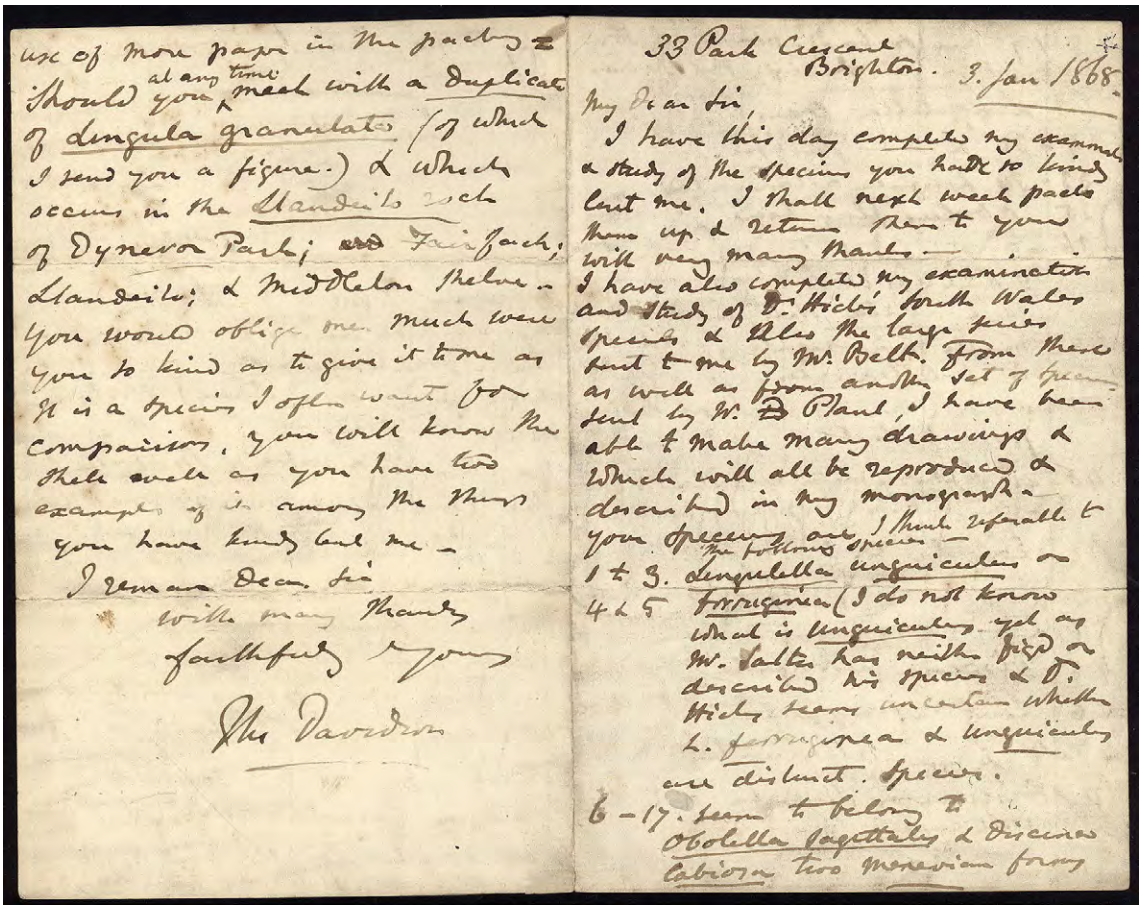

THE
ANATOMY
OF
HUMANE BODIES,
WITH FIGURES
DRAWN AFTER THE LIFE
By some Of THE BEST MASTERS in Europe,
And Curiously Engraven
In One Hundred and Fourteen Copper Plates,
ILLUSTRATED WITH
LARGE EXPLICATIONS,
CONTAINING MANY NEW
Anatomical Discoveries,
AND
CHIRURGICAL OBSERVATIONS:
TO WHICH IS ADDED
AN INTRODUCTION
EXPLAINING THE
ANIMAL ŒCONOMY,
WITH A COPIOUS INDEX.
BY
William Cowper.
OXFORD
PRINTED AT THE THEATER,
For SAM. SMITH and BENJ. WALFORD, PRINTERS to the ROYAL SOCIETY,
At the PRINCE'S ARMS in ST PAUL'S CHURCH Yard,
LONDON MDCXCVIII.



resulted in a bitter plagiarism dispute between the two, one of the most famous in medical history. In 1700 Bidloo went so far as to publish his *Gulielmus Cowper, criminalis literari citatus, coram tribunali* attacking Cowper in considerable detail.

"Elegantly done and artistically perfect" (Choulant / Frank 250), the atlas is considered the finest of the Baroque period, and one of the greatest artistic anatomies of all time. Despite imperfections from the point of view of dissection, the anatomical studies reflect much that is good, including early depictions of skin and hair from observation with a microscope.

Considered as an artistic meditation on anatomy, Lairesse's designs are a total departure from the idealistic tradition inaugurated by Vesalius. Lairesse displayed his figures with every-day realism and sensuality, contrasting the raw dissected parts of the body with the full, soft surfaces of undissected flesh surrounding them; placing flayed, bound figures in ordinary nightclothes or bedding; setting objects such as a book, a jar, a crawling fly in the same space as a dissected limb or torso. He thus brought the qualities of Dutch still-life painting into anatomical illustration, and gave a new, darker expression to the significance of the act of dissection. Dumaitre, *Gérard de Lairesse* (1982). Hofer 146. *Enc. World Art IV* 753,V 436,VII 661. Russell 211. 41921

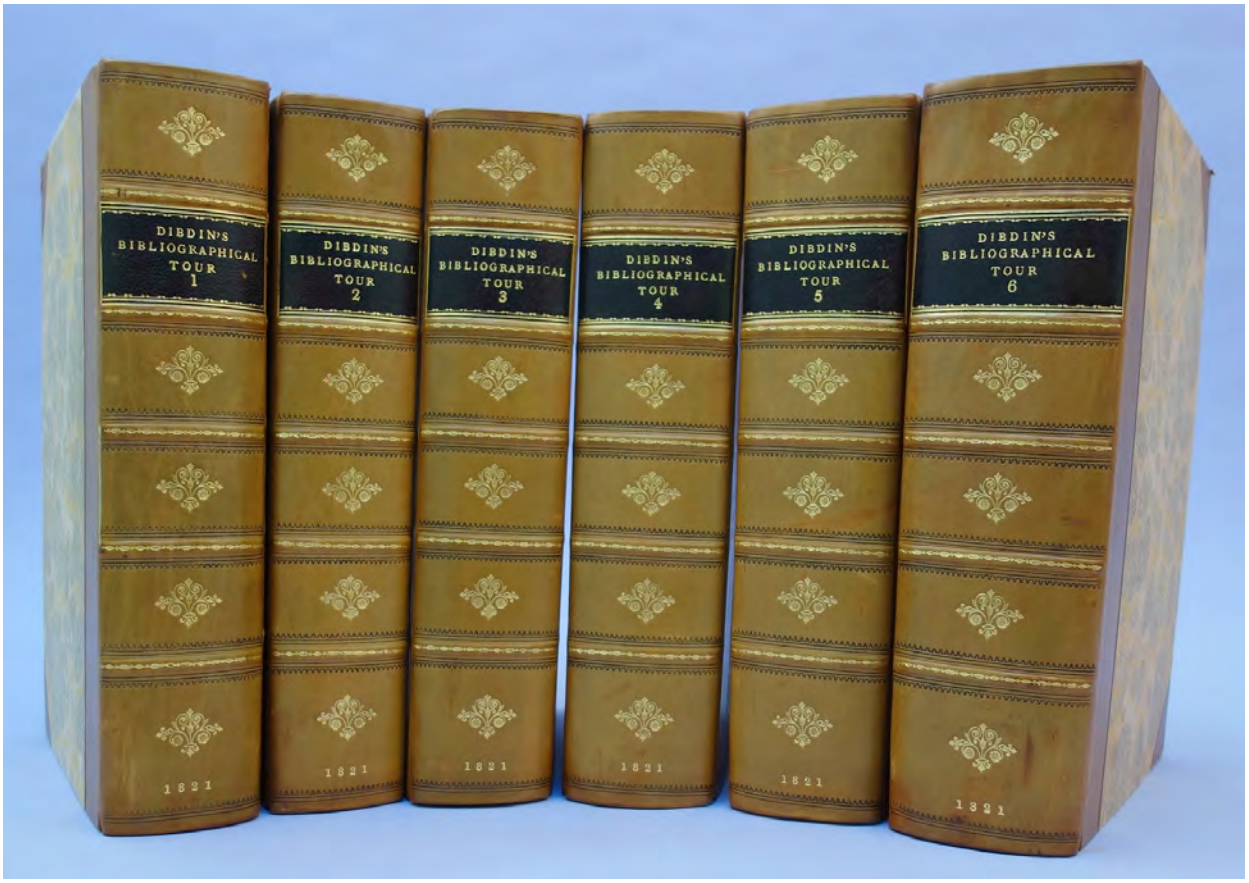


"The Specimens You Have So Kindly Lent Me"

8. Davidson, Thomas (1817-85). Autograph letter signed (including a small ink sketch) to an unidentified correspondent. 4pp. Brighton, 3 January 1868. 179 x 113 mm. Light dust-soiling, one minor repair to tear in central fold, but very good. $650

From Scottish paleontologist Thomas Davidson, the leading authority of his day on both fossil and extant brachiopods (marine animals that have hard shells on the lower and upper surface, such as the lampshell), and author of the monumental *British Fossil Brachiopoda* (6 vols., 1850-1886), the definitive reference work on the subject.

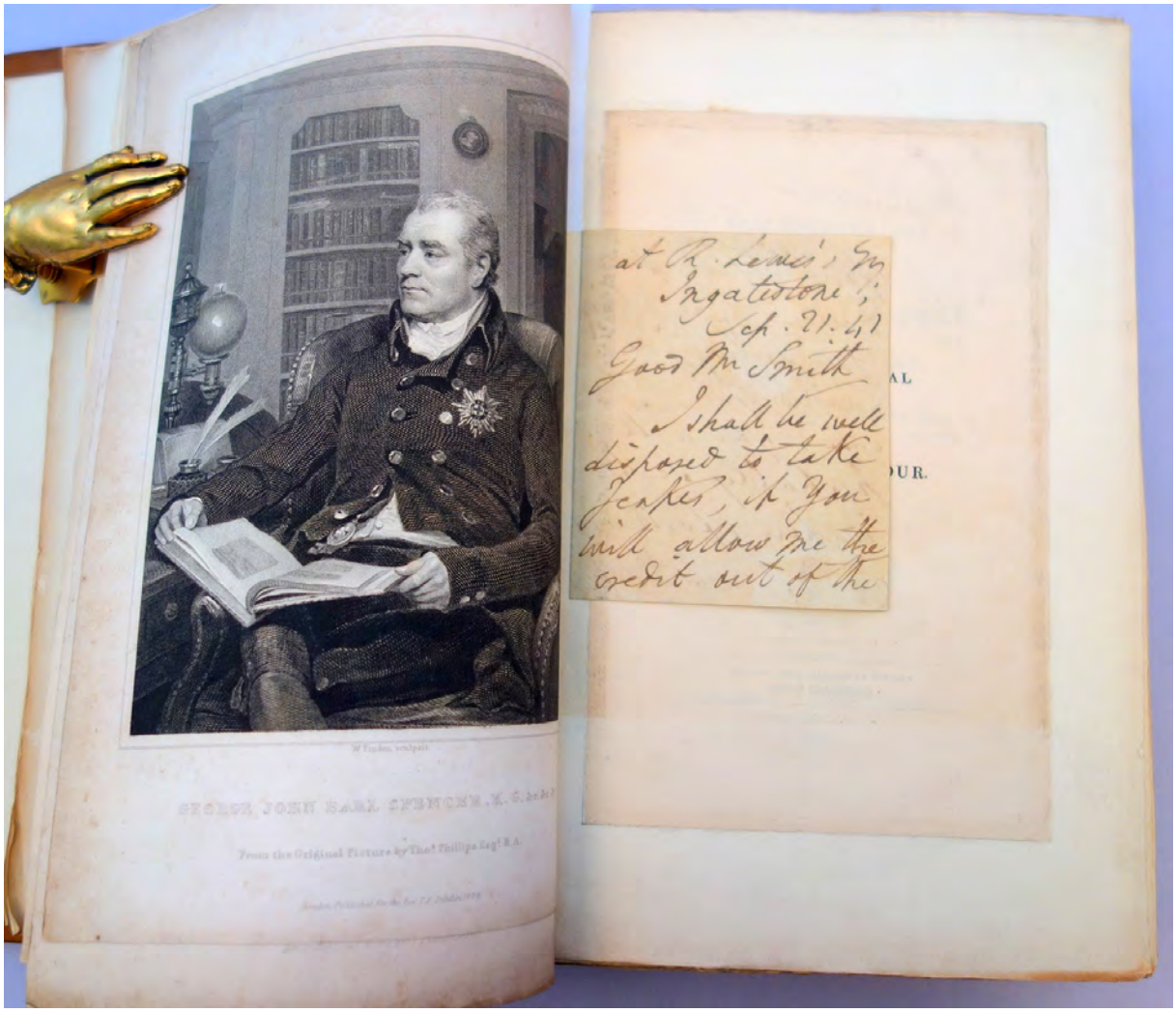
Davidson's correspondent, evidently another student of brachiopods, had provided Davidson some examples for his book, as Davidson begins by noting, "I have this day completed my examination & study of the specimens you have so kindly lent me." He had also "completed my examination and study of Dr. Hicks' South Wales species & also the larger series sent to me by Mr. Belt. From there as well as from another set of specimens sent by Mr. Plant, I have made many drawings & which will all be reproduced & described in my monograph." Here Davidson refers to the Welsh geologist Henry Hicks (1837-99), an expert on the fossils of Cambrian, pre-Cambrian and Devonian rocks; and English geologist and naturalist Thomas Belt (1832-78), known for his work on glacial geology, gold-bearing minerals, and the rocks and fossils of the Lingula Flags strata in Wales. We have not been able to further identify Mr. Plant, but he is recorded as a source of brachiopod specimens in J. W. Salter's *Catalogue of the Collection of Cambrian and Silurian Fossils Contained in the Geological Museum of the University of Cambridge* (1873). In the remainder of the letter Davidson identifies the numerous specimens sent to him by his correspondent, and includes a small ink sketch of "a curious malformation of Spirifera distans." The letter ends with Davidson's request for "a duplicate of *Lingula granulata* [a fossil brachiopod] . . . as it is a species I often want for comparisons." 43352



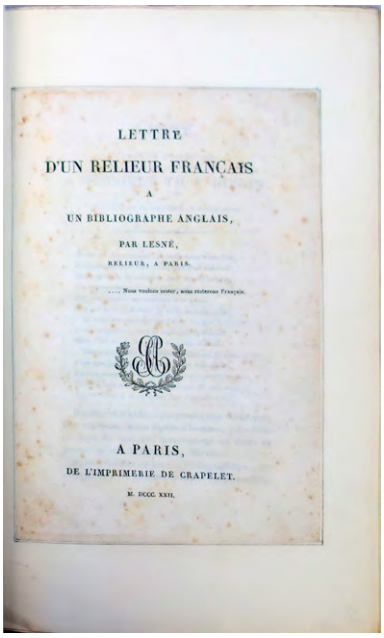
Lavishly Extra-Illustrated Copy With an Autograph Letter

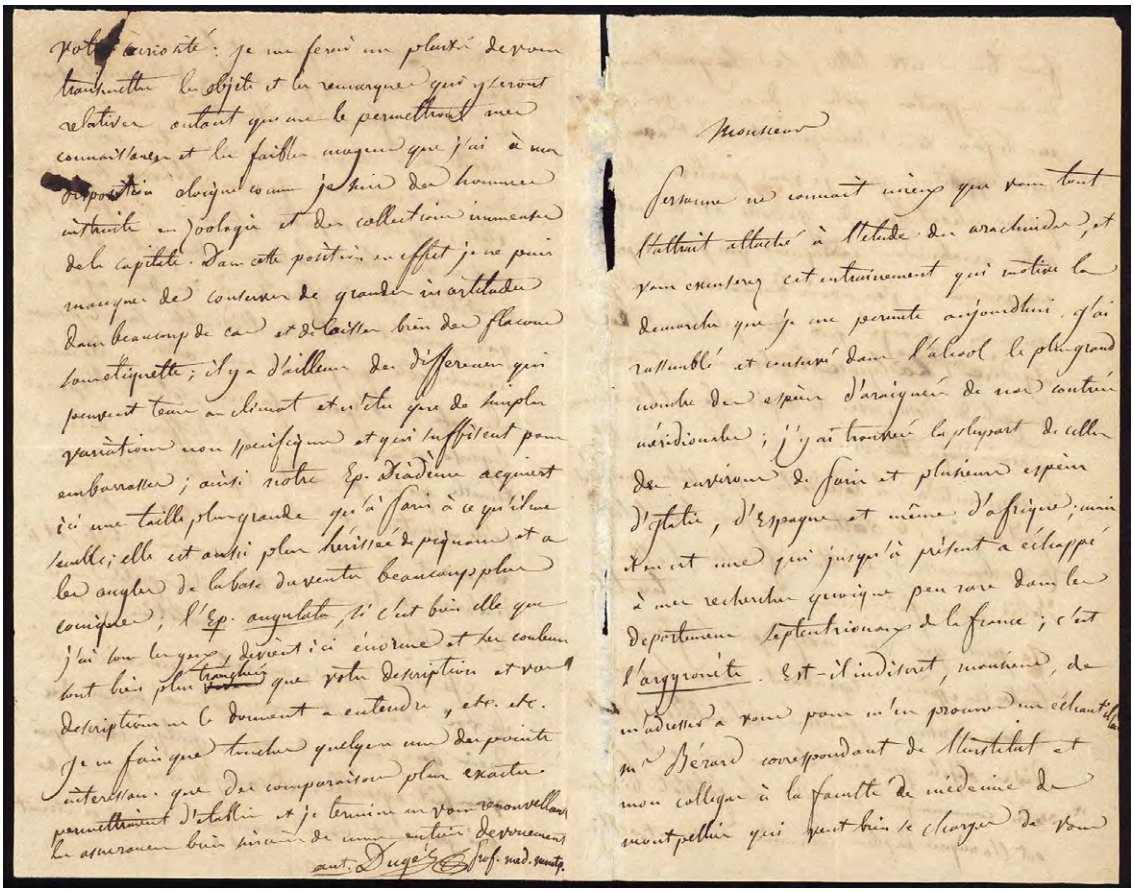
9. Dibdin, Thomas Frognall (1776-1847). A bibliographical, antiquarian and picturesque tour in France and Germany. 3 vols. in 6, 8vo. [4], xxv, [6], 462; [4], 555; [4], 392, 397-622, lxii, lxxix (index) pp. 83 full-page plates plus 64 smaller plates on India paper pasted to text leaves; *Extra-Illustrated with approximately 708 additional portraits, plates, extracts, etc., including an Autograph Letter signed from Dibdin.* London: for the author by W. Bulmer and W. Nicol, Shakespeare Press . . . , 1821. 275 x 180 mm. Modern half calf, gilt spine, marbled boards. Occasional offsetting from plates, minor dust-soiling and fraying, but very good. $6500

First Edition, regular paper issue, expanded into six thick volumes. Dibdin's sumptuous work describes his book-buying tour undertaken in 1818 on behalf of the second Earl Spencer, the famous British book collector and co-founder with Dibdin of the Roxburghe Club. Though of questionable merit as a bibliographer—Jackson tartly observes that "hardly a statement [Dibdin] makes can be accepted without checking" (p. 10)—Dibdin was a lively and engaging writer whose works enjoyed great popularity and helped to stimulate enthusiasm for book collecting. The typographic merits of many of his publications "can hardly be exaggerated. Some of them are the finest productions of M'Creery, Bensley, Bulmer, and Nichols, and those printers must have been driven nearly distracted by his demands for still more proofs, more India paper vignettes, and more color insertions. If one were to collate the 1821 *Tour* in full Bowersian fashion it would fill a page and read like an Einstein formula" (*ibid.,* p. 11).



Our lavishly extra-illustrated copy is augmented with over 700 additions, including extra plates, the preface from the 1829 second edition, numerous annotations from the 1829 edition, a copy of Lesné's *Lettre d'un relieur francais à un bibliographe anglais* (1822) criticizing the *Tour*, and an autograph letter signed from Dibdin to bookseller and bibliographer John Russell Smith (1810-94), author of *Bibliotheca Cantiana, A Bibliographical Account of What Has Been Published on the History, Topography, Antiquities, Customs, and Family Genealogy of the County of Kent* (1837). In the letter, dated from Ingatestone, September 21, 1841, Dibdin states, "I shall be well disposed to take Jenkes, if you will allow me the credit out of the four copies of my Tour—for which you subscribe? Should this be the case you will probably send it here, forthwith. I wish to submit a proposition about your plate of Autographs of Kentish worthies—"Atheno Cantiano"—It would give a pretty & complete air to my boke [sic]. Would the damage be serious? . . ." Jackson, *Thomas Frognall Dibdin: An Annotated List,* 48. Windle & Pippin, *Thomas Frognall Dibdin: A Bibliography,* A38a. 42531


LETTRE
D'UN RELIEUR FRANÇAIS
A
UN BIBLIOGRAPHE ANGLAIS,
PAR LESNÉ,
RELIEUR, A PARIS.
A PARIS,
DE L'IMPRIMERIE DE CRAPELET.



"Everything Relating to the Study of Arachnids"

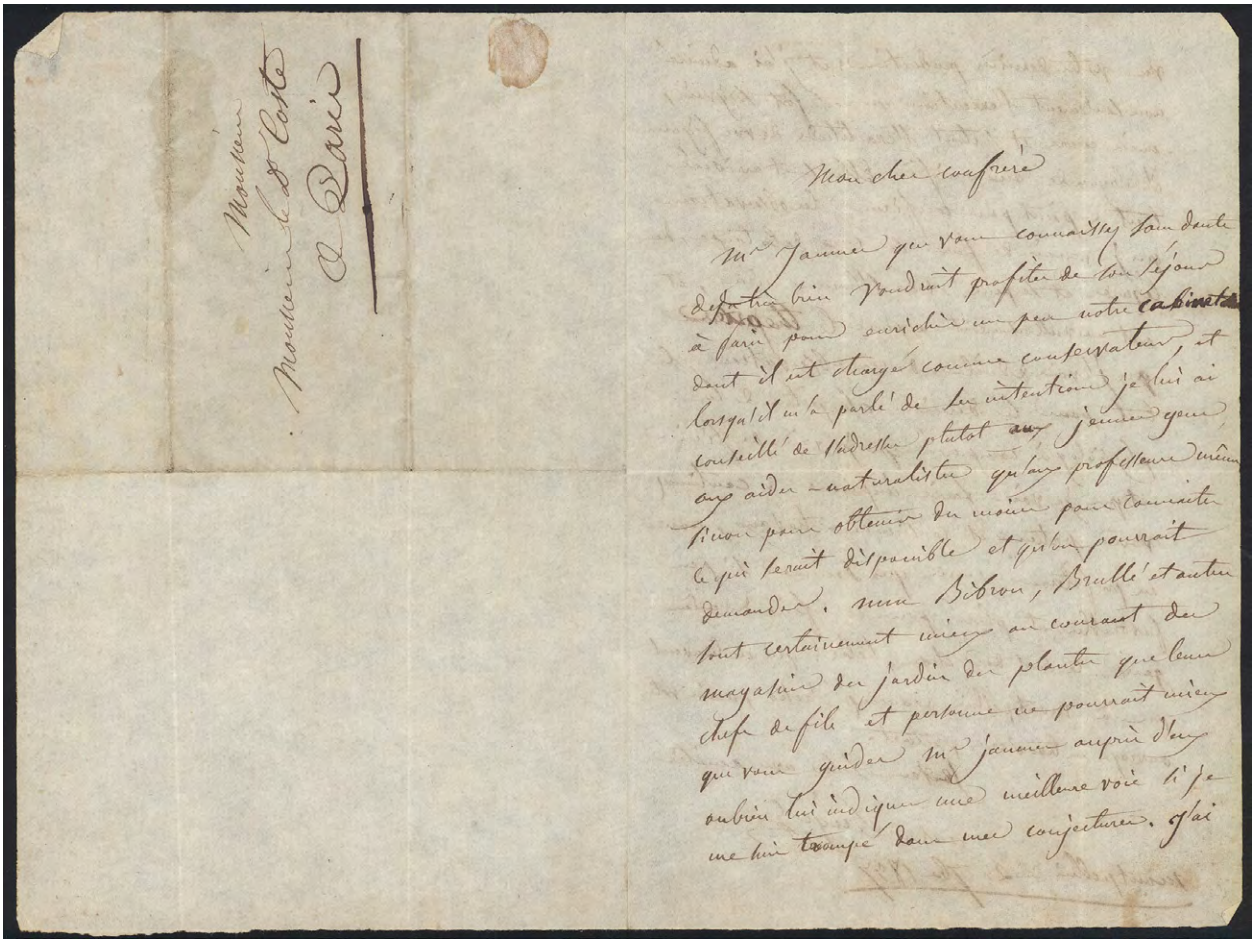
10. Dugès, Antoine Louis (1797–1838). Autograph letter signed, in French, to an unidentified scientific correspondent. 4pp. N.p., n.d. [Montpellier, ca. 1835]. 191 x 120 mm. Light toning, a few small lacunae due to removal from mounting, slightly affecting a few words, a few ink spots, but very good.

$950

From French naturalist and obstetrician Antoine Dugès, co-author (with Henri Milne Edwards) of the section on arachnids in the third edition of Cuvier's monumental *Le règne animal distribué d'après son organization* (1836) and author of important works on mites, worms and the osteology and myology of amphibians, as well as the influential *Traité de physiologie comparée de l'homme et des animaux* (1838), dedicated to Etienne Geoffroy Saint Hilaire. The present letter, written to one of Dugès's scientific colleagues, is entirely devoted to his researches on spiders, and most likely relates to the work he was doing on Cuvier's *Le règne animal:*

> No one knows better than you everything relating to the study of arachnids, and you will excuse the enthusiasm that motivates the request I would like to make today. I have collected and preserved in alcohol a very large number of spider species from our southern region; I found most of them in the environs of Paris and several species from Italy, Spain and even Africa, but there is one that has until now escaped my search although not rare in the northern regions of France; it is the argyroneta [water spider]. Is it rude, sir, for me to approach you in the hope of a specimen? . . .
>
> . . . I venture to send you several specimens and various things that may possibly have not yet been communicated to you. The *Filistata bicolor* is the most common spider in Montpellier and its environs, however the male is rare . . . I send it to you in two states, prepubertal and pubertal . . . the length of the legs and of the mandibles is so different at these two stages that one could doubt their identity without the incontestable proof that I have of it . . .

43372



"The Exactitude of your Illustrations of Mammalian Embryos"

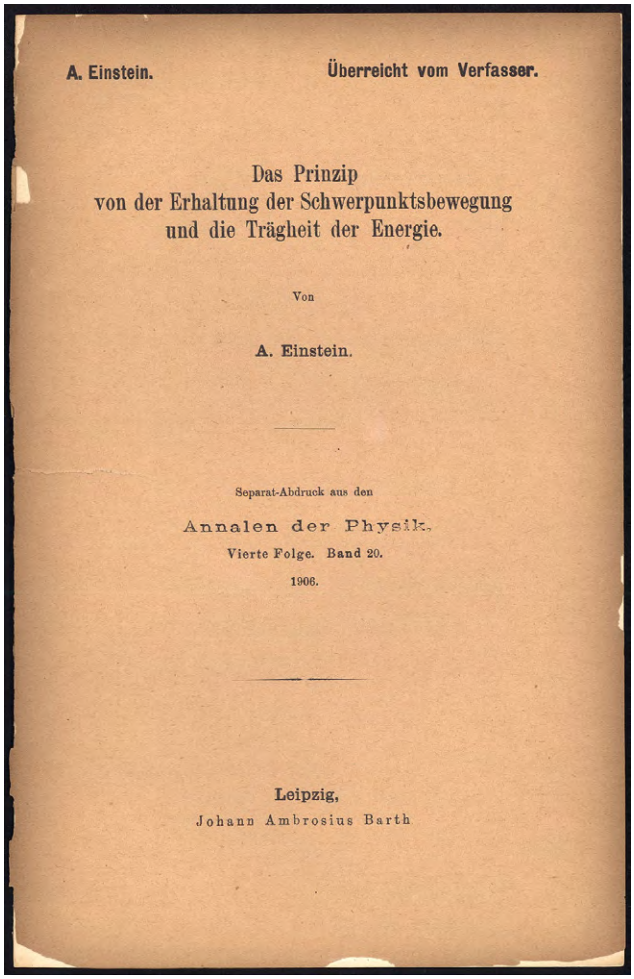
11. Dugès, Antoine Louis (1797-1838). Autograph letter signed, in French, to Jean Jacques Cyprien Victor Coste (1807-73). 2 pp. plus integral address leaf. Montpellier, 20 September 1837. 207 x 137 mm. Very good. $750

From French naturalist and obstetrician Antoine Dugès, professor of obstetrics at the University of Montpellier and author of the influential *Traité de physiologie comparée de l'homme et des animaux* (1838), mentioned in this letter. He was also co-author (with Henri Milne Edwards) of the section on arachnids in the third edition of Cuvier's monumental *Le règne animal distribué d'après son organization* (1836) and wrote important studies on mites, worms and the osteology and myology of amphibians. His correspondent, Victor Coste, was professor of anatomy at l'École Pratique in Paris and the author of *Cours d'embryogénie comparée* (1837), a work that Dugès thought highly of and praised in his letter:

> . . . I have seen your latest production, and I admired not only the execution, which is very well done, but above all the exactitude of your illustrations of mammalian embryos. They came just in time to confirm the observations I had made of those of the mole, lizards and snakes, and man himself; and supported wonderfully the theories I had deduced from these observations, all for the last chapter of the comparative physiology that I have just finished and will have printed. Continue with your patient and conscientious efforts, and we who are less favorably placed to do similar work will profit from them . . .

In the first part of the letter Dugès introduces his colleague M. Jammes, curator of the Cabinet at Montpellier, who was traveling to Paris to acquire specimens for the Montpellier collections. 43373

"A Body's Energy Depends on its Energy Content"


A. Einstein. Überreicht vom Verfasser.

Das Prinzip
von der Erhaltung der Schwerpunktsbewegung
und die Trägheit der Energie.

Von

A. Einstein.

Separat-Abdruck aus den

Annalen der Physik.

Vierte Folge. Band 20.

1906.

Leipzig,
Johann Ambrosius Barth

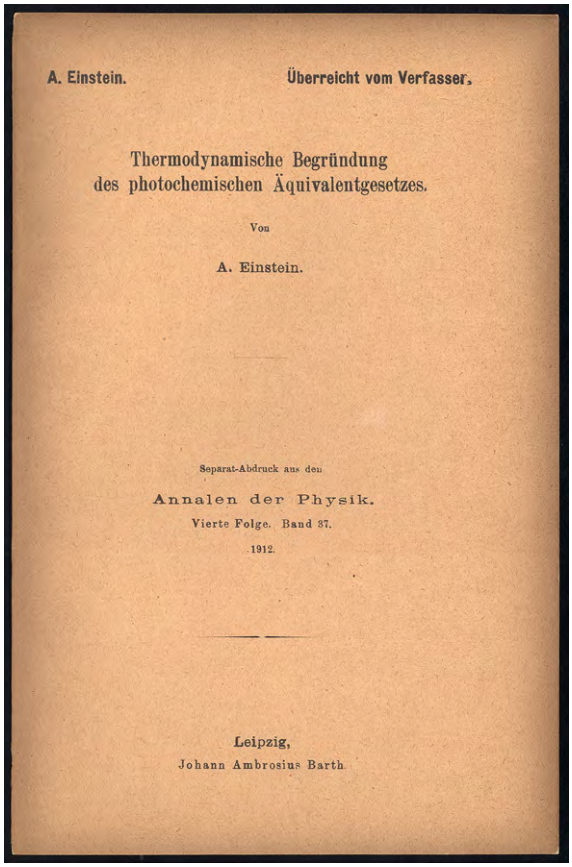
12. Einstein, Albert (1879-1955). Das Prinzip von der Erhaltung der Schwerpunktsbewegung und die Trägheit der Energie. Offprint from *Annalen der Physik* 20 (1906). 627-633pp. 224 x 145 mm. Original printed wrappers, chipped and with one small tear, front wrapper detached but present. Light toning but very good internally. $5000

First Edition, Rare Offprint Issue. Einstein's second paper on the inertia of energy, following his 1905 paper "Ist die Trägheit eines Körpers von seinem Energieinhalt abhängig?" [Is the inertia of a body dependent on its energy content?]. In the present paper Einstein presented another argument in support of the proposition that a body's energy depends on its energy content. "About a year after he first introduced the inertia of energy, Einstein published a paper, entitled "The Principle of the Conservation of the Center of Gravity and the Inertia of Energy," in which he showed that $E = mc^2$ is necessary and sufficient to ensure that the center-of-mass theorem holds for systems in which 'not only mechanical, but also electromagnetic processes take place' . . . As Einstein acknowledges, his paper is similar to Poincaré's contribution to the Lorentz *Festschrift* [1900]. Einstein showed that in order to avoid the kind of violations of the center-of-mass theorem discussed by Poincaré, one has to assume that energy has inertia" (Janssen, pp. 39-40). Janssen, "The Trouton experiment, $E = mc^2$, and a slice of Minkowski space-time," in *Revisiting the Foundations of Relativistic Physics: Festschrift in Honor of John Stachel* (2003), pp. 27-54. Weil, *Albert Einstein Bibliography,* 13. 43290

The First Application of Quantum Theory to Photochemistry— The Einstein-Stark Law

13. Einstein, Albert (1879-1955). Thermodynamische Begründung des photochemischen Äquivalentgesetzes. Offprint from *Annalen der Physik 37* (1912). 832-838pp. 221 x 145 mm. Original printed wrappers, edges a bit darkened, small splits in spine. Light toning but very good. $9500

First Edition, Offprint Issue. Einstein's formulation of the photochemical equivalence law, a fundamental principle relating to chemical reactions induced by light, which states that for every quantum of radiation (photon) absorbed, one molecule of the affected substance reacts. Einstein's formulation, founded on thermodynamics, marks the first application of quantum theory to photochemistry; it was one of his last significant contributions to quantum theory. The photochemical equivalence law is also known as the Stark-Einstein



A. Einstein. Überreicht vom Verfasser.

Thermodynamische Begründung
des photochemischen Äquivalentgesetzes.

Von

A. Einstein.

Separat-Abdruck aus den

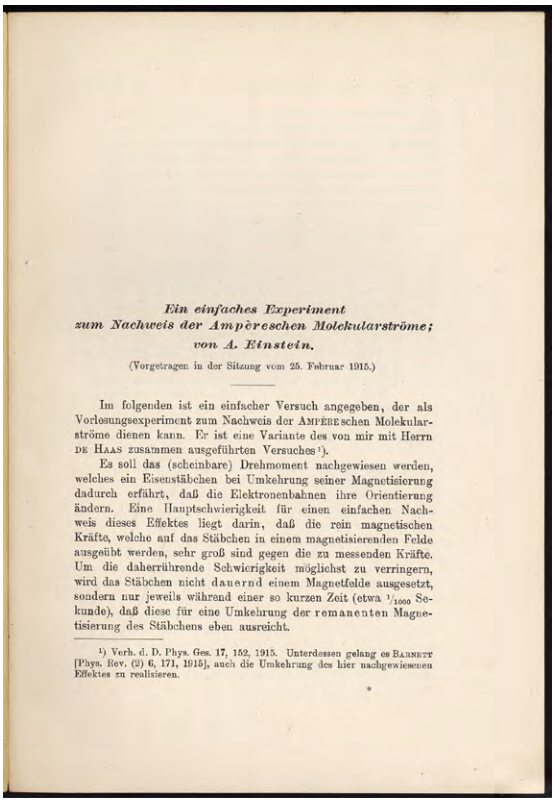
Annalen der Physik.

Vierte Folge. Band 37.

1912.

Leipzig,
Johann Ambrosius Barth

No. 13



Ein einfaches Experiment
zum Nachweis der Ampèreschen Molekularströme;
von A. Einstein.

(Vorgetragen in der Sitzung vom 25. Februar 1915.)

Im folgenden ist ein einfacher Versuch angegeben, der als Vorlesungsexperiment zum Nachweis der Ampèreschen Molekularströme dienen kann. Er ist eine Variante des von mir mit Herrn de Haas zusammen ausgeführten Versuches[1]).

Es soll das (scheinbare) Drehmoment nachgewiesen werden, welches ein Eisenstäbchen bei Umkehrung seiner Magnetisierung dadurch erfährt, daß die Elektronenbahnen ihre Orientierung ändern. Eine Hauptschwierigkeit für einen einfachen Nachweis dieses Effektes liegt darin, daß die rein magnetischen Kräfte, welche auf das Stäbchen in einem magnetisierenden Felde ausgeübt werden, sehr groß sind gegen die zu messenden Kräfte. Um die daherrührende Schwierigkeit möglichst zu verringern, wird das Stäbchen nicht dauernd einem Magnetfelde ausgesetzt, sondern nur jeweils während einer so kurzen Zeit (etwa $^1/_{1000}$ Sekunde), daß diese für eine Umkehrung der remanenten Magnetisierung des Stäbchens eben ausreicht.

[1]) Verh. d. D. Phys. Ges. 17, 152, 1915. Unterdessen gelang es Barnett [Phys. Rev. (2) 6, 171, 1915], auch die Umkehrung des hier nachgewiesenen Effektes zu realisieren.

law: the German experimental physicist Johannes Stark had published his own derivation of the photochemical equivalence law in 1908, but at that time Stark did not agree with Einstein's views on the corpuscular nature of radiation, and his argument was not based on quantum theory. Mehra and Rechenberg, *The Historical Development of Quantum Theory,* 1, pp. 103-104. Weil, *Albert Einstein Bibliography,* 46. 43291

The Einstein-De Haas Effect

14. **Einstein, Albert** (1879-1955). Ein einfaches Experiment zum Nachweis der Ampèreschen Molekularströme. Offprint from *Verhandlung der Deutschen Physikalischen Gesellschaft* 18 (1916). 173-177pp. 230 x 157 mm. Original printed wrappers. Fine copy. $7500

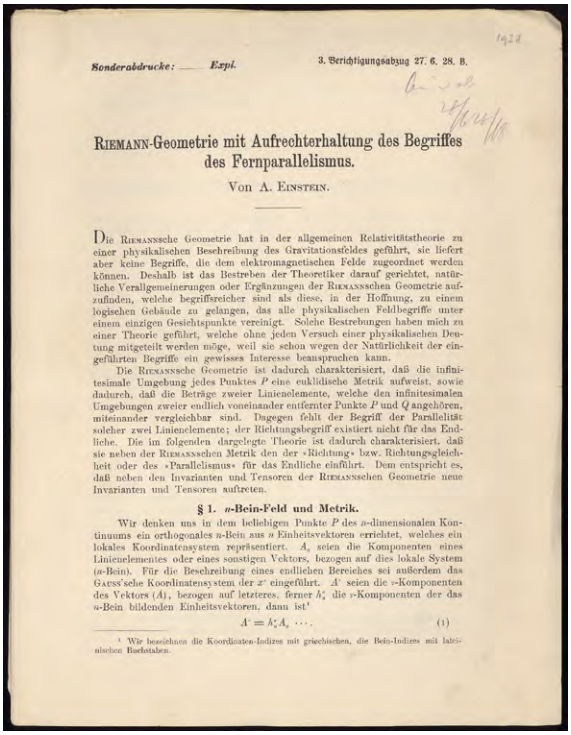
First Edition, Offprint Issue, of one of Einstein's very few experimental contributions to physics In 1915 Einstein and Dutch physicist Wander Johannes de Haas conducted gyromagnetic experiments leading to the discovery of the Einstein-de Haas effect, which corresponds to the mechanical rotation induced in a ferromagnetic cylinder suspended inside a coil when an impulse of electric current is sent through the coil. Einstein was very enthusiastic about the experimental results, stating that he and de Haas had "given firm proof of the existence of Ampère's molecular currents" (quoted in Pais, *Subtle is the Lord*, pp. 245-246). After his collaboration with de Haas ended, Einstein published the present paper on the Einstein-de Haas effect, proposing a new experimental method for determining gyromagnetism. The Einstein-de Haas effect is now known to reveal a relationship between magnetism, angular momentum and electron spin; however, this was not understood at the time, as electron spin was not discovered until the 1920s. Weil, *Albert Einstein Bibliography*, 82. 43294

Very Rare Proof Copy

15. **Einstein, Albert** (1879-1955). Riemann-Geometrie mit Aufrechterhaltung des Begriffes des Fernparallelismus. 5 proof sheets from the *Siztungsberichte der preussischen Akademie der Wissenschaften* (1928), printed on rectos only, numbered [1] – 5 but otherwise unpaginated. 273 x 210 mm. Unbound as issued. Creased horizontally and at upper right corner, light edgewear. Pencil corrections in an unidentified hand (not Einstein's) on sheets 3 and 5; typesetter's note on first sheet. Very good.

$4750

First Edition, Proof Copy of Einstein's first paper on distant parallelism (also called absolute parallelism or teleparalleism), a mathematical concept he devised independently in order to construct a new geometrical framework in which to formulate a unified field theory. The paper was published in the *Siztungsberichte der preussischen Akademie der Wissenschaften* (1928), pp. 217-221. The paper is purely mathematical, a rarity for Einstein; he followed it a week later with another short paper in which he discussed the physics. "Einstein soon was to learn that the mathematical concept of distant parallelism was by no means new and had already been explored by mathematicians, notably by Roland Weitzenböck and Elie Cartan. While immediately acknowledging the priority of others as far as the mathematics was concerned, Einstein nevertheless held high hopes for his idea of formulating a unified field theory within this structure" (Sauer, p. 17). Einstein's hopes did not pan out, and he abandoned the distant parallelism approach a few years later. Pais, *Subtle is the Lord*, pp. 344-347. Sauer, "Einstein's unified field theory program," California Institute of Technology 20-7 (version of April 11, 2007). Weil, *Albert Einstein Bibliography,* 161. 43313



Sonderabdrucke: ____ Expl. 3. Berichtigungsabzug 27. 6. 28. B.

RIEMANN-Geometrie mit Aufrechterhaltung des Begriffes des Fernparallelismus.

Von A. EINSTEIN.

Die RIEMANNsche Geometrie hat in der allgemeinen Relativitätstheorie zu einer physikalischen Beschreibung des Gravitationsfeldes geführt, sie liefert aber keine Begriffe, die dem elektromagnetischen Felde zugeordnet werden können. Deshalb ist das Bestreben der Theoretiker darauf gerichtet, natürliche Verallgemeinerungen oder Ergänzungen der RIEMANNschen Geometrie aufzufinden, welche begriffsreicher sind als diese, in der Hoffnung, zu einem logischen Gebäude zu gelangen, das alle physikalischen Feldbegriffe unter einem einzigen Gesichtspunkte vereinigt. Solche Bestrebungen haben mich zu einer Theorie geführt, welche ohne jeden Versuch einer physikalischen Deutung mitgeteilt werden möge, weil sie schon wegen der Natürlichkeit der eingeführten Begriffe ein gewisses Interesse beanspruchen kann.

Die RIEMANNsche Geometrie ist dadurch charakterisiert, daß die infinitesimale Umgebung jedes Punktes P eine euklidische Metrik aufweist, sowie dadurch, daß die Beträge zweier Linienelemente, welche den infinitesimalen Umgebungen zweier endlich voneinander entfernter Punkte P und Q angehören, miteinander vergleichbar sind. Dagegen fehlt der Begriff der Parallelität solcher zwei Linienelemente; der Richtungsbegriff existiert nicht für das Endliche. Die im folgenden dargelegte Theorie ist dadurch charakterisiert, daß sie neben der RIEMANNschen Metrik den der »Richtung« bzw. Richtungsgleichheit oder des »Parallelismus« für das Endliche einführt. Dem entspricht es, daß neben den Invarianten und Tensoren der RIEMANNschen Geometrie neue Invarianten und Tensoren auftreten.

§ 1. *n*-Bein-Feld und Metrik.

Wir denken uns in dem beliebigen Punkte P des n-dimensionalen Kontinuums ein orthogonales n-Bein aus n Einheitsvektoren errichtet, welches ein lokales Koordinatensystem repräsentiert. A_ν seien die Komponenten eines Linienelementes oder eines sonstigen Vektors, bezogen auf dies lokale System (n-Bein). Für die Beschreibung eines endlichen Bereiches sei außerdem das GAUSS'sche Koordinatensystem der x^ν eingeführt. A^ν seien die ν-Komponenten des Vektors (A), bezogen auf letzteres, ferner h^ν_τ die ν-Komponenten der das n-Bein bildenden Einheitsvektoren, dann ist[1]

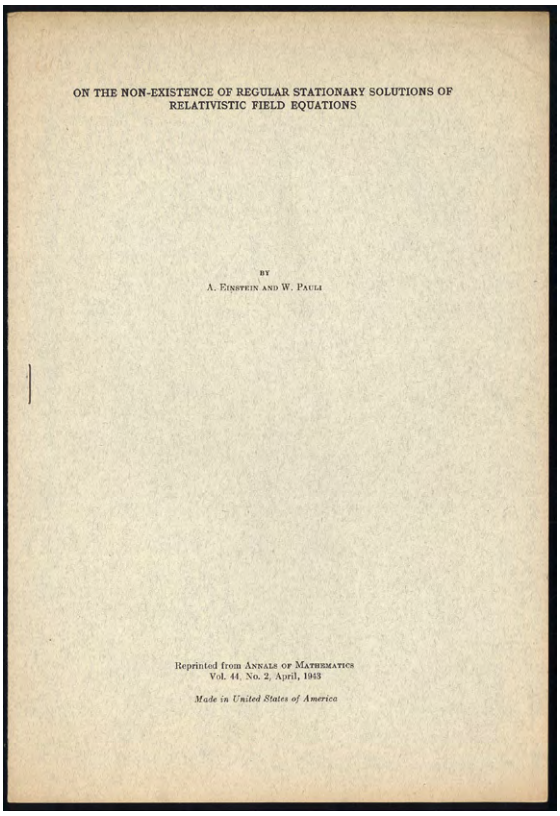
$$A^\nu = h^\nu_\tau A_\tau \cdots . \qquad (1)$$

[1] Wir bezeichnen die Koordinaten-Indizes mit griechischen, die Bein-Indizes mit lateinischen Buchstaben.

No. 15

Einstein and Pauli's Only Joint Paper

16. Einstein, Albert (1879-1955) and **Wolfgang Pauli** (1900-1958). On the non-existence of regular stationary solutions of relativistic field equations. Offprint from *Annals of Mathematics* 44 (1943). 313-137pp. 257 x 176 mm. Original printed wrappers. Insignificant crease in upper corner, two small rust-marks from paper clips on back wrapper, but very good. $2750



ON THE NON-EXISTENCE OF REGULAR STATIONARY SOLUTIONS OF RELATIVISTIC FIELD EQUATIONS

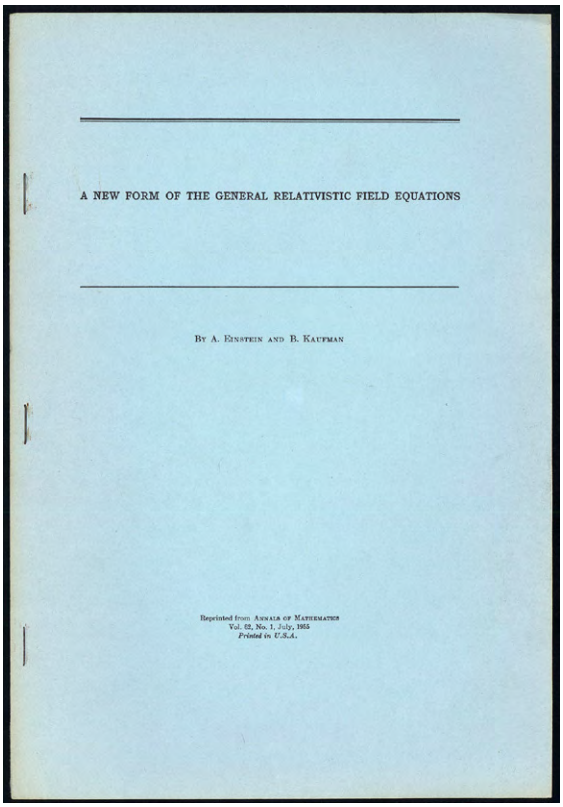
BY

A. EINSTEIN AND W. PAULI

Reprinted from ANNALS OF MATHEMATICS
Vol. 44, No. 2, April, 1943

Made in United States of America

First Edition, Offprint Issue. In 1940 Wolfgang Pauli left Europe to take a position at Princeton's Institute for Advanced Study, where he remained until 1946. During his years at the IAS he enjoyed many scientific discussions with Einstein, out of which arose the present paper, their only joint effort. The paper "took up a problem that Einstein had investigated a few years earlier, namely that in the absence of matter . . . Einstein's field equations under conditions to be specified should have the Euclidean metric as the only solution . . . Einstein's and probably very strongly also Pauli's motivation was the formal resemblance of the stationarity condition with the cylinder condition of the five-dimensional theory of Kaluza and Klein. The authors write: 'When one tries to find a unified theory of the gravitational and electromagnetic fields, he cannot help felling that there is some truth in Kaluza's five-dimensional theory'" (Enz, *No Time to be Brief: A Scientific Biography of Wolfgang Pauli,* p. 388). Weil, *Albert Einstein Bibliography*, 211. 43374



A NEW FORM OF THE GENERAL RELATIVISTIC FIELD EQUATIONS

By A. Einstein and B. Kaufman

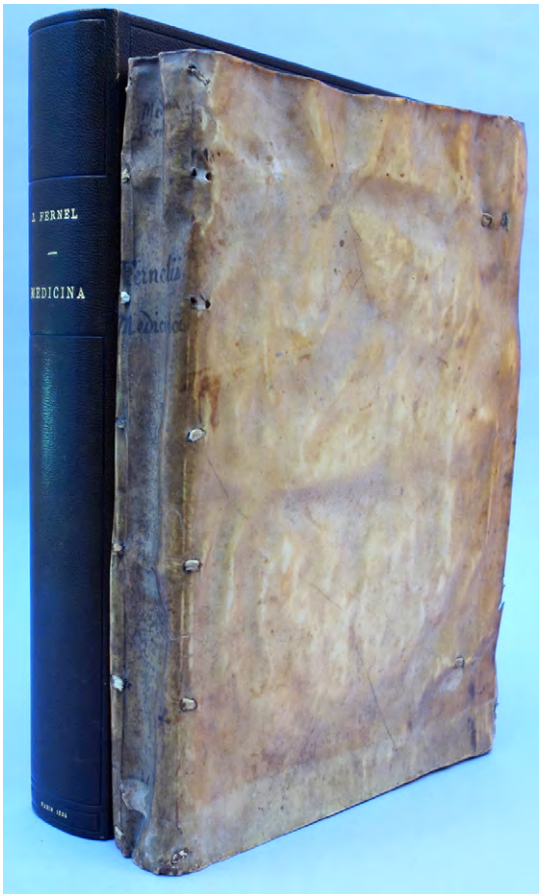
Reprinted from Annals of Mathematics
Vol. 62, No. 1, July, 1955
Printed in U.S.A.

Einstein's Last Published Scientific Paper

17. **Einstein, Albert** (1879-1955) and **Bruria Kaufman** (1928-2010). A new form of the general relativistic field equations. Offprint from *Annals of Mathematics* 62 (1955). 128-138pp. 255 x 177 mm. Original printed wrappers. Fine copy. $2750

First Edition, Offprint Issue of Einstein's last published scientific paper, written in collaboration with Israeli mathematician Bruria Kaufman, who served as Einstein's assistant at Princeton from 1950 until Einstein's death on April 18, 1955. "Kaufman was Einstein's last collaborator. She and Einstein wrote two joint papers, both dealing with asymmetric connections. The last collaborative effort in Einstein's life was completed in January 1955" (Pais, *Subtle is the Lord,* p. 497). The paper was published posthumously. Not in Weil (which does not list works later than 1954). 43301

The First Systematic Treatise on Pathology, Which also Named Pathology & Physiology

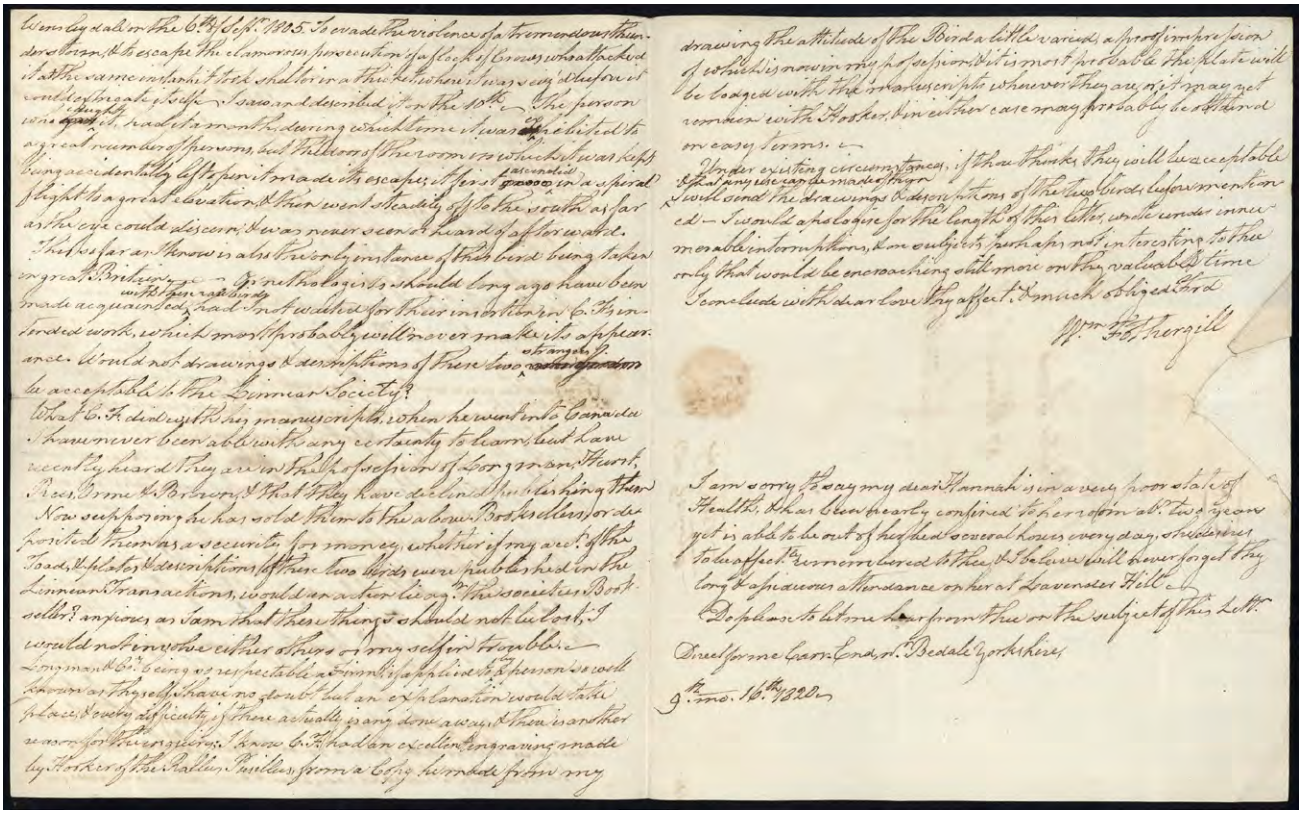


18. **Fernel, Jean** (1497?–1558). Medicina. Folio. [12], 250 (misprinted 248), [14], 238, [18], 90, [10]pp. Woodcut portrait in text. Paris: André Wechel, 1554. 338 × 226 mm. Limp vellum c. 1554, a.e.g., two binder's cords broken in upper spine, very unusual 15th-century Latin inscriptions, music and cartoons visible on inside front and back covers and inner flaps. Margins of last 10 leaves a trifle gnawed, but a fine and completely unrestored tall copy, in a full morocco suede-lined box by Lobstein. "Double-phi" cipher penned on upper margin of title, reminiscent of those of bibliophiles Nicolas Claude Fabri de Peiresc (1580-1637), scholar and patron of the sciences, and Nicolas Fouquet (1615-80), finance minister to Louis XIV. From the renowned, but undocumented library of the French non-practicing physician, music publisher, and connoiseur, Jean Blondelet. Contemporary marginalia, including index of diseases related to biblical names on final flyleaf. $17,500

First Edition. The first systematic treatise on pathology, which also introduced the names for the sciences of pathology and physiology. In the second part of the above, entitled "Pathologia" (a term Fernel introduced), Fernel provided the first systematic essay on the subject, methodically discussing the diseases of each organ. The result was a succinct summary of the best available knowledge of organic abnormality in

disease. Fernel's predecessor Benivieni, whose *De abditis* (1507) represents the foundation of modern pathology, had presented a collection of case histories without any attempt at a logical or methodical system. Fernel's contributions to the study of aneurysms were particularly noteworthy. He was the first to associate arterial dilatation with aneurysm and he differentiated true from false aneurysms. Fernel also attributed the cause of arterial aneuysms to syphilis, which was pandemic during the Renaissance.

Although Fernel's earlier treatise, *De naturali parte medicinae* (1542; PMM 68), has long been considered the earliest work devoted exclusively to physiology, Fernel actually named that science "Physiologia" as the title to the revised edition of it which forms the first part of the *Medicina*. Within six years after his graduation from medical school Fernel became one of the most famous physicians in France. His reputation at the court of the dauphin (later Henri II) became firmly established when he saved the life of Henri's mistress, Diane de Poitiers. Fernel was however less successful with François I, Henri's father, who died of syphilis in 1547. See the classic *Endeavour of Jean Fernel* (1946) by Sir Charles Scott Sherrington. Garrison-Morton 2271. Long, *History of Pathology*, pp. 38–41. Willius & Dry, *History of the Heart and Circulation* (1948) 40-41, 372. Acierno, *History of Cardiology* (1994)pp. 48-50, 97-99. Durling 1459. Norman 785. Waller 2993. Wellcome I, 2195. 34703

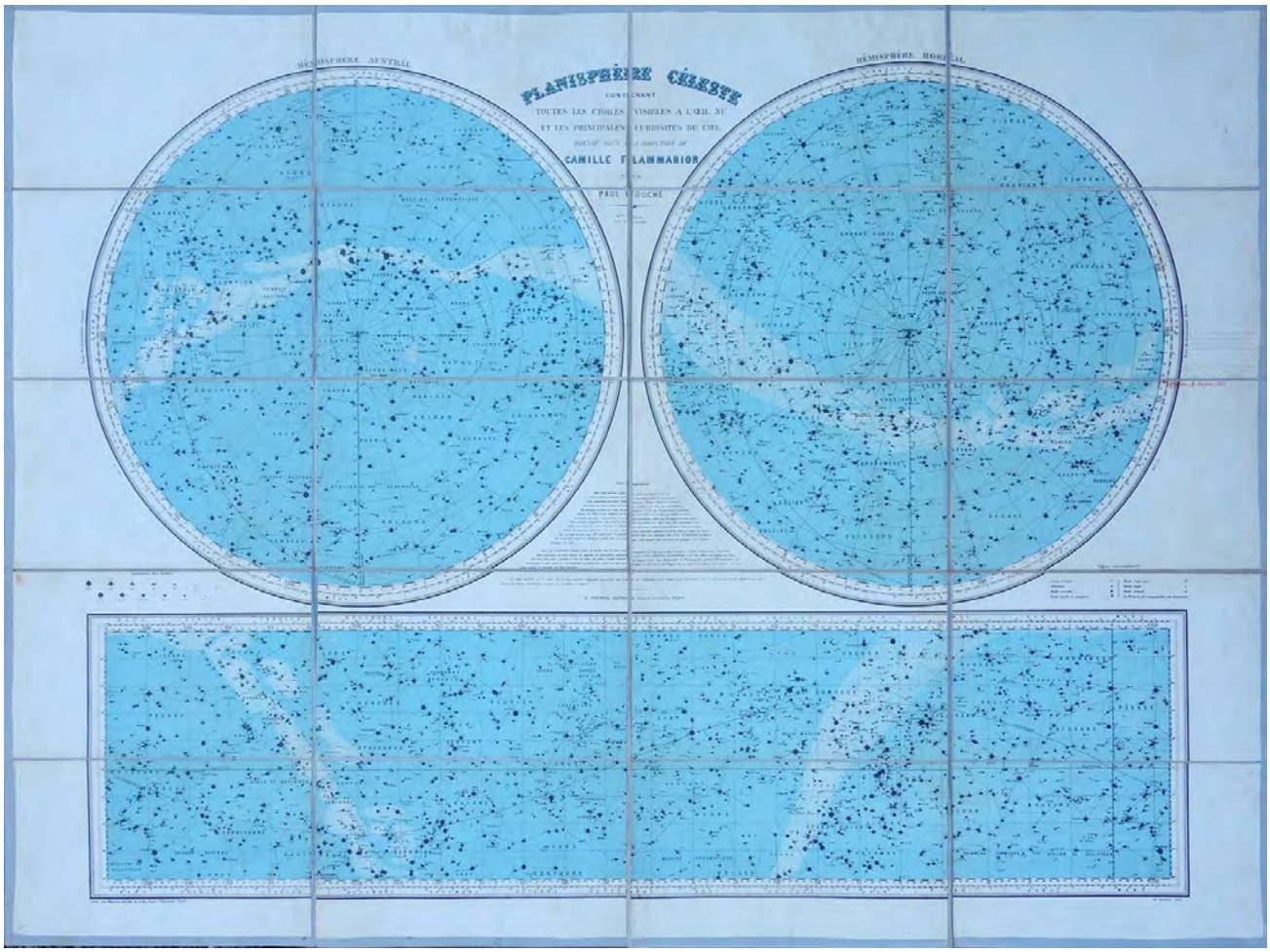


"Thou Hast Read & Approved my Hints Toward the Natl. Histy. of the Toad"

19. Fothergill, William (b. 1748). Autograph letter signed to Dr. [John] Sims (1749-1831). 3pp. Carr-End [Yorkshire], 9th mo. [September] 16, 1820. 225 x 184 mm. Outer margin of second leaf repaired where seal was broken, otherwise fine. Docketed by recipient. $750

Long letter with excellent natural history content from William Fothergill, amateur naturalist and member of the distinguished Yorkshire Fothergills. He was the nephew of John Fothergill (1712-80), the physician who first identified trigeminal neuralgia and who supported the publication of Benjamin Franklin's papers on electricity; he was also a cousin of naturalist Charles Fothergill, who immigrated to Canada in 1817 and became one of that country's first ornithologists. William Fothergill's correspondent was English physician and botanist John Sims, a founding member of the Linnean Society and editor of *Curtis's Botanical Magazine.*

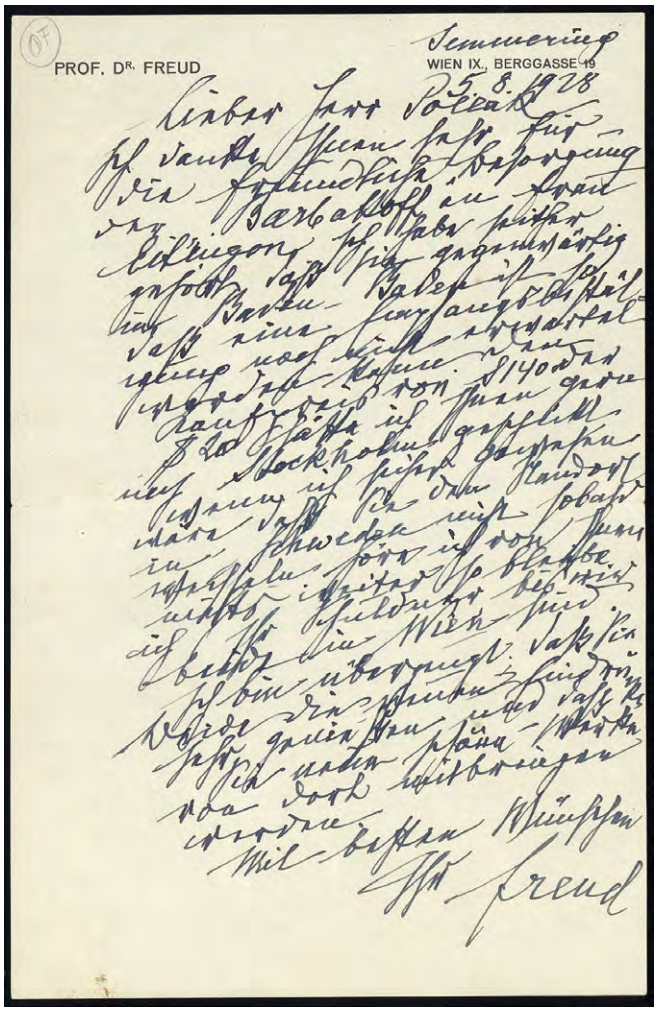
Fothergill is best known for his observations on the toad (*Rana bufo*), which Sims communicated to the Linnean Society on Feb. 6, 1821; the complete paper, titled "Hints toward the natural history of the toad," appeared in Volume 64 of the *Philosophical Magazine* (1824). In his letter Fothergill notes that "My Bro. Thos. has informed me thou hast read & approved my hints toward the Natl. Histy. of the Toad." He also discusses at length the large-scale study of British fauna by Charles Fothergill, which Charles had left uncompleted upon his emigration to Canada in 1817. "What C. F. did with his manuscripts, when he went into Canada, I have never been able with any certainty to learn, but Lane recently heard they are in the possession of Longman, Hurst, Rees, Orme & Brown, & that they have declined publishing them." William had intended to contribute descriptions and images of two birds never before seen in in England: *Rallus pusillus* (little olivaceous gallinule) and a species of falcon identified as *Falco fiercatus*. The former bird "was not known to Linné & if my memory is correct was first discovered and described by Pallas . . . Latham notices it in his Index Ornithologicus, and is received I think into the later editions of the Systema Natura, but as far as I know is not recorded as having been seen in Great Britain." Fothergill recorded his descriptions of these birds in the early part of the century; "ornithologists should long ago have been made acquainted with these rare birds had I not waited for their insertion in C. F.'s intended work, which most probably will never make its appearance." 43057



19th Century Celestial Map

20. Fouché, Paul. Planisphère celeste contenant toutes les étoiles visibles à l'oeil nu et les principales curiosités du ciel. Dressé sous la direction de **Camille Flammarion**. Chromolithographed map, cut into sections and mounted on linen as often. Paris: G. Thomas, n.d. [1884 or after]. 915 x 1215 mm. A few minor spots but very good. Location of the June 1918 nova marked in red ink in right margin, with accompanying pencil notes. $1500

Fourth edition, revised of this handsome 19th-century celestial map showing the visible stars in the northern and southern hemispheres together with a map of the zodiac. The map was prepared by illustrator Paul Fouché under the direction of Camille Flammarion (1842-1925), the well-known French astronomer and author of numerous works of popular science. 43326

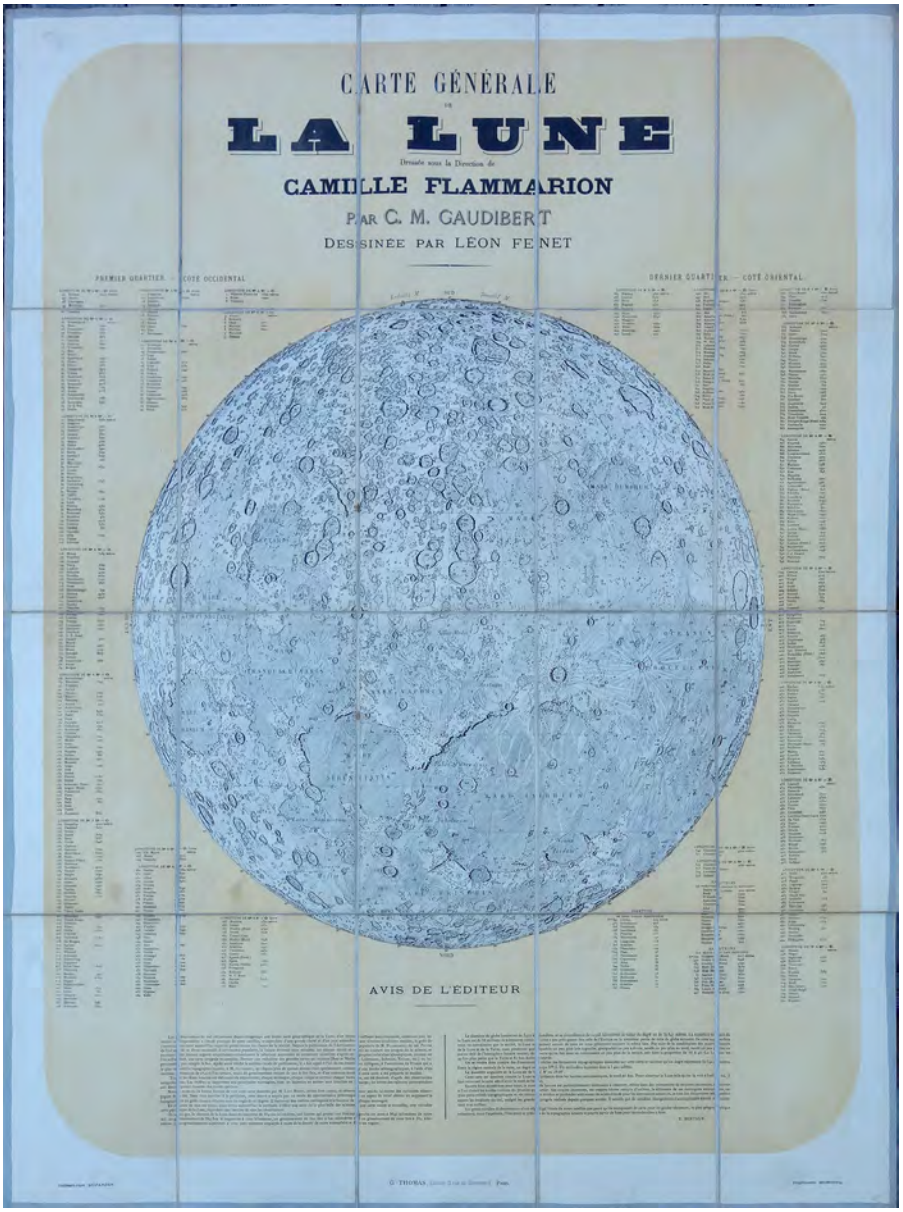


"I Would Gladly Have Sent the Purchase Amount"

21. Freud, Sigmund (1856-1939). Autograph letter signed, in German, to Austrian artist Max Pollak (1886-1970). 1 page, on his personal stationery. Vienna, August 5, 1928. 230 x 150 mm. Fine. English translation included. $8500

To the painter and printmaker Max Pollak, thanking him for sending a copy of his color aquatint of the dancer Tatjana Barbakoff to "Frau Eitingon." This refers to the wife of Freud's colleague, the noted psychoanalyst Max Eitingon (1881-1943), who had undergone analysis with Freud in 1908-9 and went on to found the Berlin Psychoanalytic Clinic, the International Psychoanalytic Association and several other psychoanalytic organizations. The etching was evidently a gift from Freud, for he states that "I would gladly have sent the purchase amount of S140 or $20 to you in Stockholm, if I had been sure you wouldn't soon be changing your location in Sweden. If I hear nothing more from you, then I will remain in your debt until we are both in Vienna again." Pollak had recently emigrated from Vienna to the United States, which is why Freud included a dollar figure for the purchase price.

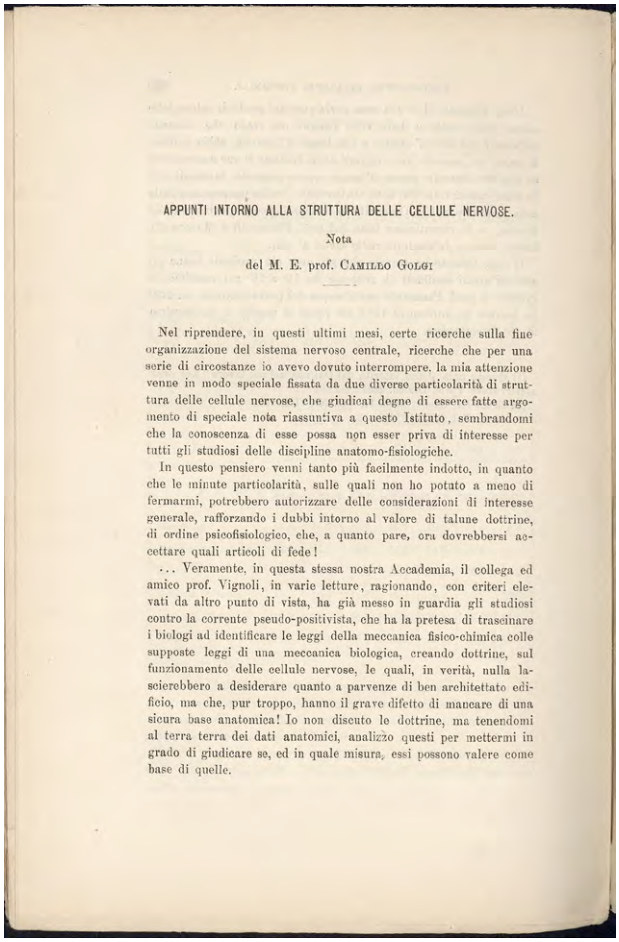
Freud had known Pollak since at least 1914, when Pollak was commissioned to make a large portrait etching of Freud seated at his desk among his antiquities. Freud himself owned a copy of Pollak's etching of Barbakoff, which is now preserved at the Freud Museum in London. Regarding Freud as an art collector, see *Sigmund Freud and Art* (1989). 40592



Rare 19th Century Lunar Map

22. Gaudibert, Casimir Marie (1823-1901). Carte générale de la lune dressée sous la direction de **Camille Flammarion** . . . dessinée par Léon Fenet. Lithographed map, cut into sections and mounted on linen. Paris: Emile Bertaux, n.d. [1887]. 1205 x 920 mm. Minor spotting and soiling, but very good. $2750

Rare large-scale lunar map prepared by French astronomer Casimir Marie Gaudibert under the direction of Camille Flammarion (1842-1925), founder and the first president of the Société Astronomique de France and author of numerous popular works on astronomy. Gaudibert's map, drawn by Léon Fenet, introduced six crater names later adopted into the International Astronomical Union's original lunar nomenclature (1935): Carpenter, Flammarion, Frères Henry (later changed to Henry Frères), Mouchez, Nasmyth and Rutherfurd. Whitaker, *Mapping and Naming the Moon*, pp. 149-50. 43325



APPUNTI INTORNO ALLA STRUTTURA DELLE CELLULE NERVOSE.

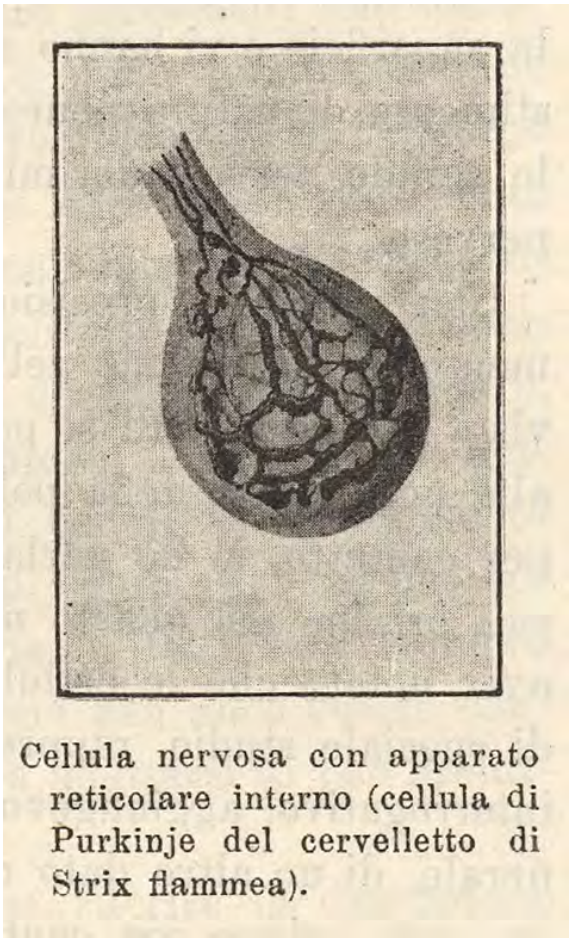
Nota

del M. E. prof. CAMILLO GOLGI

Nel riprendere, in questi ultimi mesi, certe ricerche sulla fine organizzazione del sistema nervoso centrale, ricerche che per una serie di circostanze io avevo dovuto interrompere, la mia attenzione venne in modo speciale fissata da due diverse particolarità di struttura delle cellule nervose, che giudicai degne di essere fatte argomento di speciale nota riassuntiva a questo Istituto, sembrandomi che la conoscenza di esse possa non esser priva di interesse per tutti gli studiosi delle discipline anatomo-fisiologiche.

In questo pensiero venni tanto più facilmente indotto, in quanto che le minute particolarità, sulle quali non ho potuto a meno di fermarmi, potrebbero autorizzare delle considerazioni di interesse generale, rafforzando i dubbi intorno al valore di talune dottrine, di ordine psicofisiologico, che, a quanto pare, ora dovrebbersi accettare quali articoli di fede!

... Veramente, in questa stessa nostra Accademia, il collega ed amico prof. Vignoli, in varie letture, ragionando, con criteri elevati da altro punto di vista, ha già messo in guardia gli studiosi contro la corrente pseudo-positivista, che ha la pretesa di trascinare i biologi ad identificare le leggi della meccanica fisico-chimica colle supposte leggi di una meccanica biologica, creando dottrine, sul funzionamento delle cellule nervose, le quali, in verità, nulla lascierebbero a desiderare quanto a parvenze di ben architettato edificio, ma che, pur troppo, hanno il grave difetto di mancare di una sicura base anatomica! Io non discuto le dottrine, ma tenendomi al terra terra dei dati anatomici, analizzo questi per mettermi in grado di giudicare se, ed in quale misura, essi possono valere come base di quelle.



Cellula nervosa con apparato reticolare interno (cellula di Purkinje del cervelletto di Strix flammea).

The Golgi Apparatus—The Only Cell Organelle Named for a Scientist

23. Golgi, Camillo (1843-1926). Appunti intorno alla struttura delle cellule nervose. In *Rendiconti [della] Reale Istituto Lombardo di Scienze e Lettere,* series 2, 31 (1898): 930-941. Whole number. 869-961, [3, including final blank]pp. 250 x 165 mm. (uncut and largely unopened). Original printed wrappers, minor chipping and edgewear, 20th century ownership stamp of an Italian scientist (name illegible) on verso of front wrapper. Faint scattered foxing but very good. $1850

First Edition, journal issue of Golgi's paper announcing his discovery of the Golgi apparatus, the only cell organelle to be named after a scientist. Earlier in his career the Italian physician Camillo Golgi had developed a method of staining nerve tissue using silver nitrate, which for the first time allowed him to study the structure of individual nerve cells and to observe neuron pathways in the brain. In 1898, using his staining method, Golgi observed what he described as an "apparato reticolare interno" (internal reticular apparatus) in a nerve cell taken from the cerebellum of a barn owl, which he described and illustrated in the present paper. The Golgi apparatus, which plays a critical role in cell function, was one of the first cell organelles to be observed; however, some scientists at first doubted its existence, believing Golgi's discovery to be simply an artifact caused by his staining technique. It was not until the development of the electron microscope in the 1950s that Golgi's discovery was confirmed beyond doubt.

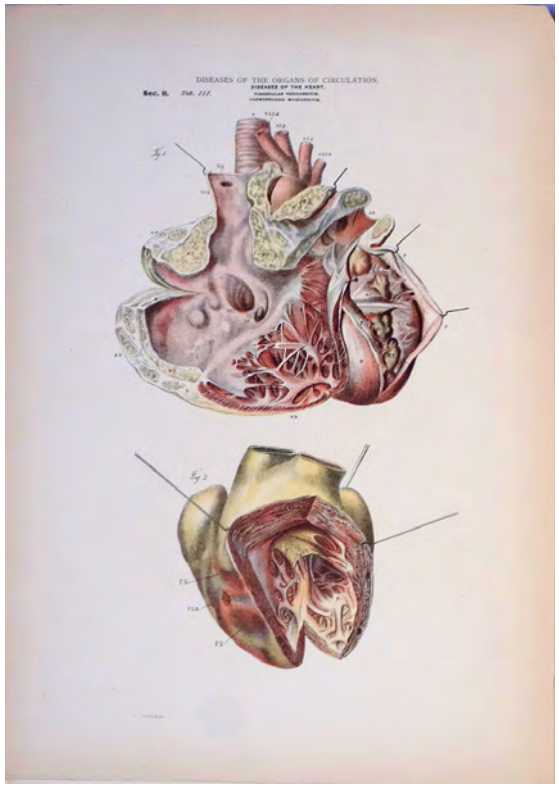
Golgi's groundbreaking studies of nerve tissue led to the eventual acceptance of the neuron doctrine (the concept that the nervous system is made up of discrete individual cells, which ironically Golgi opposed), and gained him a share of the 1906 Nobel Prize in Physiology or Medicine for his contributions to the study of the structure of the nervous system. Morré and Mollenhauer, *The Golgi Apparatus: The First Hundred Years*, pp. 1-3; 257. Not in Garrison-Morton, though it should be. 43376

Bassano Photograph of Huxley

24. Huxley, Thomas Henry (1825-95). Portrait photograph of Huxley in late middle age by Alexander Bassano (1829-1913). London: St. James's Studio, n.d. [1880s]. Mounted; photograph measures 145 x 105 mm.; mount measures 168 x 111 mm. A little faded, light spotting, minor loss on verso of mount due to removal from album, but very good. $500

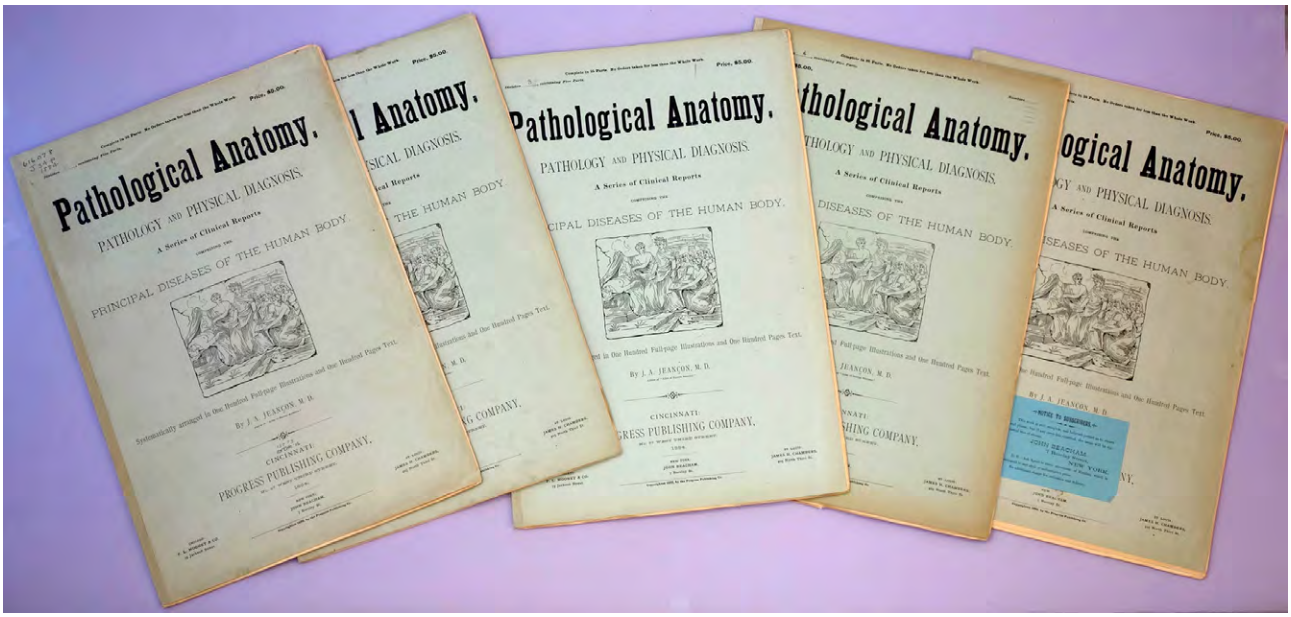
The portrait is a three-quarter view showing Huxley standing behind a table with his left hand on a book. It appears to be one of several photographs Bassano took of Huxley at this time; see "File:T. H. Huxley-1880s.jpg," Wikimedia Commons. Bassano was the leading royal and high society photographer in London during the Victorian era. File:T. H. Huxley-1880s.jpg," Wikimedia Commons, n.p., 15 Dec. 2014. Web. Accessed 09 Jan. 2015. 43368

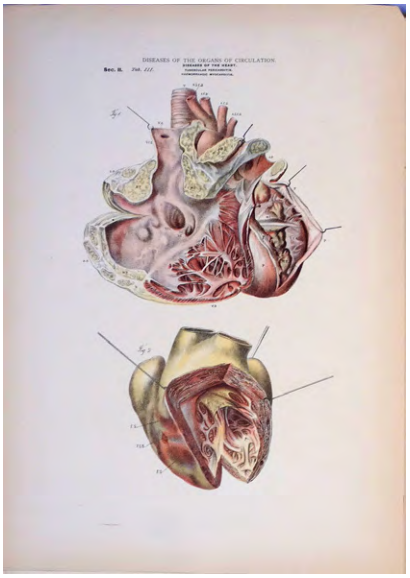
The Only English Translation of Cruveilhier's "Anatomie Pathologique"



25. Jeançon, John Allard (1831-1903). Pathological anatomy, pathological and physical diagnosis. A series of clinical reports comprising the principal diseases of the human body. 25 parts [so stated on the front wrapper] in 5 fascicles. [100]pp., paginated as follows: 16, 8, 16, 8, 4, 16, 8, 4, 8, 8, 4pp., plus 4 leaves of preliminaries at the front of the fifth fascicle. 100 lithograph plates (mostly chromolithograph), including 2 double-page, by W. M. Donaldson & Co., Cincinnati. Cincinnati: Progress Publishing Co. . . ., 1884. 490 x 347 mm. Fascicles in original printed wrappers, repaired, library call number and accession date in ink on wrapper of first fascicle, printed notice from John Beacham, the work's New York publisher, tipped to front wrapper of fifth fascicle; preserved in original cloth portfolio (rebacked). Occasional unobtrusive library stamps on plates and text leaves, minor fraying to edges, but very good. $6750

First Edition. This remarkable and beautifully illustrated American atlas of pathological anatomy, a work previously neglected by medical bibliographers, marks the only English translation of any portion of Cruveilhier's *Anatomie pathologique du corps humain* (1829-42). In the first eight sections, devoted to pathological anatomy, the plates are very high quality full-size chromotithographic reproductions of images from Cruveilhier's *Anatomie pathologique* accompanied by English translations





of Cruveilhier's descriptive text, augmented with Jeançon's detailed notes summarizing the findings of later researchers. Remarkably, Jeançon does not credit Cruveilhier anywhere in the publication—a factor that may explain why the role played by Cruveilhier's work in this publication was not previously noted. The last two sections, probably written by Jeançon, contain more up-to-date information on clinical diagnosis, microbiology, histology, etc.; the plates include illustrations of sphygmomanometer readings, microscopic elements of blood and saliva and the morbid histology of abdominal typhoid. Our copy is particularly noteworthy in that it is in the original five fascicles and preserves both the fragile original wrappers and the original cloth portfolio. We are indebted to W. Bruce Fye for pointing out the connection between Cruveilhier's and Jeançon's works.

John (né Jean) Allard Jeançon was a French physician who immigrated to the United States in the mid-nineteenth century and served as a military surgeon during the American Civil War; he later was appointed to the faculty of the Eclectic Medical Institute in Cincinnati, where he remained until 1891. Although Jeançon published the *Pathological Atlas* under his own name without acknowledging Cruveilhier as a source, he did include Cruveilhier in his list of medical names mentioned in the text! The work consists of ten separately paginated sections, as listed below. 43336

I: Diseases of the cerebro-spinal axis and its main branches (16pp., 16 plates)

II: Diseases of the heart and its membranes (8pp., 8 plates)

III: Diseases of the organs of respiration (16pp., 16 plates)

IV: Diseases of the blood-vessels (8pp., 8 plates)

V: Diseases of spinal centers of peripheral nerves (4pp., 4 plates)

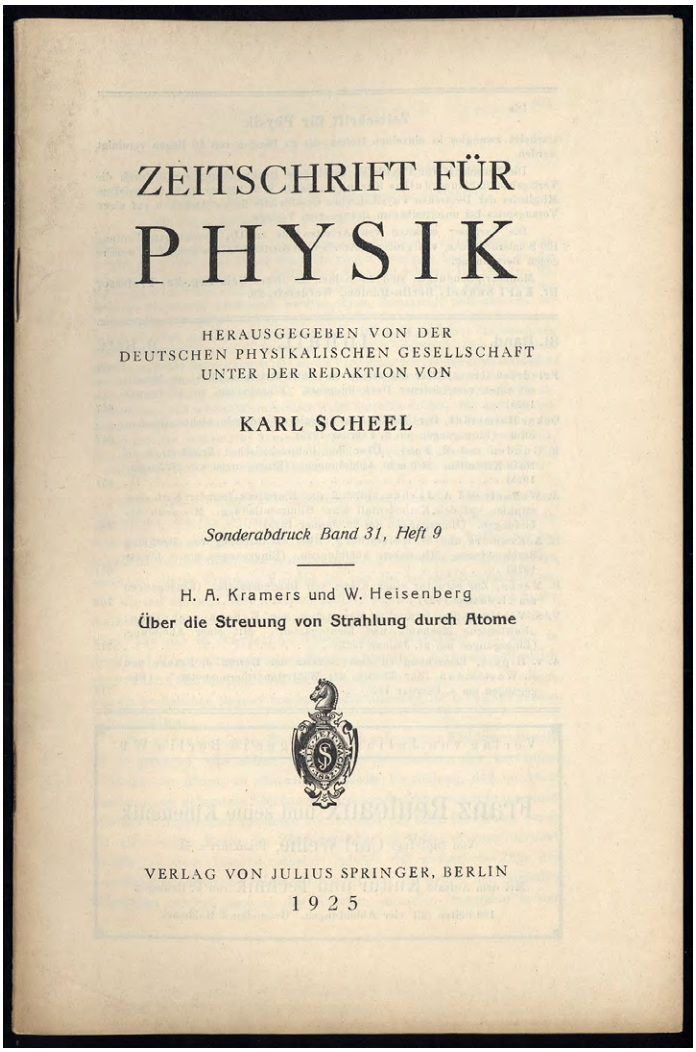
VI: Diseases of the organs of digestion (16pp., 16 plates)

VII: Diseases of the liver, spleen and lymphatics (8pp., 8 plates)

VIII: Diseases of the urinary-apparatus (4, 8pp., 12 plates)

IX: Physical diagnosis and clinical anatomy (8pp., 8 plates)

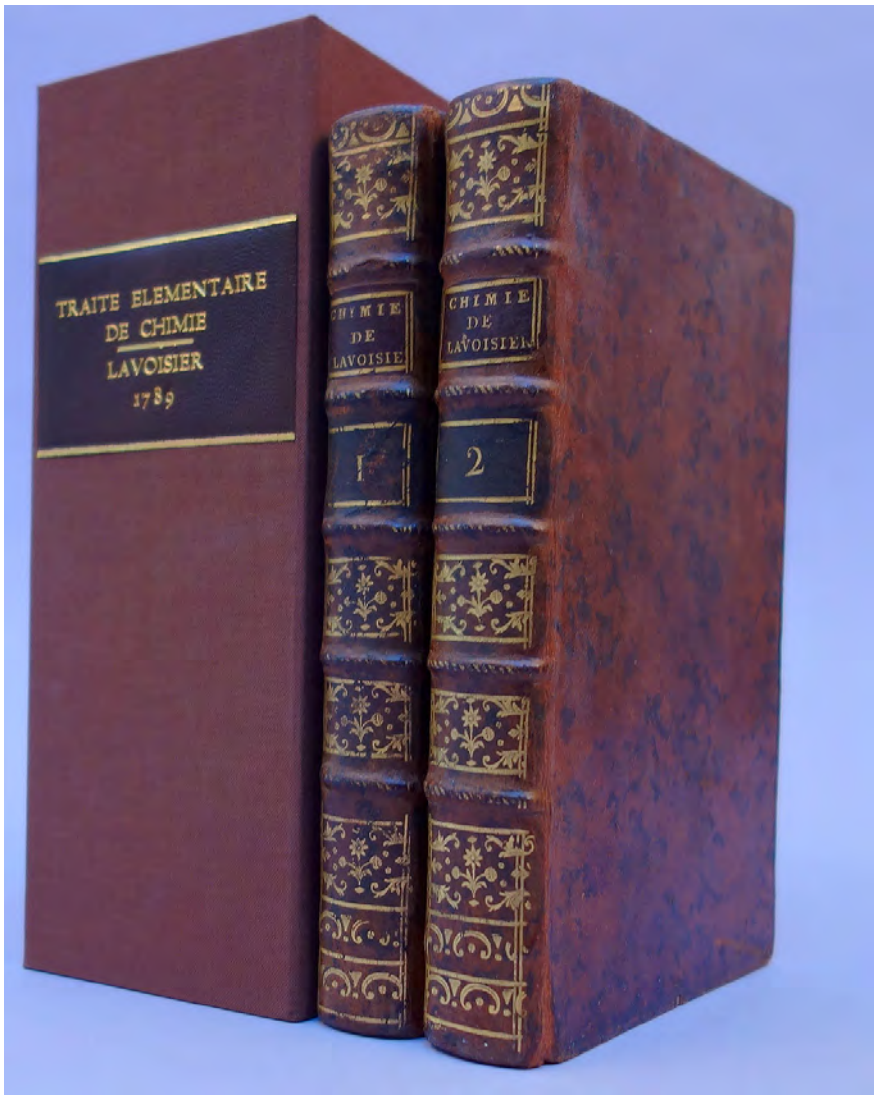
X: Physical diagnosis, and morbid histology (4pp., 4 plates)


ZEITSCHRIFT FÜR
PHYSIK
HERAUSGEGEBEN VON DER
DEUTSCHEN PHYSIKALISCHEN GESELLSCHAFT
UNTER DER REDAKTION VON
KARL SCHEEL
Sonderabdruck Band 31, Heft 9
H. A. Kramers und W. Heisenberg
Über die Streuung von Strahlung durch Atome
VERLAG VON JULIUS SPRINGER, BERLIN
1925

The Kramers-Heisenberg Formula— Stepping Stone to the New Quantum Mechanics

26. Kramers, Hendrik Anthony (1894-1952) and **Werner Heisenberg** (1901-76). Über die Streuung von Strahlung durch Atome. Offprint from Zeitschrift für Physik 31 (1925). 681-708pp. Original printed wrappers. Light toning, but fine. $2750

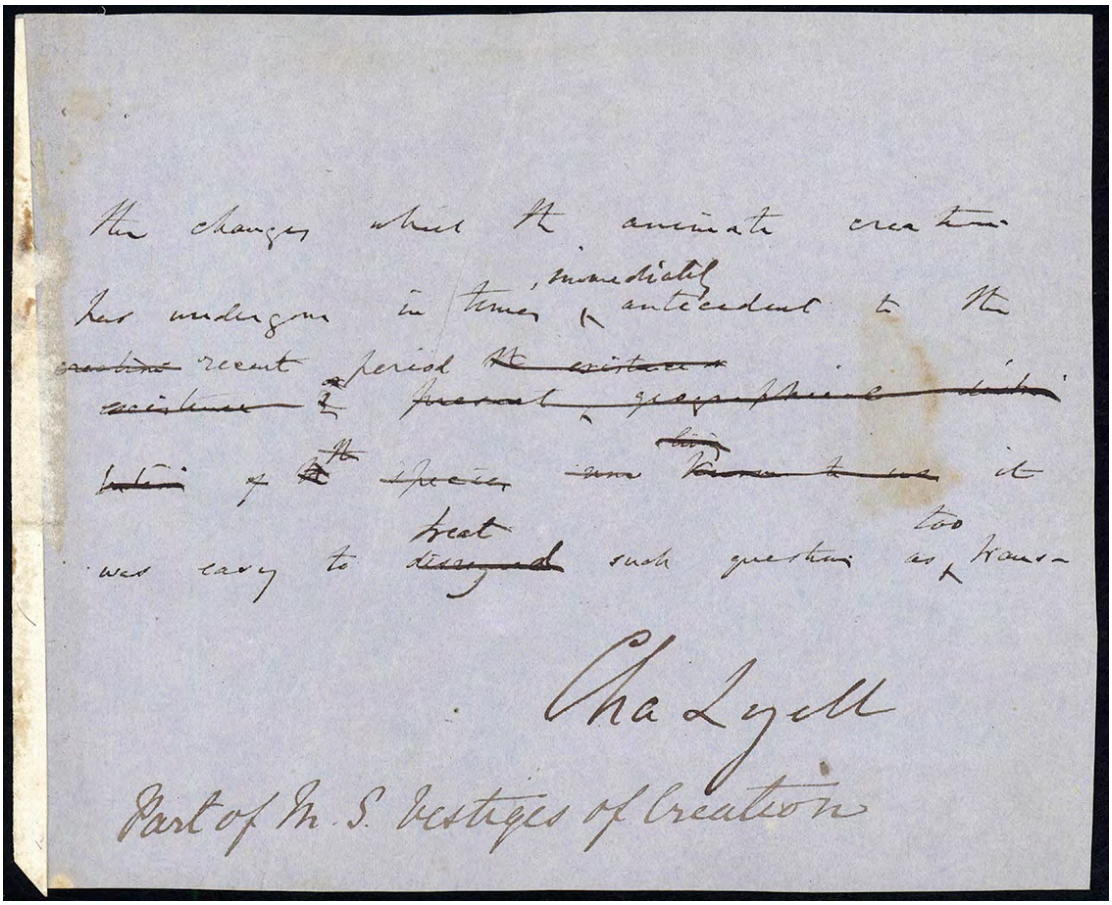
First Edition, Offprint Issue. During his 1924 visit to Bohr's Institute for Theoretical Physics in Copenhagen, Heisenberg and Bohr's assistant H. A. Kramers worked together on the problem of atomic structure from the point of view of dispersion theory. "At first, this interest might appear strange because the problems of atomic structure, say, e.g., the calculation of the energy states of helium, would not seem to have any connection with the scattering of light by atoms, which was the principal concern of dispersion theory. However, Bohr and his collaborators had concluded that the problem of atomic structure could not be separated from the problem of the emission and absorption of radiation—and this could be considered as a problem of the dispersion of radiation" (Mehra & Rechenberg, *Historical Development of Quantum Theory,* 2, p. 170). Kramers and Heisenberg's joint paper on the dispersion of light by atoms contained the important Kramers-Heisenberg dispersion formula, an expression of the cross section for scattering of a photon by an atomic electron; among other things, the formula explained the phenomenon of inelastic scattering, anticipating the Raman effect. Heisenberg's work on this paper "was the final touch needed for [him] to fabricate quantum mechanics six months later" (Cassidy, *Uncertainty: The Life and Science of Werner Heisenberg*, p. 188). 43379



Foundation of Modern Chemistry

27. Lavoisier, Antoine Laurent (1743-94). Traité élémentaire de chimie. 2 vols., 8vo. xliv, 322; viii, [323]-653 [3]pp. 2 printed folding tables, 13 engraved plates by Marie A. P. P. Lavoisier, the author's wife. Paris: Cuchet, 1789. Mottled sheep ca. 1789, gilt spines, tiny scuff-mark on front cover of Vol. I. Insignificant foxing on tables, but fine otherwise, with the contemporary binding in unusually fine condition. Early ownership signature on endpapers. Boxed. $5750

First Edition, second issue as usual (only 2 or 3 copies of the one-volume first issue are known). The foundation of modern chemistry. Lavoisier overthrew the phlogiston theory of Stahl, established the concept of elements as substances which cannot be further decomposed, and reformed chemical nomenclature. An important consequence of his work was the law of conservation of mass, which states that matter remains constant throughout all chemical change. The book's thirteen plates of chemical apparatus were drawn and engraved by Lavoisier's wife, who had studied under the French artist David. The one-volume first issue is so rare as to be virtually unobtainable; the second issue contains 95 pages of additional material, including the "Tables à l'usage des chimistes" (pp. 559-591), the "Table des matières" (pp. 592-619) and various approvals of the work (pp. 620-653). Horblit 64. *Printing and the Mind of Man* 238. Duveen & Klickstein 154. Norman 1295. 41534

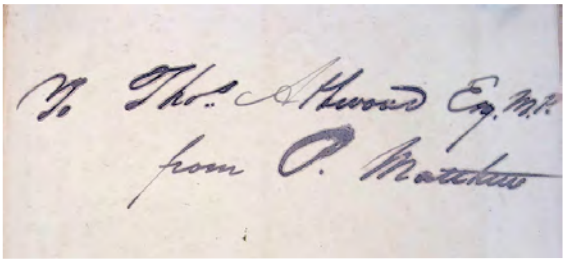


From the Manuscript of Lyell's "Antiquity of Man"

28. Lyell, Charles (1797-1875). Autograph fragment of the manuscript of *Geological Evidences of the Antiquity of Man* (1863), with Lyell's signature ("Cha Lyell") at the foot. 1 sheet. N.p., n.d. [1863 or earlier]. 113 x 140 mm. Minor staining, traces of former mounting, but very good. Incorrectly labeled "Part of M.S. Vestiges of Creation" in an unidentified 19th century hand. $950

From the original manuscript of Lyell's extraordinarily popular and influential *Geological Evidences for the Antiquity of Man* (1863), in which he made the case for human antiquity based on the growing body of archeological and paleontological evidence, and also announced his acceptance of Darwin's theory of evolution as "the best explanation yet offered of the connection between man and those animals which have flourished successively on the earth" (Lyell, *Geological Evidences for the Antiquity of Man* [4th ed. 1873], p. v). The work was an immediate bestseller, going through three editions in one year; apart from Robert Chambers' anonymously published *Vestiges of the Natural History of Creation* (to which some nameless Victorian mistakenly attributed this fragment) almost no other 19th-century work of science was ever sold in such numbers so quickly. The success of Lyell's work was a major factor in Darwin's choosing to bypass the subject of human antiquity in the *Descent of Man* (1871), where he wrote that "the high antiquity of man has recently been demonstrated by the labours of a host of eminent men" and recommended his readers to "the admirable treatises of Sir Charles Lyell, Sir John Lubbock, and others" (p. 3).

This fragment of Lyell's manuscript is from Chapter XX ("Theories of progression and transmutation"), p. 358, and contains text from lines 11-13: "the changes which the animate creation had undergone in times immediately antecedent to the recent period it was easy to treat such questions as too trans-[cendental]." The printed text shows a minor change in wording from that of the manuscript, substituting "these" for "such" in the final line. The manuscript includes several revisions in Lyell's hand. 43366

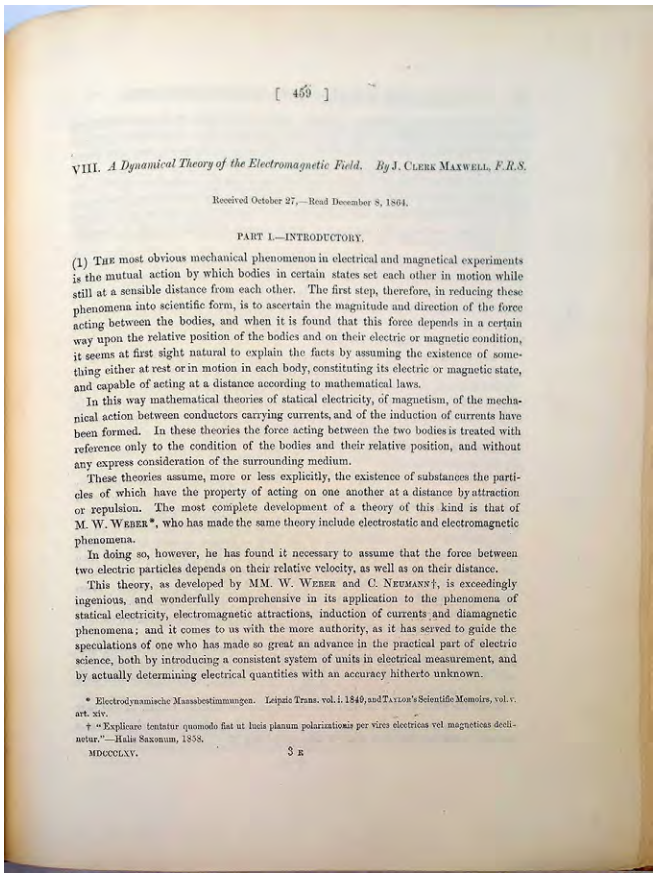


Perhaps the Rarest Autograph of the Precursors of Darwin

29. Matthew, Patrick (1790-1874). Emigration fields. 12mo. xi, [1], 237, [1]pp., adverts. 2 large folding maps engraved by Sidney Hall. Edinburgh: Black. . . , 1839. 198 x 120 mm. Original cloth, gilt, rebacked preserving original backstrip, worn & spotted. Light browning but very good. $4500

First Edition, Inscribed by Matthew to Thomas Attwood (1783-1856) on endpaper: "To Thomas Atwood M.P. Esq from P. Matthew" This inscription is the only autograph of Patrick Matthew we have seen on the market in fifty years. Matthew is well known for his early statement of the theory of natural selection in his book *On Naval Timber and Arboriculture* (1831), anticipating Darwin by 28 years. In later years, after Darwin published *On the Origin of Species* (1859), Matthew even went to the eccentric extreme of having calling cards printed describing himself as the discoverer of the theory of natural selection!

Matthew's plan for British emigration to North America, Africa, Australia and New Zealand was informed by his ideas on natural selection. He speculated on the influence of environmental conditions, for example in southern Africa, where he predicted that the native population, perfectly adapted to the climate, and now governed by a more humane colonial policy, would grow at a faster rate than the colonial population. Matthew presented this copy to the social reformer and M. P. Thomas Attwood, who presented the Chartists' petition for universal suffrage and other democratic rights to the House of Commons in June of 1839 (see the *Dictionary of National Biography*). 37704



[459]

VIII. *A Dynamical Theory of the Electromagnetic Field.* By J. Clerk Maxwell, *F.R.S.*

Received October 27,—Read December 8, 1864.

PART I.—INTRODUCTORY.

(1) The most obvious mechanical phenomenon in electrical and magnetical experiments is the mutual action by which bodies in certain states set each other in motion while still at a sensible distance from each other. The first step, therefore, in reducing these phenomena into scientific form, is to ascertain the magnitude and direction of the force acting between the bodies, and when it is found that this force depends in a certain way upon the relative position of the bodies and on their electric or magnetic condition, it seems at first sight natural to explain the facts by assuming the existence of something either at rest or in motion in each body, constituting its electric or magnetic state, and capable of acting at a distance according to mathematical laws.

In this way mathematical theories of statical electricity, of magnetism, of the mechanical action between conductors carrying currents, and of the induction of currents have been formed. In these theories the force acting between the two bodies is treated with reference only to the condition of the bodies and their relative position, and without any express consideration of the surrounding medium.

These theories assume, more or less explicitly, the existence of substances the particles of which have the property of acting on one another at a distance by attraction or repulsion. The most complete development of a theory of this kind is that of M. W. Weber*, who has made the same theory include electrostatic and electromagnetic phenomena.

In doing so, however, he has found it necessary to assume that the force between two electric particles depends on their relative velocity, as well as on their distance.

This theory, as developed by MM. W. Weber and C. Neumann†, is exceedingly ingenious, and wonderfully comprehensive in its application to the phenomena of statical electricity, electromagnetic attractions, induction of currents and diamagnetic phenomena; and it comes to us with the more authority, as it has served to guide the speculations of one who has made so great an advance in the practical part of electric science, both by introducing a consistent system of units in electrical measurement, and by actually determining electrical quantities with an accuracy hitherto unknown.

* Electrodynamische Maassbestimmungen. Leipzic Trans. vol. i. 1849, and Taylor's Scientific Memoirs, vol. v. art. xiv.

† "Explicare tentatur quomodo fiat ut lucis planum polarizationis per vires electricas vel magneticas declinetur."—Halis Saxonum, 1858.

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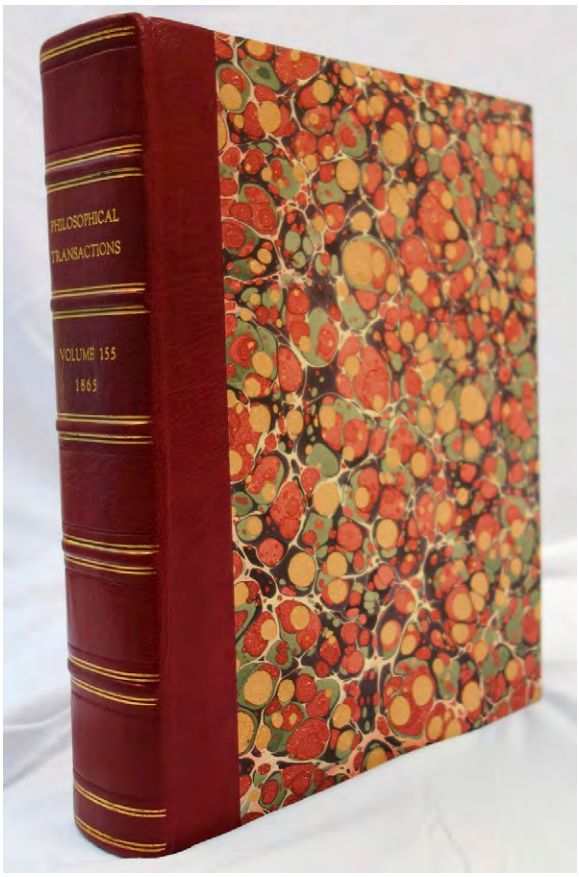


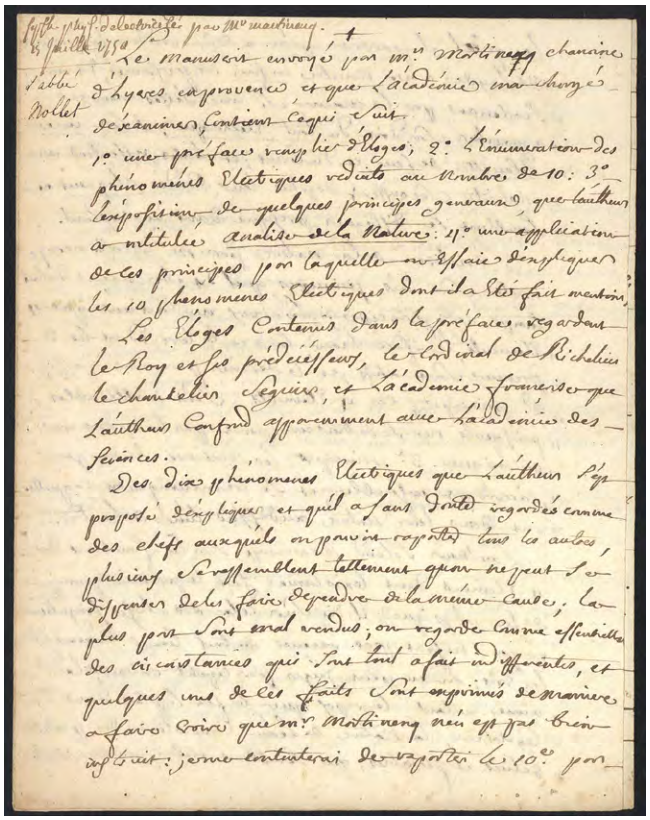
Maxwell's Field Equations for Electromagnetism

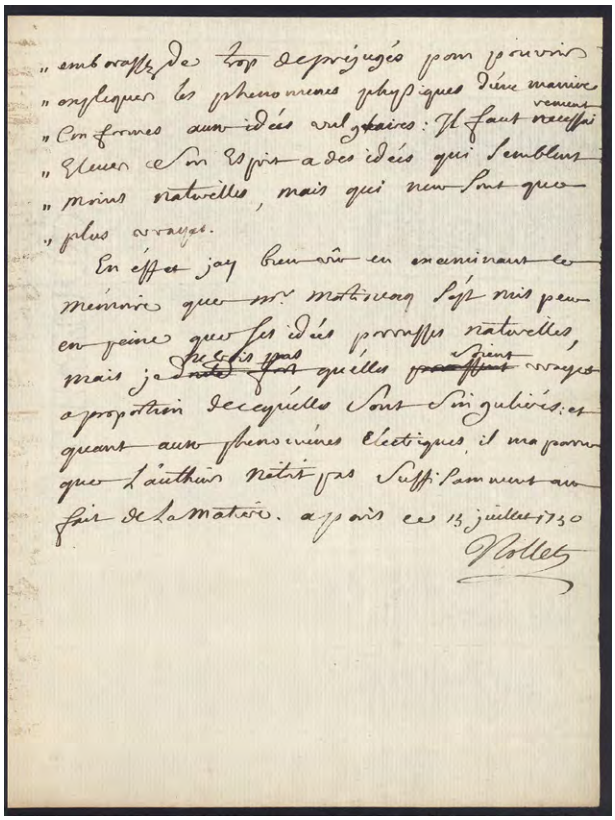
30. Maxwell, James Clerk (1831-1879). A dynamical theory of the electromagnetic field. In *Philosophical Transactions* 155, part 1 (1865): 459-512. Whole volume. 796, 29pp. 300 x 230 mm. 41 plates, including 1 in color. Quarter morocco, gilt, in period style. Very good copy. $6500

First Edition. In this culminating paper on the foundations of electromagnetic theory Maxwell developed twenty field equations of electromagnetism. "A dynamical theory of the electromagnetic field" clinched the theory that light was a form of electricity. Maxwell had already found in 1862 a link of a purely phenomenological kind between electromagnetic quantities and the velocity of light, but the present paper provided a new theoretical framework for the subject, based on experiment and a few general dynamical principles, from which the propagation of electromagnetic waves through space followed without special assumptions about molecular vortices or forces between electrical particles. "A generation later, Einstein's work on relativity was founded directly upon Maxwell's electromagnetic theory: it was this that led him to equate Faraday with Galileo and Maxwell with Newton" (*Printing and the Mind of Man*). *Dictionary of Scientific Biography*. Dibner 68. *Printing and the Mind of Man* 355. Norman 1465. 42154

31. Neave, Richard. Ecorché sculpture in bronze of a flayed male figure holding a small Neanderthal skull, signed in the bronze "R. N. 2014." N.p., 2014. 420 mm. (16.5") high (excluding wooden plinth). No. 3 of an edition limited to 12 examples. With artist's signed authentication. $12,500

Bronze ecorché in the Renaissance tradition, reminiscent of the famous "musclemen" from Vesalius's *De humani corporis fabrica* (1543) but showing much greater anatomical detail than was ever done in bronze in the 16th century. Neave, a British expert on forensic anatomical reconstruction, especially facial reconstruction, has earned fame for his recreations of the faces of historical figures including Jesus, King Philip of Macedon and the Yde Girl, a bog body dating from ca. 54 B.C. He also collaborated with Pascale Pollier on the Vesalius monument unveiled at Zakynthos on September 4, 2014; the monument is a life-size (or larger) bronze ecorché similar to our smaller version, but holding a different skull. 43386





Eighteenth-Century Critique of a Paper on Electricity

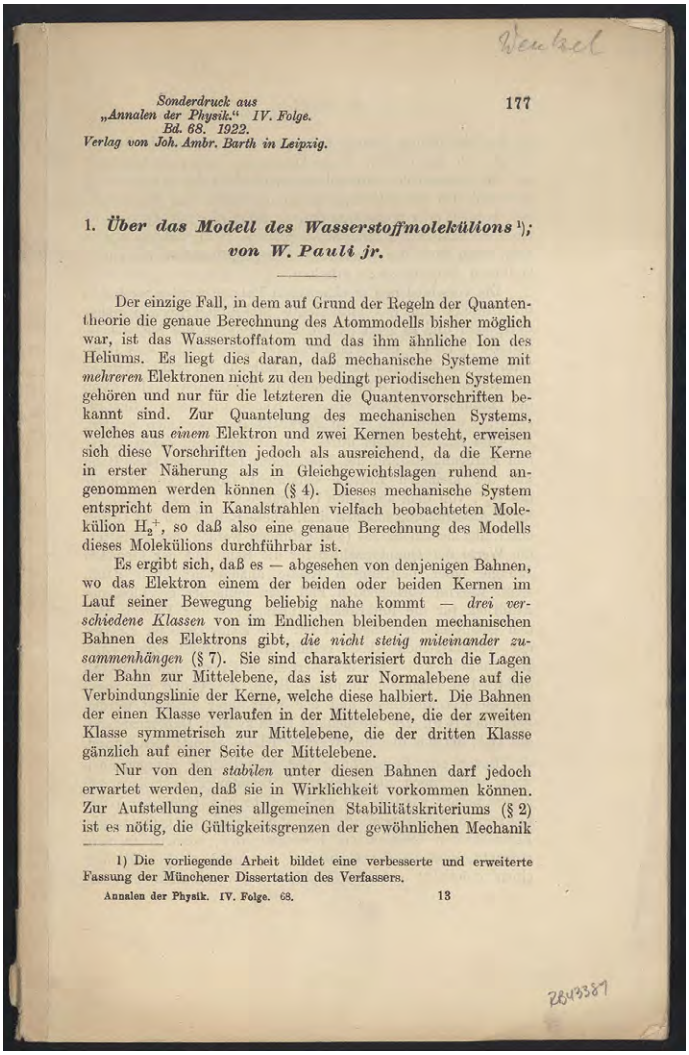
32. Nollet, Jean-Antoine, *Abbé* (1700-1770). Autograph manuscript signed. Paris, July 13, 1750. 6-1/2pp., written on 2 half sheets folded to make 4 leaves (inner sheet made up of 2 quarter sheets pasted together). Creased horizontally where previously folded, negligible offsetting, otherwise fine.

$7500

Nollet's lengthy analysis of a manuscript treatise on electricity submitted to the Academy of Sciences by one M. Martinenq of Hyers in Provence. Martinenq's treatise was based on the following three principles: (1) the existence of only four elements (air, fire, water and earth); (2) the unchangeable nature of these elements, which cannot be altered by chemical means; and (3) the existence of affinities between like elements that would allow, for example, the "fire" in one object to communicate with the "fire" in another. It was largely on the basis of this last principle that Martinenq proposed to provide explanations for ten electrical phenomena; however, according to Nollet's critique,

> several [of these phenomena] resemble each other so much that one cannot help assigning them to the same cause; the majority are badly expressed; the author believes certain circumstances to be essential when in fact they are immaterial, and certain of these facts are so expressed as to make one believe that Mr. Martinenq has not been well instructed in this subject.

In the course of debunking Martinenq's system, Nollet discusses electrical phenomena such as friction, the attraction between electrified bodies, the generation of sparks and noise, and brush discharge. He ended by recommending that the Academy of Sciences not publish Martinenq's treatise, since "quant aux phenomènes électriques, il m'a paru que l'auteur n'etait pas suffisamment au fait de la matière" (as for electrical phenomena, it seems to me that the author is not sufficiently grounded in the matter). 38302



Wentzel

Sonderdruck aus
„Annalen der Physik." IV. Folge.
Bd. 68. 1922.
Verlag von Joh. Ambr. Barth in Leipzig.

177

1. ***Über das Modell des Wasserstoffmolekülions*** [1]**;**
von W. Pauli jr.

Der einzige Fall, in dem auf Grund der Regeln der Quantentheorie die genaue Berechnung des Atommodells bisher möglich war, ist das Wasserstoffatom und das ihm ähnliche Ion des Heliums. Es liegt dies daran, daß mechanische Systeme mit *mehreren* Elektronen nicht zu den bedingt periodischen Systemen gehören und nur für die letzteren die Quantenvorschriften bekannt sind. Zur Quantelung des mechanischen Systems, welches aus *einem* Elektron und zwei Kernen besteht, erweisen sich diese Vorschriften jedoch als ausreichend, da die Kerne in erster Näherung als in Gleichgewichtslagen ruhend angenommen werden können (§ 4). Dieses mechanische System entspricht dem in Kanalstrahlen vielfach beobachteten Molekülion H_2^+, so daß also eine genaue Berechnung des Modells dieses Molekülions durchführbar ist.

Es ergibt sich, daß es — abgesehen von denjenigen Bahnen, wo das Elektron einem der beiden oder beiden Kernen im Lauf seiner Bewegung beliebig nahe kommt — *drei verschiedene Klassen* von im Endlichen bleibenden mechanischen Bahnen des Elektrons gibt, *die nicht stetig miteinander zusammenhängen* (§ 7). Sie sind charakterisiert durch die Lagen der Bahn zur Mittelebene, das ist zur Normalebene auf die Verbindungslinie der Kerne, welche diese halbiert. Die Bahnen der einen Klasse verlaufen in der Mittelebene, die der zweiten Klasse symmetrisch zur Mittelebene, die der dritten Klasse gänzlich auf einer Seite der Mittelebene.

Nur von den *stabilen* unter diesen Bahnen darf jedoch erwartet werden, daß sie in Wirklichkeit vorkommen können. Zur Aufstellung eines allgemeinen Stabilitätskriteriums (§ 2) ist es nötig, die Gültigkeitsgrenzen der gewöhnlichen Mechanik

1) Die vorliegende Arbeit bildet eine verbesserte und erweiterte Fassung der Münchener Dissertation des Verfassers.

Annalen der Physik. IV. Folge. 68. 13

2643387

Pauli's Doctoral Thesis

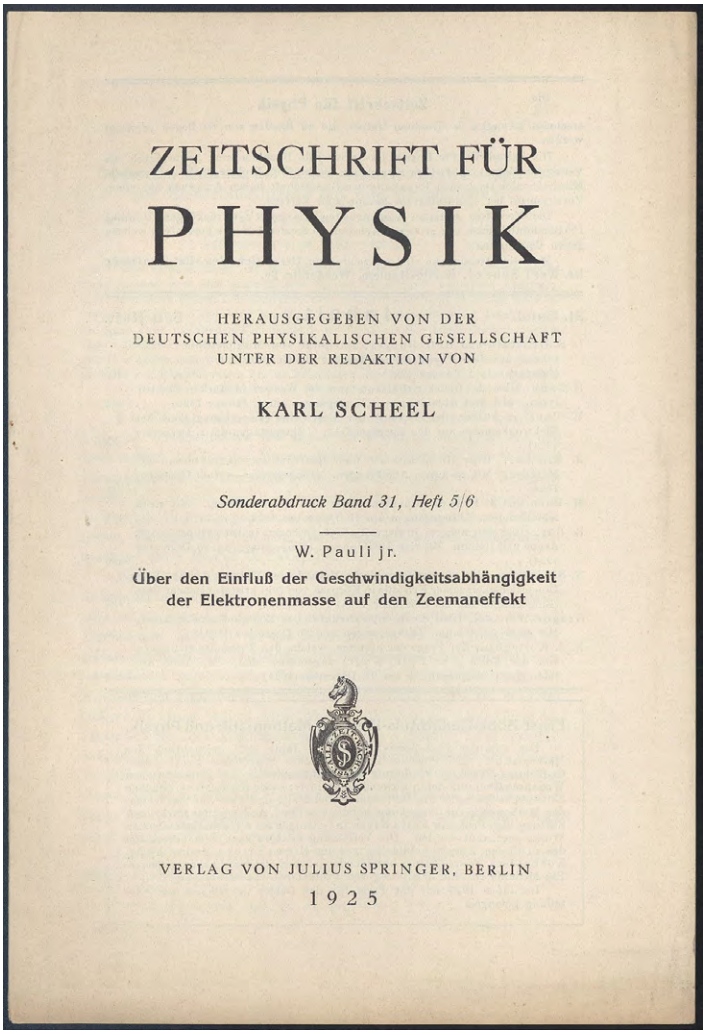
33. Pauli, Wolfgang (1900-1958). Über das Modell des Wasserstoffmolekülions. Offprint from *Annalen der Physik*, 4th series, 68 (1922). 177-240pp. 227 x 145 mm. Without wrappers as issued, small chips at spine extremities. Minor toning but very good. Presented by Pauli to physicist Gregor Wentzel (1898-1978), with Pauli's pencil inscription "Wentzel" on the first leaf. $2750

First Edition, Rare Offprint Issue of Pauli's doctoral thesis. At the urging of his teacher, Arnold Sommerfeld, Pauli chose as his topic the quantum theory of ionized molecular hydrogen (H_2^+), which contains two protons and one electron. As Heisenberg (also a student of Sommerfeld's) later recalled, Pauli "wanted to examine if, in a complicated system for which one was just barely capable of doing the calculations, Bohr's theory and the Bohr-Sommerfeld quantum conditions led to the experimentally correct result. For, in our Munich discussions doubts had come to us whether the hitherto obtained successes of the theory were not limited to simple systems and whether a failure might not occur already in the more complicated system" (quoted in Enz, *No Time to be Brief: A Scientific Biography of Wolfgang Pauli,* p. 63). Pauli's efforts, although they obtained him his doctorate, did not yield a successful quantum theory of H_2^+; according to Born, who reviewed Pauli's work on H_2^+ in his *Lectures on Quantum Mechanics*, the resulting energy values "cannot be made to agree with the measurements of the ionization and excitation voltages" (quoted in Enz, p. 69). The problem of the hydrogen molecular ion was not solved until 1927, when Øyvind Burrau published the first successful quantum-mechanical treatment of H_2^+.

Pauli presented this paper to his good friend Gregor Wentzel, whom Enz (p. 147) describes as "perhaps Pauli's most kindred spirit." Both Wentzel and Pauli were doctoral students under Sommerfeld at the Ludwig Maximilian University in Munich, and obtained their Ph.Ds in the same year. In 1928 Wentzel and Pauli obtained professorships in Zurich, Pauli at the ETH and Wentzel at the University of Zurich; together the two built the reputation of Zurich as a center for theoretical physics. Wentzel contributed to the development of quantum mechanics, most notably as one of the authors of the Wentzel-Kramers-Brioullin method for finding approximate solutions to linear differential partial equations. 43387

Pauli's First Paper on his Exclusion Principle

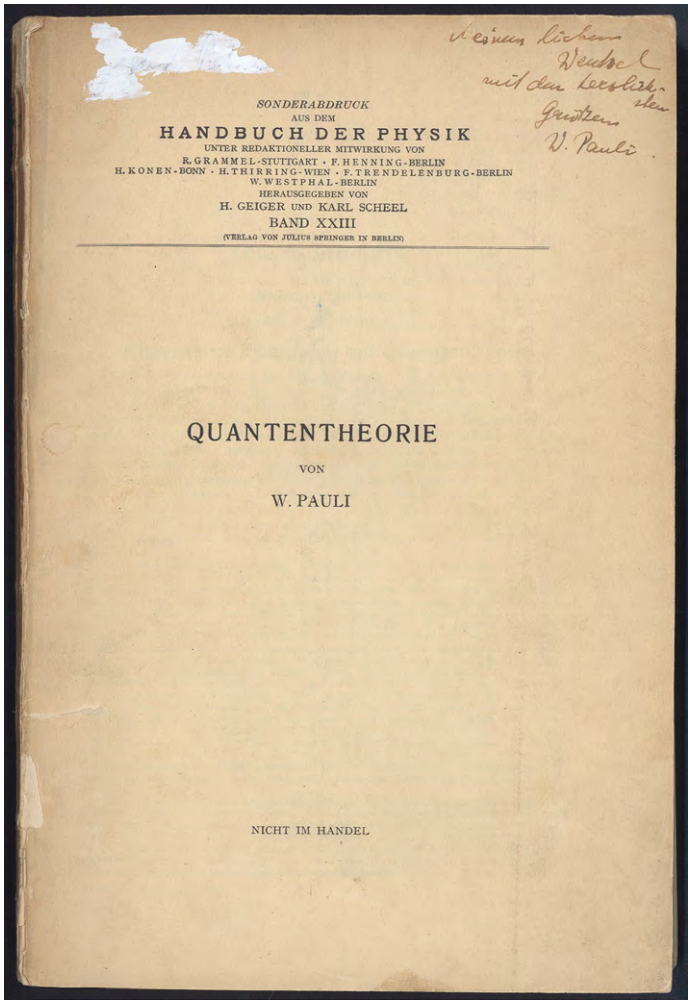
34. Pauli, Wolfgang (1900-1958). Über den Einfluss der Geschwindigkeitsabhängigkeit der Elektronenmasse auf den Zeemaneffekt. Offprint from *Zeitschrift für Physik* 31 (1925). 373-385pp. 230 x 157 mm. Original printed wrappers. Fine copy. $17,500


ZEITSCHRIFT FÜR
PHYSIK
HERAUSGEGEBEN VON DER
DEUTSCHEN PHYSIKALISCHEN GESELLSCHAFT
UNTER DER REDAKTION VON
KARL SCHEEL
Sonderabdruck Band 31, Heft 5/6
W. Pauli jr.
Über den Einfluß der Geschwindigkeitsabhängigkeit
der Elektronenmasse auf den Zeemaneffekt
VERLAG VON JULIUS SPRINGER, BERLIN
1925

First Edition, Extremely Rare Offprint Issue of Pauli's first paper on the exclusion principle, "the crowning conclusion to the old quantum theory" (*Dictionary of Scientific Biography*), for which Pauli was awarded the Nobel Prize in 1945. This is the second copy of the offprint of Pauli's paper to come on to the market in our fifty years of experience. Pauli's exclusion principle states that no two atoms in an electron can be in the same quantum state. The principle grew out of Pauli's investigations into the anomalous Zeeman effect, undertaken in 1922-1923 during his first visit to Copenhagen. The Zeeman effect (named after Pieter Zeeman, who won the Nobel Prize for discovering it) is the splitting of spectral lines in a strong magnetic field. Classical mechanics theory predicted that the spectral lines would split into three, but in 1898 it was observed that a certain line in the sodium spectrum actually splits into four lines—the first example of what is now called the anomalous Zeeman effect. After wrestling with the Zeeman problem in Copenhagen, Pauli returned to Germany where he began critically examining the attempts of Bohr and other physicists to explain the phenomenon.

> According to the view then orthodox, which was also taken over by Bohr . . . a non-vanishing angular momentum of the atomic core was supposed to be the cause of this doublet structure. In the autumn of 1924 [the date the present paper was submitted], I published some arguments against this point of view, which I definitely rejected as incorrect and proposed instead of it the assumption of a new quantum theoretic property of the electron, which I called a "two-valuedness not describable classically" (Pauli, p. 29).

Pauli's "two-valuedness" anticipated the concept of electron spin, verified by Goudsmit and Uhlenbeck in 1925. Pauli expanded his arguments in a second paper published six weeks later, which generalized the exclusion principle. Pauli, "Wolfgang Pauli - Nobel Lecture: Exclusion Principle and Quantum Mechanics". Nobelprize.org. Nobel Media AB 2014. Web. Accessed 18 Dec 2014. 43342



The "Old Testament" of Quantum Theory, Inscribed by Pauli to Wentzel

35. Pauli, Wolfgang (1900-1958). Quantentheorie. Offprint from *Handbuch der Physik,* Vol. 23 (Berlin: Springer, 1926), pp. 1-278 (plus 4pp. publisher's adverts.). 252 x 171 mm. Original printed wrappers, splits in front and back hinges, a few chips and tears, name of former owner, historian of physics Jagdish Mehra (1931-2008), effaced with whiteout. Very good. *Presentation Copy, Inscribed by Pauli* to physicist Gregor Wentzel (1898-1978) on the front wrapper: "Meinem lieben Wentzel mit dem herzlichsten Grüßen W. Pauli." $7500

First Edition, Offprint Issue. Pauli's magisterial book-length article on quantum theory for the *Handbuch der Physik*, which occupied him for most of 1925, elegantly summarizes the "old" quantum theory prior to the rise of quantum mechanics. While he was writing the article the new quantum mechanics burst upon the scene; "in rapid succession the fundamental work of Heisenberg, Dirac and Schrödinger appeared, leading to a proper, mathematically consistent quantum mechanics" (*Dictionary of Scientific Biography*). Physicists jokingly called Pauli's *Quantenmechanik* the "Old Testament"; he would follow it six years later with a "New Testament," *Die allgemeine Prinzipien der Wellenmechanik*, published in the second edition of the *Handbuch der Physik* (1933). When Heisenberg received his copy he wrote to Pauli thanking him "for your beautiful book in which I have read with much pleasure, although with a critical mind and unforgivingly. Obviously, it's an exact exposition of the physical connections which were known before the mess of last year, and reading it was a true recreation" (quoted in Enz, *No Time to be Brief: A Scientific Biography of Wolfgang Pauli*, p. 130).

Pauli presented this paper to his good friend and fellow theoretical physicist Gregor Wentzel; see no. 33 for further information. 43380

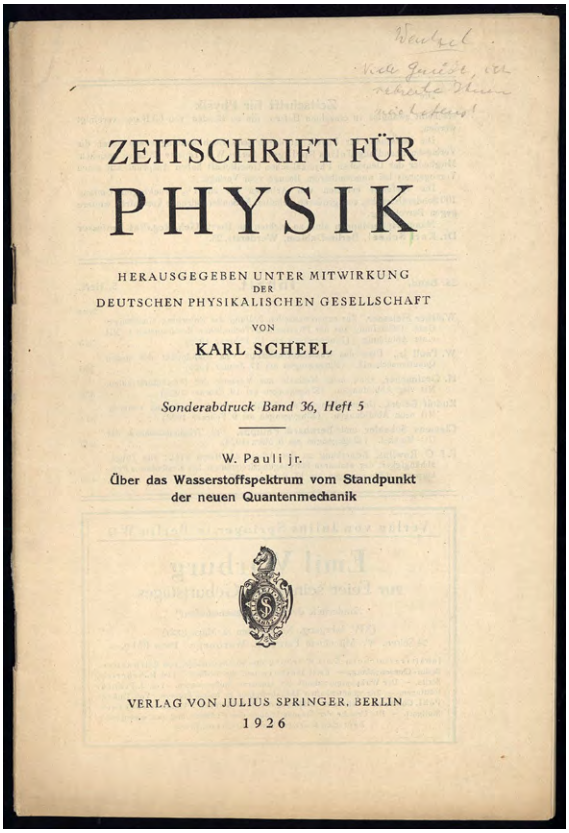
Pauli Solves the Hydrogen Atom Using the New Matrix Mechanics

36. Pauli, Wolfgang (1900-1958). Über das Wasserstoffspektrum vom Standpunkt der neuen Quantenmechanik. Offprint from *Zeitschrift für Physik* 36 (1926). 336-363pp. 229 x 158 mm. Original printed wrappers, slightly soiled. Very good. *Presentation Copy, Inscribed by Pauli* in pencil to physicist Gregor Wentzel: "Wentzel Viele Grüße, ich schreibe Ihnen nächstens!" [Wentzel, Greetings, I will write to you next time!]. $3750

First Edition, Offprint Issue. In October 1925, shortly after completing his lengthy treatise on the old quantum theory (see no. 35), Pauli threw himself into the task of solving the problem of the hydrogen atom using Born, Heisenberg and Jordan's new matrix mechanics. Both Heisenberg and Born had failed to find a

solution, but after working for a few weeks on the problem Pauli reported his success to Heisenberg in a letter, to which Heisenberg responded: "I probably don't have to tell you how much I rejoiced at your new theory of hydrogen and how much I admire that you have made out this theory so fast" (letter to Pauli of 3 November 1925, quoted in Enz, p. 135). "The reason for Pauli's quick success was that he had recognized at once a major weakness of the matrix theory and had found a way of curing it in the case of the hydrogen problem. Matrix mechanics had passed its first crucial test . . . It took Pauli less than three weeks to derive the Balmer formula [for the hydrogen spectrum] purely by means of the methods of matrix mechanics. His quick success converted him completely to the scheme of Born, Heisenberg and Jordan. Pauli now become convinced that this theory constituted a 'tremendous fundamental advance' . . . For the time being, at least, Pauli's heart had been captured by matrix mechanics; it appeared to him that only by means of this theory could one hope to make further progress in the understanding of atomic phenomena. Quantum theory had a future again" (Mehra & Rechenberg, *Historical Development of Quantum Theory*, 3, pp. 171; 174).

Pauli presented this paper to his good friend and fellow theoretical physicist Gregor Wentzel; see no. 33 for further information. Enz, *No Time to be Brief: A Scientific Biography of Wolfgang Pauli*, pp. 134-137. 43381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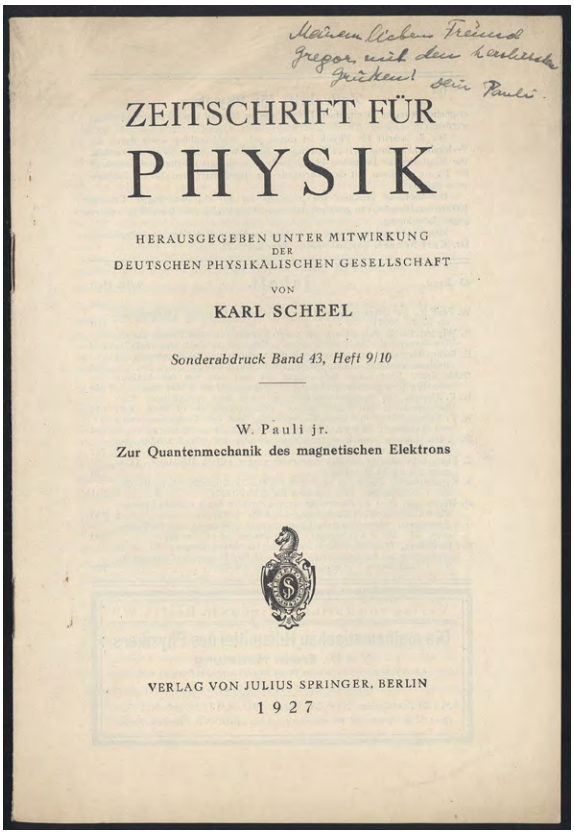
HERAUSGEGEBEN UNTER MITWIRKUNG DER DEUTSCHEN PHYSIKALISCHEN GESELLSCHAFT
VON
KARL SCHEEL
Sonderabdruck Band 36, Heft 5
W. Pauli jr.
Über das Wasserstoffspektrum vom Standpunkt der neuen Quantenmechanik
VERLAG VON JULIUS SPRINGER, BERLIN
1926

Paul's Mathematical Theory of Electron Spin—Inscribed to Wentzel

37. Pauli, Wolfgang (1900-1958). Zur Quantenmechanik des magnetischen Elektrons. Offprint from *Zeitschrift für Physik* 43 (1927). 601-623pp. 230 x 157 mm. Original printed wrappers, slightly dust-soiled. Fine copy, with Pauli's presentation inscription to physicist Gregor Wentzel (1898-1978) on the front wrapper: "Meinem lieben Freund Gregor mit den herzlichen Grüßen! sein Pauli." $3750


Meinem lieben Freund Gregor, mit den herzlichen Grüßen! sein Pauli.
ZEITSCHRIFT FÜR
PHYSIK
HERAUSGEGEBEN UNTER MITWIRKUNG DER DEUTSCHEN PHYSIKALISCHEN GESELLSCHAFT
VON
KARL SCHEEL
Sonderabdruck Band 43, Heft 9/10
W. Pauli jr.
Zur Quantenmechanik des magnetischen Elektrons
VERLAG VON JULIUS SPRINGER, BERLIN
1927

First Edition, Offprint Issue. In the first of his famous papers on the exclusion principle, Pauli had proposed a new property of the electron as an explanation for the anomalous Zeeman effect, describing it as "a peculiar, classically not describable kind of two-valuedness of the quantum theoretical properties of the valence electron." This "peculiar two-valuedness" turned out to be electron spin, a concept first suggested by physicists Ralph Kronig, Samuel Goudsmit and George Uhlenbeck in 1925 and refined by Llewellyn Thomas in 1926. Ironically, Pauli at first vigorously resisted

the notion of electron spin, despite the persuasive efforts of Bohr, Heisenberg, Goudsmit and others; it was not until March 1926 that he finally changed his mind. In the present paper Pauli worked out the mathematical theory of electron spin, introducing the 2 x 2 Pauli matrices as a basis of spin operators. "Pauli showed [in this paper] that it was possible to describe the spinning electron by two-component wave functions. With this, the problem of the electron spin was completely solved, at least in the framework of non-relativistic wave mechanics" (Enz, *No Time to be Brief: A Scientific Biography of Wolfgang Pauli,* p. 116).

Pauli presented this paper to his good friend and fellow theoretical physicist Gregor Wentzel; see no. 33 for further information. 43375

Inscribed to His Friend David Dennison—The Only Inscribed Presentation Copy of Pauling's "The Nature of the Chemical Bond" We Have Seen on the Market

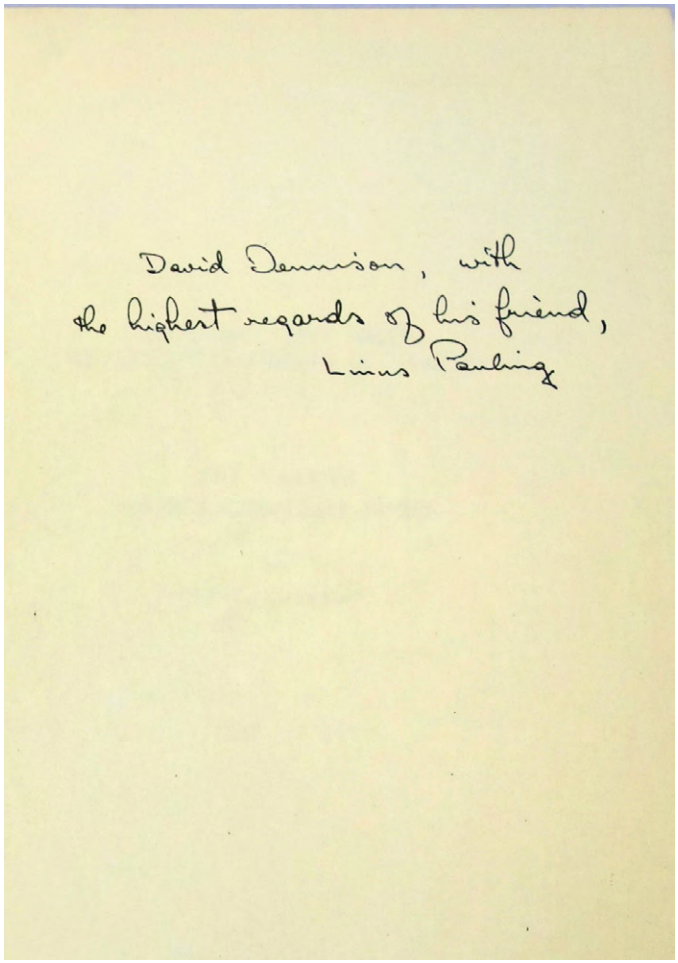
38. Pauling, Linus (1901-94). The nature of the chemical bond and the structure of molecules and crystals. xiv, 429pp. plus 1 page of publisher's adverts. Ithaca: Cornell University Press; London: Humphrey Milford, Oxford University Press, 1939. 230 x 150 mm. Original cloth, upper corner of back cover slightly bumped. Very good. *Presentation Copy, inscribed by Pauling* to quantum physicist David Dennison (1900-1976) on the front endpaper: "David Dennison, with the highest regards of his friend, Linus Pauling." $17,500

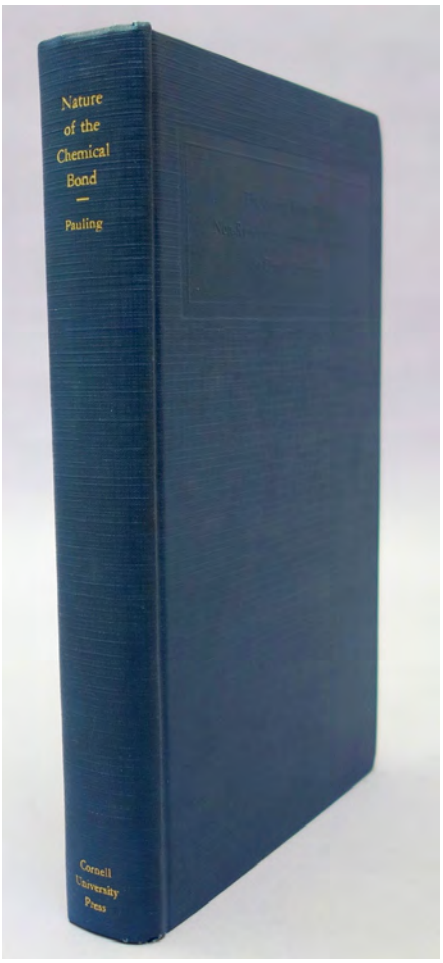
First Edition. A remarkable copy, the only presentation copy inscribed at the time of publication that we have ever seen, and an excellent association between two of the first American physicists to contribute to the new quantum mechanics of the 1920s. Pauling, who received the 1954 Nobel Prize in Chemistry for his research into the nature of the chemical bond, was one of the founders of quantum chemistry and a pioneer in the application of quantum theory to the structure of molecules. He was also famous at a very early age, and probably did not feel the need to send out presentation copies to advance his career. Until we acquired this copy the only signed copies of the first edition of Pauling's classic that we had ever seen or handled were copies that he clearly signed for owners decades after the book was published.

The Nature of the Chemical Bond is possibly the most famous book ever published by a professor at Caltech. It "taught a couple of generations of chemists that the sizes and electrical charges of atoms determine exactly [emphasis ours] their arrangement in molecules" (Judson, p. 57), and proved essential to understanding the helical structure of DNA and other complex proteins.

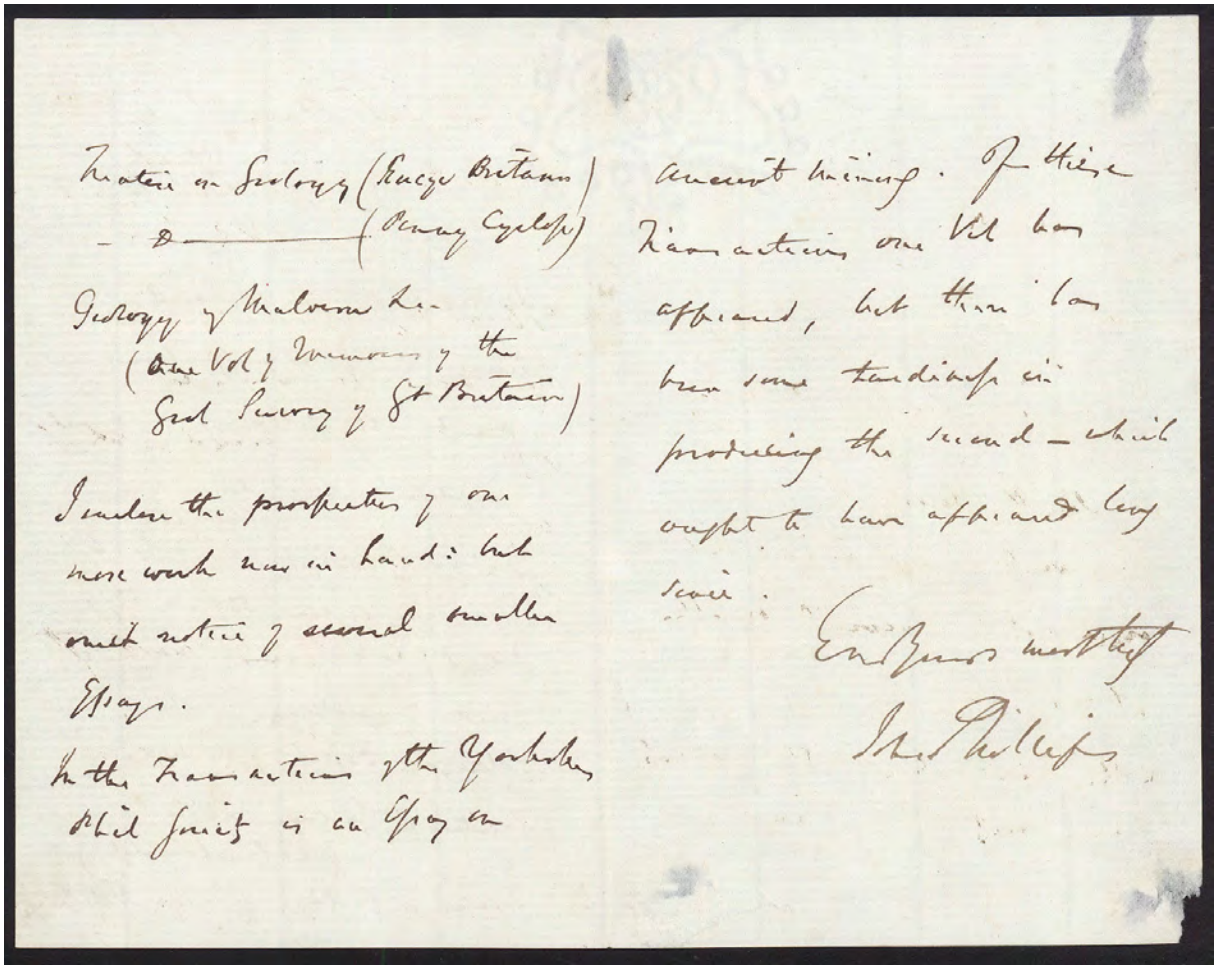
The recipient of this copy, David Dennison, received his Ph.D. in physics from the University of Michigan in 1924 and spent the next three years in Europe doing postdoctoral research under Bohr, Sommerfeld and Schroedinger at the time the new quantum mechanics was emerging. It was during this period that Dennison came up with the solution to one of the major puzzles in quantum physics, the problem of the specific heat of hydrogen. Upon his return to the United States in 1927, Dennison joined with three other theoretical physicists he had known in Europe—Otto Laporte, Samuel Goudsmit and George Uhlenbeck—to help expand the study of theoretical physics at the University of Michigan; he remained at the university for the rest of his career. Dennison's work at the University of Michigan, particularly in the organization of the physics department's Summer Symposia, helped to make the university a major center for theoretical physics in the 1920s and 1930s.

Pauling and Dennison first met in 1927 in Munich, where both men had gone to study under Sommerfeld at the Theoretical Physics Institute. In 1939-40 Dennison went on sabbatical and spent the academic year at Cal Tech, where Pauling was professor of chemistry. It was during this time that Pauling presented a copy of his newly published *Nature of the Chemical Bond* to Dennison., whose work he footnoted on p. 281. Inscribed copies





of Pauling's work are extremely rare; all the other ones we have seen bear only his signature, and were signed later in Pauling's life when admirers brought him copies to autograph. Judson, *The Eighth Day of Creation*, pp. 51-70. James, *Nobel Laureates in Chemistry*, pp. 368-78; 422-26. Goertzel & Goertzel, *Linus Pauling*, pp. 66-77. Kuhn, Thomas. "Oral History Transcript — Dr. David Dennison." American Institute of Physics, n.d. Web. 43276

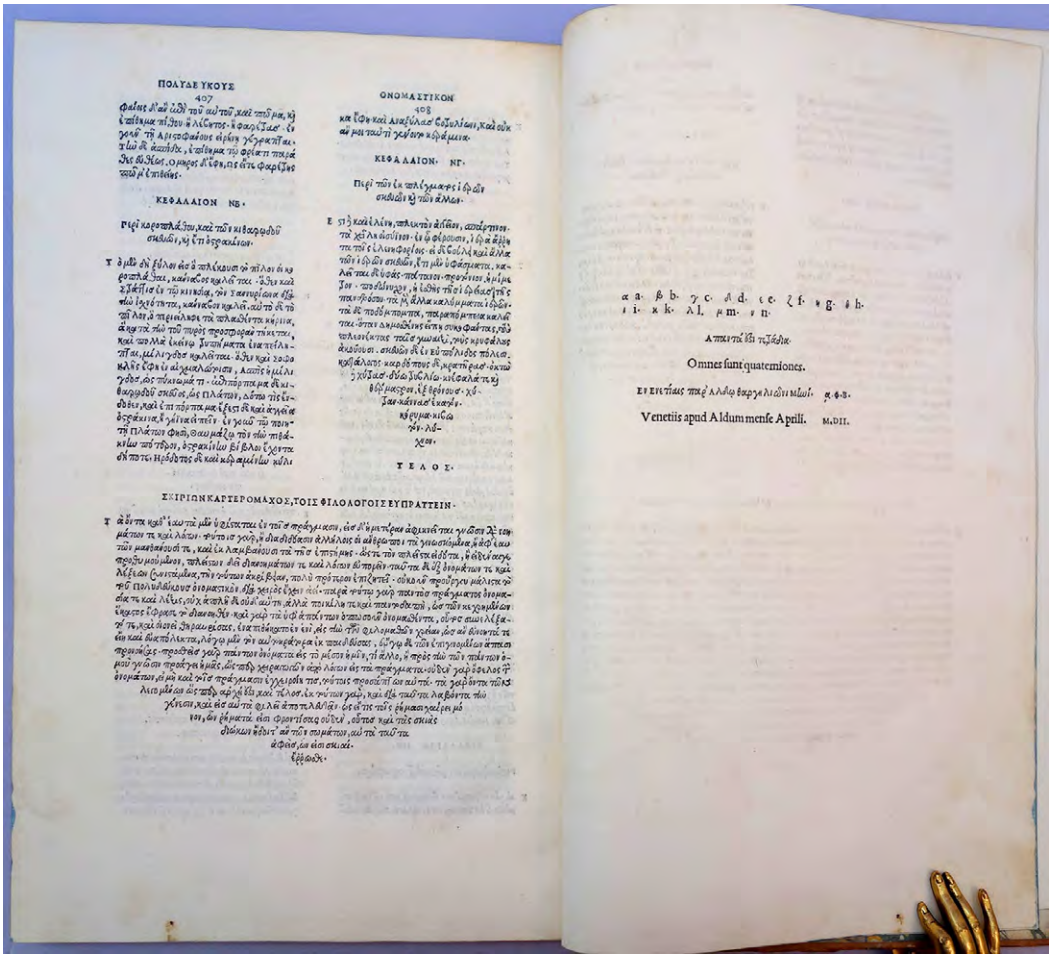


"Nearly a Complete Enumeration"

39. Phillips, John (1800–1874). Autograph letter signed to an unidentified correspondent. 3pp. York, 6 November 1851. 157 x 101 mm. Insignificant loss caused by removal from mounting, not affecting text, but very good. $750

From British geologist John Phillips, nephew and ward of the famous British geologist William Smith and author of several significant works on geology. After completing his education, Phillips accompanied his uncle on various research tours made in connection with Smith's geological maps, and assisted Smith in giving courses of geological lectures in York. In 1826 Phillips became keeper of the Yorkshire Museum and secretary of the Yorkshire Philosophical Society. In 1831 he helped to found the British Association for the Advancement of Science, and served as the BAAS's first assistant secretary from 1832 to 1859. In 1834 Phillips was appointed professor of geology at King's College, London; and in 1856 he succeeded William Buckland to the readership of geology at Oxford University. During his tenure at Oxford Phillips helped to found the Oxford Museum, and served as curator of the Ashmolean Museum from 1854 to 1870.

In the present letter Phillips answers his correspondent's request for a list of his publications, giving "nearly a complete enumeration" of his works to date including his *Illustrations of the Geology of Yorkshire* (1829–36), *Treatise on Geology* (1837–39) and several papers on geology contributed to periodicals and encyclopedias. "I enclose the prospectus of one more work now in hand [probably *The Rivers, Mountains and Sea-Coast of Yorkshire* (1853)] but omit notice of several smaller Essays. In the Transactions of the Yorkshire Phil. Society is an Essay on ancient mining. Of these Transactions one Vol. has appeared, but there has been some tardiness in producing the second—which ought to have appeared long since." 43359



No. 40. Last text page and colophon

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

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

Editio princeps. One of the most significant intellectuals of the later second century CE, the apogee of Hellenism under the Roman Empire, Pollux, a Greek grammarian and sophist from Alexandria, was appointed professor of rhetoric at the Academy in Athens by the Roman Emperor Commodus (son of Marcus Aurelius). His only surviving work, the Onomasticon, a thesaurus of Attic Greek synonyms and phrases arranged thematically in ten books, is the oldest specimen of encyclopedism surviving from antiquity. It is also the only surviving Greek lexical work with an onomastic structure: not an alphabetic sequence of lemmata but topical assemblages of synonyms.

The *Onomasticon* is divided into ten books, each of which contains a short dedication to Commodus as *Caesar*, indicating that the work was published before 177 CE since Commodus became *Augustus* in that year. Each book forms a separate treatise by itself, containing the most important words relating to certain subjects, with short explanations of the meanings of the words, which are frequently illustrated by quotations from the ancient writers. Instead of an alphabetical arrangement, the words are arranged according to the subjects treated of in each book. The object of the work was to present youths with a kind of store-house, from which they could

borrow all the words of which they had need, and could at the same time learn their usage in the best writers.

The *Onomasticon* "supplies in passing much rare and valuable information on many points of classical antiquity— objects in daily life, the theater, politics— and quotes numerous fragments of lost works. Pollux was probably the person satirized by Lucian as a worthless and ignorant person who gains a reputation as an orator by sheer effrontery, and pilloried in his Lexiphanes, a satire upon the affectation of obscure and obsolete words" (*Encyclopaedia Britannica* [1999]).

The *editio princep*s of Pollux's *Onomasticon*, issued by Aldus Manutius in 1502, made the work widely available to Renaissance scholars and antiquaries, and anatomists of the period drew on the *Onomasticon* for obscure Greek words to describe parts of the body. The *Onomasticon* was a valuable source of information for several important nineteenth-century works of classical scholarship, and has continued to attract the interest of researchers in a variety of fields—for example, in 2004, John H. Dierkx published an article on "Dermatologic terms in the Onomasticon of Julius Pollux" in *The American Journal of Dermatopathology.* Adams P-1787. Ahmanson-Murphy 54. Renouard, pp. 32-33. 40354

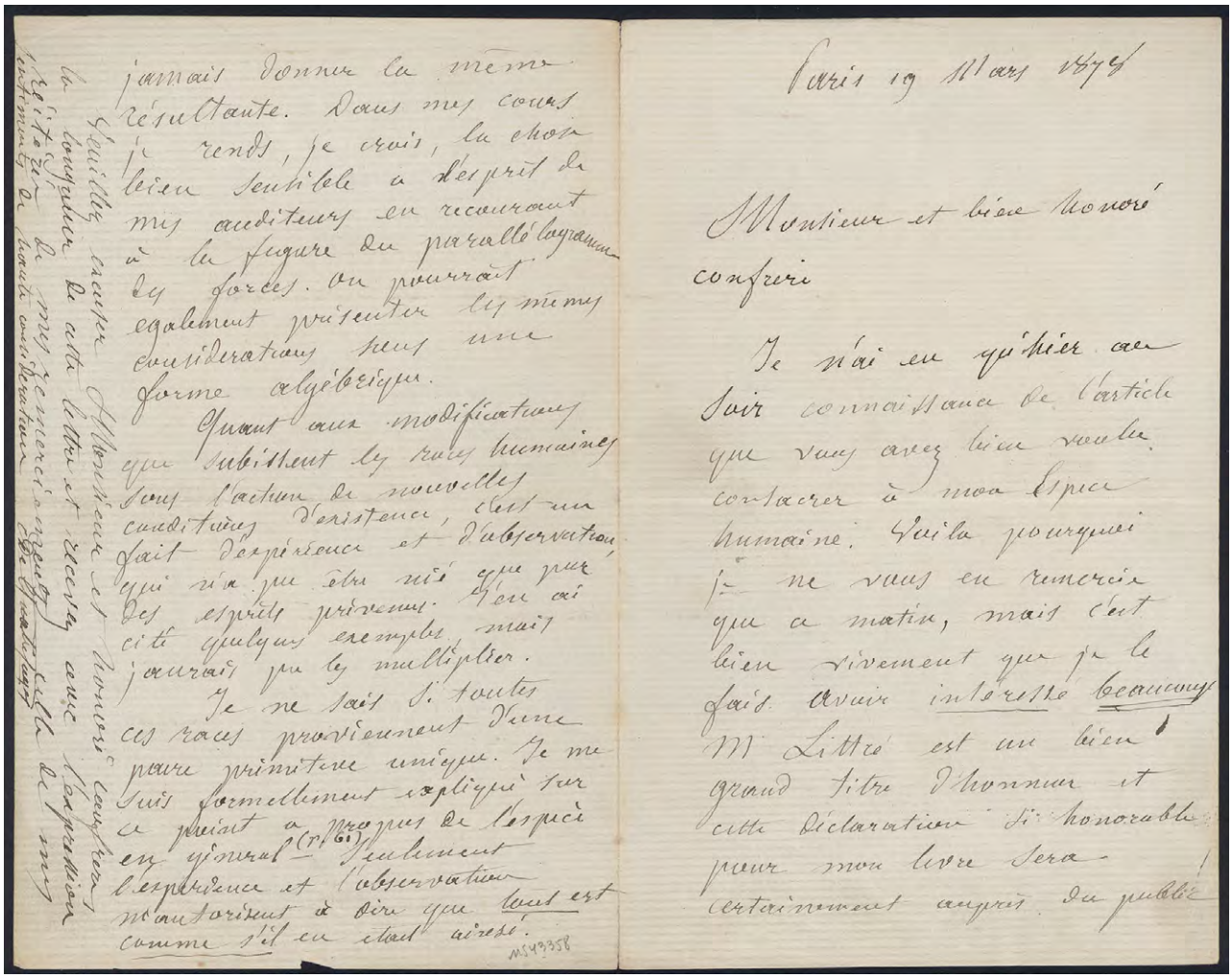
Quatrefages on Human Evolution and Race

41. Quatrefages de Bréau, Jean Louis Armand (1810-92). Autograph letter signed, in French, to "Monsieur et bien honoré confrère"; i.e., Emile Littré (1801-81). 4pp. Paris, 19 March 1878. 214 x 135 mm. A few tiny marginal tears, but very good. $1250

Excellent letter on human evolution and race from French anthropologist Armand de Quatrefages, professor of anthropology and ethnology at the Muséum Nationale d'Histoire Naturelle and author of numerous influential works on anthropology. His correspondent was the great French philosopher and lexicographer Emile Littré, who had recently published a long review of Quatrefage's *L'espèce humaine* (1877) in his journal *La philosophie positive* (Vol. 20 [1878]: 161-169).

In *L'espèce humaine* Quatrefage discussed the question of human origins, which had become a hot topic after the publication of Darwin's *Descent of Man* (1871). Littré's review was quite critical of the ideas expressed in *L'espèce humaine*, for even though Quatrefages and Littré both rejected Darwin's evolutionary views, the two men held sharply diverging opinions on the subject of human origins. Quatrefages, a monogenist, believed that all of humanity had originated from a single ancestral pair, with the various human races developing over time through the combined actions of heredity and environment. Littré, on the other hand, was a polygenist who believed that each of the human races had derived from a separate source.

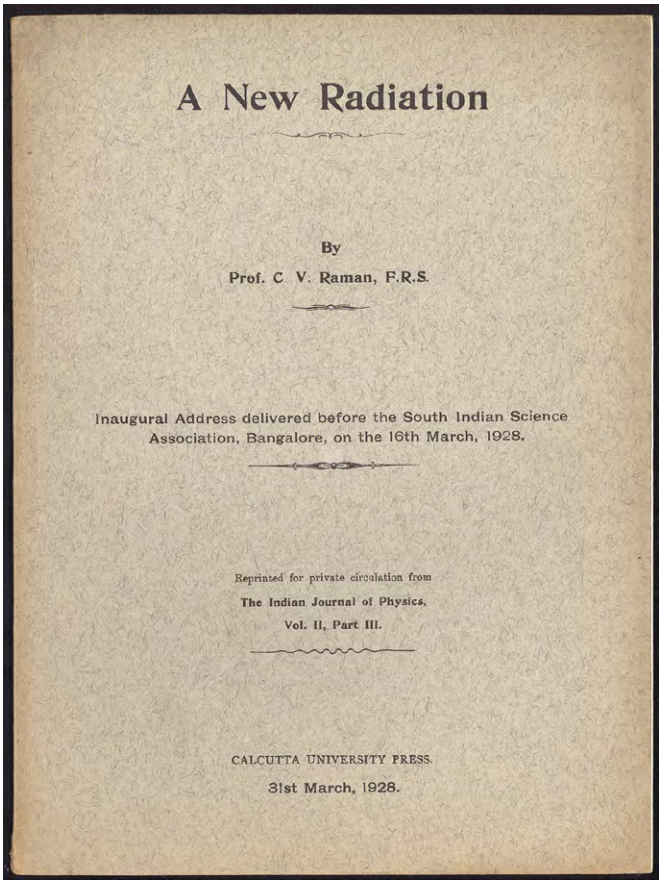
In his review Littré refused to accept the possibility of one race transforming into another: "Despite the interfecundity of the human races, I reject their common origin, because there has been no experimental evidence for the transformation of a white man to a black man or a black to a white" (p. 169). Quatrefages answered this point at length in his letter:



It is true we have never seen the transformation of a white man to a Negro. But this transformation is impossible to anyone who admits the doctrine of the formation of races under the influence of environmental conditions. Whites and Negroes are the result of a sum of very different actions. Place a white man in the country of the Negroes; he will undergo new experiences, but he will nevertheless keep the [hereditary] imprint previously received. The sum of his parts inevitably will differ from the sum of the components of the Negro. So he will never produce the same result. In my classes I render the thing quite understandable, I think, to the minds of my listeners by using the figure of the parallelogram of forces. One could also present the same considerations in algebraic form.

As to the changes experienced by human races under the influence of new conditions of existence, this is a fact of experience and observation, which has been denied by prejudiced minds . . .

Staum, *Nature and Nurture in French Social Sciences, 1859-1914 and Beyond,* pp. 57-58. 43358


A New Radiation

By

Prof. C V. Raman, F.R.S.

Inaugural Address delivered before the South Indian Science Association, Bangalore, on the 16th March, 1928.

Reprinted for private circulation from
The Indian Journal of Physics,
Vol. II, Part III.

CALCUTTA UNIVERSITY PRESS.
31st March, 1928.

The Raman Effect—"One of the Most Convincing Proofs of the Quantum Theory of Light"

42. Raman, Chandrasekhara Venkata (1888-1970). A new radiation. Inaugural address delivered before the South Indian Science Association, Bangalore, on the 16th March, 1928. Offprint from *Indian Journal of Physics* 2, part 3 (1928). 12pp. Plate. 245 x 184 mm. Original wrappers, slightly darkened at edges. Fine copy.

$8500

First Edition, Rare Offprint Issue of Raman's seminal paper on the Raman effect, for which Raman received the Nobel Prize in Physics in 1930. While studying the scattering of light by fluids and other substances, Raman and his assistants noted a weak secondary radiation that was shifted in wavelength. Further examination of this phenomenon revealed that this secondary radiation showed several spectroscopic lines shifted toward longer wavelengths; "these now-called Raman lines are due to the loss or gain of energy experienced by photons as a result of their interaction with the vibrating molecules of the substance through which they pass" (Weber, p. 93). Raman made his first clear observation of the Raman effect on February 28, 1928 and reported his findings in the present paper, read at the Science Congress at Bangalore on March 16. The American optical physicist R. W. Wood called the Raman effect "one of the most convincing proofs of the quantum theory of light" (quoted in *Dictionary of Scientific Biography*). In 1998 the Raman effect was designated a National Historical Chemical Landmark by the American Chemical Society in recognition of its significance as a tool for analyzing the composition of solids, liquids and gases. Mehra & Rechenberg, *Historical Development of Quantum Theory* 6, pp. 355-361. Weber, *Pioneers of Science*, pp. 93-94. 43343

One of the Rarest Books in the History of Anesthesia— No Copies Recorded in North America

43. Sagra, Ramon de la (Ramón Dionisio José de la Sagra y Peris) (1798-1871). L'ame: Démonstration de sa réalité déduite de l'étude des effets du chloroforme et du curare sur l'économie animale. [4], 225pp. Paris: Germer-Baillière, 1868. 178 x 113 mm. Quarter morocco, mottled boards ca. 1868, light edgewear and scuffing. Very good to fine copy. Sold

Rare First Edition, with OCLC recording no copies in North America and only two copies in all (both in the British Library); the USTC also locates 4 copies in France. In this singular work, seemingly unknown to historians of anesthesia, the author attempted to deduce the existence and reality of the human soul by studying the physiological actions of curare and chloroform on the nervous system. Most of Sagra's work is devoted to a detailed and well-documented analysis of the effects these drugs produce in the body, along with a critique of current scientific theories of anesthesia. He argued that the anesthetic and paralytic effects of curare, ether and chloroform act only on the "physical and material" parts of the nervous system responsible for motion and

sensation, leaving the "functions of intellectual life" unaffected. Since anesthetic drugs cannot affect the intellect, this proves (according to the author) the existence of the immaterial soul.

Sagra led a most unusual life. A native of Galicia, a province in northwest Spain, he studied anatomy, medicine, mathematics and pharmacy at a local university before involving himself in liberal politics. He emigrated from Spain to Cuba in 1821, where he was appointed a professor of natural history and published books printed in Cuba on the history and economy of the island. After traveling in the Americas, and publishing accounts of his travels, he returned to Europe in 1835, where he settled in Paris, became a disciple of the radical French politician Pierre-Joseph Proudhon, and founded the world's first anarchist journal, *El Porvenir.* Sagra was elected a member of the Spanish Parliament four times between 1838 and 1854, but was forced to leave Spain two years later because he was spreading Socialist ideas. He returned to Paris, where he met Karl Marx and Friedrich Engels and served as consul of Uruguay. He died in Switzerland at the age of 73. 43355

Schrödinger Creates Wave Mechanics—Extremely Rare Offprints

44. Schrödinger, Erwin (1887-1961). Quantisierung als Eigenwertproblem. 4 parts. Offprints from *Annalen der Physik*, 4th series, 79 (1926) – 81 (1926). [361]-76; 489-527; [437]-490; [109]-139pp. 227 x 146 mm. Unbound as issued (part 1 without backstrip). Minor dust-soiling and wear, first part vertically creased, otherwise very good. From the library of physicist Gregor Wentzel (1898-1978), with his signature in pencil on the first two parts. $30,000

First Editions, Extremely Rare Complete Set of Four Offprints. The *principia* of wave mechanics, which, together with Heisenberg's matrix mechanics (1925) marked the birth of quantum mechanics. Schrödinger received half of the 1933 Nobel Prize for physics for this achievement, sharing the prize with Paul Dirac, whose relativistic equation of the electron (1928) was founded on Schrödinger's wave mechanics.

Schrodinger's wave mechanics arose from his work on a new atomic theory, which he began in 1925.

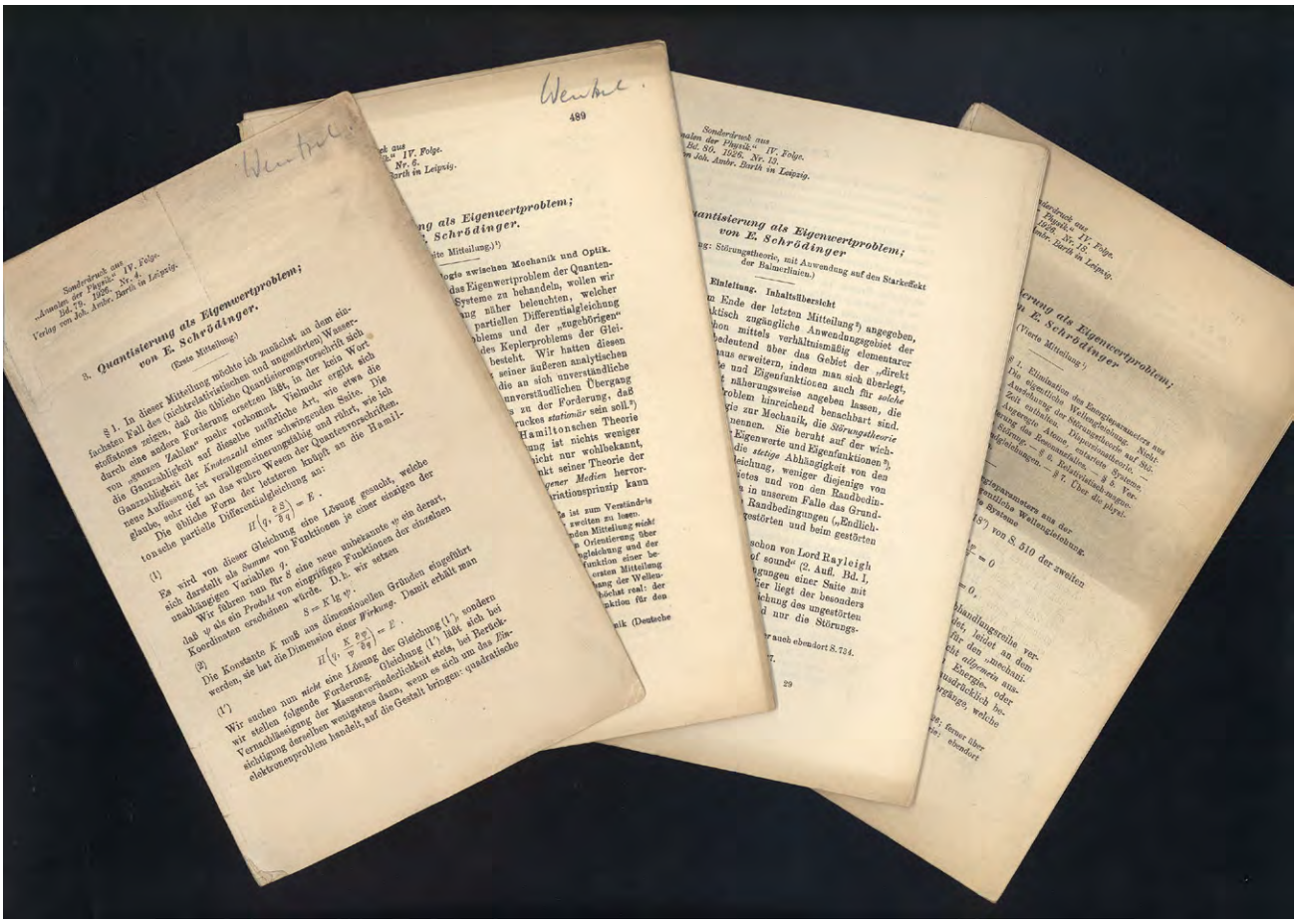
> Schrödinger was profoundly influenced by de Broglie's work on waves associated with the motion of free particles (1923-34) and he set about trying to apply this concept to bound particles, to improve on the Bohr model of the atom. In Schrödinger's atom an electron can be in any orbit in which its matter wave fits in a whole number of wavelengths. This picture of a standing wave replaces that of an electron in accelerated circular motion; so long as the electron remains in orbit it need not radiate light, and there is no violation of Maxwell's equations. . . . Schrödinger's wave equation is the key relationship in a mathematical fabric which was one of the most surprising and important of the sudden advances that have occurred in the development of physics (Weber, *Pioneers of Science*, p. 99).

His first attempt, in which he treated the electron relativistically, failed because he did not take into account electron spin, which had not yet been recognized (electron spin was discovered by Uhlenbeck and Goudsmit in 1925).

> [He began by] writing down a relativistic wave equation for the electron (mass m, charge –e) in a hydrogen atom (i.e., in the Coulomb field of its nucleus). . . . The solution by the standard method of eigenvalues yielded energy states which disagreed with those of Sommerfeld's fine-structure formula of 1915, hence Schrödinger abandoned [this attempt]; however, he soon (around Christmas 1925) discovered that the non-relativistic approximation yielded the correct Balmer spectrum. He worked out the whole theory in some detail, and on 27 January 1926 the Annalen der Physik received his paper containing an exhaustive treatment of the hydrogen problem (*Twentieth Century Physics*, I, p. 194).

"It soon became apparent that he had arrived at a theory that correctly represented the behavior of the electron to a very good approximation. The result was the emergence of wave mechanics in January 1926" (*Dictionary of Scientific Biography*). Shortly afterwards several physicists, including Pauli and Schrödinger himself, proved that Schrödinger's wave mechanics was equivalent to Heisenberg's matrix mechanics.

The first part of Schrodinger's four-part paper contains the first appearance of his famous wave equation, written for the hydrogen atom; the following papers contain his attempts to find wave equations for many-electron



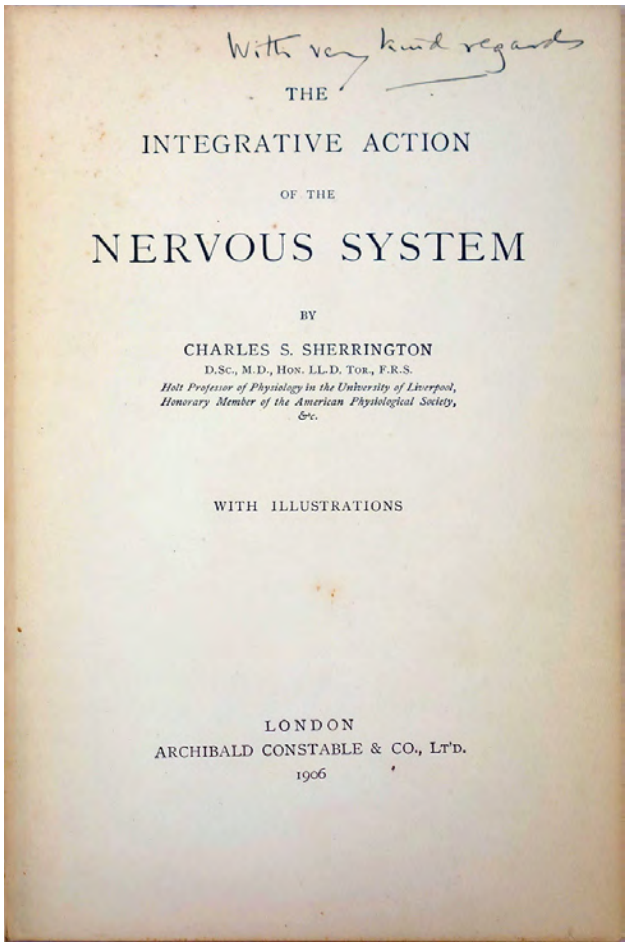
atoms and molecules. "The author and many other physicists soon started to apply the Schrödinger equation to many problems of atomic theory: band spectra, intensities of x-ray spectra, Stark effect, the helium problem, collision phenomena, and the Compton effect. The methods of differential equations in wave mechanics proved to be much more powerful and easier to handle than the clumsy matrix method [of Heisenberg] or the tricky q-number formalism [of Dirac]" (*Twentieth Century Physics*, 1, p. 196). This set of offprints is from the library of German physicist Gregor Wentzel, who also made contributions to quantum mechanics; he is best known for the Wentzel-Kramers-Brillouin approximation for finding approximate solutions to linear partial differential equations with spatially varying coefficients. Moore, *Schrödinger,* ch. 6. These offprints are **exceptionally rare**—this is the second set we have handled in fifty years. 43345

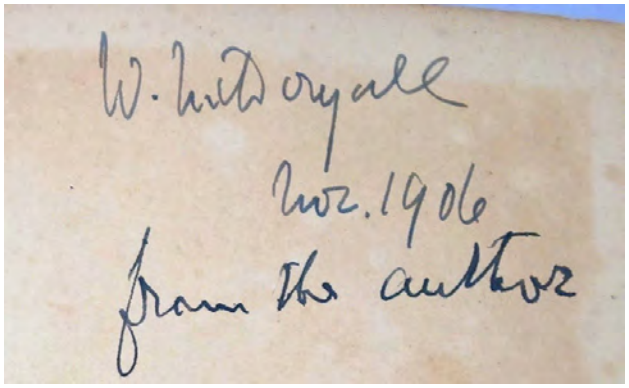
"True Foundation of Modern Neurophysiology"—Extremely Rare Presentation Copy Inscribed to William McDougall

45. Sherrington, Sir Charles (1857–1952). The integrative action of the nervous system. 8vo. xvi, 411pp. Text illustrations (some full-page). London: Archibald Constable & Co., 1906. 223 x 148 mm. Original cloth, a bit shaken, corners a bit worn, crack in cloth across lower spine, front joint reglued. Some foxing and browning on first and last leaves, several leaves dog-eared, presumably by the recipient. Good copy, showing signs of being read by the recipient. *Extremely Rare Presentation Copy, Inscribed by Sherrington* on the title: "With very kind regards." Signature (dated Nov. 1906) of the recipient, British psychologist William McDougall (1871-1938), on the half-title, with his note "From the author"

beneath; extensive notes in McDougall's hand on rear pastedown and verso of last index leaf, McDougall's numerous marginal lines in ink and pencil throughout the book marking paragraphs of interest.

$9,500


With very kind regards
THE
INTEGRATIVE ACTION
OF THE
NERVOUS SYSTEM
BY
CHARLES S. SHERRINGTON
D.Sc., M.D., Hon. LL.D. Tor., F.R.S.
Holt Professor of Physiology in the University of Liverpool, Honorary Member of the American Physiological Society, &c.
WITH ILLUSTRATIONS
LONDON
ARCHIBALD CONSTABLE & CO., Lt'd.
1906

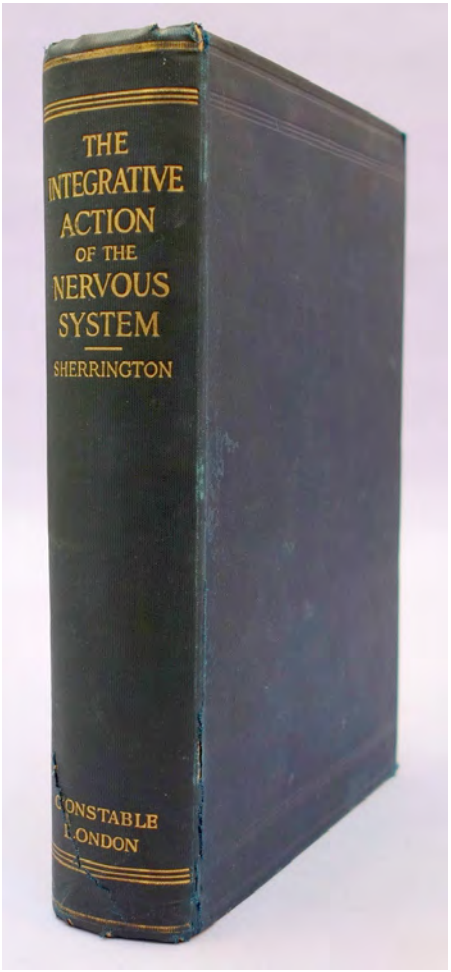

W. McDougall
Nov. 1906
from the author

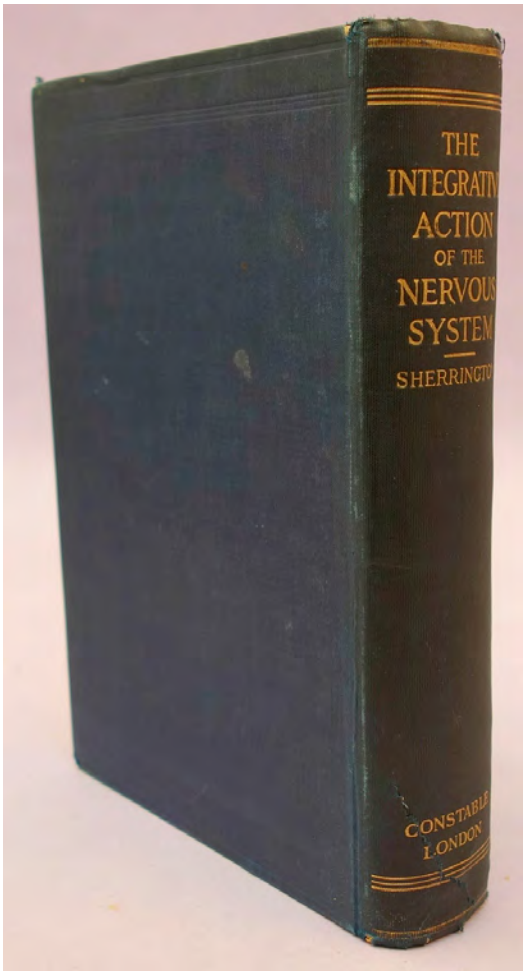
First Edition, British Issue. An extremely rare presentation copy of Sherrington's classic work, which "stands as the true foundation of modern neurophysiology" (*Garrison's History of Neurology,* p. 229). This is the only copy of Sherrington's classic inscribed by Sherrington to a known recipient that we have seen on the market during the past fifty years. The only other presentation copy that we handled was a copy of the American issue inscribed by Sherrington to an unidentified recipient. We handled that copy, which was exhibited in the *Hundred Books Famous in Medicine* exhibition at the Grolier Club, approximately forty years ago.

Sherrington's neurophysiological researches "bridged the gap between the theoretical and speculative neurology of the nineteenth century and the empirical science of the twentieth. He carried out an extensive program of experimentation, and the results of these investigations placed clinical neurology on a sound scientific footing. His *Integrative Action of the Nervous System,* which summarized twenty years of intensive investigation, has been compared to William Harvey's *De Motu Cordis* for its significance as a turning point in the history of physiology" (Grolier Club, *100 Books Famous in Medicine,* p. 326). Sherrington received a share of the 1932 Nobel Prize in physiology or medicine for his work on the functions of neurons.

Sherrington presented this copy to British psychologist William McDougall, author of the influential *Introduction to Social Psychology* (1908) and a founder of the British Psychological Society. Sherrington must have had a high opinion of McDougall, as he used his influence on occasion to help advance the younger man's career. In 1912 Sherrington sponsored McDougall for election to the Royal Society, filling out McDougall's candidate's certificate. After Sherrington obtained the Waynflete Professorship of Physiology at Oxford University in 1913, he helped McDougall, who was then the university's Wilde Reader in Mental Philosophy, to establish Oxford's first laboratory of experimental psychology.

The Integrative Action of the Nervous System is based on a series of Silliman Lectures that Sherrington delivered at Yale University in 1904. There are two issues of the 1906 first edition: The American issue, with the imprint of Charles Scribner's Sons, New York; and the British issue, with the imprint of Archibald Constable, which consists of the American-printed sheets with a new title. Although *Printing and the Mind of Man* and other bibliographies give the first edition's American imprint as "New Haven: Yale University Press," this is an error, as Yale

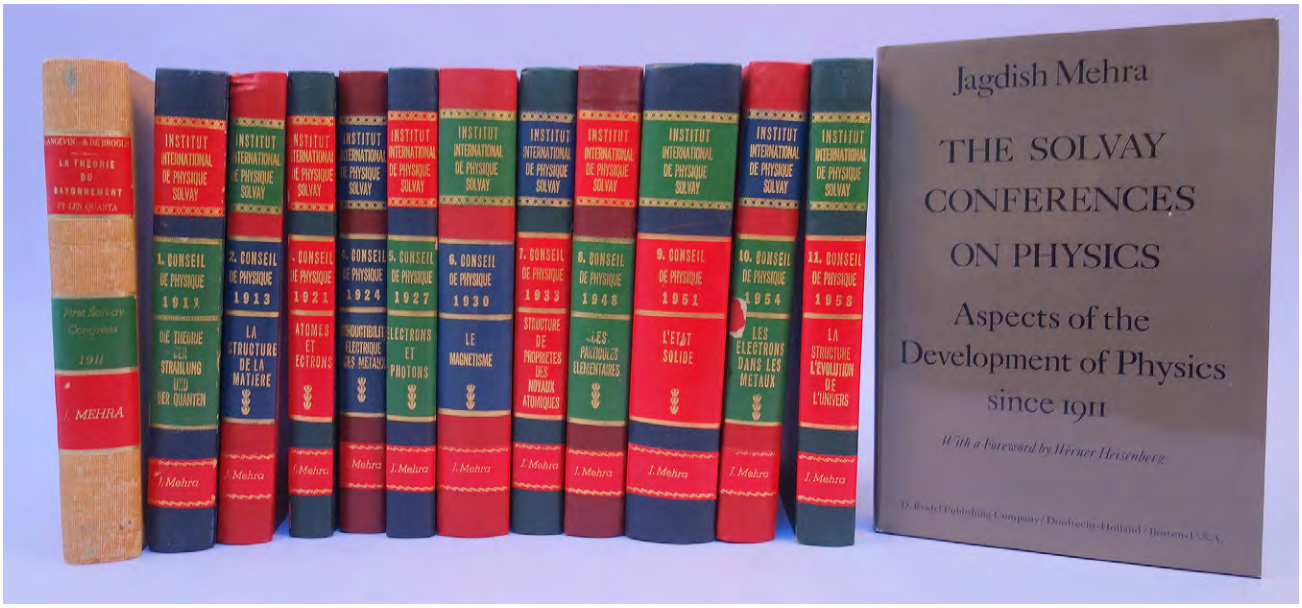




did not take over the publication of Sherrington's book until the second printing of 1911. Dawson's catalogue 214 (Feb. 1971) states that publishing records show the British issue being published in October 1906, whereas the American issue was not published until December 8, 1906; it is thus claimed that the British issue is prior. This claim, although disputed, would tend to be confirmed by McDougall's dating the receipt of his copy in November 1906. Whatever the case, it is certainly logical that Sherrington, an Englishman, would have given copies of the British issue of his book to friends or colleagues. Garrison-Morton 1432. Fulton, Sherrington, p. 182. Grolier Club, *100 Books Famous in Medicine*, 90. Norman 1939. *Printing and the Mind of Man* 397. Ratcliffe, Jessica, "New acquisition: Experimental psychology instruments." *Sphæra: The Newsletter of the Museum of the History of Science, Oxford.* Oxford Museum of the History of Science, n.d. Web. Accessed 24 Nov. 2014. "William McDougall (1871-1938)." History of Psychology Centre. British Psychological Society, n.d. Web. Accessed 24 Nov. 2014. 43319

Mehra's Set of the Solvay Conferences

46. Solvay Conferences. Set of the transactions of the first 11 Solvay conferences (the first volume present in both the original French and the German translation of 1914). 12 vols. total. V.p., 1912-1958. 230 x 156 mm. (approx.). Bound for historian of physics Jagdish Mehra (1931-2008) in library buckram, gilt-lettered spine labels (some a little chipped). Occasional library stamps and markings, light toning, but very good. With: **Mehra, Jagdish** (1931-2008). The Solvay Conferences on physics: Aspects of the development of physics since 1911. xxxii, 415pp. Dordrecht and Boston: D. Reidel Publishing Co., 1975. Original cloth, dust-jacket. Mint. $1850



First Editions, plus **First Edition in German** of the first volume of transactions. In 1911 the Belgian industrialist Ernest Solvay invited a group of the world's most prominent physicists, including Einstein, Planck, Lorentz, Sommerfeld, Rutherford and Marie Curie, to participate in a scientific conference on the difficulties of reconciling classical physics with quantum theory. The conference "set the style for a new type of scientific meetings, in which a select group of the most well informed experts in a given field would meet to discuss the problems at its frontiers, and would seek to define the steps for their solution" (Mehra, *Solvay Conferences,* p. xv). The first Solvay Conference—widely considered a turning point in the history of modern physics—was so successful that in the following year Solvay established a foundation, now known as the International Solvay Institutes for Physics and Chemistry, "to encourage the researches which would extend and deepen the knowledge of natural phenomena" (*ibid.*) and to sponsor further conferences. The next two Solvay Conferences met in 1913 and 1921; subsequent conferences have been held every three years except during wartime.

The first eleven Solvay Conferences were devoted to the following topics:

No. 1 (1911): The theory of radiation and quanta

No. 2 (1913): The structure of matter

No. 3 (1921): Atoms and electrons

No. 4 (1924): Electrical conductivity of metals and related problems

No. 5 (1927): Electrons and protons

No. 6 (1930): Magnetism

No. 7 (1933): Structure and properties of the atomic nucleus

No. 8 (1948): Elementary particles

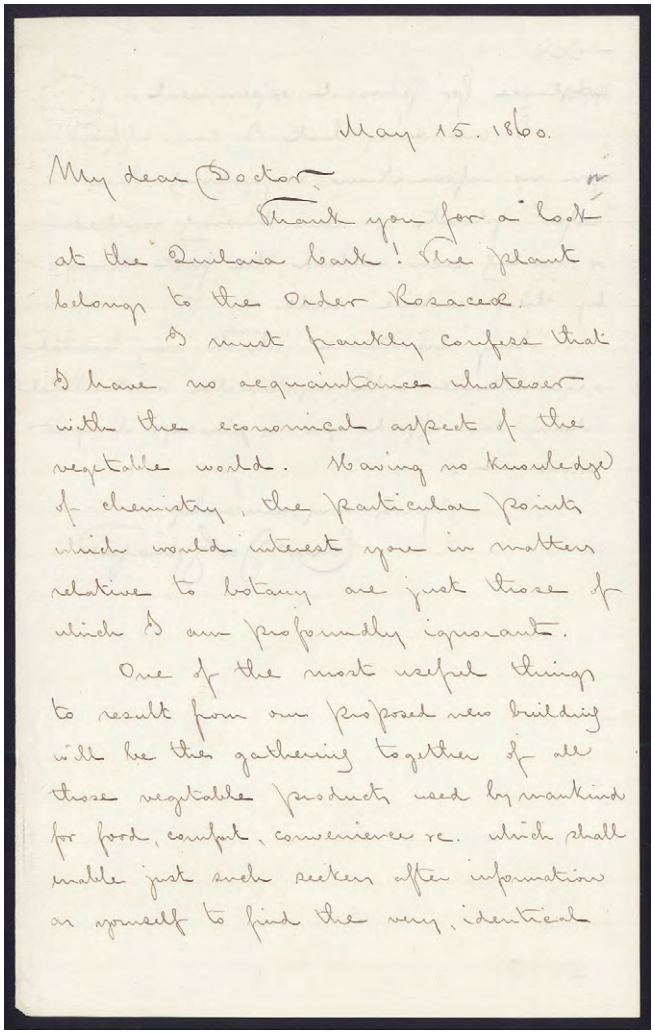
No. 9 (1951): The solid state

No. 10 (1954): Electrons in metals

No. 11 (1958): The structure and evolution of the universe

The most famous of these early conferences, besides the first one, was undoubtedly the fifth (1927), where the participants met to discuss the newly formulated quantum mechanics. It was there that Einstein, disenchanted with Heisenberg's uncertainly principle, made his famous remark that "God does not play dice," to which Niels Bohr replied, "Einstein, stop telling God what to do!"

This set is from the library of historian of physics Jagdish Mehra, who used it when writing his *Solvay Conferences on Physics: Aspects of the Development of Physics since 1911.* A copy of this work is included with the set. 43383



May 15. 1860.

My dear Doctor

Thank you for a look at the Quilaia bark! The plant belongs to the Order Rosaceæ.

I must frankly confess that I have no acquaintance whatever with the economical aspects of the vegetable world. Having no knowledge of chemistry, the particular points which would interest you in matters relative to botany are just those of which I am profoundly ignorant.

One of the most useful things to result from our proposed new building will be the gathering together of all those vegetable products used by mankind for food, comfort, convenience etc. which shall enable just such seekers after information as yourself to find the very identical

"The Plant Belongs to the Order Rosaciae"

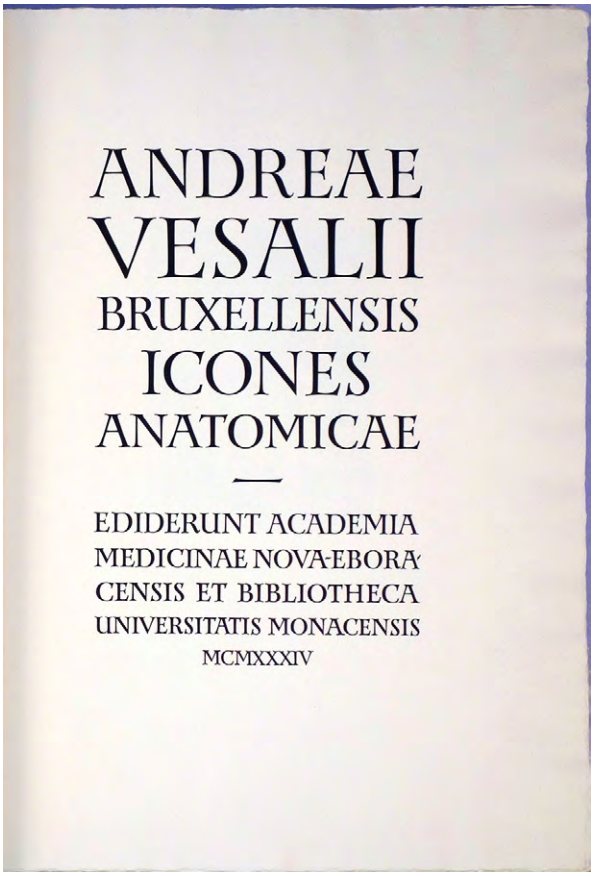
47. Sprague, Charles James (1823-1903). Autograph letter signed to "My dear Doctor" [David Humphreys Storer (1804-91)]. 2pp. plus integral blank. N.p., May 15, 1860. Creased where folded, faint traces of mounting on verso of blank leaf, but very good. $375

From Charles James Sprague, botanical curator of the Boston Society of Natural History (now the Boston Museum of Science) to fellow naturalist and BSNH member David H. Storer. Sprague specialized in the study of lichens, amassing a large collection of specimens that is now housed at Harvard University. He was an intimate friend of botanist Asa Gray (best known as an early supporter of Darwin's theory of evolution), and contributed many valuable specimens and critical notes to Gray's collections. Sprague's correspondent, David H. Storer, was a physician and naturalist who in 1837 was appointed one of the commissioners of the Natural History Survey of the Massachusetts Commonwealth. Storer spent 30 years recording and classifying the state's fish and reptiles, publishing his findings both as part of the survey and in separate works such as *A History of the Fishes of Massachusetts* (1867).

Sprague's letter reads in part:

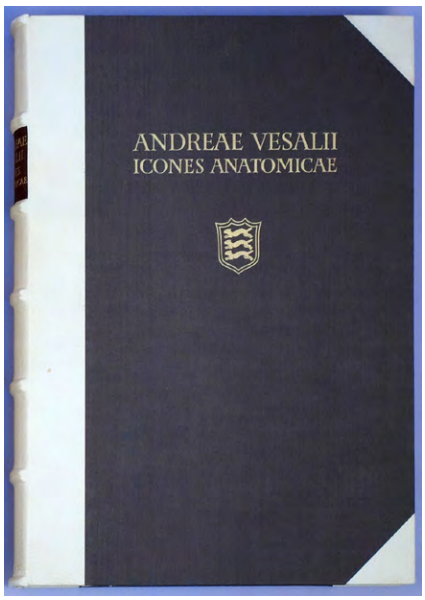
> Thank you for a look at the Quil[l]aia bark! The plant belongs to the Order Rosaciae.
>
> I must frankly confess that I have no acquaintance whatever with the economical aspects of the vegetable world. Having no knowledge of chemistry, the particular points which would interest you in matters relative to botany are just those of which I am profoundly ignorant.
>
> One of the most useful things to result from our proposed new building will be the gathering together of all those vegetable products used by mankind for food, comfort, convenience etc. which will enable just such seekers after information as yourself to find the very identical substance for personal experiment. . . .

In the last paragraph quoted Sprague refers to the BSNH's plan to construct a new museum building; the building, designed by William Gibbons Preston, opened in 1864 and remained in use until 1949. "Charles James Sprague" [obituary notice], Rhodora 5 (1903): 234. "David Humphreys Storer," *Proceedings of the American Academy of Arts and Sciences* 27 (1893): 388-391. 43321

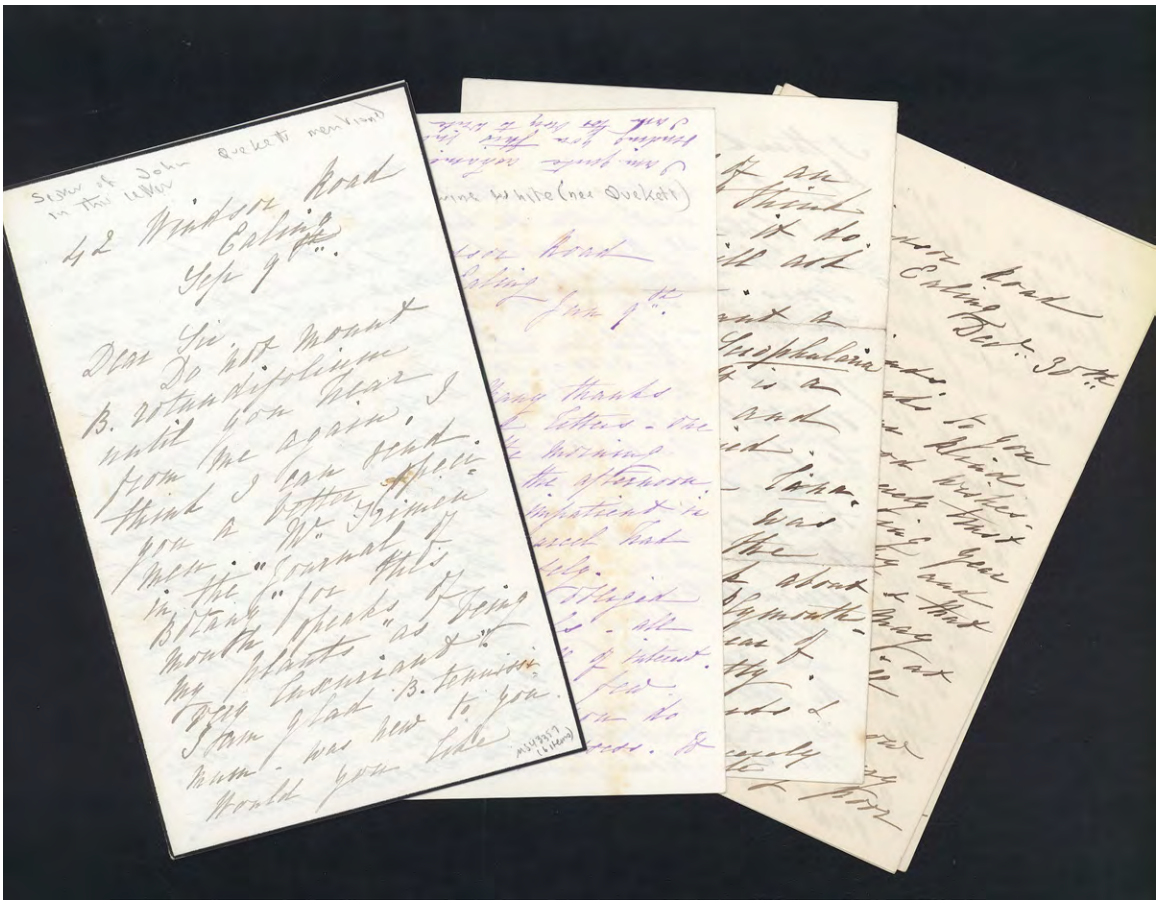


The Finest Scientific Book by a Modern Private Press

48. Vesalius, Andreas (1514-64). Icones anatomicae. Large folio. 189ff. (Supplementary leaf "To the Reader," issued in 1936, laid in loosely). Original half white pigskin over dark grey boards, morocco label on spine, gilt supra-libros, by Frieda Thiersch, plain dust-jacket (a little worn and chipped); preserved in original box (faded, slightly worn, one or two corners separated). 540 x 375 cm. New York & Munich: Printed by the Bremer Press for the New York Academy of Medicine and the University of Munich, 1934. Apart from the wear to the plain dust wrapper and the box, this is a very fine, virtually immaculate copy. $9500



Reprints on the finest hand-made rag paper, and with the greatest possible care and craftsmanship, the 227 original woodblocks from the *Fabrica* found in the University of Munich together with the woodblock for the titlepage of the second edition of the Fabrica found in the University of Louvain. The missing woodblocks were reproduced photographically, along with all the illustrations from Vesalius's other works. The original descriptive Latin text for the illustrations taken from the 1555 edition is interspersed in finely set letterpress on thinner paper. One of 615 numbered copies. 110 other copies without the text were sold in Munich in a different binding. This is the last, and also the mostly finely printed edition, to reproduce the original woodblocks for the 1543 *Fabrica*. All of the original woodblocks were destroyed in the bombing of Munich in 1943. Cushing VI.A.-16. 43329



With Original Photographs of the Husband & Wife Team of Botanists

49. White [nee Quekett], Eliza Catherine (1812-75). (1) Four autograph letters signed to Robert Morton Middleton, Jr. (1846-1909), plus one incomplete letter and another incomplete letter from her husband, botanist Charles Frederick White (1818-76). Ealing, n.d. [ca. 1870-75]. 23pp. total. Various sizes. (2) Two portrait photographs, one of C. F. and E. C. White together, and the other of C. F. White alone. N.p., n.d. Mounted; mounts measure 229 x 163 mm. Some minor fraying to one letter, photographs somewhat faded, but overall very good. Accompanied by an offprint of C. F. White's obituary published in *Proceedings of the Linnean Society* (1896-97). $1250

Letters with excellent botanical content from Eliza Catherine White, "a most accomplished woman, a good British botanist, a keen collector of Mosses, Micro-Fungi, Bryozoa, etc., and a lady of considerable artistic ability" (*Journal of the Linnean Society: Botany* 33 [1897-98]: 73). She was the sister of John Quekett (1815-61), the pioneering microscopist and histologist, who succeeded Richard Owen as Conservator of the Hunterian Museum. In 1849 Eliza married Charles Frederick White, a botanist and botanical artist specializing in mosses, microscopic fungi and pollens; both Charles and Eliza were members of the Linnean Society. Her correspondent was British botanist and anthropologist Robert Morton Middleton, Jr., a fellow member of the Linnean Society who specialized in the plants of Britain and North America; his herbarium, consisting of some 3000 specimens, was presented to McGill University in 1890. Middleton was also a collector of autographs, an interest mentioned several times in Eliza White's letters to him.

In her letter dated June 9, White writes that she is "indeed charmed to receive Avena fatua [common wild oat]" and that "Wolffia [a type of duckweed] always retires from public life in the winter just like the other Lemnas." In the same letter she mentions her wish to have the autograph of Paul du Chaillu, the French-American explorer who was the first modern European to confirm the existence of the gorilla, and recalls that she had

"had the gratification (?) of entertaining Du Chaillu at lunch one day when my brother was ill in bed—he told me that he could relate many more wonderful things 'but that we were not ready for such rich milk.'" In her letter of September 9 she mentions finding specimens of Buxbanmia aphylla (a species of moss) and Triglochin palustris (slender bog arrow-grass); in her letter of January 27 she offers Middleton "a specimen of Scrophularia vernalis" (yellow figwort) and notes that "Hypericum linariifolium [flax-leaved St. John's wort] was gathered on the top of a bank about 5 miles from Plymouth." In a long letter dated August 28 White laments having "lost all the Zoophytes" she was intending to send to Middleton, but offers him a specimen of Carex ornithopoda (bird's-foot sedge) to make up for her carelessness; later she notes that "Mr. Baker [John Gilbert Baker (1834-1920), botanist at Kew Gardens and author of numerous botanical works] has named and returned my collection of Chinese plants—the tulip seems to be a wonder. He tells me that it is to appear in the next Journal." The letters are accompanied by two portrait photographs, probably taken in the 1860s; one shows Eliza and Charles White standing together with hands clasped, and the other shows Charles seated and holding a pair of spectacles. 43357

50. Willis, Francis (1717-1807). Doctor Willis. Medal in tin showing Willis in three-quarter profile on the obverse, with the reverse reading "Britons rejoice your king's restored 1789." Signed "C. I." on the obverse, followed by a serpent (?). N.p., 1789. 34 mm. diameter. Minor discoloration, tiny nick in edge, but very good. $950

A medal commissioned by Willis to commemorate his successful treatment of George III, who had suffered his first attack of madness in the summer of 1788. Willis was called in to treat the ailing monarch shortly afterwards and over the next few months he subjected the king to several of the standard 18th-century treatments for insanity including forcible restraint, blistering, coercion and the application of leeches to the temples; he also prescribed a regime of fresh air and physical exercise. The king recovered his sanity in 1789, which prompted a frenzy of national rejoicing and made Willis's reputation. "Official medals were struck to commemorate the recovery of the king, and Dr. Willis had some struck of his own—for advertising purposes. On one side was depicted Willis, and on the other, 'Britons Rejoice Your King's Restored 1789'" (Arnold, *Bedlam: London and its Mad*, p. 152). The medals were issued in silver, copper, bronzed lead and tin; we are offering one of the tin examples. Storer, *Medicina in Nummis,* no. 3790. 43384