Catalogue 60

Science, Medicine & Technology, Including Annotated Books and Small Archives

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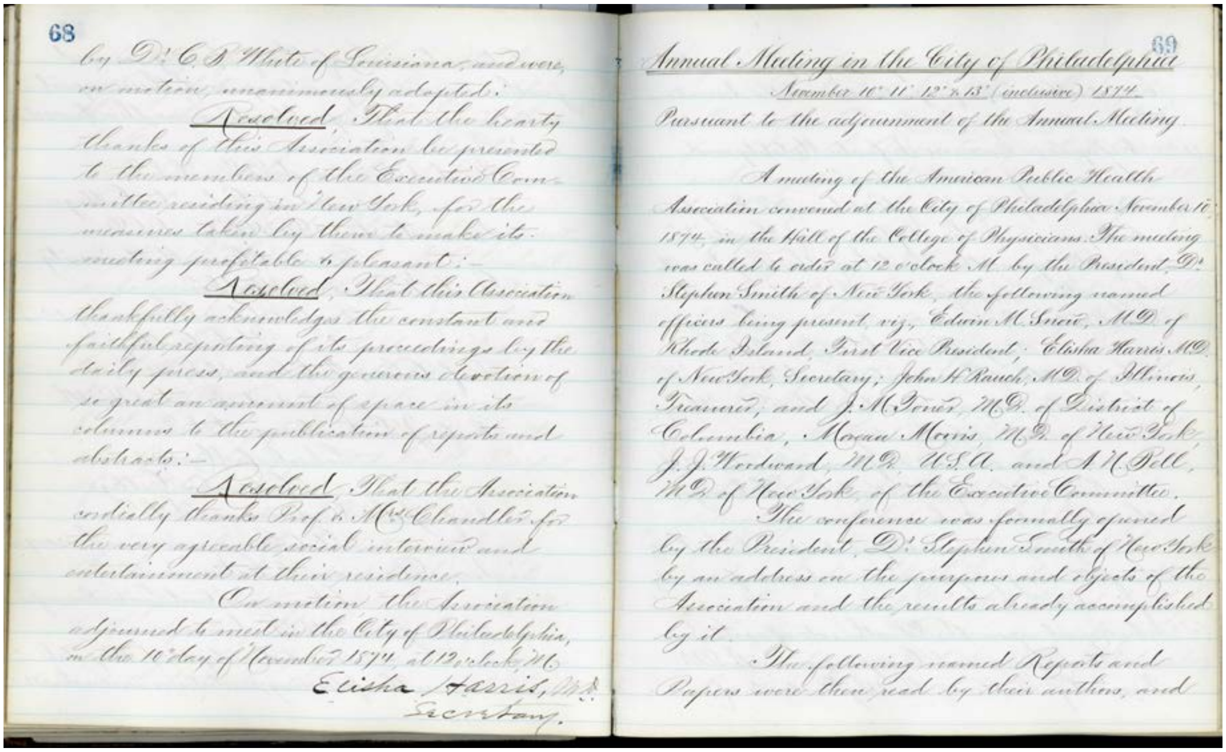

68

by Dr. C. B. White of Louisiana, and were, on motion, unanimously adopted:

Resolved, That the hearty thanks of this Association be presented to the members of the Executive Committee residing in New York, for the measures taken by them to make its meeting profitable & pleasant:—

Resolved, That this Association thankfully acknowledges the constant and faithful reporting of its proceedings by the daily press, and the generous devotion of so great an amount of space in its columns to the publication of reports and abstracts:—

Resolved, That the Association cordially thanks Prof. & Mrs. Chandler for the very agreeable social interview and entertainment at their residence.

On motion the Association adjourned to meet in the City of Philadelphia, on the 10th day of November 1874, at 12 o'clock, M.

Elisha Harris, M.D.
Secretary.

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Annual Meeting in the City of Philadelphia
November 10th, 11th, 12th & 13th (inclusive) 1874.

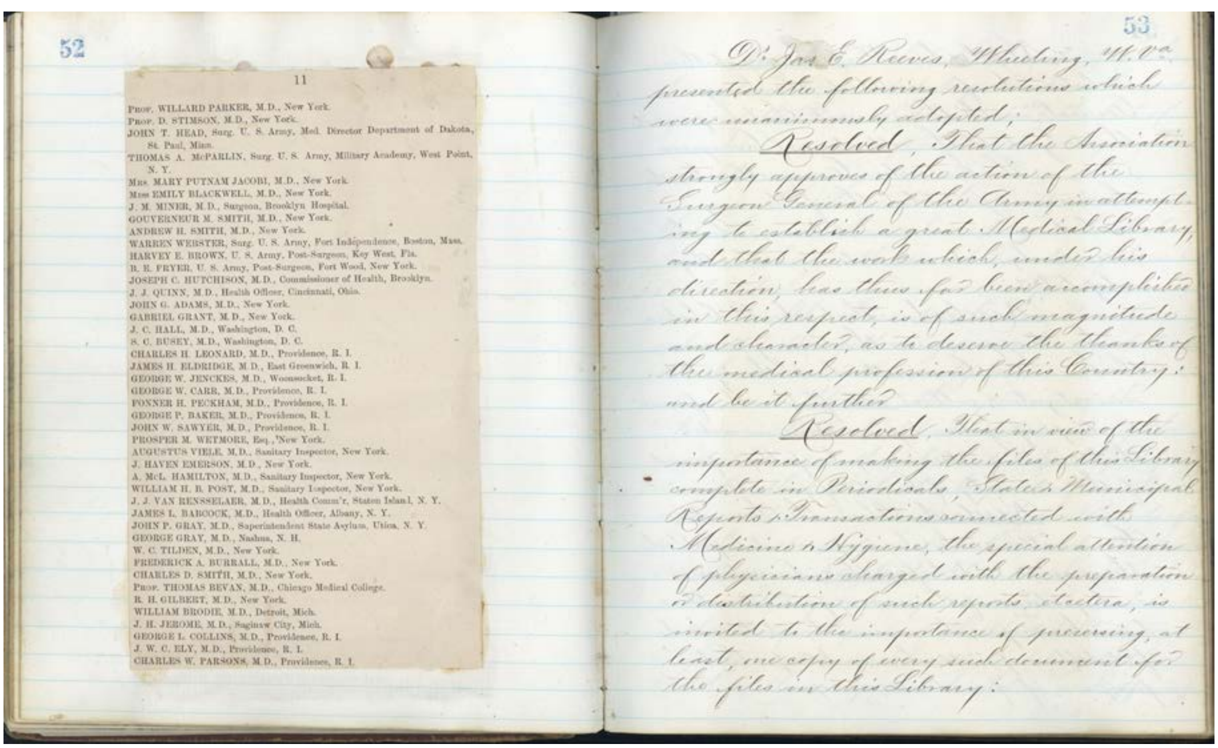
Pursuant to the adjournment of the Annual Meeting

A meeting of the American Public Health Association convened at the City of Philadelphia November 10th 1874, in the Hall of the College of Physicians. The meeting was called to order at 12 o'clock M. by the President, Dr. Stephen Smith of New York, the following named officers being present, viz., Edwin M. Snow, M.D. of Rhode Island, First Vice President; Elisha Harris M.D. of New York, Secretary; John H. Rauch, M.D. of Illinois, Treasurer, and J. M. Toner, M.D. of District of Columbia, Moreau Morris, M.D. of New York, J. J. Woodward, M.D. U.S.A. and A. N. Bell, M.D. of New York, of the Executive Committee.

The conference was formally opened by the President, Dr. Stephen Smith of New York by an address on the purposes and objects of the Association and the results already accomplished by it.

The following named Reports and Papers were then read by their authors, and

Elisha Harris's signature as Secretary of the American Public Health Association



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Prof. WILLARD PARKER, M.D., New York.
Prof. D. STIMSON, M.D., New York.
JOHN T. HEAD, Surg. U. S. Army, Med. Director Department of Dakota, St. Paul, Minn.
THOMAS A. McPARLIN, Surg. U. S. Army, Military Academy, West Point, N. Y.
Mrs. MARY PUTNAM JACOBI, M.D., New York.
Miss EMILY BLACKWELL, M.D., New York.
J. M. MINER, M.D., Surgeon, Brooklyn Hospital.
GOUVERNEUR M. SMITH, M.D., New York.
ANDREW H. SMITH, M.D., New York.
WARREN WEBSTER, Surg. U. S. Army, Fort Independence, Boston, Mass.
HARVEY E. BROWN, U. S. Army, Post-Surgeon, Key West, Fla.
B. E. FRYER, U. S. Army, Post-Surgeon, Fort Wood, New York.
JOSEPH C. HUTCHISON, M.D., Commissioner of Health, Brooklyn.
J. J. QUINN, M.D., Health Officer, Cincinnati, Ohio.
JOHN G. ADAMS, M.D., New York.
GABRIEL GRANT, M.D., New York.
J. C. HALL, M.D., Washington, D. C.
S. C. BUSEY, M.D., Washington, D. C.
CHARLES H. LEONARD, M.D., Providence, R. I.
JAMES H. ELDRIDGE, M.D., East Greenwich, R. I.
GEORGE W. JENCKES, M.D., Woonsocket, R. I.
GEORGE W. CARR, M.D., Providence, R. I.
FONNER H. PECKHAM, M.D., Providence, R. I.
GEORGE P. BAKER, M.D., Providence, R. I.
JOHN W. SAWYER, M.D., Providence, R. I.
PROSPER M. WETMORE, Esq., New York.
AUGUSTUS VIELE, M.D., Sanitary Inspector, New York.
J. HAVEN EMERSON, M.D., New York.
A. McL. HAMILTON, M.D., Sanitary Inspector, New York.
WILLIAM H. B. POST, M.D., Sanitary Inspector, New York.
J. J. VAN RENSSELAER, M.D., Health Comm'r, Staten Island, N. Y.
JAMES L. BABCOCK, M.D., Health Officer, Albany, N. Y.
JOHN P. GRAY, M.D., Superintendent State Asylum, Utica, N. Y.
GEORGE GRAY, M.D., Nashua, N. H.
W. C. TILDEN, M.D., New York.
FREDERICK A. BURRALL, M.D., New York.
CHARLES D. SMITH, M.D., New York.
Prof. THOMAS BEVAN, M.D., Chicago Medical College.
R. H. GILBERT, M.D., New York.
WILLIAM BRODIE, M.D., Detroit, Mich.
J. H. JEROME, M.D., Saginaw City, Mich.
GEORGE L. COLLINS, M.D., Providence, R. I.
J. W. C. ELY, M.D., Providence, R. I.
CHARLES W. PARSONS, M.D., Providence, R. I.

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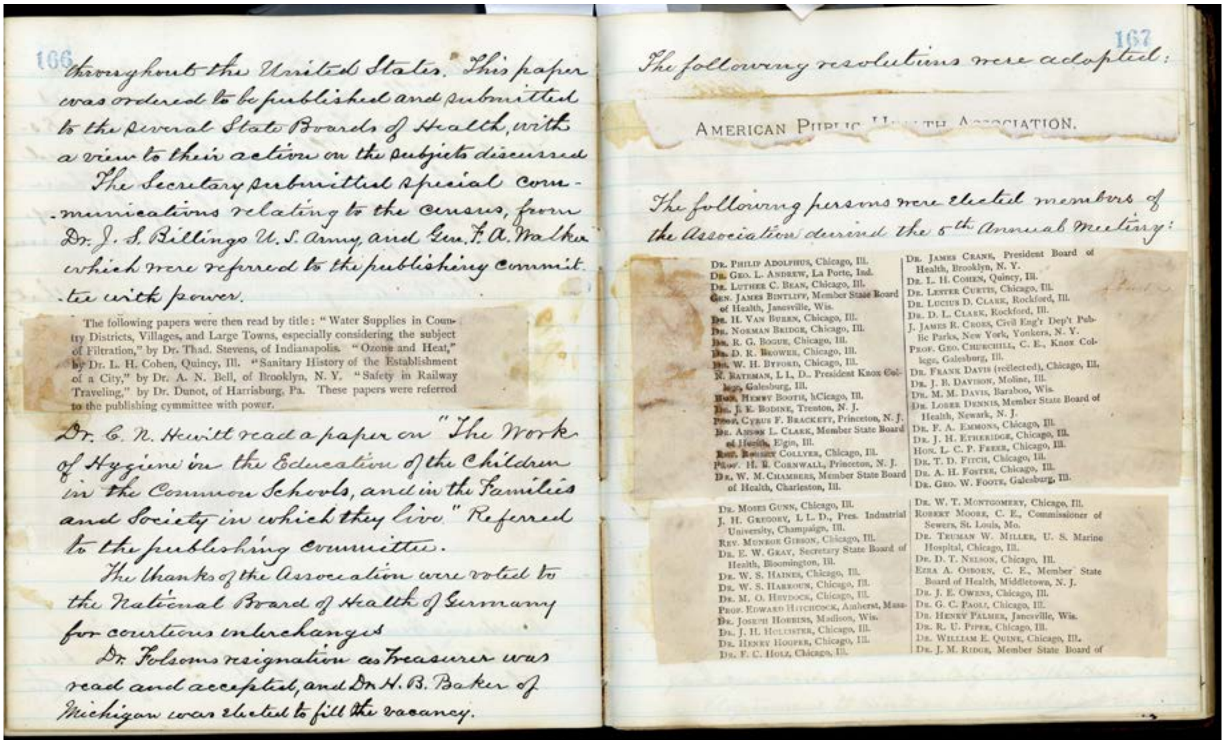
Dr. Jas. E. Reeves, Wheeling, W. Va. presented the following resolutions which were unanimously adopted;

Resolved, That the Association strongly approves of the action of the Surgeon General of the Army in attempting to establish a great Medical Library, and that the work which, under his direction, has thus far been accomplished in this respect, is of such magnitude and character, as to deserve the thanks of the medical profession of this Country: and be it further

Resolved, That in view of the importance of making the files of this Library complete in Periodicals, State & Municipal Reports & Transactions connected with Medicine & Hygiene, the special attention of physicians charged with the preparation or distribution of such reports, etcetera, is invited to the importance of preserving, at least, one copy of every such document for the files in this Library:

Pioneering women physicians Emily Blackwell and Mary Putnam Jacobi were among the APHA's first members



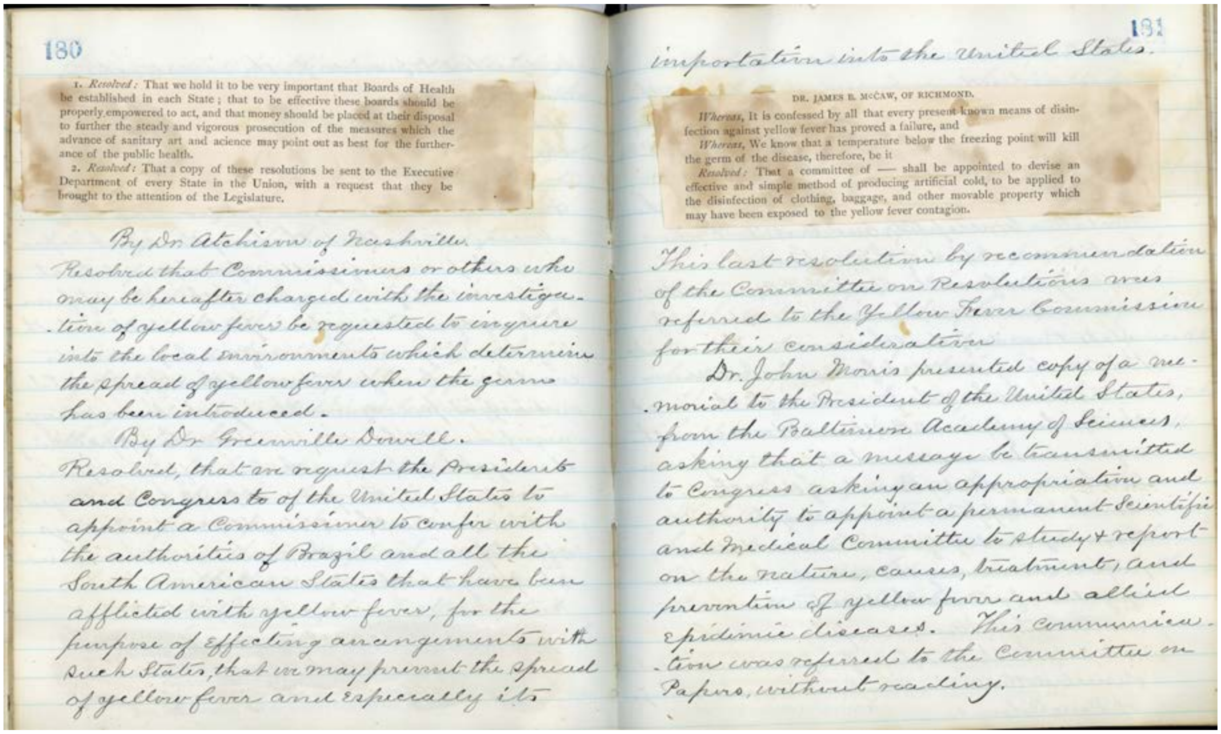
Unique Document Recording the Formation of the American Public Health Association

1. American Public Health Association. [Minutes of proceedings.] Manuscript document in several hands, supplemented with pasted-in printed materials. 285pp. (text on pp. 3-285). N.p., 1872-1880. 205 x 170 mm. In bound journal volume title "Minutes" on the front cover, calf and rough calf, rebacked, front cover repaired, boxed. Front free endpaper restored. Overall very good. $7500

Unique Document Recording the Foundation and Formative Years of the American Public Health Association, the first national organization of its kind in the United States and a landmark in the history of public health. "If a date can be assigned to the professionalization of public health it would be the appearance in 1872 of the American Public Health Association" (Duffy, *The Sanitarians: A History of American Public Health,* p. 130).

Founded in 1872, the APHA, which currently has more than 25,000 members worldwide, "champions the health of all people and communities . . . speak[s] out for public health issues and policies backed by science . . . [and is] the only organization that influences federal policy, has a 140-year plus perspective and brings together members from all fields of public health" ("About APHA." APHA, American Public Health Association, 2017. Website). The APHA works with the medical profession and government agencies to shape public policy on all aspects of public health, including access to health care, emergency preparedness, food security, environmental health issues, disease control and international health.

The APHA's foundation came at a critical period in America's medical and social history. Increasingly filthy conditions in the country's rapidly growing urban areas, coupled with the widespread sanitation problems experienced during the Civil War (where disease had been responsible for two out of three war-related fatalities) highlighted the pressing need to establish large-scale systems for managing public sanitation and hygiene; at the same time, advances in medical and scientific knowledge were beginning to provide effective tools for doing so. In April 1872 ten reform-minded medical men met in New York to begin the groundwork for setting up a permanent national organization dedicated to promoting public health. The minutes of this historic first meet-



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1. *Resolved:* That we hold it to be very important that Boards of Health be established in each State; that to be effective these boards should be properly empowered to act, and that money should be placed at their disposal to further the steady and vigorous prosecution of the measures which the advance of sanitary art and acience may point out as best for the furtherance of the public health.

2. *Resolved:* That a copy of these resolutions be sent to the Executive Department of every State in the Union, with a request that they be brought to the attention of the Legislature.

By Dr. Atchison of Nashville.
Resolved that Commissioners or others who may be hereafter charged with the investigation of yellow fever be requested to inquire into the local environments which determine the spread of yellow fever when the germ has been introduced.

By Dr Greenville Dowell.
Resolved, that we request the President and Congress to of the United States to appoint a Commissioner to confer with the authorities of Brazil and all the South American States that have been afflicted with yellow fever, for the purpose of effecting arrangements with such States, that we may prevent the spread of yellow fever and especially its

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importation into the United States.

DR. JAMES B. McCAW, OF RICHMOND.

Whereas, It is confessed by all that every present known means of disinfection against yellow fever has proved a failure, and

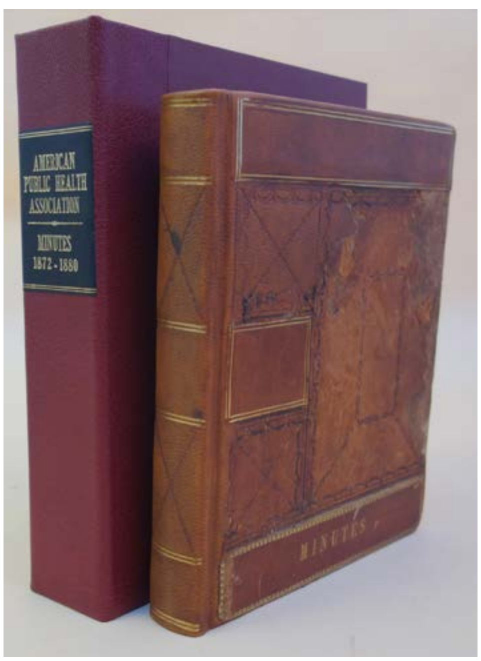
Whereas, We know that a temperature below the freezing point will kill the germ of the disease, therefore, be it

Resolved: That a committee of — shall be appointed to devise an effective and simple method of producing artificial cold, to be applied to the disinfection of clothing, baggage, and other movable property which may have been exposed to the yellow fever contagion.

This last resolution by recommendation of the Committee on Resolutions was referred to the Yellow Fever Commission for their consideration.

Dr. John Morris presented copy of a memorial to the President of the United States, from the Baltimore Academy of Sciences, asking that a message be transmitted to Congress asking an appropriation and authority to appoint a permanent Scientific and Medical Committee to study + report on the nature, causes, treatment, and prevention of yellow fever and allied epidemic diseases. This communication was referred to the Committee on Papers, without reading.

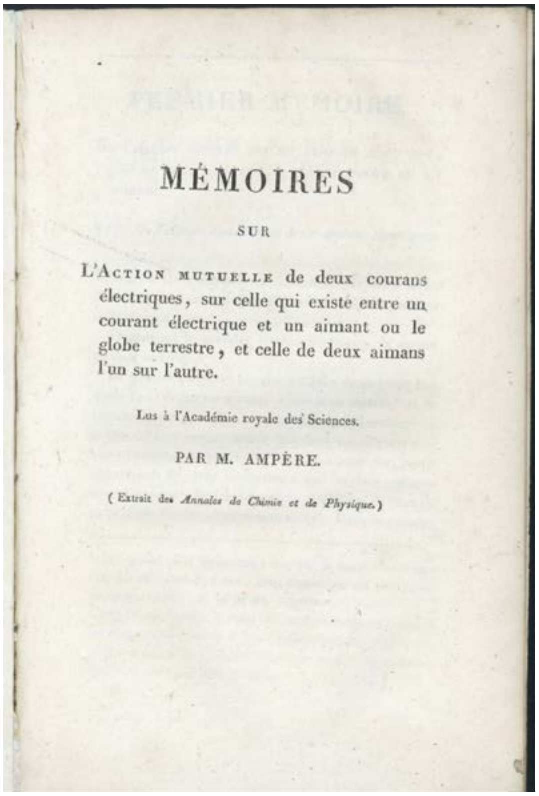
A discussion of yellow fever in the APHA minute book



ing are on pp. 3-7 of our minute book; they are followed by records of further preliminary meetings in Long Branch, N.J. and Cincinnati, and the first through eighth annual meetings of the Association, held in the years 1872-1880.

Among those present at the APHA's foundation meeting were two noted pioneers in the field: Dr. Elisha Harris (1824-84), who during the Civil War was instrumental in founding and running the U. S. Sanitary Commission; and Dr. Stephen Smith (1823-1922), who in 1866 had helped set up New York's Metropolitan Board of Health, the first municipal public health agency in the United States. Harris served as the APHA's first secretary; his signature appears at the end of three of the eight annual reports contained in our minute book. Four other annual reports are signed by E. H. Janes, the Association's secretary pro tem. The first members of the Association included (among others) Austin Flint, Frederick Law Olmsted, Wolcott Gibbs, John Shaw Billings, and pioneering female physicians Emily Blackwell and Mary Putnam Jacobi.

The APHA grew quickly, as can be seen by printed membership lists pasted into the minute book; its eighth annual meeting in 1880—the last meeting recorded in the book—drew around 400 members. The APHA's first annual meetings were focused primarily on epidemic disease. The minute book includes records of addresses on cholera, scarlatina, typhoid, epizootic illness in horses and—most especially—yellow fever, which became epidemic in America in 1873. Other public health issues, such as municipal waste disposal, clean water, proper ventilation, sanitary engineering, occupational health and hospital construction, are also covered in these minutes. The APHA published abstracts of these minutes in its *Public Health Papers and Reports* (later the *American Journal of Public Health*), but the manuscript record book we are offering contains a much fuller account of the proceedings of the APHA's first meetings. 44495



MÉMOIRES

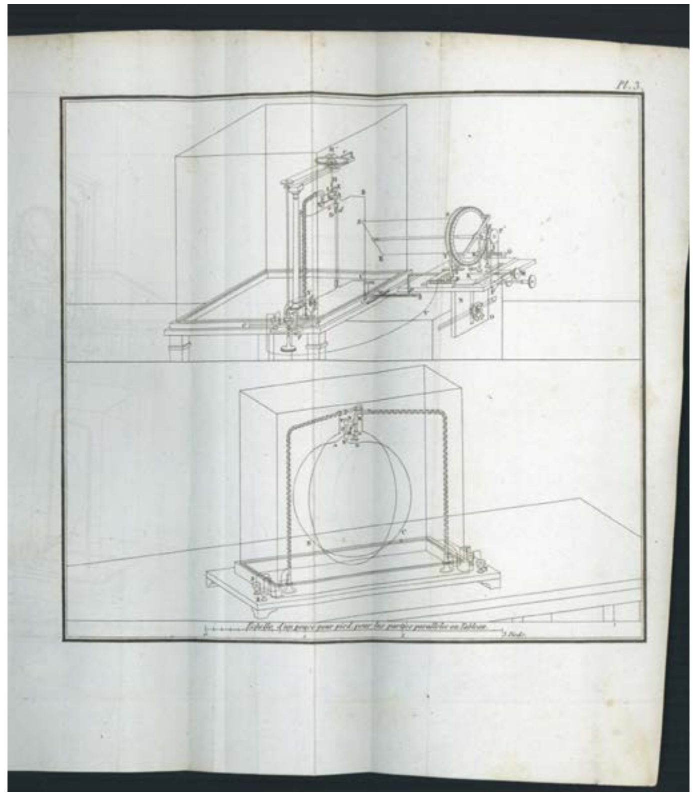
SUR

L'ACTION MUTUELLE de deux courans électriques, sur celle qui existe entre un courant électrique et un aimant ou le globe terrestre, et celle de deux aimans l'un sur l'autre.

Lus à l'Académie royale des Sciences.

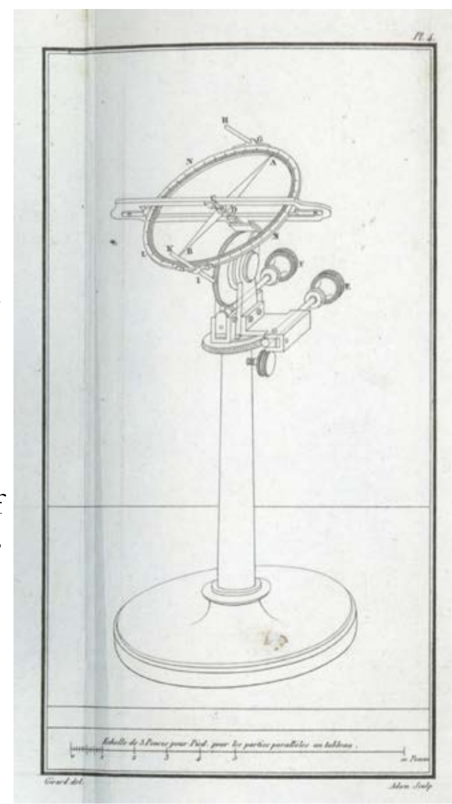
PAR M. AMPÈRE.

(Extrait des *Annales de Chimie et de Physique.*)



Foundation Work of Electrodynamics: The Rare Offprint

2. **Ampère, André Marie** (1775-1836). Mémoires sur l'action mutuelle de deux courans électriques, sur celle qui existe entre un courant électrique et un aimant ou le globe terrestre, et celle de deux aimans l'un sur l'autre. Extrait des *Annales de Chimie et de Physique*. 68pp. 5 folding plates. [Paris: impr. de Feugeray, 1821.] 196 x 128 mm. Old plain paper wrappers, small crease in back wrapper. Minor foxing, but fine otherwise. $18,500



First Separate Edition of Ampère's two landmark memoirs establishing the science of electrodynamics, significantly revised from the journal versions. Ampère was present at the Académie des Sciences on Sept. 11, 1820, when François Arago performed—for the first time in France—Hans Christian Oersted's experiment demonstrating the magnetic effects of current-carrying wires on magnetized needles. Inspired by Oersted's discovery, Ampère immediately concluded that magnetism was electricity in motion, an intuitive leap which he sought to confirm by experiment. During September and October 1820, Ampère performed a series of experiments designed to elucidate the exact nature of the relationship between electric current-flow and magnetism, as well as the relationships governing the behavior of electric currents in various types of conductors. His investigations, reported weekly before the Académie des Sciences, established the new science of electrodynamics.

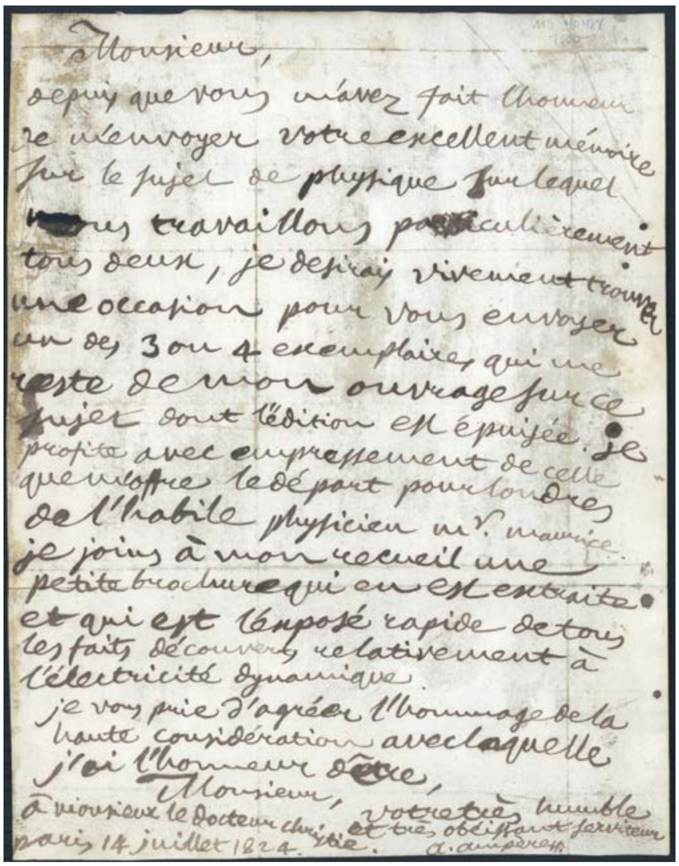
Among the discoveries described in this memoir are Ampère's demonstration of the tangential orientation of a magnetic needle by an electric current when terrestrial magnetism is neutralized; his proof that conducting planar spirals attract and repel each other and respond to bar magnets in an analogy to magnetic poles; and his demonstration of electrodynamic forces between linear conducting wires. The memoir's plates illustrate the several instruments that Ampère devised to carry out his experiments.

Ampère's scientific genius, while capable of remarkable leaps of insight, was somewhat lacking in organization and discipline. It often happened that Ampère would publish a paper one week, only to find the following week that he had thought of several new ideas that he felt ought to be incorporated into the paper. Since he could not alter the original, he would add his revisions to the separately published reprints of the paper, and even modify the revised versions later if he felt it necessary; some of his papers exist in as many as five different versions. Dibner, *Heralds of Science,* 62. Hofmann, *Andre-Marie Ampère,* ch. 7 (containing a detailed account of Ampère's investigations). Norman 43. 44552

Sending a Copy of his "Recueil d'Observations Electro-Dynamiques"

3. Ampère, André Marie (1775-1836). Autograph letter signed, in French, to [Samuel Hunter] Christie (1784-1865). Paris, 14 July 1824. 1 page. 225 x 175 mm. Light marginal staining, lacuna from ink oxidation affecting one word. Very good.

$7500



Monsieur,
depuis que vous m'avez fait l'honneur de m'envoyer votre excellent mémoire sur le sujet de physique sur lequel [illegible] travaillons particulièrement tous deux, je desirais vivement trouver une occasion pour vous envoyer un des 3 ou 4 exemplaires qui me reste de mon ouvrage sur ce sujet dont l'édition est épuisée. je profite avec empressement de celle que m'offre le départ pour londres de l'habile physicien mr. maurice. je joins à mon recueil une petite brochure qui en est extraite et qui est l'exposé rapide de tous les faits découverts relativement à l'électricité dynamique.
je vous prie d'agréer l'hommage de la haute considération avec laquelle j'ai l'honneur d'être,
Monsieur, votre très humble et très obéissant serviteur
A. Ampère
à monsieur le Docteur Christie
paris 14 juillet 1824.

From Ampère to British mathematician and physicist Samuel Hunter Christie, who performed important research on terrestrial and other forms of magnetism:

> Ever since you did me the honor of sending me your excellent memoir on the subject of physics on which we are both particularly working, I have wanted very much to find an occasion to send you one of my 3 or 4 remaining copies of my work on this subject, which is out of print . . . I add to my work a small pamphlet extracted from it, which is a brief summary of all the discoveries relating to electrodynamics (translation ours).

The "ouvrage" Ampère referred to here was his *Recueil d'observations électro-dynamiques* (1823), representing "the most complete single summary of his accomplishments to that date" (Hofmann, p. 321); the work included observations on terrestrial magnetism. The "petite brochure" was Ampère's *Précis de la théorie des phénomènes électro-dynamiques pour servir de supplément au "Recueil d'observations électro-dynamiques"* (1824). Ampère, whose scientific creativity far exceeded his powers of organization, was in the habit of issuing numerous revisions, additions and explanations to his previously published works; the *Précis* is an example of this practice. Ampère sent these two publications to Christie via his friend Baron Jean-Frédéric Maurice (1775-1851), a Swiss-born mathematician and astronomer.

Samuel Hunter Christie, Ampère's correspondent, is best known for inventing a forerunner of the "Wheatstone bridge" method for comparing the resistances of wires of different thicknesses, published in the *Philosophical Transactions* in 1833. At the time of Ampère's letter Christie had published two works, *Observations on Magnetic Attractions* (1821) and *On the Diurnal Deviations of the Horizontal Needle when under the Influence of Magnets* (1823). We do not know which one of these he presented to Ampère. Hofmann, *André-Marie Ampère* (1995). 40488

Superb Archive on the Transit of Venus and Geodesy

4. Bassot, J. A. Léon (1841-1917). Archive consisting of 127 letters, telegrams, etc. to his wife and other family members, many in postmarked covers; also 38 photographs including large bound folding photograph of the participants in the "Dixième Conférence Générale de l'Association Géodésique Internationale" (Brussels 1892) and miscellaneous travel documents. 1860s – 1917; the letters cover the period 1881 – 1884. Some dust-soiling, one of the panels of the 1892 photograph detached, some of the photographs faded but on the whole very good. $8500

Archive of French geodesist and astronomer General J. A. Léon Bassot, who received the Académie des Science's prestigious Lalande Prize in 1883 for his observations of the transit of Venus that took place on December 6, 1882. Bassot, a geodesist with the French Army, was part of the Académie's expedition to St. Augustine, Florida, led by François Perrier, sent for the purpose of observing this important astronomical event. Transits of Venus are rare, taking place twice every 120 years or so; the 1882 transit was the last to occur prior to the transits of 2004 and 2012. Observations of the 1882 event, made by astronomers throughout the world, were used to determine the solar parallax and calculate the distance from the Earth to the Sun.

Included in Bassot's archive are 27 letters and other pieces of correspondence written during the 1882 expedition, describing in detail the particulars of the journey to St. Augustine (via New York, Niagara Falls and Montreal) and the triumphant conclusion of the expedition's mission. On December 6, just after the transit occurred, Bassot wrote to his wife that "The transit took place today & we observed it completely. . . Everything has gone wonderfully well and the observations will, I think, be very good. . . the sky was covered just half an hour after the last contact; we saw everything, but we almost missed the last part of the passage . . . Perrier is ecstatic." In a longer letter dated December 9, Bassot went into further detail about the expedition's luck in having clear

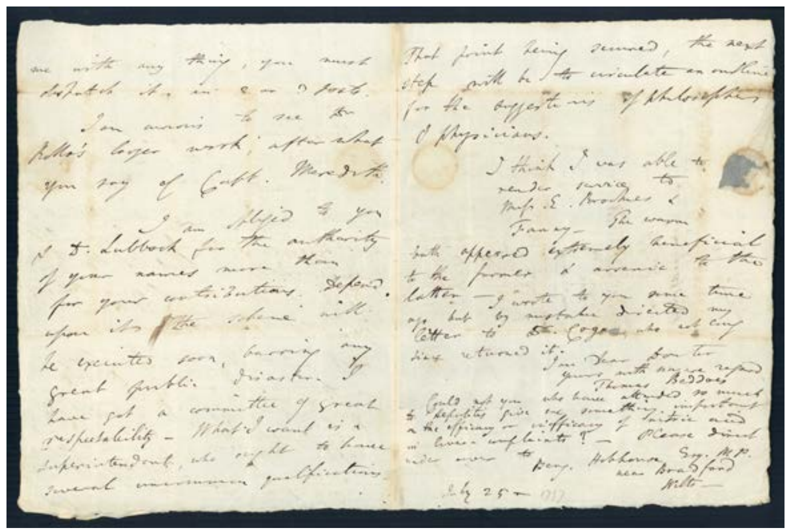
weather during its observations: "3/4 of an hour after the last contact the sun clouded over; the next day and the day after the sky was completely covered and we are seeing the sun for the first time today. We are all the more fortunate in that the North American stations have not all been favored: in Washington, it was partly clear but at Cedar Quay, at the same latitude as St. Augustine on the Gulf of Mexico, American observers missed a contact; the two German missions, which were installed in the north of Florida, saw nothing at all. . ." (translations ours).

The remainder of the correspondence in Bassot's archive covers his geodesic activities in Paris and Nice in 1881 and 1882, during which he helped recalculate several longitudes, as well as his campaign for regional political office in 1884. The archive also boasts a good-sized collection of photographs, including a cabinet portrait of Perrier dated 1876; several portraits of Bassot and his family; group photographs of several scientific conferences; and some images of the Mounier Observatory, an adjunct to the Nice Observatory, where Bassot served as director from 1904 until his death. Perrier, *Notice sur la vie et les travaux de Léon Bassot* (1935). 44550

"You Speak of the Beneficial Effects of Nitric Acid"

5. Beddoes, Thomas (1760–1808). Autograph letter signed to Dr. [Thomas G.] Girdlestone (1758–1822). Bradford, July 25, [1797 (from postmark)]. 3pp. plus integral cover. 252 x 196 mm. Creased along original folds, light soiling on cover, lacunae repaired along folds and where seal was broken, with loss of one letter. Very good. $2500

Beddoes' letter touches on the medicinal properties of nitric acid and discusses his famous Pneumatic Institution for the treatment of disease by inhalation of various gases, which began operation the following year (1798). The letter begins as follows:



> I was extremely gratified with your Yarmouth case, which I carefully returned to Dr. Babington. I trust it is designed for publication. I shall be curious to learn the sequel. In your last letter you speak of the beneficial effects of nitric acid. I have had some most important communications on the subject which I am going to print, & should be happy to receive a paper from you . . .

Later in the letter Beddoes refers to his "scheme" for the Pneumatic Institution—he thanks Dr. Girdlestone and a Dr. Lubbock

> for the authority of your names more than for your contributions. Depend upon it the scheme will be executed soon, barring any great public disaster. I have got a committee of great respectability—What I want is a superintendent, who ought to have several uncommon qualifications. That point being secured, the next step will be to circulate an outline for the suggestions of philosophers & physicians.

Even though Beddoes does not mention the Pneumatic Institution by name here, it is highly improbable that the above paragraph refers to anything else. The "superintendent of uncommon qualifications" that Beddoes ended up hiring was the nineteen-year-old Humphry Davy, who first made his name as a scientist through his investigations, performed in the Pneumatic Institution's laboratory, of the physiological properties of nitrous oxide gas.

In a postscript, Beddoes once again returns to the subject of nitric acid:

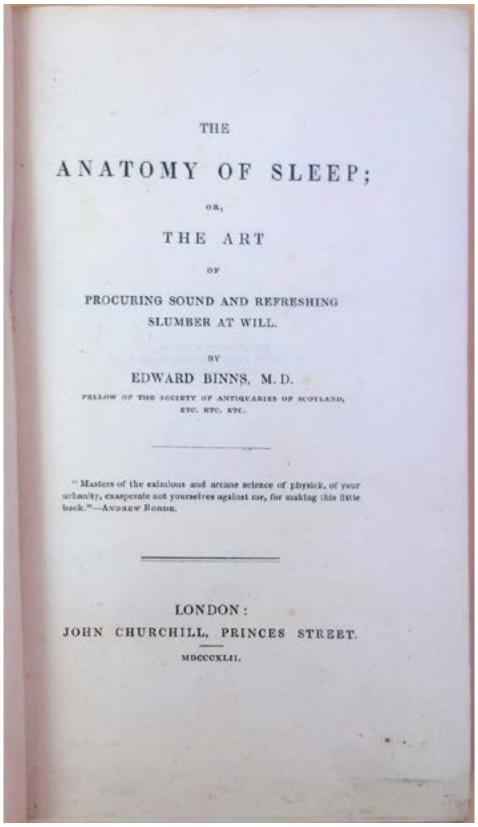
> Could not you who have attended so much to Hepatitis give me something important on the efficacy of nitric acid in liver complaints?

Beddoes' correspondent, Dr. Thomas Girdlestone, was a Yarmouth physician who had served in India; he was the author of *Essays on the Hepatitis and Spasmodic Affections in India* (1787) and several other works. Hirsch.
34283

The First Book Typeset by Machinery; A Landmark in Sleep Research

6. Binns, Edward (d. 1851). The anatomy of sleep . . . 8vo. x, 394pp. Hand-colored lithographed title, 3 lithographed plates, text illustrations. London: John Churchill, 1842. 192 x 112 mm. Original cloth, back cover a bit spotted, spine slightly faded and with tiny chips at the top. Edges slightly dust-soiled, otherwise fine. Later ownership inscription on front free endpaper. $1750

First Edition of the first book typeset by the Young & Delcambre Composing Machine, the first composing machine known to have been used for real work in printing offices. The colophon on the verso of the



THE

ANATOMY OF SLEEP;

OR,

THE ART

OF

PROCURING SOUND AND REFRESHING
SLUMBER AT WILL.

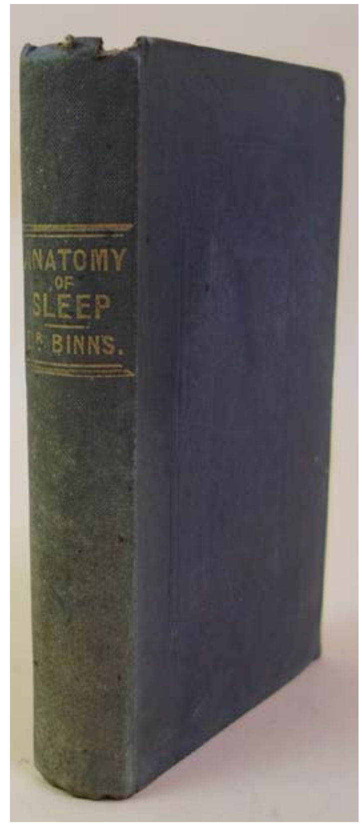
BY

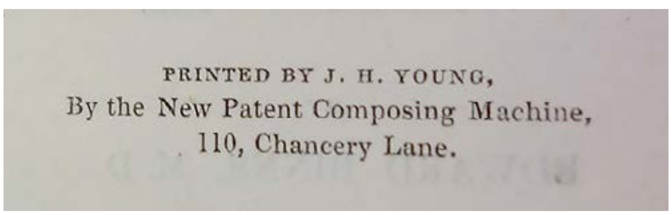
EDWARD BINNS, M. D.

FELLOW OF THE SOCIETY OF ANTIQUARIES OF SCOTLAND,
ETC. ETC. ETC.

"Masters of the calmious and arcane science of physick, of your urbanity, exasperate not yourselves against me, for making this little book."—ANDREW BORDE.

LONDON:
JOHN CHURCHILL, PRINCES STREET.
MDCCCXLII.





PRINTED BY J. H. YOUNG,
By the New Patent Composing Machine,
110, Chancery Lane.

title page states that Binn's book was "Printed by J. H. Young, by the Patent Composing Machine, 110, Chancery Lane."

Beginning in the 1840s, several inventors developed and patented mechanical typesetting systems, and it is possible that some were employed without fanfare in provincial newspapers in England for certain periods of time. However, the Young & Delcambre machine is the only one where the machine's actual work is documented within the publications it produced, likely because Young & Delcambre were aggressive in promoting their technology and got it mentioned in the few publications in which it was used. Other than a couple of books that their machine typeset and a couple of periodicals for which the machine set type for short periods, no other specific publications set by typesetting machinery are known between the publication of Binns book and the first application of the Linotype by the New York Daily Tribune in 1886.

Like other early mechanical compositors, the Young & Delcambre machine set a single continuous line of type; line breaking and justification were done later by hand, as was distribution of the types after use. At this stage in the development of machine typesetting, the additional labor needed to operate the machine and distribute the type did not provide enough economic incentive to replace the manual process. These problems would not be adequately addressed until the invention of the Linotype and Monotype type casters which eliminated the redistribution process by melting down the lead type for reuse. Another issue with the Young & Delcambre machine was that it was intended to be operated by women, who were paid less than men, in order to lower the machine's overall operating costs. "The use of the Young and Delcambre machine was opposed by the London Union of Compositors, particularly because female labour was employed to operate it" (*Printing and the Mind of Man: Catalogue of the Exhibitions. . .* , no. 463).

It may be interesting to some that efforts to mechanize typesetting occurred about the same time that Charles Babbage was attempting to mechanize calculation through his Difference Engines and his Analytical Engine.

Neither the typesetting or calculating technologies caught on when they were first pioneered, chiefly because the early machines could not provide sufficient speed gains or cost savings.

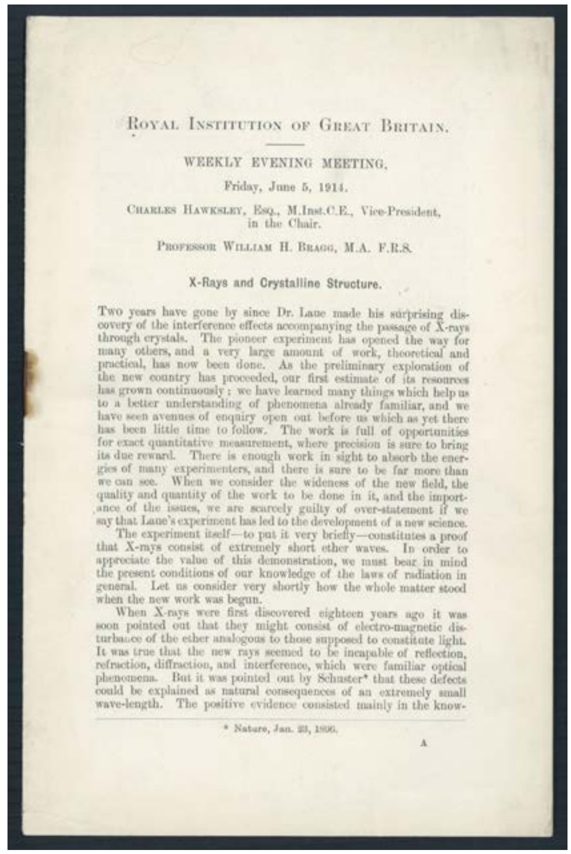
Binns's book has been rightly valued for its significance in the history of typography and printing, but it also appears to be one of the first books on what we now call sleep research. The author, a physician, began his preface as follows:

> The following attempt to elucidate the laws of procuring sleep at will, by directing the activity of the cerebral organs, is, we believe, the first ever made; or, if any similar attempt has been made, it has escaped our researches . . .

The chapters cover such topics as "Definition of sleep," "Drowsiness," "Hibernation," Somnambulism," "Hallucination" and "Phenomena of dreams." Garrison-Morton.com 7001. 44543

7. Bragg, William Henry (1862-1942). X-rays and crystalline structure. Offprint from *Proceedings of the Royal Institution of Great Britain* 21 (1914). 10pp. 212 x 140 mm. Without wrappers. Light soiling, small rust-stains from staples, one corner creased but very good. $500

First Edition, Offprint Issue of W. H. Bragg's paper summarizing the progress to date in x-ray crystallography, a field he and his son W. Lawrence Bragg originated, and which is now one of the essential analytic tools of physics, chemistry and molecular biology. Prior to 1912, scientists had very little knowledge about the solid state of matter, but in 1912 came the Friedrich-Knipping-Laue paper showing that x-rays can be diffracted by crystals. The Braggs used Laue's discovery to determine the actual positions of atoms in crystals, with Lawrence Bragg providing the theoretical basis for crystal structure analysis and William Henry Bragg contributing the x-ray spectrometer, which measures the strength of an x-ray beam reflected from a crystal face. In 1915, the year after this paper was published, the Braggs shared the Nobel Prize for physics for their studies of crystal structure by means of x-rays, becoming the first—and so far, the only—father and son team to win a Nobel. 44419



ROYAL INSTITUTION OF GREAT BRITAIN.

WEEKLY EVENING MEETING,

Friday, June 5, 1914.

CHARLES HAWKSLEY, ESQ., M.Inst.C.E., Vice-President, in the Chair.

PROFESSOR WILLIAM H. BRAGG, M.A. F.R.S.

X-Rays and Crystalline Structure.

Two years have gone by since Dr. Laue made his surprising discovery of the interference effects accompanying the passage of X-rays through crystals. The pioneer experiment has opened the way for many others, and a very large amount of work, theoretical and practical, has now been done. As the preliminary exploration of the new country has proceeded, our first estimate of its resources has grown continuously; we have learned many things which help us to a better understanding of phenomena already familiar, and we have seen avenues of enquiry open out before us which as yet there has been little time to follow. The work is full of opportunities for exact quantitative measurement, where precision is sure to bring its due reward. There is enough work in sight to absorb the energies of many experimenters, and there is sure to be far more than we can see. When we consider the wideness of the new field, the quality and quantity of the work to be done in it, and the importance of the issues, we are scarcely guilty of over-statement if we say that Laue's experiment has led to the development of a new science.

The experiment itself—to put it very briefly—constitutes a proof that X-rays consist of extremely short ether waves. In order to appreciate the value of this demonstration, we must bear in mind the present conditions of our knowledge of the laws of radiation in general. Let us consider very shortly how the whole matter stood when the new work was begun.

When X-rays were first discovered eighteen years ago it was soon pointed out that they might consist of electro-magnetic disturbance of the ether analogous to those supposed to constitute light. It was true that the new rays seemed to be incapable of reflection, refraction, diffraction, and interference, which were familiar optical phenomena. But it was pointed out by Schuster* that these defects could be explained as natural consequences of an extremely small wave-length. The positive evidence consisted mainly in the know-

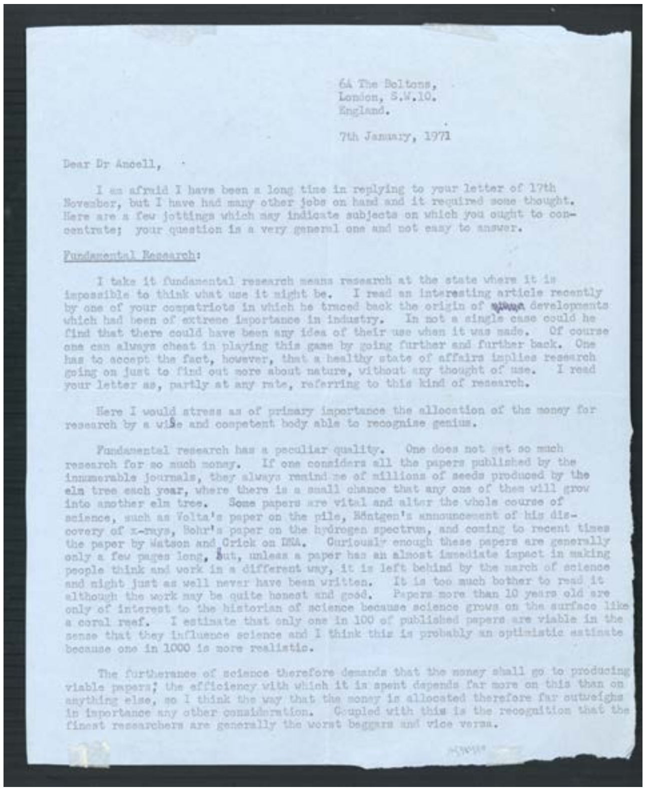
* Nature, Jan. 23, 1896.

A

"A Healthy State of Affairs Implies Research Going on Just to Find Out More about Nature"

8. Bragg, William Lawrence (1890-1971). Typed letter signed to Dr. R. M. Ancell, Jr. London, January 7, 1971. 1-1/4pp., on single sheet (air letter). 238 x 196 mm. Creased where originally folded, traces of mounting tape, otherwise fine. $5000

In 1938 Lawrence Bragg was named Cavendish Professor of experimental physics at Cambridge, a post he held until 1953. There Bragg met Max Perutz, who had been working at the Cavendish Laboratory on the structure of hemoglobin. Bragg immediately became deeply interested in applying x-ray crystallography to study the huge and complex protein molecules of the living cell. He devoted the rest of his scientific career to this field and supervised the work of others, including Perutz and John Kendrew, who shared the 1962 Nobel Prize in chemistry for their elucidation of the first structures of proteins.



6A The Boltons,
London, S.W.10.
England.

7th January, 1971

Dear Dr Ancell,

I am afraid I have been a long time in replying to your letter of 17th November, but I have had many other jobs on hand and it required some thought. Here are a few jottings which may indicate subjects on which you ought to concentrate; your question is a very general one and not easy to answer.

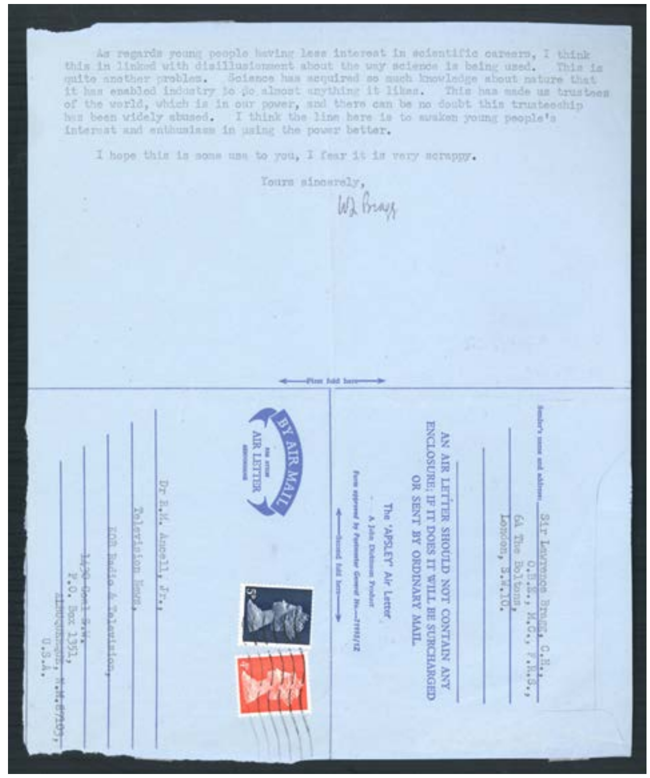
Fundamental Research:

I take it fundamental research means research at the state where it is impossible to think what use it might be. I read an interesting article recently by one of your compatriots in which he traced back the origin of developments which had been of extreme importance in industry. In not a single case could he find that there could have been any idea of their use when it was made. Of course one can always cheat in playing this game by going further and further back. One has to accept the fact, however, that a healthy state of affairs implies research going on just to find out more about nature, without any thought of use. I read your letter as, partly at any rate, referring to this kind of research.

Here I would stress as of primary importance the allocation of the money for research by a wise and competent body able to recognise genius.

Fundamental research has a peculiar quality. One does not get so much research for so much money. If one considers all the papers published by the innumerable journals, they always remind me of millions of seeds produced by the elm tree each year, where there is a small chance that any one of them will grow into another elm tree. Some papers are vital and alter the whole course of science, such as Volta's paper on the pile, Röntgen's announcement of his discovery of x-rays, Bohr's paper on the hydrogen spectrum, and coming to recent times the paper by Watson and Crick on DNA. Curiously enough these papers are generally only a few pages long, but, unless a paper has an almost immediate impact in making people think and work in a different way, it is left behind by the march of science and might just as well never have been written. It is too much bother to read it although the work may be quite honest and good. Papers more than 10 years old are only of interest to the historian of science because science grows on the surface like a coral reef. I estimate that only one in 100 of published papers are viable in the sense that they influence science and I think this is probably an optimistic estimate because one in 1000 is more realistic.

The furtherance of science therefore demands that the money shall go to producing viable papers; the efficiency with which it is spent depends far more on this than on anything else, so I think the way that the money is allocated therefore far outweighs in importance any other consideration. Coupled with this is the recognition that the finest researchers are generally the worst beggars and vice versa.



As regards young people having less interest in scientific careers, I think this is linked with disillusionment about the way science is being used. This is quite another problem. Science has acquired so much knowledge about nature that it has enabled industry to do almost anything it likes. This has made us trustees of the world, which is in our power, and there can be no doubt this trusteeship has been widely abused. I think the line here is to awaken young people's interest and enthusiasm in using the power better.

I hope this is some use to you, I fear it is very scrappy.

Yours sincerely,

WL Bragg

Sender's name and address: Sir Lawrence Bragg, C.H., O.B.E., M.C., F.R.S.,
6A The Boltons,
London, S.W.10.

AN AIR LETTER SHOULD NOT CONTAIN ANY ENCLOSURE; IF IT DOES IT WILL BE SURCHARGED OR SENT BY ORDINARY MAIL.

The 'APSLEY' Air Letter
A John Dickinson Product

BY AIR MAIL
AIR LETTER

Dr R.M. Ancell, Jr.,
Television News,
KOB Radio & Television,
1430 Coal S.W.,
P.O. Box 1351,
Albuquerque, N.M. 87103,
U.S.A.

After Bragg's retirement from Cambridge he was appointed professor of natural philosophy at the Royal Institution, where he continued his scientific researches, made organizational and administrative changes, and instituted an enormously popular series of scientific lectures for schoolchildren, many of which he gave himself. These lectures inspired a television series and made Bragg an admired and recognized public figure. He retired from the R. I. in 1966 and died in July 1971.

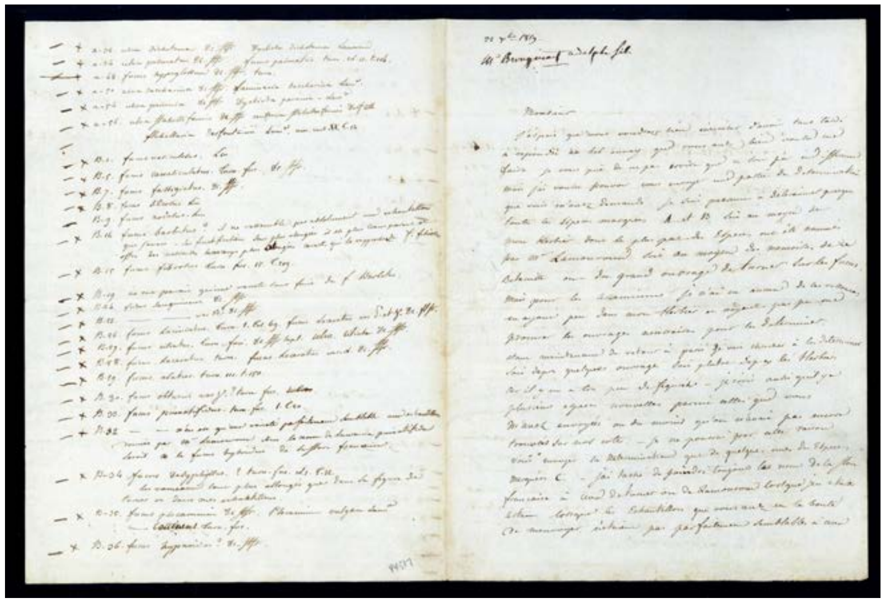
The letter we are offering here, written six months before Bragg's death, is a response to a query by a member of the television news staff at KOB Radio & Television in Albuquerque, N.M. It contains some profound and thought-provoking statements on the nature and progress of scientific research:

> Fundamental Research:
>
> I take it fundamental research means research at the state where it is impossible to think what use it might be. I read an interesting article recently by one of your compatriots in which he traced back the origin of developments which had been of extreme importance in industry. In not a single case could he find that there could have been any idea of their use when it was made . . . One has to accept the fact, however, that a healthy state of affairs implies research going on just to find out more about nature, without any thought of use . . .
>
> Fundamental research has a peculiar quality. One does not get so much research for so much money. If one considers all the papers published by the innumerable journals, they always remind me of millions of seeds produced by the elm tree each year, where there is a small chance that any one of them will grow into another elm tree. Some papers are vital and alter the whole course of science, such as Volta's paper on the pile, Röntgen's announcement of his discovery of x-rays, Bohr's paper on the hydrogen spectrum, and coming to recent times the paper by Watson and Crick on DNA. Curiously enough these papers are generally only a few pages long. But, unless a paper has an almost immediate impact in making people think and work in a different way, it is left behind by the march of science and might just as well never have been written . . .
>
> The furtherance of science therefore demands that the money shall go to producing viable papers; the efficiency with which it is spent depends far more on this than on anything else, so I think the way that the money is allocated therefore far outweighs in importance any other consideration . . .

Phillips, "William Lawrence Bragg," in Thomas & Phillips, eds., *Selections and Reflections: The Legacy of Sir Lawrence Bragg,* pp. 1–69. 38490

"I Have Succeeded in Determining Almost All the Species Marked A and B"

9. Brongniart, Adolphe Théodore (1801-76). Autograph letter in French to an unidentified scientific correspondent. 4pp. N.p., 22 September 1819. 238 x 178 mm. Light toning but very good. Docketed on the first leaf. $500

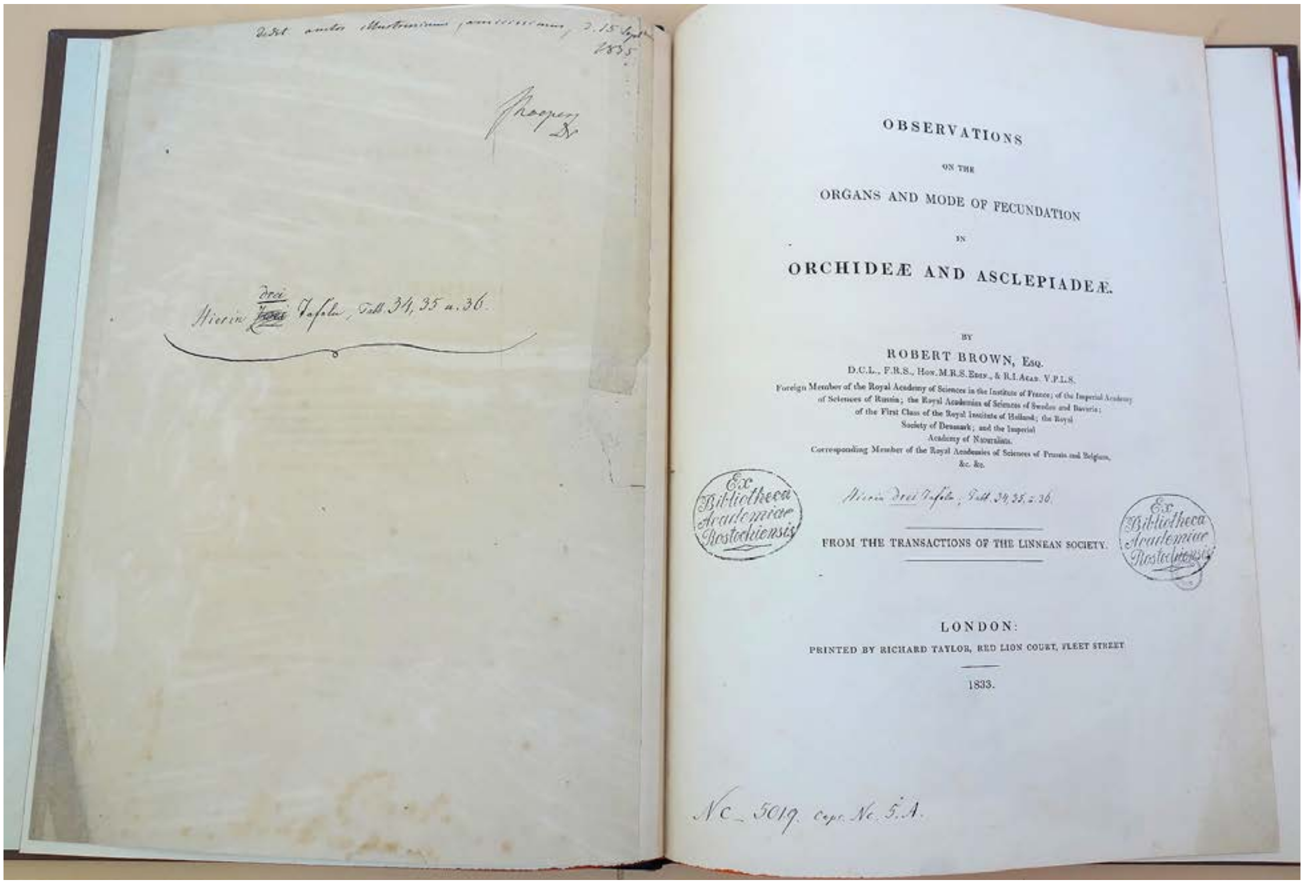


Letter with excellent scientific content from Adolphe Brongniart, the founder of paleobotany, whose *Histoire des végétaux fossiles* (1828-37) laid the groundwork for that science. Brongniart began his scientific career at a very young age, publishing his first paper in 1822 at the age of 21. The present letter, written when Brogninart was just 18, shows that even as an adolescent he was already an accomplished botanist and plant taxonomist. In it, Brongniart discussed his researches on fossil *Fucus* (a type of seaweed) and related marine algae, which he would later draw on when writing his paper "Observations sur les fucoides et sur quelques autres plantes marines fossiles," published in the first volume of the *Mémoires de la Société d'Histoire Naturelle de Paris* (1823).

To his unnamed scientific correspondent, who had asked for help in identifying a collection of specimens, Brongniart wrote:

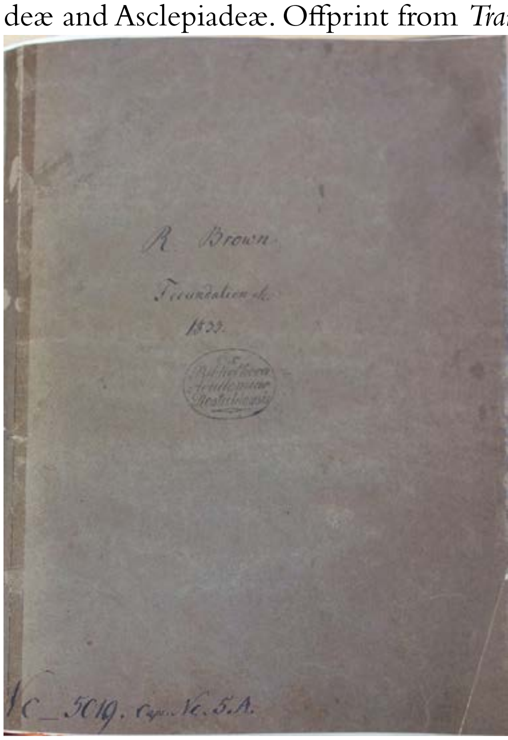
> I have succeeded in determining almost all the species marked A and B by means of my herbarium, of which most of the species have been named by M. Lamouroux either by means of the memoirs of this botanist or Turner's great work on Fucus. But for the ceramiums I have had none of these resources having little in my herbarium and having been unable to obtain the necessary works to determine them . . . I could not for that reason send you the determination of any of the species marked C. I have always tried to attach the French names of the flora to those of Turner or Lamouroux when I was certain of them. When the samples you kindly sent me were not exactly like those I had, or had figured, I tried to indicate the difference . . . My father is busy collecting samples of the fossil shells in the neighborhood of Paris that you requested of him and I hope in sending them to you to be able to attach the determinations of these Fucus . . . (translation ours).

Brongniart's letter continues with a two-page list of the specimens he was able to identify, which breaks off at no. B-36; **it appears from internal evidence that the list would have continued past this number.** The botanists mentioned in the above quotation are Dawson Turner (1775-1858), author of *Fuci sive plantarum fucorum generi a botanicis ascriptarum icones descriptiones et historia* (1807-8) and Jean Vincent Félix Lamouroux (1779-1825), author of *Dissertations sur plusieurs espèces de fucus, peu connues ou nouvelles, avec leur description en Latin et en Français* (1805), and the first to distinguish between brown, green and red algae. Brongniart also refers to his father, geologist and naturalist Alexandre Brongniart (1770-1847), who developed a system of fossil markers for dating geological strata. 44517

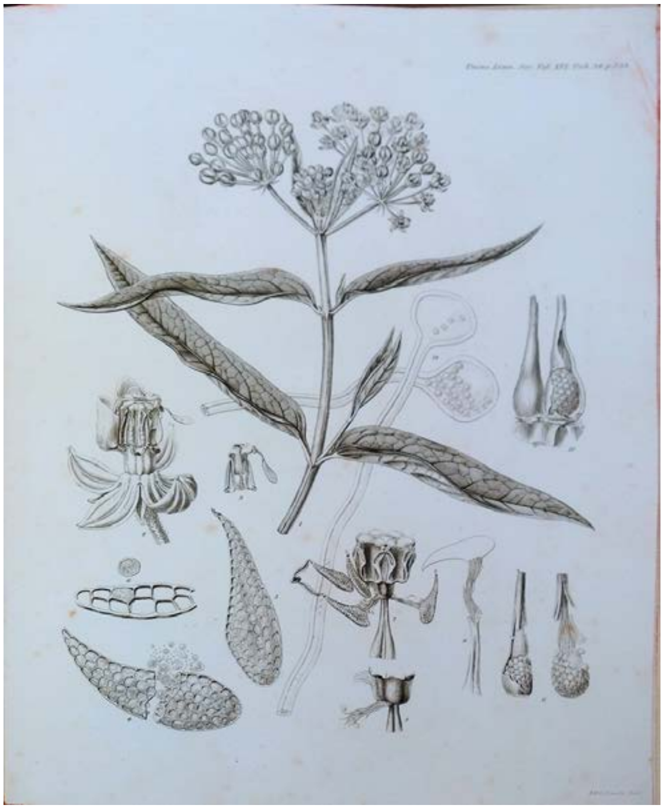


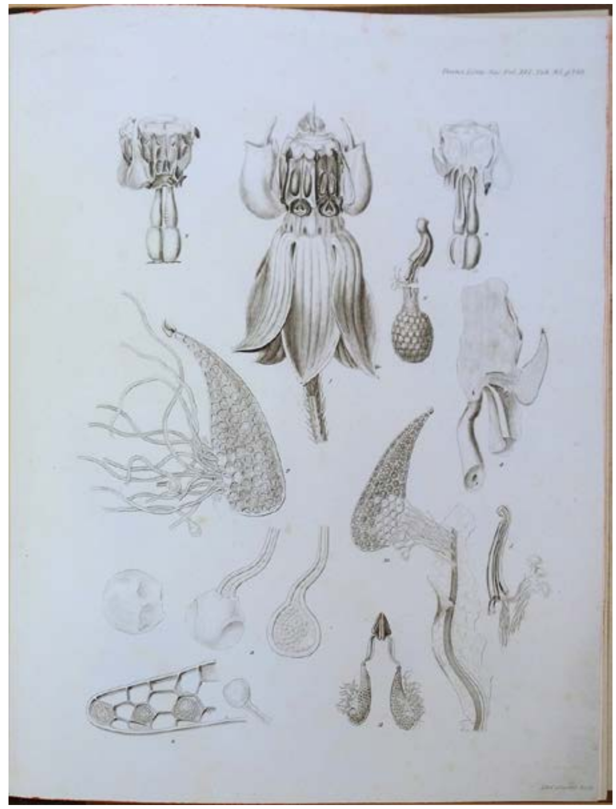
The Cell Nucleus: The Rare Offprint

10. Brown, Robert (1773-1858). Observations on the organs and mode of fecundation in Orchideæ and Asclepiadeæ. Offprint from *Transactions of the Linnean Society*. [2], 685-745pp. 3 engraved plates. London: Richard Taylor, 1833. 282 x 221 mm. Modern quarter morocco, cloth boards, original front wrapper (repaired) bound in. Minor staining and foxing on the plates, inner margins of plates and first three leaves repaired, but very good. *Presentation Copy*, inscribed, probably by the recipient, on the verso of the front wrapper: "dedit auctor illustrissimus, amicissimus, d. 15 Septbris. 1835 Dr. Shaeper[?]" [the most illustrious and dear author gave (this) on 15th September 1835]. Stamps of the Rostock University Library on the front wrapper, title and a few other leaves. $6500



First Edition, Offprint Issue. Discovery of the cell nucleus. Brown originally published his discovery in a pamphlet printed for private distribution, titled "Observations on the Organs and Mode of Fecundation in Orchideae and Asclepiadeae" (1831); the pamphlet, issued in a small edition, is now nearly impossible to obtain. The expanded journal edition of the paper, of which this is the offprint, includes Brown's "Additional observations on the mode of fecundation in Orchideae," which he read before the Linnean Society in June 1832.

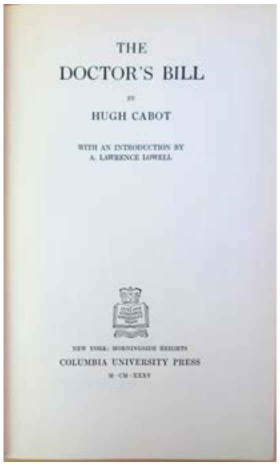


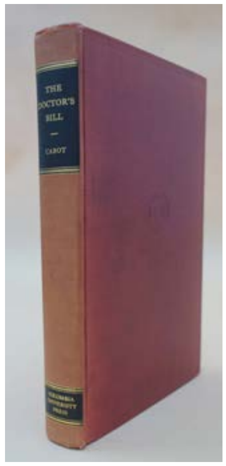


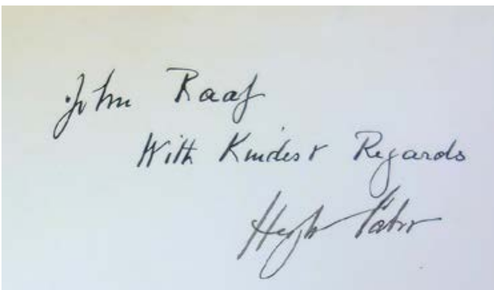
In his paper Brown described a singular structure he had observed in the cells of orchideae,

> a single circular areola, generally somewhat more opake than the membrane of the cell . . . only one areola belongs to each cell . . . This areola, or nucleus of the cell as perhaps it might be termed, is not confined to the epidermis, being also found not only in the pubescence of the surface particularly when jointed, as in Cypripedium, but in many cases in the parenchyma or internal cells of the tissue . . . The nucleus of the cell is not confined to the Orchideae but is equally manifest in many other Monocotyledonous families; and I have even found it, hitherto however in very few cases, in the epidermis of Dicotyledonous plants (pp. 710-12).

"A few earlier botanists evidently had observed the presence of this nucleus in some cells, as Brown himself points out, but he was the first specially to demonstrate its general occurrence in living cells and to give it the name 'nucleus'" (*Dictionary of Scientific Biography*). 44488


THE
DOCTOR'S BILL
BY
HUGH CABOT
WITH AN INTRODUCTION BY
A. LAWRENCE LOWELL
NEW YORK: MORNINGSIDE HEIGHTS
COLUMBIA UNIVERSITY PRESS
M·CM·XXXV



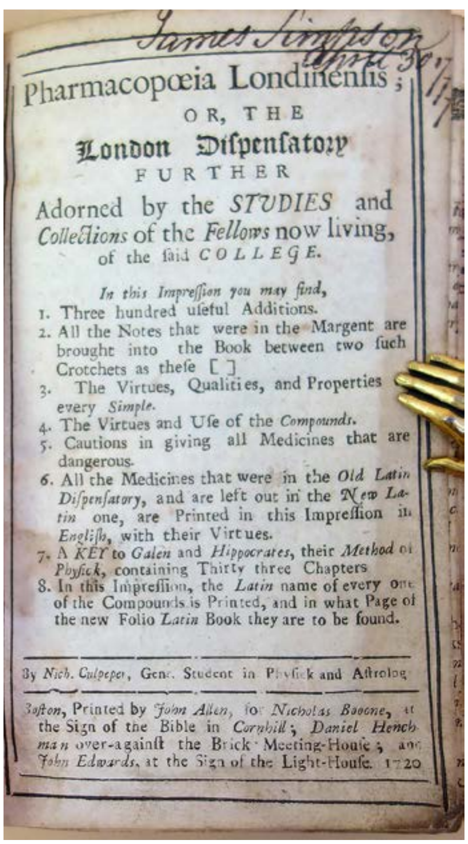


Pioneering Work on Medical Economics

11. Cabot, Hugh (1872-1945). The doctor's bill. xvi, 313, [3]pp. New York: Columbia University Press, 1935. 228 x 154 mm. Original blind-stamped cloth, gilt-lettered spine, spine a bit faded. Very good. *Presentation Copy*, inscribed by Cabot on the front endpaper: "John Raaf with kindest regards Hugh Cabot." $450

First Edition. Cabot, Professor of Surgery at the Mayo Clinic, was a strong advocate of group medical practice and of establishing a partnership between the federal government, medical schools and hospitals to provide health care to low-income and poor Americans. He published this book on medical economics in the middle of the Great Depression, a time when the government was considering expanding the Social Security Act to include some form of national health insurance (a move adamantly opposed by the American Medical Association). The recipient of this copy was most likely neurological surgeon John E. Raaf (1905-2000), who interned at the Mayo Clinic in the 1930s. Garrison-Morton.com 8619. 44229

The First Full-Length Medical Book Published in the American Colonies; The Earliest American Medical Book Possibly Obtainable Today


James Simpson
April 30 1777

Pharmacopœia Londinensis;
OR, THE
London Dispensatory
FURTHER
Adorned by the STUDIES and
Collections of the Fellows now living,
of the said COLLEGE.
In this Impression you may find,
1. Three hundred useful Additions.
2. All the Notes that were in the Margent are brought into the Book between two such Crotchets as these [ ]
3. The Virtues, Qualities, and Properties every Simple.
4. The Virtues and Use of the Compounds.
5. Cautions in giving all Medicines that are dangerous.
6. All the Medicines that were in the Old Latin Dispensatory, and are left out in the New Latin one, are Printed in this Impression in English, with their Virtues.
7. A KEY to Galen and Hippocrates, their Method of Physick, containing Thirty three Chapters.
8. In this Impression, the Latin name of every one of the Compounds is Printed, and in what Page of the new Folio Latin Book they are to be found.

By Nich. Culpeper, Gent. Student in Physick and Astrolog

Boston, Printed by John Allen, for Nicholas Boone, at the Sign of the Bible in Cornhill; Daniel Henchman over-against the Brick Meeting-House; and John Edwards, at the Sign of the Light-House. 1720

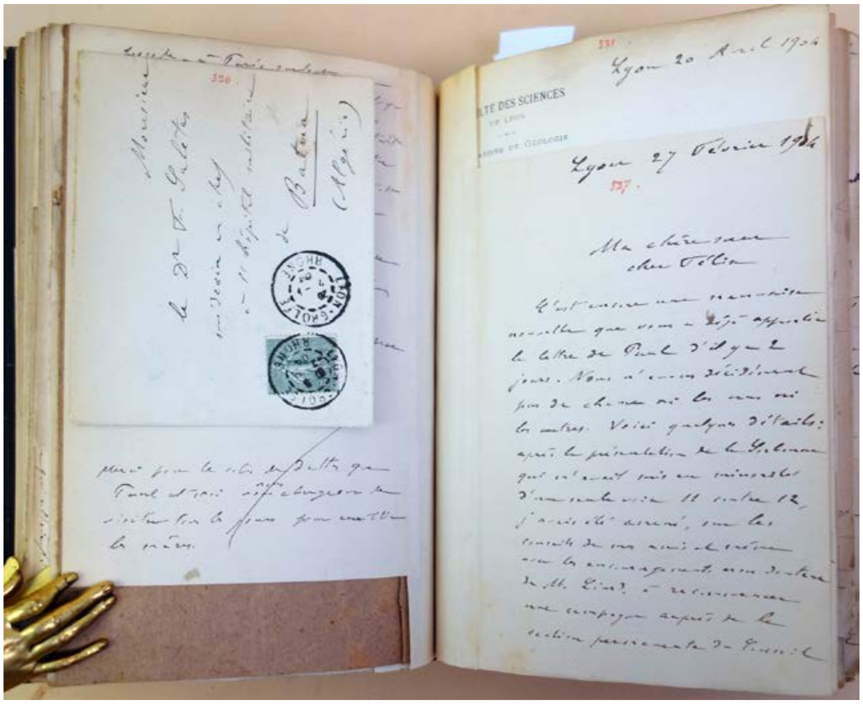
12. Culpeper, Nicholas (1616-54). Pharmacopoeia Londinensis; or, the London dispensatory further adorned by the studies and collections of the fellows now living, of the said college. 8vo. [24], 305, [39]pp. Boston: John Allen for Nicholas Boone. . . Daniel Henchman. . . and John Edwards, 1720. 175 x 113 mm. American blind-tooled sheep ca. 1720, spine cracked, inner hinges repaired, some rubbing and edgewear. Margins of first few leaves trimmed touching some text, some toning as is usual for American books of this era, but very good. Ownership signatures of James Simpson (dated April 30, 1777) and William Whipple (dated 1750). $30,000

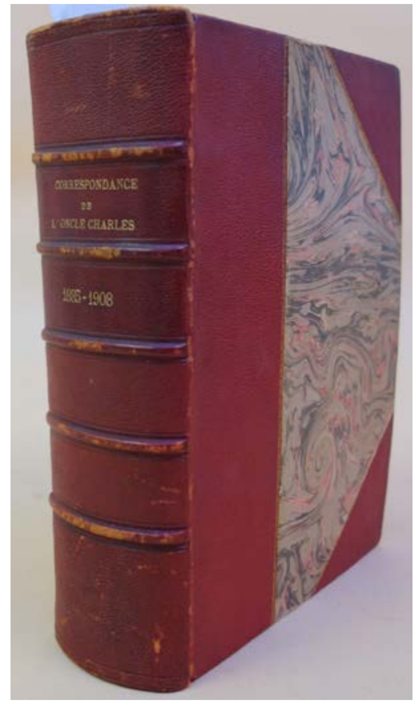
First American Edition. This 1720 Boston edition of Culpeper's *Pharmacopoeia Londinensis* enjoys the triple distinction of being the first herbal, the first pharmacopoeia, and the first full-length medical book published in the American colonies. It is the earliest American medical book possibly obtainable today. This copy is also remarkable for its original American blind-tooled sheep binding. This is also probably one of the earliest American bindings that one could expect to obtain today.

The only known predecessors of our edition are the unique surviving copy of Thomas Thatcher's *Brief Rule to Guide the Common People of New England. . . in the Small Pocks or Measles* (Boston, 1677; described

as "a single sheet of paper"), and a 1708 Boston reprint of *The English Physician*, ascribed to Culpeper on the title-page, but most probably only as an attempt to capitalize on his famous name. The 1708 edition has been essentially unobtainiable since the 19th century.

The American edition of Culpeper's work enjoyed a wide popularity in the colonies, perhaps because of its Puritan slant and its bias toward the household treatment of illness. Culpeper's writings show a genuine interest in providing health care for the poor: his remedies contained only cheap, readily obtainable English herbs, and on his deathbed, he stated that he "never gave a patient two medicines where one would serve." It was this populist attitude toward medical care that had prompted Culpeper in 1649 to publish his English translation of the *Pharmacopoeia Londiniensis*, an act that earned him the enmity of London's medical establishment. Austin 591. Cowen, "Boston editions of Nicholas Culpeper," *Journal of the History of Medicine and Allied Sciences* 9 (1956), pp. 156-165. Garrison-Morton.com 1828.2. Norman C-542.
44533



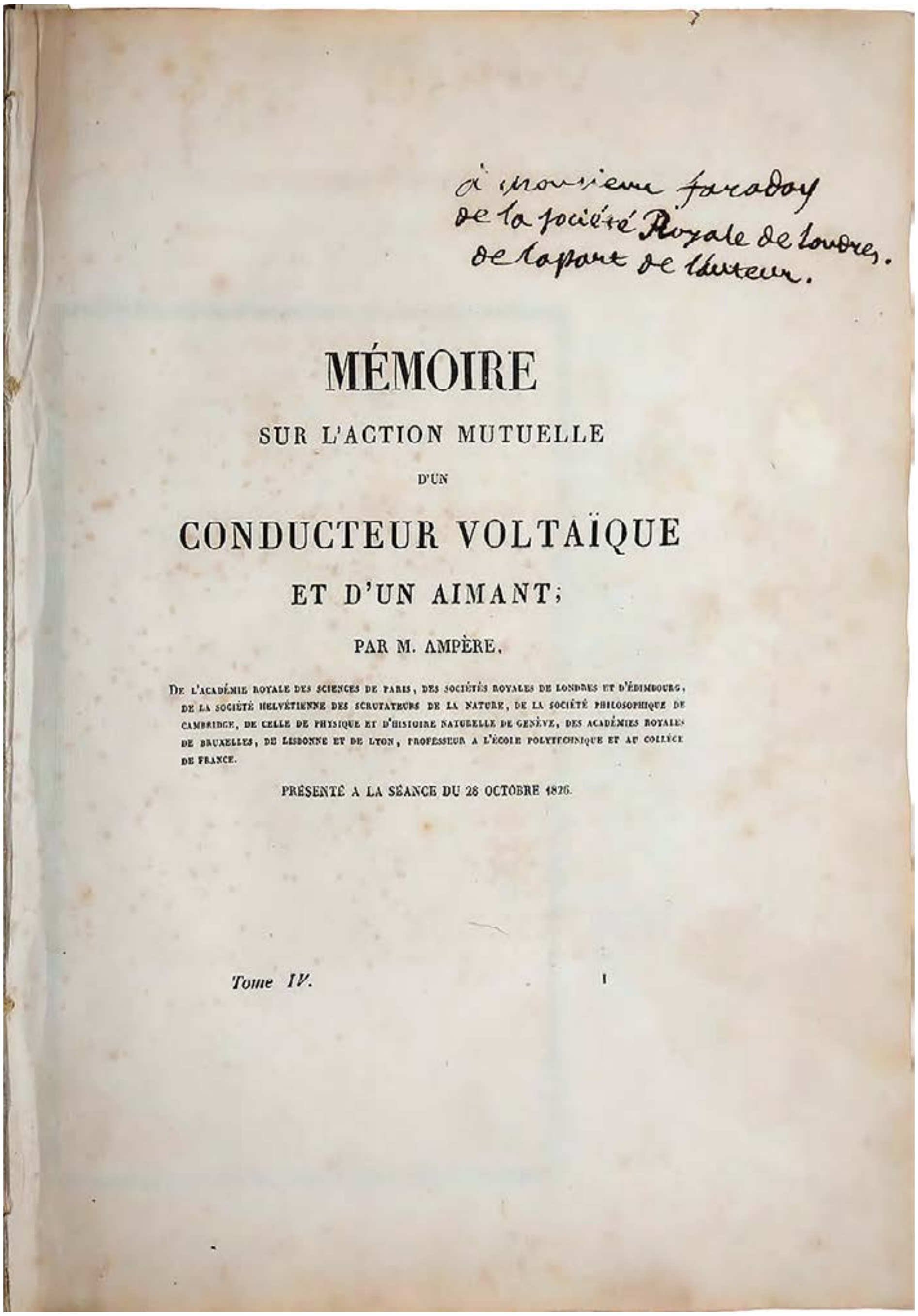


Archive of Circa 150 Autograph Letters

13. Depéret, Charles (1854-1929). Correspondance de l'Oncle Charles (spine title). Bound collection of circa 150 autograph letters / postcards signed, many with postmarked covers, to Depéret's sister Louise and brother-in-law Dr. Michel-Félix-Antoine Salètes. 582pp. total (numbered by hand in red ink). V.p., 1885-1908. 214 x 147 mm. Early 20th century three-quarter morocco, gilt-lettered spine, marbled boards, minor wear at spine and edges. Fore-edges a bit frayed but very good. $4500

Voluminous collection of correspondence from noted French geologist and paleontologist Charles Depéret, dean for 33 years of the Faculté des Sciences at Lyon and author of nearly 300 works on geology, paleontology and archeology, including the classic monograph "Les terrains tertiaries de la Bresse" (1893; written with F. Delafond), and *Les transformations du monde animal* (1907), a work that "clearly and accurately explains the great problems of paleontology" (*Dictionary of Scientific Biography*). In 1892, based on his stratigraphic research, Depéret introduced the Burdiglian Stage of the Lower Miocene, spanning the time between 20.43 – 15.97 million years ago. Depéret also known for "Depéret's Rule" of progressive evolutionary specialization, stating that when a population group starts to specialize it can only specialize further and never return to a more generalized state.

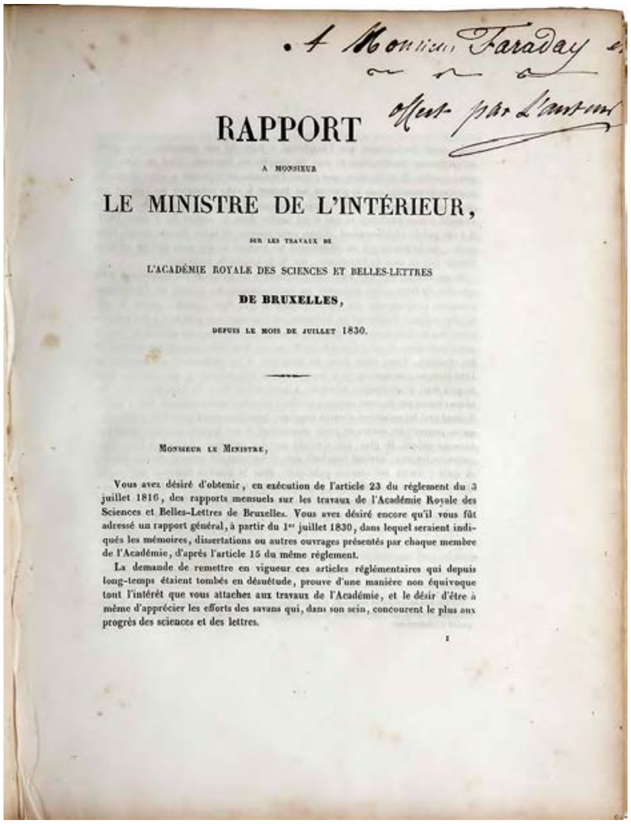
All the letters in this volume were written to Depéret's sister, Louise, and her husband, Dr. Félix Salètes, physician and author of *Conférences pratiques sur les premiers soins à donner aux blesses* (1899); it was their son, Paul Louis Jacques Salètes, who had the letters bound in the present volume under the title "Correspondance de l'Oncle Charles." The well-organized letters include references to Depéret's work and his travels in Europe and America for research or to attend scientific conferences. 44437



Faraday's Copies of Offprints Sent to Him by Colleagues; Only Example We Know of a Book from Faraday's Library

14. Faraday, Michael (1791-1867). Bound volume of 19 offprints/pamphlets on electricity and physics from Faraday's library, including four with *Presentation Inscriptions from their Authors to Faraday*, namely:

(1) Ampère, André-Marie (1775-1836). Mémoire sur l'action mutuelle d'un conducteur voltaïque et d'un aimant. Offprint from *Nouveaux Mémoires de l'Académie royale des sciences et belles-lettres de Bruxelles* 4 (1827). [2], 3-88pp. 3 folding engraved plates. Brussels: M. Hayez, Imprimeur de l'Académie Royale, [1827] (colophon). Inscribed by Ampére on the title: "à Monsieur Faraday de la Société Royale de Londres de la part de l'auteur."



A Monsieur Faraday

offert par l'auteur

RAPPORT

A MONSIEUR

LE MINISTRE DE L'INTÉRIEUR,

SUR LES TRAVAUX DE

L'ACADÉMIE ROYALE DES SCIENCES ET BELLES-LETTRES

DE BRUXELLES,

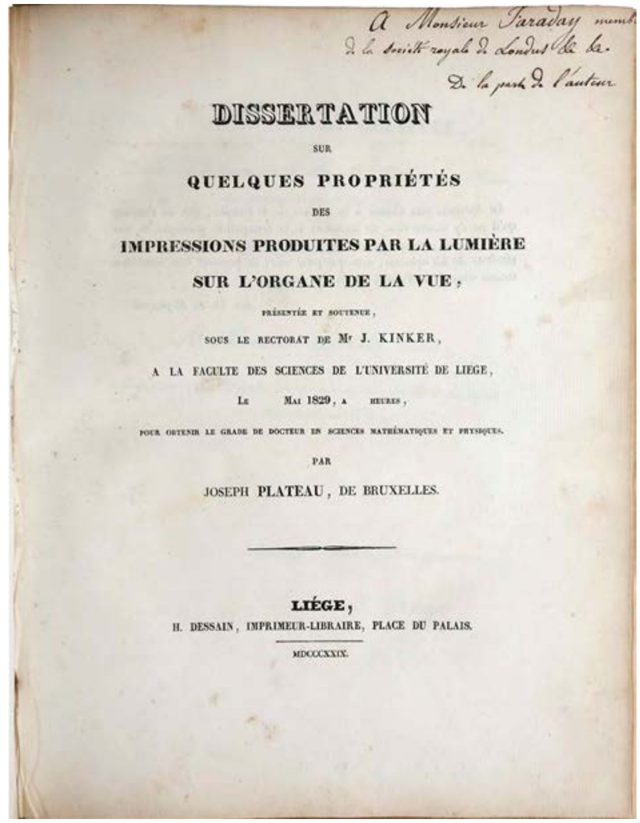
DEPUIS LE MOIS DE JUILLET 1830.

MONSIEUR LE MINISTRE,

Vous avez désiré d'obtenir, en exécution de l'article 23 du réglement du 3 juillet 1816, des rapports mensuels sur les travaux de l'Académie Royale des Sciences et Belles-Lettres de Bruxelles. Vous avez désiré encore qu'il vous fût adressé un rapport général, à partir du 1er juillet 1830, dans lequel seraient indiqués les mémoires, dissertations ou autres ouvrages présentés par chaque membre de l'Académie, d'après l'article 15 du même réglement.

La demande de remettre en vigueur ces articles réglémentaires qui depuis long-temps étaient tombés en désuétude, prouve d'une manière non équivoque tout l'intérêt que vous attachez aux travaux de l'Académie, et le désir d'être à même d'apprécier les efforts des savans qui, dans son sein, concourent le plus aux progrès des sciences et des lettres.

1



A Monsieur Faraday mem[bre] de la Société royale de Londres &c &c. De la part de l'auteur

DISSERTATION

SUR

QUELQUES PROPRIÉTÉS

DES

IMPRESSIONS PRODUITES PAR LA LUMIÈRE

SUR L'ORGANE DE LA VUE,

PRÉSENTÉE ET SOUTENUE,

SOUS LE RECTORAT DE Mr J. KINKER,

A LA FACULTE DES SCIENCES DE L'UNIVERSITÉ DE LIEGE,

LE MAI 1829, A HEURES,

POUR OBTENIR LE GRADE DE DOCTEUR EN SCIENCES MATHÉMATIQUES ET PHYSIQUES.

PAR

JOSEPH PLATEAU, DE BRUXELLES.

LIÉGE,

H. DESSAIN, IMPRIMEUR-LIBRAIRE, PLACE DU PALAIS.

MDCCCXXIX.

Inscribed to Faraday by Adolphe Quetelet

(2) [Quetelet, Adolphe (1796-1874).] Rapport à monsieur le minister de l'intérieur, sur les travaux de l'Académie Royale des Sciences et des Belles-Lettres de Bruxelles, depuis le mois de Juillet 1830. Offprint from *Nouveaux Mémoires de l'Académie Royale des Sciences et Belles-Lettres de Bruxelles* 7 (1832). 12pp. Inscribed by Quetelet on the first leaf: "A Monsieur Faraday offert par l'auteur."

(3) Plateau, Joseph Antoine Ferdinand (1801-83). Dissertation sur quelques propriétés des impressions produits par la lumière sur l'organe de la vue. 32pp. Folding plate. Liège: Dessain, 1829. Inscribed by Plateau on the title: "A Monsieur Faraday mem[bre] de la Société royale de Londres &c &c. De la part de l'auteur."

(4) Wenckebach, Willem (1803-47). Disputatio mathematica inauguralis de pontium lapideorum forma et mensuris ex aequilibrii doctrina determinandis. [vii], 116, [2]pp. 2 folding plates. Amsterdam: Sulpke, 1830. Inscribed by Wenckebach on the title: "Dr. Faraday with the Author's resp[ects]."

Bound with 15 other pamphlets (**click here** to see the list). 265 x 205 mm. Disbound, original boards preserved; in a drop-back box. Minor foxing and toning, two of the inscriptions a bit trimmed, but very good. $47,500

An extraordinary volume of scientific offprints on physics, electricity and related subjects, including **four with presentation inscriptions**, owned and assembled by Michael Faraday, whose groundbreaking experimental researches on electrical and magnetic phenomena mark the foundation of modern electromagnetic technology and constitute "the starting point for the revolutionary theories of Clerk Maxwell and later of Einstein" (*Printing and the Mind of Man*). This is the **only example we know** of a book from Faraday's library. The offprints in it testify to the breadth and depth of Faraday's scientific interests and to his large network of connections within the 19th-century scientific community.

Most of the offprints in this volume date from the 1820s and early 1830s, an extremely fruitful period in Faraday's scientific career. In 1821, shortly after Oersted's discovery of electromagnetism, Faraday invented two devices to produce what he called "electromagnetic rotation," thus creating the first electric motor. He spent the next several years exploring the electromagnetic properties of materials, investigating the connections between optics and electromagnetism, perfecting several new types of glass for optical researches, and pursuing chemical investigations including the discovery of benzene. In 1831 Faraday published the first of his "Experimental researches in electricity" his single most important scientific paper, in which he reported his discovery of the means for generating electricity by electro-magnetic induction and his invention of the dynamo. From this revolutionary achievement "was to come the whole of the electric power industry and the benefits to everyone that have followed upon the ability to transport electricity to even the smallest village or farm" (Williams, *Faraday,* p. 195).

The most significant item in this volume is the inscribed offprint of Ampère's "Mémoire sur l'action mutuelle d'un conducteur voltaïque et d'un aimant" (1827), in which Ampère showed that his own theory of electricity was able to account for the results obtained in Biot's and Poisson's rival theories. This memoir "brought to a close [Ampère's] main sequence of research publications on electricity and magnetism" (Grattan-Guinness, p. 960); it immediately preceded his great summary work, *Théorie mathématique des phénomènes électrodynamiques uniquement déduite de l'expérience* (1827), which is regarded as the founding treatise of electrodynamics. Like Faraday, Ampère was one of the creators of electromagnetic science, and each was fully aware of the other's work in this field. The two men began corresponding and exchanging papers in the early 1820s, when Ampère was in the midst of his brilliant series of experiments exploring the exact nature of the relationship between electric current-flow and magnetism. Later, after Ampère's death, Faraday recalled Ampère's kindness in writing to him "when [I was] a young man and fearful of venturing into science . . . [giving] me that confidence to which the little I have done if it is anything at all is entirely due" (letter to Dumas dated 29 April 1840, in *The Select Correspondence of Michael Faraday*, Vol. I, p. 372).

Of the inscribed works other than Ampère's in the present volume, the most interesting is the dissertation of optical physicist Joseph Plateau, who was one of the first to demonstrate the illusion of a moving image; his work contributed to the development of cinema. Faraday, who began corresponding with Plateau in the early 1830s, was also interested in optics, and it is likely that he first learned of Plateau's work from this inscribed copy of Plateau's thesis. "The basis of much of [Plateau's] work was his observation that an image takes an appreciable time to form on, and to disappear from, the retina. In his dissertation (1829) Plateau showed, among other things, that the total length of an impression, from the time it acquires all its force until it is scarcely sensible, is approximately a third of a second. He applied his results to the study of the principles of the color mixture produced by the rapid succession of colors. This led to the formulation of the law (now known as the Talbot-Plateau law) that the effect of a color briefly presented to the eye is proportional both to the intensity of the light and the time of presentation. Plateau also studied various optical illusions that result from the persistence of the image on the retina" (*Dictionary of Scientific Biography*). On 10 December 1830 Faraday presented a paper at the Royal Institution entitled "On a peculiar class of optical deceptions" about the optical illusions that could be found in rotating wheels. As Faraday publicly acknowledged, much of his paper was similar to what Plateau had published in his thesis.

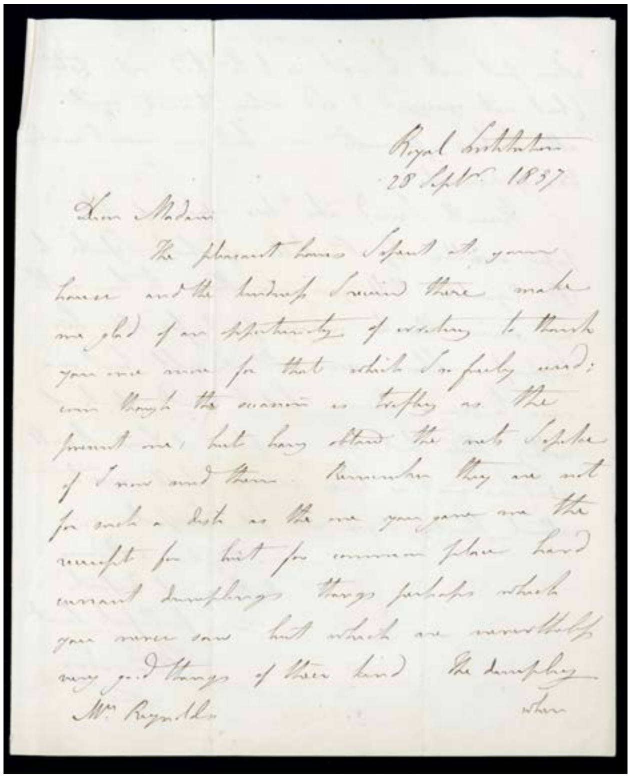
The statistician and social scientist Adolphe Quetelet, another of Faraday's scientific correspondents, is represented by two offprints in our volume, including the inscribed one listed above. Best known for his introduction of statistical methods into the social sciences, Quetelet was a polymath whose work on atmospheric electricity was much admired by Faraday. The two men corresponded and exchanged papers between the 1830s and the 1860s and appear to have enjoyed a warm professional relationship.

The last signed offprint is a thesis by Dutch mathematician Willem Wenckebach, lecturer at the Royal Military Academy in Breda and later professor of mathematics at Utrecht University. We have not been able to find any information about his connection with Faraday.

Among the other scientists represented in this volume are mathematician and engineer Jean Nicolas Pierre Hachette, one of the founders of France's École Polytechnique; physicist Amadeo Avogadro, for whom Avogadro's constant is named; physicist Auguste de la Rive, author of *Treatise on Electricity in Theory and Practice* (1854–58); natural historian and paleontologist Georges Cuvier; chemist Michel Chevreul; mathematician Gaspard de

Prony, whose method of compiling mathematical tables greatly influenced Charles Babbage; and mathematician and physicist Joseph Fourier, author of *Théorie analytique de la chaleur* (1822). For a full list of the offprints in this volume, **click here.**

The original binding, partially preserved for this volume, is exceptionally plain and utilitarian. Whether Faraday might have bound it for himself is unknown, but it is a distinct possibility, since he **began his working life as a bookbinder before turning to science.** Faraday, *The Select Correspondence of Michael Faraday,* ed. L. P. Williams (1971). Grattan-Guinness, *Convolutions in French Mathematics, 1800–1840* (1990). Hoffman, *André-Marie Ampère*, 1995. Williams, *Michael Faraday*. 44490



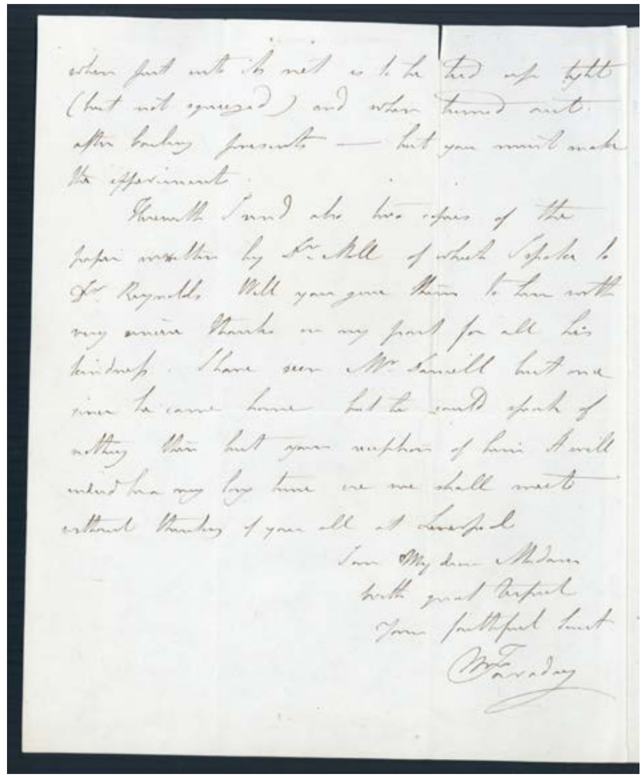
Royal Institution
28 Septr. 1837

Dear Madam

The pleasant hours I spent at your house and the kindness I received there make me glad of an opportunity of writing to thank you once more for that which I so freely used; even though the occasion is trifling as the present one, but having obtained the nets I spoke of I now send them. Remember they are not for such a dish as the one you gave me the receipt for but for common place hard currant dumplings things perhaps which you never saw but which are nevertheless very good things of their kind. The dumpling

Mrs. Reynolds

when



when put into its net is to be tied up tight (but not squeezed) and when turned out after boiling presents — but you must make the experiment.

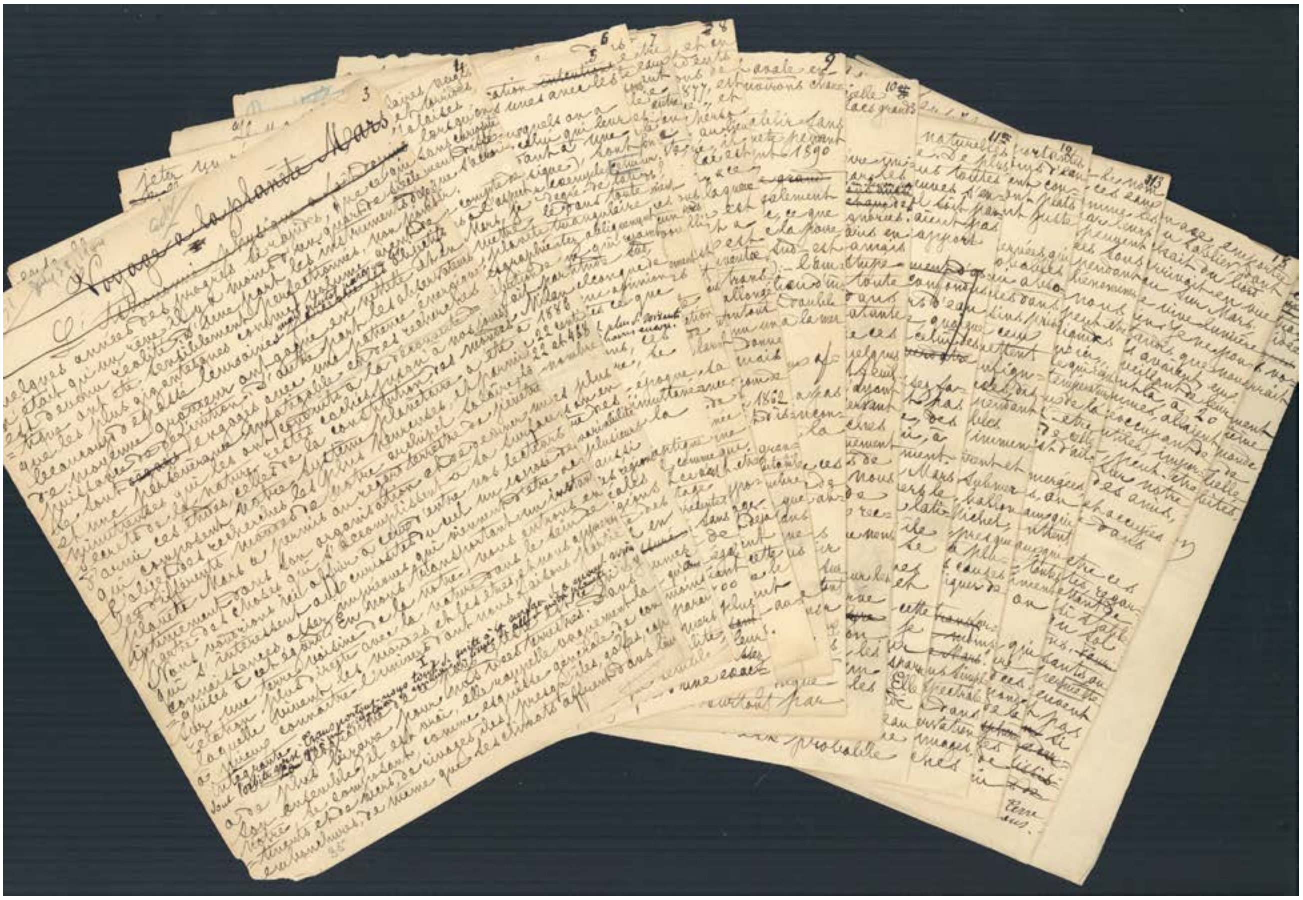
Herewith I send also two copies of the paper written by Dr. Moll of which I spoke to Dr. Reynolds. Will you give them to him with very sincere thanks on my part for all his kindness. I have seen Mr. Daniell but once since he came home but he could speak of nothing then but your [illegible] of him. It will indeed be a very long time ere we shall meet without thinking of you all at Liverpool.

I am My dear Madam
With great Respect
Your faithful Servt
M. Faraday

"Two Copies of the Paper Written by Dr. Moll"

15. Faraday, Michael (1791-1867). Autograph letter signed to Mrs. Reynolds. [London,] Royal Institution, 28 Sept. 1837. 2pp. plus integral blank. 229 x 189 mm. Creased where previously folded, small marginal tear, pin-holes in upper right corner of first leaf, otherwise fine. $1500

Letter by Michael Faraday, the British physicist best known for his discovery of electromagnetic induction and his invention of the dynamo. The second paragraph of the letter mentions "two copies of the paper written by Dr. Moll of which I spoke to Dr. Reynolds"—this may be a reference to Gerard Moll's *On the Alleged Decline of Science in England* (1831), a pamphlet published as a rebuttal to Charles Babbage's *Reflections on the Decline of Science in England, and on Some of its Causes* (1830). Moll's pamphlet was edited and published by Faraday; see *Origins of Cyberspace*, no. 40. In the same paragraph, Faraday refers to "Daniell," probably John Frederic Daniell (1790-1845), inventor of the long-functioning electric battery known as the Daniell cell. We have not been able to identify Faraday's correspondent. 38489



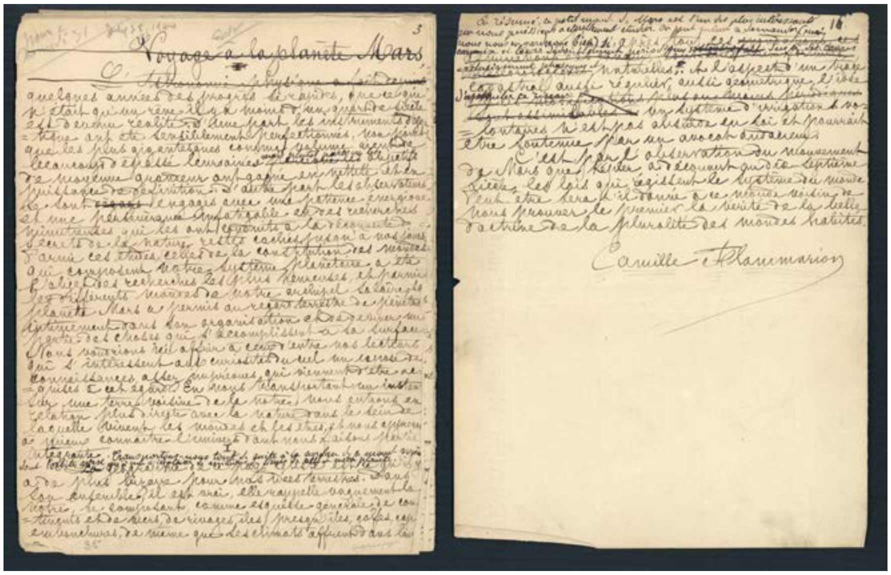
The Planet Mars—Author's Possibly Unpublished Autograph Draft

16. Flammarion, Camille (1842-1925). Voyage à la planète Mars. Autograph manuscript in French, signed by Flammarion on last leaf. 4to. 3-16ff., in ink, rectos only. [Paris or Juvisy, 1892.] Loose sheets. Lightly creased, browning, slight soiling & chipping, but very good. $12,500

Flammarion's signed autograph draft of what appears to be a popular article based on a section of his classic *La Planète Mars et ses Conditions d'Habitabilité*, published in 1892. Some of the text in our manuscript, particularly that on ff. 8 and 9, appears in the first volume of *La Planète Mars*, in the chapter titled "Changements actuellement observes" (pp. 547-578); however, the remainder of the manuscript's text varies widely from the printed book's, and appears to be geared toward a more general audience. *La Planète Mars* was the most comprehensive work on Mars to yet appear, and Flammarion's views on Mars dominated the field in Europe much as Percival Lowell's did in America (Lowell began his observations and writings in the mid-1890s, after Flammarion).

The manuscript shows some revisions by Flammarion on most leaves, ranging from crossing out of a few words to the interpolation of several lines of text. A second editor has marked the text in a few places in the margin in plain and colored pencil, and the first leaf bears the pencil date July 28, 1944 in the upper margin. The first leaf is numbered 3 in Flammarion's hand; however, the title and beginning of the text occur on this leaf. Despite the presence of editorial markings, we have found no evidence that Flammarion's article was published.

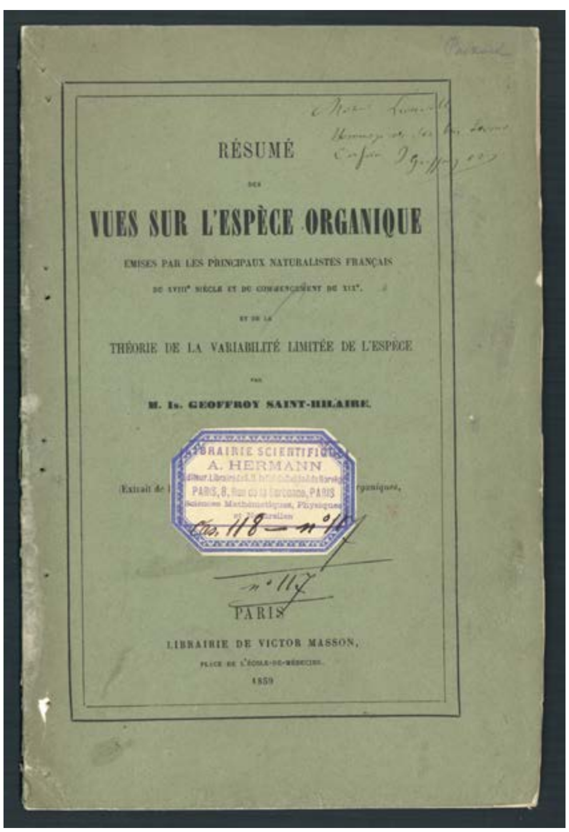
The date of this text is important not only for preceding Flammarion's great work on Mars, but also because it represents an early date in the acceptance of Mars's "canals," a supposed network of lines crisscrossing the planet (these lines are actually optical illusions caused by the human brain's tendency to impose patterns on visual data). First described by Italian astronomer Giovanni Schiaparelli in 1878, the Martian "canals" led to a great



deal of popular speculation about the possibility of intelligent life on Mars and became a staple of science fiction. It was not until the Mariner flights to Mars in the late 1960s that the notion of canals on Mars was finally put to rest.

In the present manuscript Flammarion, referring to Schiaparelli's observations of 1877-86, accepts that the Mars canals exist, that they are not optical effects, and that they show variation linked with the seasons on Mars. Flammarion states that it would not be completely absurd to consider that the canals could be the work of intelligence. He paints a poetic picture of evening on earth contrasted with morning on Mars, and speculates that if there were Martians, their intelligence would be superior to ours. Glasstone, *The Book of Mars* 19-31, reproducing several maps from Flammarion's *La Planète Mars*. Ley & von Braun, *The Exploration of Mars* (1956) 45-46, 48-52, 61, 174, also reproducing Flammarion's maps. 44531

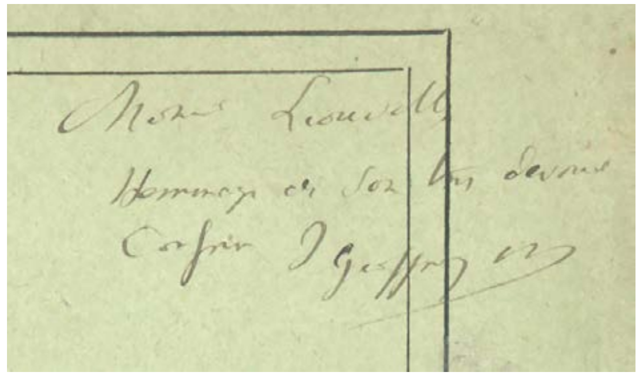
Geoffroy Saint-Hilaire's Theory of Evolution—Presentation Copy of the Extremely Rare Offprint



17. Geoffroy Saint-Hilaire, Isidore (1805-61). Résumé des vues sur l'espèce organique émises par les principaux naturalistes français du XVIIIe siècle et du commencement du XIXe, et de la théorie de la variabilité limitée de l'espèce. Offprint from *Histoire naturelle générale des règnes organiques*, Vol. II, pt. 2. 40pp. Paris: Victor Masson, 1859. 236 x 157 mm. Original printed wrappers, spine repaired, stab-holes in left margin, one or two tiny marginal tears. *Presentation Copy*, inscribed by Geoffroy to French mathematician Joseph Liouville (1809-72) on the front wrapper: "Mons. Liouville Hommage de son très devoué confrère I Geoffroy." 19th-century bookseller's label of A. Hermann tipped to front wrapper. Embossed stamp of Bowdoin College library on p. 15. Marginal notes (in English) in pencil on several pages. $2750

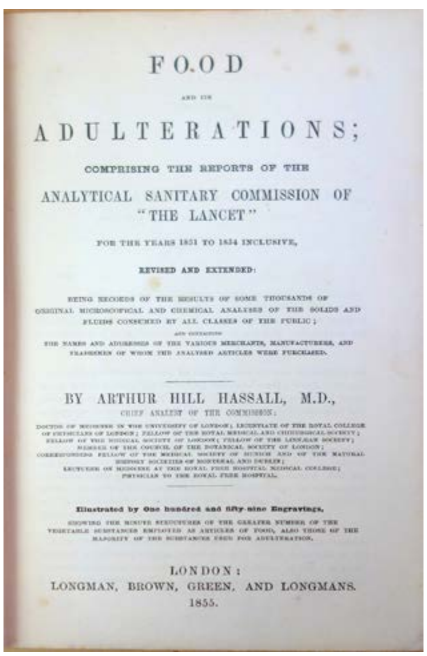
First Edition, with only three copies (all in French libraries) cited in OCLC. This copy bears Geoffroy's presentation inscription to French mathematician Joseph Liouville, a fellow member of the Académie des Sciences, best remembered for his work on fractional calculus, differential geometry and transcendental numbers, and for founding the influential *Journal de Mathématiques Pures et Appliquées.*

Isidore Geoffroy Saint-Hilaire, son of naturalist Étienne Geoffroy Saint-Hilaire, was a major participant in the debates on the species question that occupied scientists in the mid-nineteenth century prior to the publication of Darwin's *On the Origin of Species* (1859). These arguments ranged from the transformist theories of Lamarck and the elder Geoffroy, who claimed that new habits and environments could bring about heritable structural changes in organisms, to the essentialist ideas of Cuvier and his followers, who believed that species did not change over time. Drawing on his own researches in teratology (a term he coined) and zoology, Isidore came up with his own theory of limited variability of type that



> viewed the organism as anchored by a specific type, an idealized rather than real form, which constituted a fixed point around which the oscillations of nature played . . . [The theory] was bolstered by much empirical evidence including animal hybridization experiments undertaken at the menagerie of the Muséum National d'Histoire Naturelle. It was also supported by exhaustive taxonomic work on teratological anomalies and comparisons with lesser morphological variations (*New Dictionary of Scientific Biography*).

Isidore's theory of the limited variability of species type is summarized at the end of the *Résumé*, which begins with reviews of the species theories advanced by Buffon, Lamarck, Cuvier and the elder Geoffroy. The work is a separate printing of selections from the second volume of Isidore's *Histoire naturelle générale des règnes organiques* (1854-62), which contains the final expression of his limited-variability theory; both the volume and the separate publication were published in 1859. It is likely that Isidore arranged for this separate printing in order to highlight his place among the French evolutionary theorists of the eighteenth and nineteenth centuries. 44535

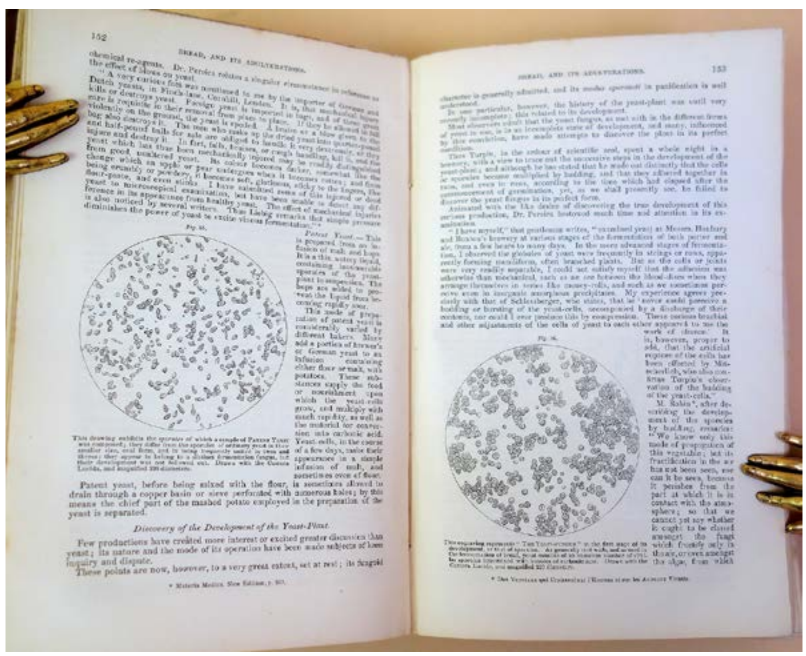


FOOD
AND ITS
ADULTERATIONS;
COMPRISING THE REPORTS OF THE
ANALYTICAL SANITARY COMMISSION OF
"THE LANCET"
FOR THE YEARS 1851 TO 1854 INCLUSIVE,
REVISED AND EXTENDED:
BEING RECORDS OF THE RESULTS OF SOME THOUSANDS OF ORIGINAL MICROSCOPICAL AND CHEMICAL ANALYSES OF THE SOLIDS AND FLUIDS CONSUMED BY ALL CLASSES OF THE PUBLIC;
AND CONTAINING
THE NAMES AND ADDRESSES OF THE VARIOUS MERCHANTS, MANUFACTURERS, AND TRADESMEN OF WHOM THE ANALYSED ARTICLES WERE PURCHASED.

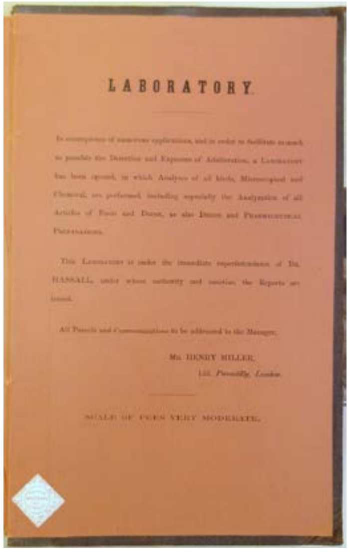
BY ARTHUR HILL HASSALL, M.D.,
CHIEF ANALYST OF THE COMMISSION;
[illegible]

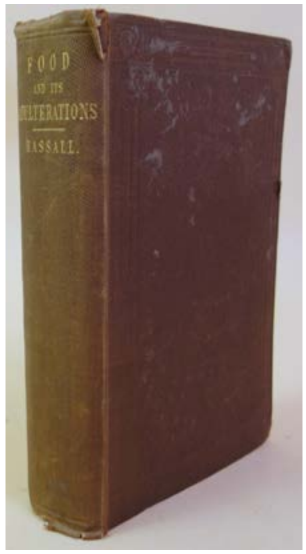
Illustrated by One hundred and fifty-nine Engravings,
SHOWING THE MINUTE STRUCTURES OF THE GREATER NUMBER OF THE VEGETABLE SUBSTANCES EMPLOYED AS ARTICLES OF FOOD, ALSO THOSE OF THE MAJORITY OF THE SUBSTANCES USED FOR ADULTERATION.

LONDON:
LONGMAN, BROWN, GREEN, AND LONGMANS.
1855.

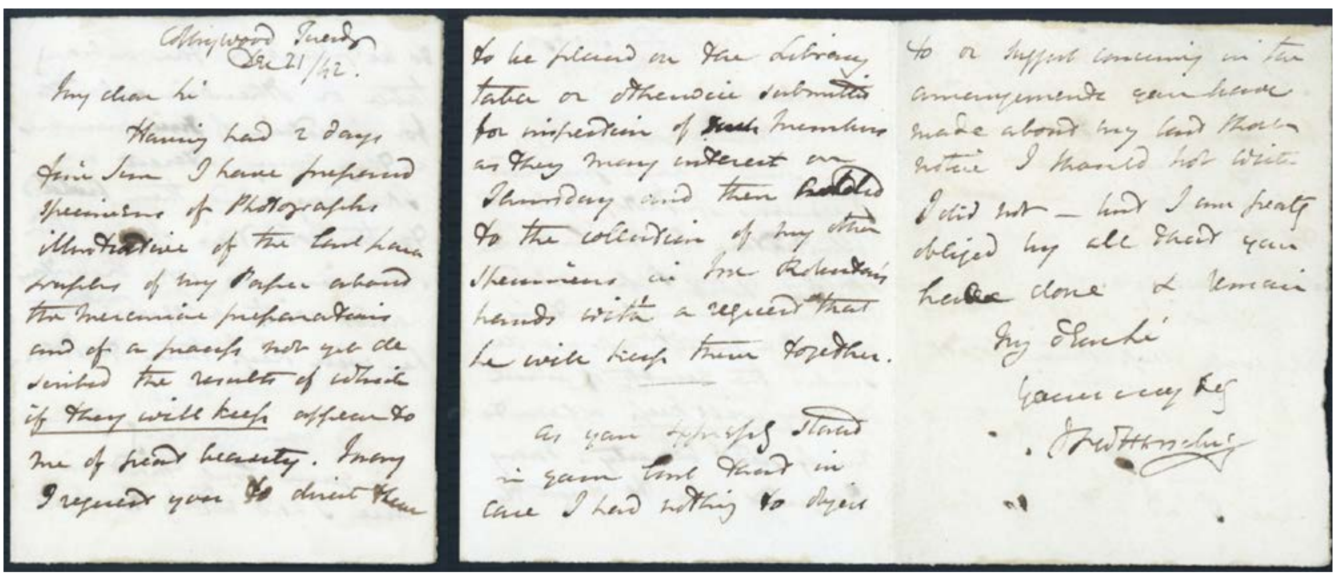


18. Hassall, Arthur Hill (1817-94). Food and its adulterations; comprising the reports of the analytical sanitary commission of "The Lancet" for the years 1851 to 1854 inclusive. . . . 8vo. [4] xlviii, 659 [1]pp., publishers' adverts. 159 text wood-engravings. London: Longman [etc.], 1855. 222 x 142 mm. (partially unopened). Original cloth, somewhat shaken, worn & spotted. Light browning & foxing, but very good. $950





First Edition. The first half of the nineteenth century saw flagrant and widespread food adulteration practiced by British merchants, who routinely used such substances as alum, potato flour, chicory and even poisonous mineral salts to extend, bleach and color their products. Public concern had been aroused in 1820 with the publication of Accum's *Treatise on the Adulteration of Food and Culinary Poisons*, but this had little lasting effect, and food merchants continued to adulterate their products until another public scare in 1848 prompted the editor of the *Lancet* to appoint an Analytical and Sanitary Commission, consisting of Hassall and Dr. W. Letheby, to investigate and report on the quality of foods consumed by all classes of the British public. Hassall performed chemical analyses of suspect foodstuffs, using methods superior to any previously employed, and was the first to demonstrate the value of the microscope in detecting adulterants. His revelations, first published in a series of articles in the *Lancet* from 1851-1855, inspired the appointment of a select Parliamentary Commission on food adulteration and led to the passage of the first Food and Drug Act in 1860. An advertisement for Dr. Hassall's testing laboratory is on the rear pastedown. Drummond & Wilbraham, pp. 341-347. Norman 1019. 44563



Collingwood Tuesday
Dec 21/42.
My dear Sir
Having had 2 days fine sun I have prepared specimens of Photographs illustrative of the last few [illegible] of my Paper about the mercurial preparations and of a process not yet described the results of which if they will keep appear to me of great beauty. May I request you to direct them to be placed on the Library table or otherwise submitted for inspection of such members as they may interest on Thursday and then [illegible] to the collection of my other specimens in [illegible] hands with a request that he will keep them together.

As you [illegible] in your last that in case I had nothing to [illegible] to a [illegible] [illegible] in the arrangements you have made about my last [illegible] I should not write. I did not — but I am greatly obliged by all that you have done & remain
My dear Sir
Yours very truly
J F W Herschel

"I Have Prepared Specimens of Photographs"

19. Herschel, John F. W. (1792-1871). Autograph letter signed to an unidentified correspondent [Samuel Hunter Christie (1784-1865)]. Collingwood [House, Hawkhurst], December 21, 1842. 3pp. 122 x 98 mm. Very good. $3750

Excellent letter discussing photographic researches from Sir John Herschel, whose intensive investigations in photography and photochemistry during the late 1830s and early 1840s led to enormous advances in the field in its earliest days. Herschel coined the terms "photography," "positive," and "negative," invented new photographic processes and improved existing ones, and experimented with color reproduction.

Herschel's letter begins with a discussion of his latest photographic work:

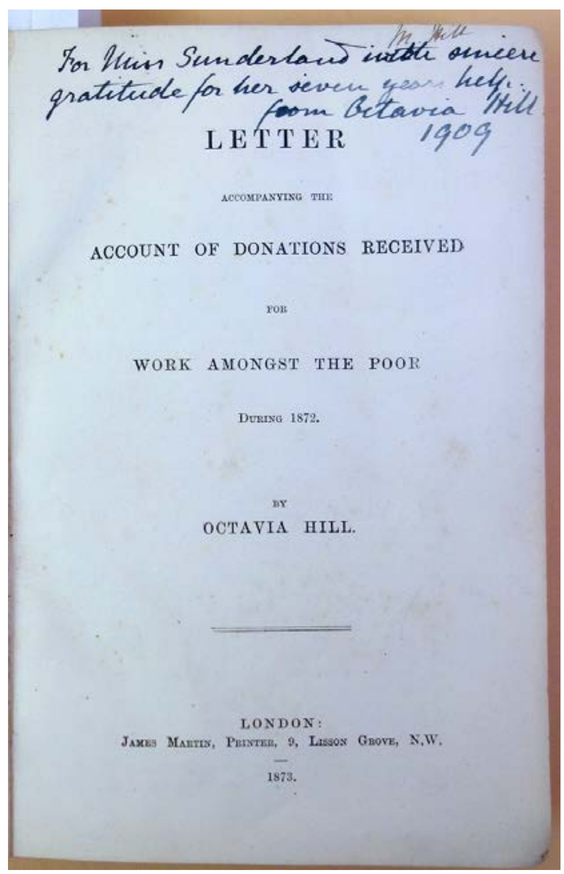
> Having had 2 days fine sun I have prepared specimens of photographs illustrative of the last paragraphs of my paper about the mercurial preparations and of a process not yet described that results of which if they will keep appear to me of great beauty. May I request you to direct them to be placed on the library table or otherwise submitted for inspection of such members as they may interest on Thursday and then added to the collection of my other specimens in Mr. Robertson's hands with a request that he will keep them together.

Herschel refers here to one of the two important papers on photography that he submitted to the Royal Society in 1842: "On the action of the rays of the solar spectrum on vegetable colours, and on some new photographic processes" (*Philosophical Transactions* 132 [1842]: 181-214) and "On certain improvements on photographic processes described in a former communication, and on the parathermic rays of the solar spectrum" (*Philosophical Transactions* 133 [1843]: 1-6). These papers discussed Herschel's photochemical experiments with a wide range of organic and metallic materials and announced his invention of two new photographic processes: The gold-based chrysotype, and the cyanotype, an iron-based method using potassium ferricyanide. This last process, which produces white images on a blue ground directly onto paper, is the ancestor of the modern blueprint. The "process not yet described" probably refers to Herschel's experimental and ultimately unsuccessful mercury-based photographic process, which he christened "celanotype." Herschel's correspondent was mathematician and physicist Samuel Hunter Christie, who made important contributions to the study of magnetism; he served as secretary of the Royal Society from 1837 to 1843. See Schaaf, *Out of the Shadows* (1992), chs. 3-5 for a detailed discussion of Herschel's photographic researches, including excerpts from his unpublished scientific notebooks. Hannavy, *Encyclopedia of Nineteenth-Century Photography* (2008), p. 655. 40222

Alleviating Poverty and Improving Living Conditions for Britain's Poor: Presentation Copy Bound from the Original Parts

20. Hill, Octavia (1838-1912). Letter [to my fellow workers] accompanying the account of donations received for work amongst the poor during 1872 [-1908]. 30 parts in one volume. London: V.p., 1873-1909. 177 x 125 mm. Original limp calf, gilt-lettered spine, some wear at edges and hinges, front hinge cracked but sound. Very good. *Presentation Copy*, inscribed by Hill on the title of the first part: "For Miss Sunderland with sincere gratitude for her seven years help from Octavia Hill 1909." Several parts bear the signature or annotations of Miranda Hill (1836-1910), Octavia Hill's sister and fellow social reformer.

$2250



M. Hill

For Miss Sunderland with the sincere gratitude for her seven years help. from Octavia Hill 1909

LETTER

ACCOMPANYING THE

ACCOUNT OF DONATIONS RECEIVED

FOR

WORK AMONGST THE POOR

DURING 1872.

BY

OCTAVIA HILL.

LONDON:

JAMES MARTIN, PRINTER, 9, LISSON GROVE, N.W.

1873.

First Book-Form Edition, bound up from the original parts, of Hill's privately printed quasi-annual reports detailing her work to alleviate poverty and improve the living conditions of England's urban poor. The recipient of this copy was most likely Joan Sunderland, who worked with Hill and later became a manager of working-class property in London. Several of the parts bear the signature or annotations of Hill's sister Miranda, founder of the influential Kyrlie Society, whose mission was to provide the poor with art, books and open spaces.

Octavia Hill, the famous English social reformer, was a major force behind the development of adequate housing for Britain's working poor and unemployed, who for the most part

My Friends,

I am very late in writing to you. Here is February nearly over before I send to you all heartiest thanks for last year's help. It has not been, believe me, for want of thought about you, and desire to write.

RUMPELSTILTSKIN.

BY

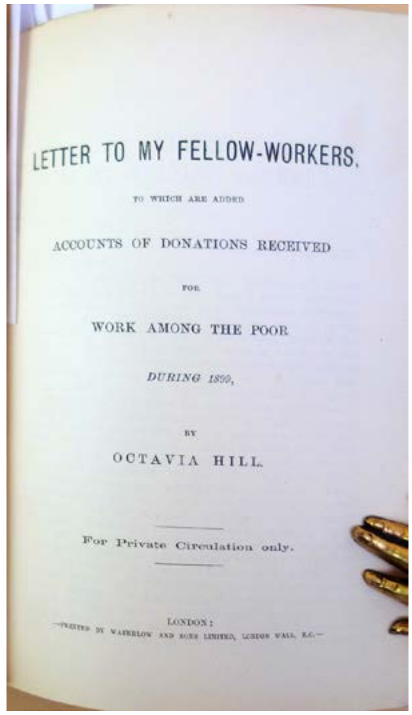
MIRANDA HILL.

Price 3d.

190, MARYLEBONE ROAD, N.W.

One of a series of plays written for, and acted by, the tenants' children at St. Christopher's Place during the last nine years.

Donation Accounts printed herewith show not a tithe of what has been sent. In general my large appeals are issued in connection with some public body which renders its own accounts, and I only acknowledge here the money sent to me for disposal privately. With regard to workers who give, not money, but themselves, we are always enrolling more, and we are always needing more; not only because our work is always increasing, but because, as our workers grow, they are continually becoming leaders able to be the centre of fresh groups of



LETTER TO MY FELLOW-WORKERS,

TO WHICH ARE ADDED

ACCOUNTS OF DONATIONS RECEIVED

FOR

WORK AMONG THE POOR

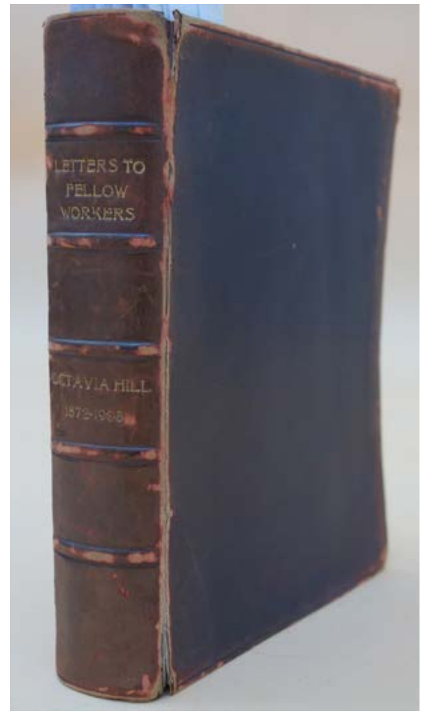
DURING 1899,

BY

OCTAVIA HILL.

For Private Circulation only.

LONDON:

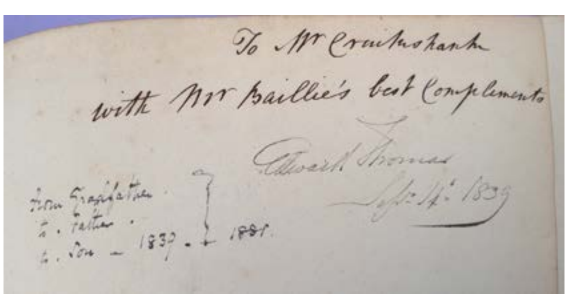


Slip advertising Miranda Hill's play
"Rumpelstilskin" bound into the "Letters"

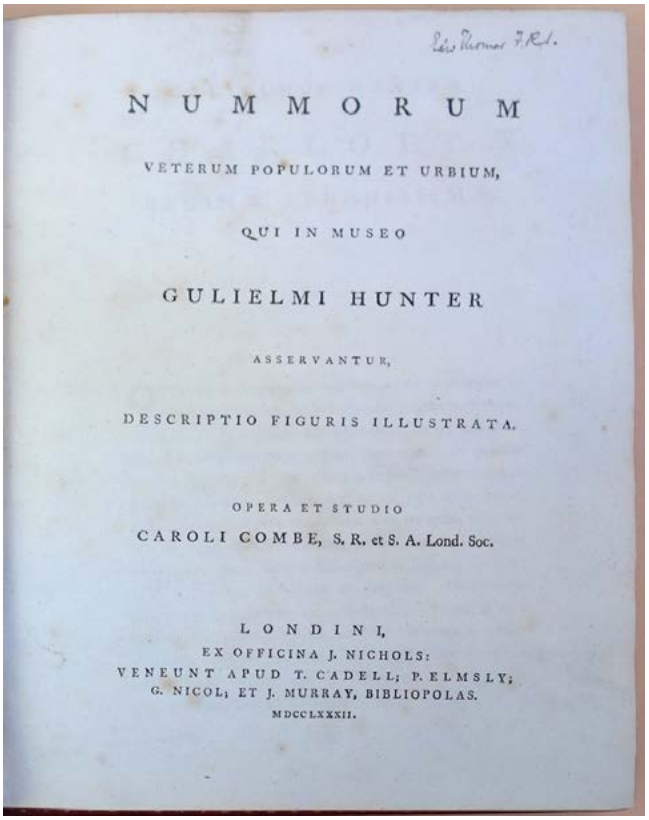
lived in cold, crowded and disease-ridden city slums. In 1865, with financial help from John Ruskin, Hill began acquiring and improving properties in London to rent to low-income families; by 1874 she had fifteen housing schemes under her management, serving around 3000 tenants. Hill employed female rent collectors and housing managers who acted as early social workers, establishing personal connections with each tenant and making sure that their residences were properly maintained. She also set up tenants' associations, after-school clubs for children and other organizations to improve tenant welfare. In the 1870s Hill expanded her efforts to include the preservation of accessible open spaces in England's cities, working with her sister Miranda to found the Kyrlie Society to "bring beauty home to the poor." In the 1880s she helped to set up the Commons Preservation Society (now the Open Space Society), and in 1893 she became one of the three founders of Britain's National Trust.

The "Letters" in our volume cover the years 1872, 1875, 1877-81, 1884-85 jointly, and 1887-1908. The volume also includes two articles by Hill: "Management of houses for the poor," following the "Letter" for 1896; and "Housing difficulties: Management versus reconstruction," following the "Letter" for 1904. OCLC records a volume identical to the one we are offering, so it appears that ours is complete as issued. 44441

Inscribed by Hunter's Nephew, Matthew Baillie, to Hunter's Assistant William Cruikshank



21. Hunter, William (1718-83). Nummorum veterum populorum et urbium, qui in museo Gulielmi Hunter asservantur, descriptio figuris illustrata. Opera et studio Caroli Combe . . . 4to. xi, [1], 354, [2, errata]pp. 68 engraved plates. London: J. Nichols; sold by T. Cadell; P. Elmsley, G. Nichol & J. Murray, 1782. 286 x 228 mm. Red crushed morocco gilt ca. 1784, a.e.g., slight wear at edges, evidence of bookplate removal inside front cover. Fine



NUMMORUM

VETERUM POPULORUM ET URBIUM,

QUI IN MUSEO

GULIELMI HUNTER

ASSERVANTUR,

DESCRIPTIO FIGURIS ILLUSTRATA.

OPERA ET STUDIO

CAROLI COMBE, S. R. et S. A. Lond. Soc.

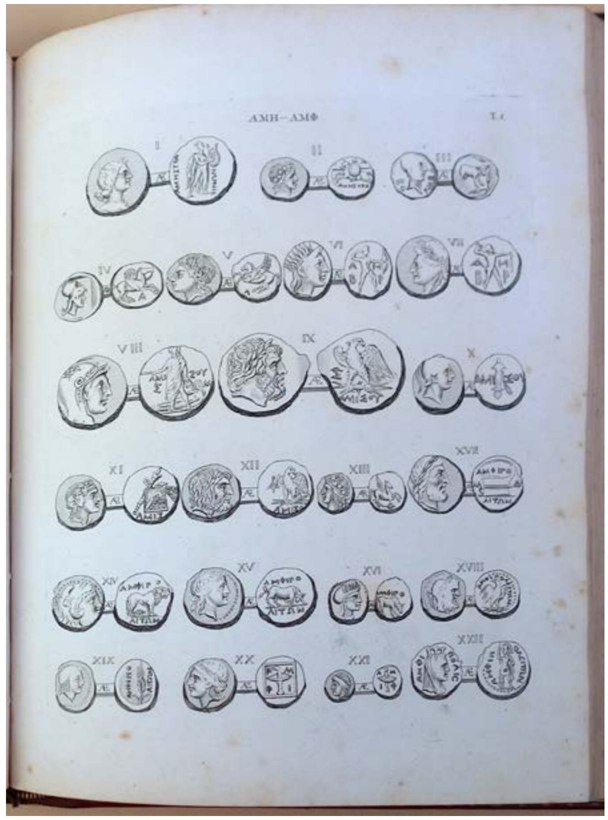
LONDINI,

EX OFFICINA J. NICHOLS:

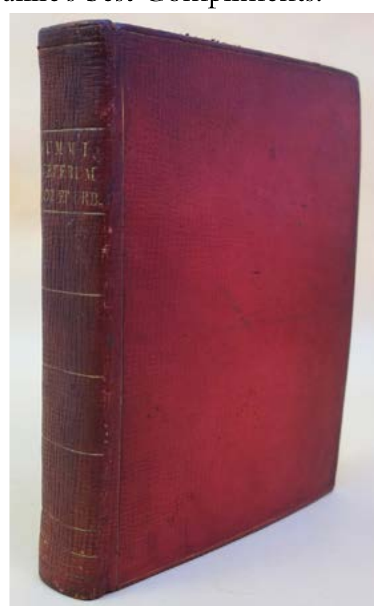
VENEUNT APUD T. CADELL; P. ELMSLY;

G. NICOL; ET J. MURRAY, BIBLIOPOLAS.

MDCCLXXXII.

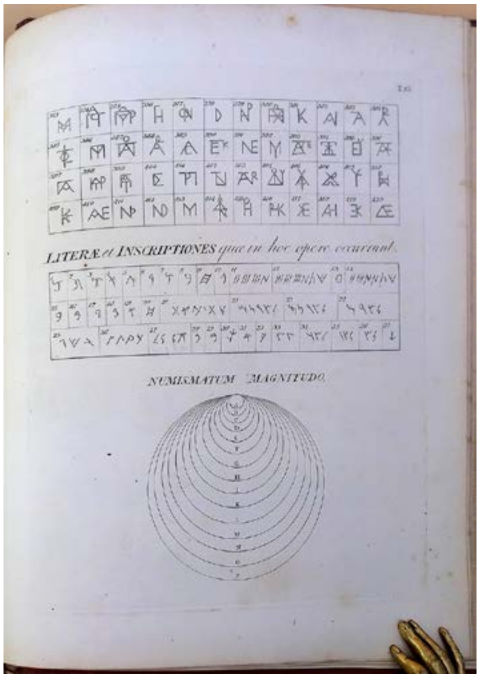


copy apart from some foxing to the plates. Inscribed by Matthew Baillie (1761-1823) to William Cruikshank (1745-1800) on the front flyleaf: "To Mr. Cruikshank with Mr. Baillie's best Compliments." 19th cent. ownership signature of Edward Thomas, dated Sept. 14, 1839, and later note, presumably by a Thomas descendent. $5000

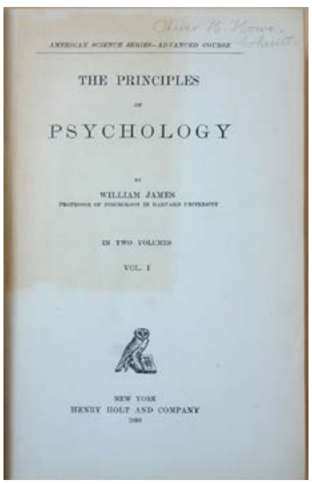


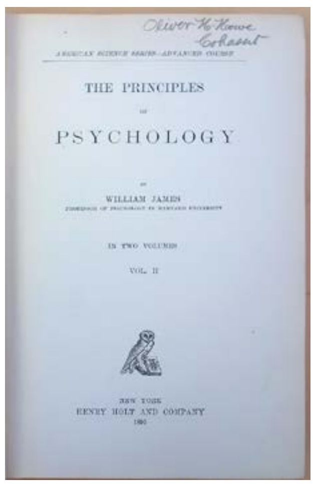
First Edition of the first and only published installment of the catalogue of William Hunter's magnificent collection of coins, a collection regarded as one of the finest in the world. Hunter, the great British surgeon, had a wide range of collecting interests including rare books, manuscripts, paintings and sculpture. He began collecting coins around 1770, and by the time of his death had spent over £22,000 on this pursuit—an enormous sum by the standards of the day. After Hunter's death, by the terms of his will, the coin collection, together with Hunter's books, pictures and anatomical models, remained in the care of three trustees for thirty years, after which time they became the property of the University of Glasgow. In 1807 the collections were sent to Glasgow, where they now represent the core of the University's Hunterian Museum.

Nummorum veterum populorum et urbium was compiled by Charles Combe (1743-1817), a physician and coin dealer who became acquainted with Hunter in 1773, and greatly assisted Hunter in forming his collection. Combe was one of the three trustees appointed in Hunter's will to administer his collections, the other two being Dr. George Fordyce and Dr. David Pitcairne. Combe had originally intended to prepare a catalogue of the complete Hunterian coin collection but was able to publish only this installment. The work is illustrated with 68 plates that Combe took care to make "more faithful to the original coins than the illustrations in previous numismatic works" (*Dictionary of National Biography*).



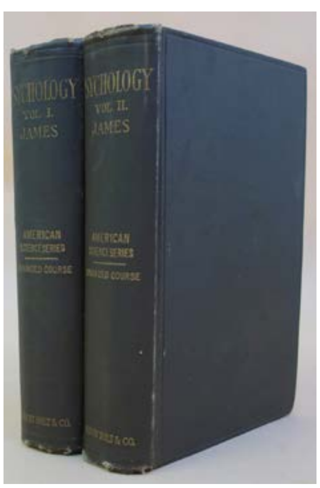
Our copy of *Nummorum veterum populorum et urbium* has an outstanding association, being inscribed by Hunter's nephew Matthew Baillie to Hunter's assistant William Cruikshank. Baillie and Cruikshank took over the administration of Hunter's Windmill Street anatomy school after Hunter's death. Hunter bequeathed the use of his collections to Baillie for a term of thirty years; had Baillie died during this time, the use of the collections would have passed to Cruikshank. Both men made lasting contributions to medicine. Baillie is best known as the author of *The Morbid Anatomy of Some of the Most Important Parts of the Human Body,* the first systematic study of pathology and the first publication in English on pathology as a separate subject (see Garrison-Morton.com 2281). Cruikshank, together with John Hunter and William Hewson, laid the foundation of modern knowledge of the lymphatic system, as described in Cruikshank's *Anatomy of the Absorbing Vessels of the Human Body* (1786; see Garrison-Morton 1103). *Dictionary of Scientific Biography.* Garrison-Morton.com 7581. Simmons and Hunter, *William Hunter 1718-1783*, ed. C. H. Brock, p. 27. 40362





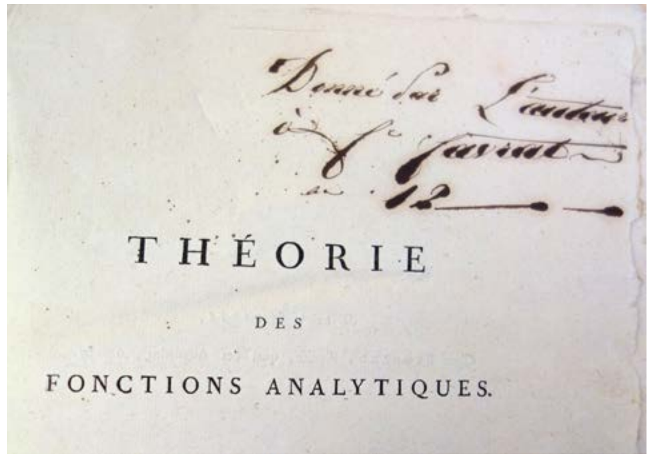
22. James, William (1843–1910). The principles of psychology. 2 vols. [2], xii, 689; [2], vi, 704, 8 (adverts.)pp. New York: Henry Holt and Company, 1890. 218 x 142 mm. Original olive cloth, gilt-lettered spines, light wear, a few tiny splits in spinal extremities. Light toning, minor offsetting on Vol. I title, but a very good set. Owner's signature on titles; modern bookplate. $2500

First Edition of James's classic textbook of psychology, a work that has become scarce on the market. James's work represents one of the first attempts to treat psychology as a natural science in which the mind is conceived of as being subject to both Darwininan evolutionary principles and to acts of will. "The book presents, in masterly language, a wealth of naturalistic observation about human behaviour and conscious experience . . . It makes clear that psychology concerns, and is of concern to, the lives of individual people. It is exploratory, not consistently scientific in spirit, and arrives at no coherent theory of psychology. However, it widens horizons and raises issues that have, in the twentieth century, been approached scientifically. It raises many issues that still challenge scientific enquiry" (*Oxford Companion to the Mind*, p. 396).



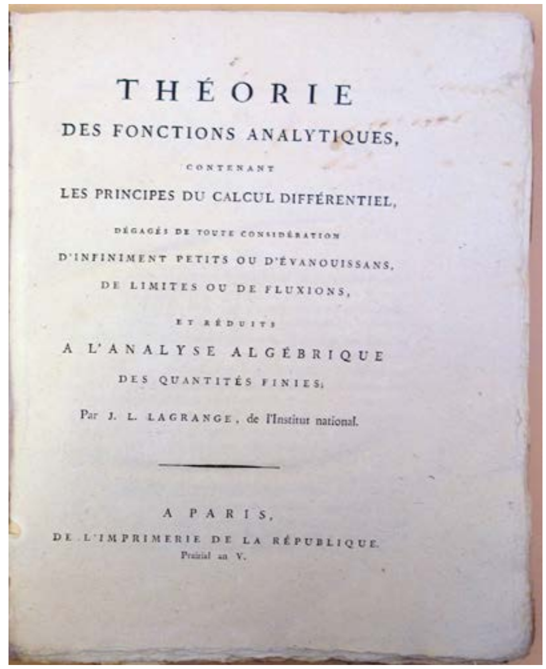
Though unidentified in the book, this is a *later impression* with the date of the original printing. The *Principles* was printed from stereotype plates so that only one edition exists, with numerous printings all made from the original set of plates. The first impression can be distinguished by the reading "the seat of intellectual power" in Vol. I, p. 10, lines 9–10, and by the reading "object of sensation" in Vol. II, p. 101, line 20. Garrison-Morton.com 4977.2. Norman 1153. 44554

Presentation Copy



23. Lagrange, Joseph Louis (1736-1813). Théorie des fonctions analytiques, contenant les principes du calcul différentiel . . . 4to. [4], viii, 277, [3, inc. blank leaf] pp. Paris: Imprimerie de la République, An V [1797/98]. 275 x 215 mm. (uncut and largely unopened). Original paste paper boards, hinges cracked but holding, light wear to spine. Minor foxing and toning, otherwise a very good, crisp copy. With cancel leaf H2. *Presentation Copy*, inscribed on the half-title: "Donné par l'auteur a S. Favral [?] an 12," probably in a secretarial hand.

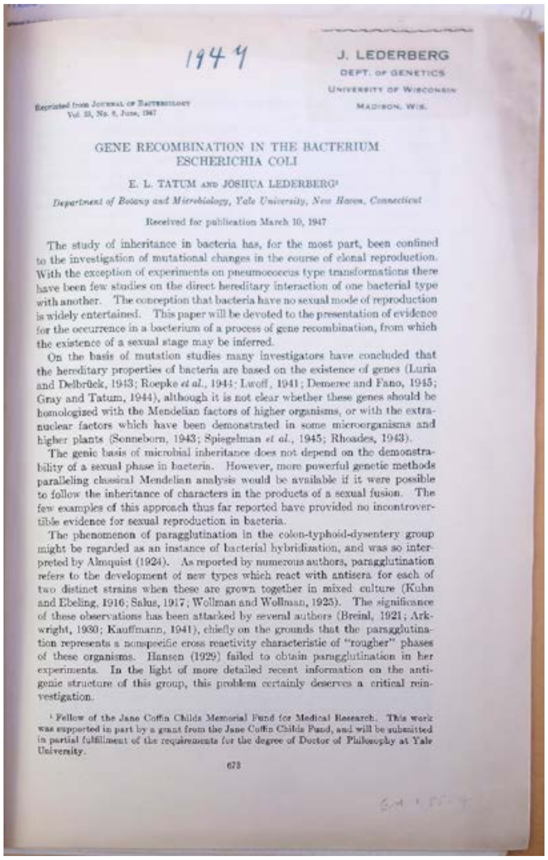
$9500



First Edition, First Issue, with bookseller's notice on the verso of the half-title, cancel leaf H2, errata list on p. 277, and 4 leaves (including final blank) in sig. Mm. The present work was Lagrange's first full-length attempt to show that power series expansions are sufficient to provide a solid foundation for differential calculus, a subject he had treated earlier in a 1772 paper.

> Lagrange's commitment to the necessity of an algebraic foundation for the calculus led him to the major accomplishment of the *Fonctions Analytiques*, in which he studied functions by means of their power series expansions. He believed that every function could be expanded into a power series . . . One of the basic results that followed in the *Fonctions Analytiques* is part of what is known today as the fundamental theorem of calculus (Seikali).

In the H. F. Norman catalogue, we stated that there were two issues of the present work, both published in the same year: A version with 276 pages, forming Vol. III of the ninth cahier of the *J. de l'École Polytechnique*; and the present separate edition with 277 pages. Later research has shown this to be incorrect: There are in fact two separate issues of the *Théorie des fonctions analytiques* —Version A, with 276 pages, and Version B, with 277—as well as the journal issue. Version B is the true first edition: This is revealed by the 8-page index that appears at the beginning of both A and B, which refers to the "Conclusion" on pp. 276-277. Since Version A does not have a page 277, it is clear that the index must have been prepared for Version B, making B the earlier issue. Version B's priority is confirmed by the fact that, in Version A the errata listed in Version B have been corrected. The journal printing of Lagrange's work is also Version B. Norman 1258. Seikali, Nahla. "Joseph-Louis Lagrange." Robin Hartshorne. N.p., n.d. Web. Accessed 04 Jan. 2013. 44487



1947

J. LEDERBERG
DEPT. OF GENETICS
UNIVERSITY OF WISCONSIN
MADISON, WIS.

Reprinted from Journal of Bacteriology
Vol. 53, No. 6, June, 1947

GENE RECOMBINATION IN THE BACTERIUM ESCHERICHIA COLI

E. L. TATUM AND JOSHUA LEDERBERG[1]

Department of Botany and Microbiology, Yale University, New Haven, Connecticut

Received for publication March 10, 1947

The study of inheritance in bacteria has, for the most part, been confined to the investigation of mutational changes in the course of clonal reproduction. With the exception of experiments on pneumococcus type transformations there have been few studies on the direct hereditary interaction of one bacterial type with another. The conception that bacteria have no sexual mode of reproduction is widely entertained. This paper will be devoted to the presentation of evidence for the occurrence in a bacterium of a process of gene recombination, from which the existence of a sexual stage may be inferred.

On the basis of mutation studies many investigators have concluded that the hereditary properties of bacteria are based on the existence of genes (Luria and Delbrück, 1943; Roepke *et al.*, 1944; Lwoff, 1941; Demerec and Fano, 1945; Gray and Tatum, 1944), although it is not clear whether these genes should be homologized with the Mendelian factors of higher organisms, or with the extra-nuclear factors which have been demonstrated in some microorganisms and higher plants (Sonneborn, 1943; Spiegelman *et al.*, 1945; Rhoades, 1943).

The genic basis of microbial inheritance does not depend on the demonstrability of a sexual phase in bacteria. However, more powerful genetic methods paralleling classical Mendelian analysis would be available if it were possible to follow the inheritance of characters in the products of a sexual fusion. The few examples of this approach thus far reported have provided no incontrovertible evidence for sexual reproduction in bacteria.

The phenomenon of paragglutination in the colon-typhoid-dysentery group might be regarded as an instance of bacterial hybridization, and was so interpreted by Almquist (1924). As reported by numerous authors, paragglutination refers to the development of new types which react with antisera for each of two distinct strains when these are grown together in mixed culture (Kuhn and Ebeling, 1916; Salus, 1917; Wollman and Wollman, 1925). The significance of these observations has been attacked by several authors (Breinl, 1921; Arkwright, 1930; Kauffmann, 1941), chiefly on the grounds that the paragglutination represents a nonspecific cross reactivity characteristic of "rougher" phases of these organisms. Hansen (1929) failed to obtain paragglutination in her experiments. In the light of more detailed recent information on the antigenic structure of this group, this problem certainly deserves a critical reinvestigation.

[1] Fellow of the Jane Coffin Childs Memorial Fund for Medical Research. This work was supported in part by a grant from the Jane Coffin Childs Fund, and will be submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Yale University.

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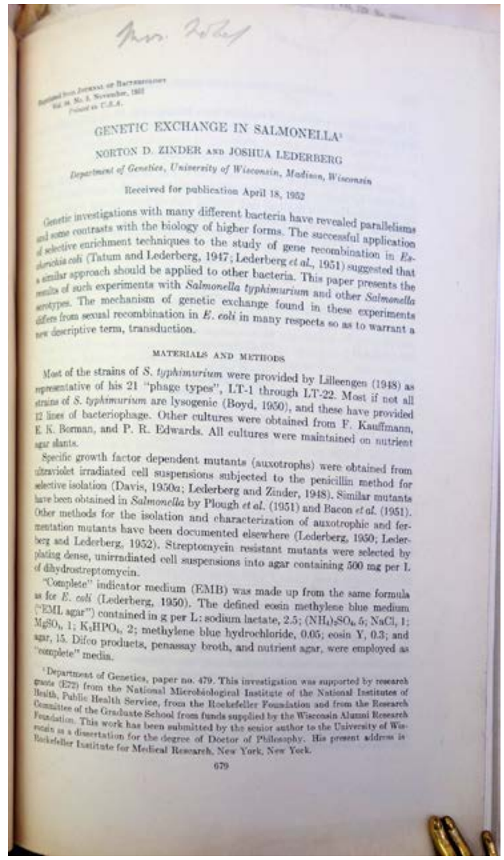

Reprinted from Journal of Bacteriology
Vol. 64, No. 5, November, 1952
Printed in U.S.A.

GENETIC EXCHANGE IN SALMONELLA[1]

NORTON D. ZINDER AND JOSHUA LEDERBERG

Department of Genetics, University of Wisconsin, Madison, Wisconsin

Received for publication April 18, 1952

Genetic investigations with many different bacteria have revealed parallelisms and some contrasts with the biology of higher forms. The successful application of selective enrichment techniques to the study of gene recombination in *Escherichia coli* (Tatum and Lederberg, 1947; Lederberg *et al.*, 1951) suggested that a similar approach should be applied to other bacteria. This paper presents the results of such experiments with *Salmonella typhimurium* and other *Salmonella* serotypes. The mechanism of genetic exchange found in these experiments differs from sexual recombination in *E. coli* in many respects so as to warrant a new descriptive term, transduction.

MATERIALS AND METHODS

Most of the strains of *S. typhimurium* were provided by Lilleengen (1948) as representative of his 21 "phage types", LT-1 through LT-22. Most if not all strains of *S. typhimurium* are lysogenic (Boyd, 1950), and these have provided 12 lines of bacteriophage. Other cultures were obtained from F. Kauffmann, E. K. Borman, and P. R. Edwards. All cultures were maintained on nutrient agar slants.

Specific growth factor dependent mutants (auxotrophs) were obtained from ultraviolet irradiated cell suspensions subjected to the penicillin method for selective isolation (Davis, 1950*a*; Lederberg and Zinder, 1948). Similar mutants have been obtained in *Salmonella* by Plough *et al.* (1951) and Bacon *et al.* (1951). Other methods for the isolation and characterization of auxotrophic and fermentation mutants have been documented elsewhere (Lederberg, 1950; Lederberg and Lederberg, 1952). Streptomycin resistant mutants were selected by plating dense, unirradiated cell suspensions into agar containing 500 mg per L of dihydrostreptomycin.

"Complete" indicator medium (EMB) was made up from the same formula as for *E. coli* (Lederberg, 1950). The defined eosin methylene blue medium ("EML agar") contained in g per L: sodium lactate, 2.5; $(NH_4)_2SO_4$, 5; NaCl, 1; $MgSO_4$, 1; K_2HPO_4, 2; methylene blue hydrochloride, 0.05; eosin Y, 0.3; and agar, 15. Difco products, penassay broth, and nutrient agar, were employed as "complete" media.

[1] Department of Genetics, paper no. 479. This investigation was supported by research grants (E72) from the National Microbiological Institute of the National Institutes of Health, Public Health Service, from the Rockefeller Foundation and from the Research Committee of the Graduate School from funds supplied by the Wisconsin Alumni Research Foundation. This work has been submitted by the senior author to the University of Wisconsin as a dissertation for the degree of Doctor of Philosophy. His present address is Rockefeller Institute for Medical Research, New York, New York.

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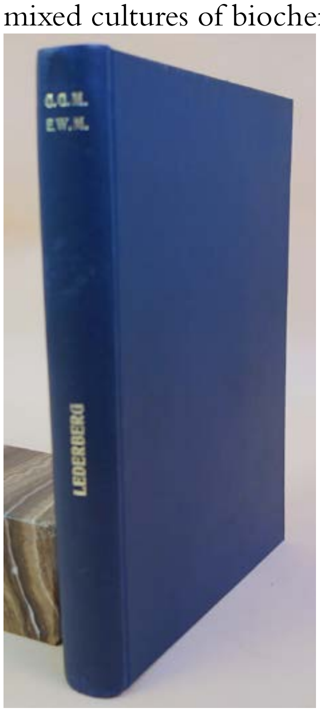
Foundation of Bacterial Genetics—Nobel Prize-Winning Work

24. Lederberg, Joshua (1925-2008). (1) (with Edward L. Tatum [1909-75]) Novel genotypes in mixed cultures of biochemical mutants of bacteria. Offprint from *Cold Spring Harbor Symposia on Quantitative Biology* 11 (1946). 113-114pp. Original printed wrappers, creased horizontally, margins a bit sunned. (2) (with Tatum). Gene recombination in the bacterium Escherichia coli. Offprint from *J. Bacteriology* 53 (1947). 673-684pp. Without wrappers. Light dust-soiling. Lederberg's address label tipped to first page. (3) (with Norton D. Zinder [1928-2012]) Genetic exchange in salmonella. Offprint from *J. Bacteriology* 64 (1952). 679-699pp., plus mimeographed addenda sheet. Without wrappers. Light soiling to first & last leaves. Bound in a volume (blue cloth, gilt-lettered spine) with 27 other offprints by Lederberg (either alone or in collaboration), plus one other offprint by Lederberg laid in loosely, and a paper by Lederberg's wife, Esther Lederberg. See list below for full descriptions. Volume bound for G. and E. Meynell, of the biology laboratory at the University of Kent, with their initials on the spine and address label on the inside front cover. Overall very good. **Click here** for complete listing. $12,500



(1) & (2) First Separate Editions. Lederberg shared the 1958 Nobel Prize for physiology or medicine with Tatum and George Beadle for their essential contributions to bacterial genetics. Among these contributions was Lederberg and Tatum's discovery of sexual processes in the reproduction of certain strains of *E. coli* bacteria, which they first announced at the July 1946 symposium at Cold Spring Harbor in their paper "Novel genotypes in mixed cultures of biochemical mutants of bacteria." "Gene recombination in the bacterium *Escherichia coli*," their first complete paper on bacterial sexual reproduction, was published the following year.

> [Lederberg and Tatum's] data showed that only when two mutants [the B^-M^- and T^-P^- mutants of the K-12 strain of *E. coli*] were mixed were prototrophs obtained: When single strains were plated, only the parental type was obtained. Even more significant, when prototrophs (recombinants) were tested for T1 resistance (the unselected marker), it was found that some were sensitive, others were resistant, but the frequency depended on which parent carried the resistant marker (Brock, *Emergence of Bacterial Genetics,* p. 82).

This crucial discovery, together with the methodology developed by Tatum and Lederberg, provided the foundation for all subsequent research in genetic recombination.

Lederberg had originally intended to study medicine, but he abandoned medical school after two years to study biochemical genetics under Tatum at Yale University. His early work in Tatum's laboratory was focused primarily on searching for sexual reproduction in bacteria. Bacteria at the time were thought to reproduce only asexually through cell division; sexual reproduction, if proven to exist in bacteria, would help explain how new genetic information could be introduced into these one-celled organisms.

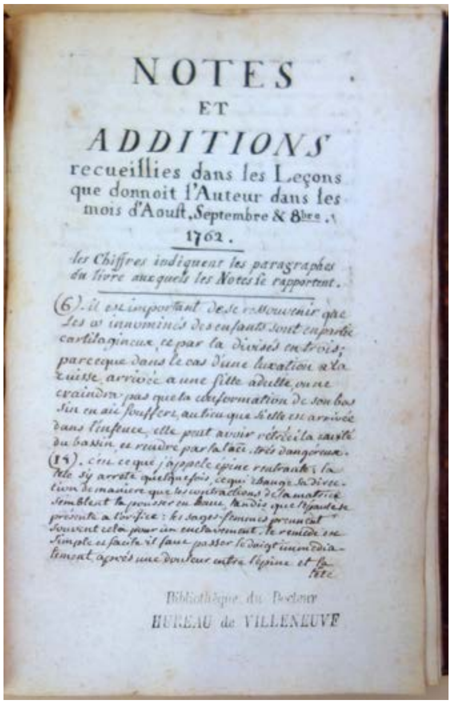
> [Lederberg] soon found that some strains of the colon bacteria *Escherichia coli* were capable of sexual reproduction. Observed sexual reproduction in these bacteria was achieved by the process named conjugation. In conjugation, the two bacteria involved become joined together by a conjugation tube; the "male" bacterium injects its chromosomal information into the "female" bacterium. Then, the daughter cell produced by this conjugation divides asexually.
>
> These observations led Lederberg and Tatum to carry out experiments in bacterial genetic recombination by examining the consequences of crossing (mating) two different bacterial strains. The resultant bacterial offspring they isolated were found to be a third strain, possessing characteristics of both parent strains used in the cross. Lederberg and Tatum names the process sexual genetic recombination and laid down the foundation for the modern science of bacterial genetics (Magee, *Nobel Prize Winners: Physiology or Medicine,* p. 779).

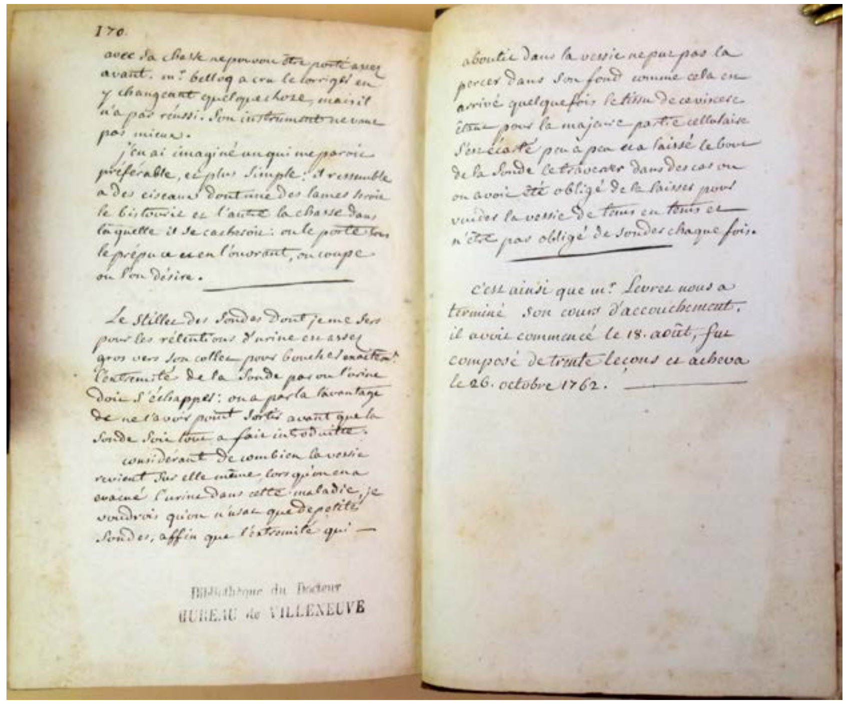
Garrison-Morton.com 255.4. (no. [2]).

(3) First Separate Edition. Lederberg left Yale in 1947 for the University of Wisconsin, where he founded and chaired that university's Department of Medical Genetics. During his tenure at Wisconsin he continued his studies in bacterial genetic recombination. With his former student Norton Zinder, Lederberg discovered another means of introducing new genetic material into bacteria: The process of transduction, in which small fragments of hereditary material are transferred from one bacterium to another through the action of a bacterial virus. Lederberg and Zinder published their discovery in their 1952 paper, "Genetic exchange in salmonella."

> Among the gene transfers that Lederberg carried out were the immunity to antibiotics and the resistance to these therapeutic drugs. These studies demonstrated that disease production and the resistance to disease by microorganisms were mediated by genetic processes. The identification of conjugation and transduction as means of introducing desired new genes into bacteria enlarged the methodology for investigation of the chemistry of heredity (Magee, pp. 779-80).

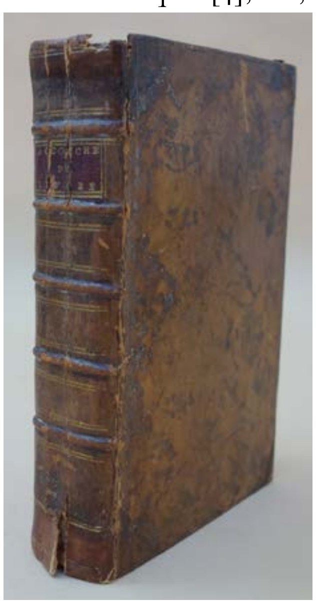
The papers described above are bound into a volume containing 29 other offprints on bacterial genetics by Lederberg (alone or with collaborators), published between 1946 and 1961; **click here** to see the complete list. Among these are Lederberg's "Gene recombination and linked segregations in Escherichia coli," containing the first genetic map of E. coli; Lederberg and Zinder's "Concentration of biochemical mutants of bacteria with penicillin," describing the penicillin selection method of isolating bacterial mutants; and Lederberg, Cavalli and Lederberg's "Sex compatibility in Escherichia coli," announcing their independent discovery of the sex-determining F factor in E. coli K-12. Many of the offprints are cited by Brock in the discussion of Lederberg and Tatum's work contained in chapters 5.1 – 5.3 of his *Emergence of Bacterial Genetics* (1990). Garrison-Morton.com 256.1. 38895





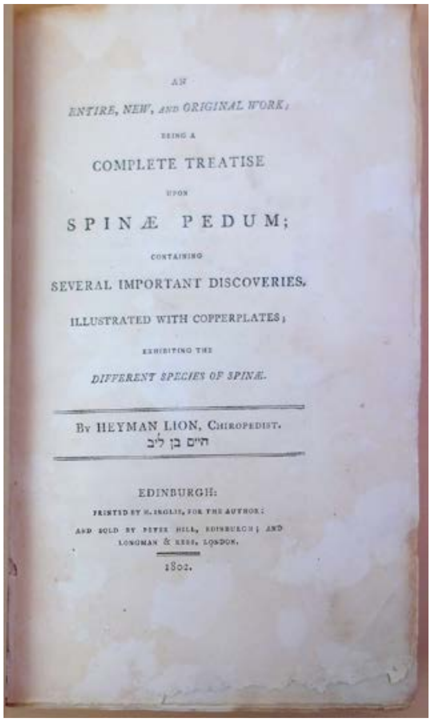
With an Unpublished Manuscript Based on Levret's Obstetrical Lectures

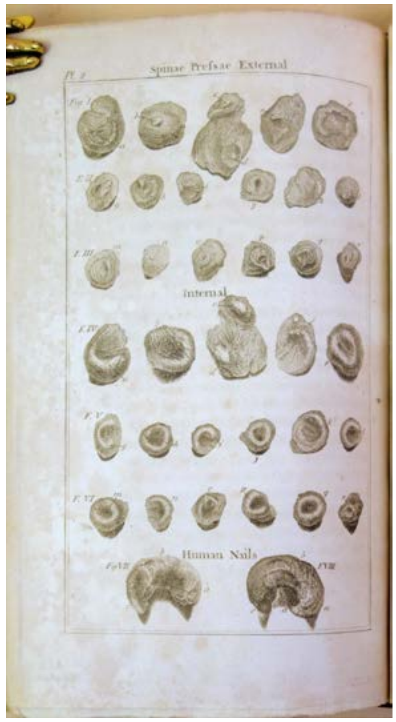
25. Levret, André (1703-80). L'art des accouchemens, demontré par des principes de physique et de méchanique. [4], xvi, 466, [6]pp. Frontispiece portrait and 5 folding plates. Paris: P. Alex. Le Prieur, 1761. [With:] Notes et additions recueillies dans les Leçons que donnoit l'Auteur dans les mois d'Aoust, Septembre & 8bre. 1762. Manuscript document in an unknown student's hand. 170, [2]pp. Together 2 items. 195 x 123 mm. 18th century mottled sheep, spine cracked but holding, hinges tender, light wear. 19th century ownership stamp of Dr. [Abel] Hureau de Villeneuve (1833-98) on several leaves. $3750

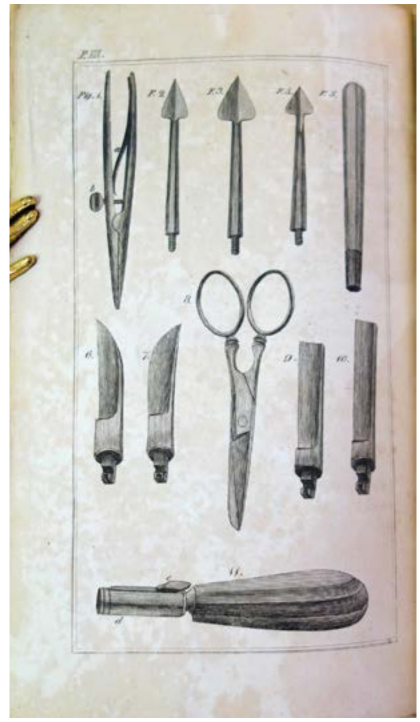


Second edition, first published in 1753. This copy of the 1761 edition is augmented with 170 pages of manuscript notes in the hand of one of Levret's students, based on the course of obstetrical lectures Levret gave between August and October 1762; the notes are keyed to the numbered paragraphs in Levret's text. Levret was one of the most influential teachers of obstetrics in the 18th century, attracting students from all over Europe; the notes in our copy provide insight into Levret's teaching methods and the materials covered in his courses. This copy was later owned by Dr. Abel Hureau de Villeneuve, French obstetrician and aeronautical pioneer.

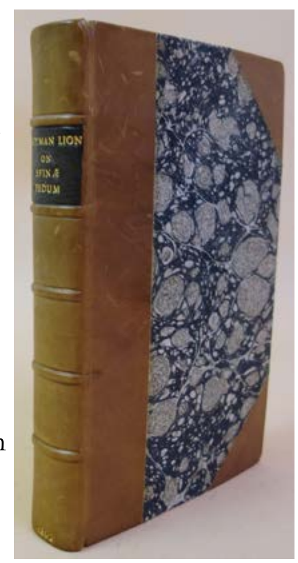
"Levret's monumental text *L'Art des accouchements demontré par des principes de physique et de méchanique* earned him the title of founder of rational obstetrics" (Hibbard, *The Obstetrician's Armamentarium*, p. 39). Levret was the outstanding figure in French midwifery of the 18th century, and his books were the most widely used from the close of Mauriceau's period to the early nineteenth century. "His logical deductions relative to the mechanism of labor, his careful handling of dystocia, and his resourcefulness in meeting emergencies, placed his teaching far in advance of his predecessors. He devoted particular study to low implantations of the placenta, to placenta praevia and the management of these anomalies. Whenever possible, he recommended that the placenta be separated at the edge rather than by boldly plunging through the body. He greatly improved the procedure of podalic version and emphasized the necessity of using but light pressure in pushing the fetus upward against the fundus of the uterus" (Cutter & Viets, *Short History of Midwifery,* p. 90; also pp. 63-64, 89). Garrison-Morton.com 6153 (1st ed.). 44549





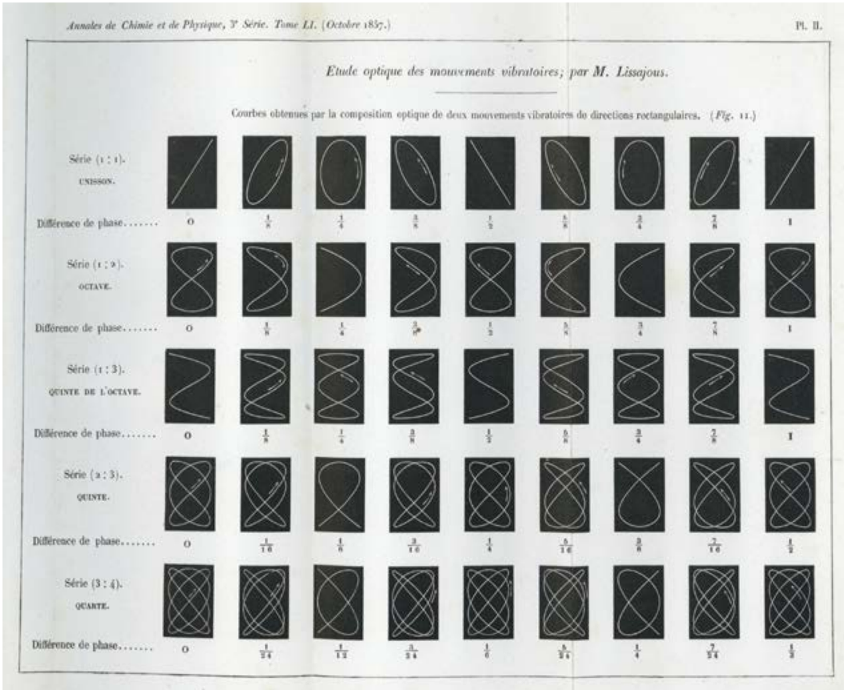


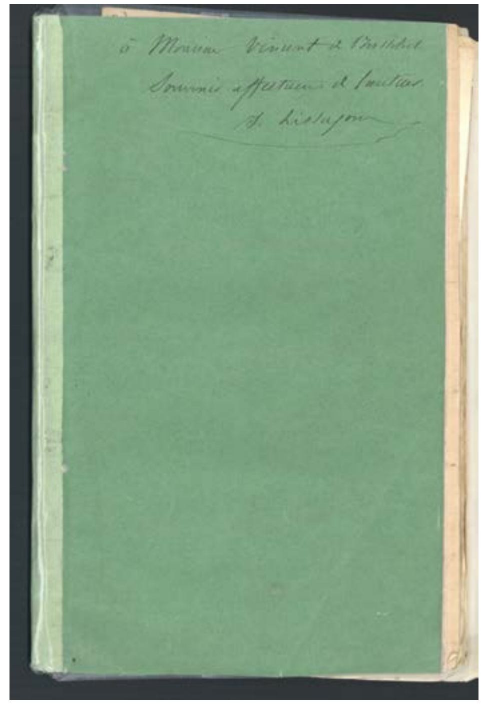
The First Original British Work on Podiatry, With Unusual Illustrations



26. Lion, Heyman. An entire, new, and original work: Being a complete treatise upon spinae pedum; containing several important discoveries, illustrated with copperplates; exhibiting the different species of spinae. 428pp. 5 plates, one hand-colored. Edinburgh: Printed by H. Inglis for the author; sold by Peter Hill . . . and Longman & Rees, 1802. 228 x 141 mm. Half calf, marbled boards by Sangorski & Sutcliffe. Some foxing and toning, but very good. Bookplate and pencil notes of British chiropodist and medical historian John Colin Dagnall (b. 1927), author of *Notes on the History of Chiropody* (1967) and *Principles and Practice of Podiatry* (1990). Autograph letter signed to Dagnall from Stanley Bray at Sangorski & Sutcliffe, dated June 7, 1982, laid in. $2000

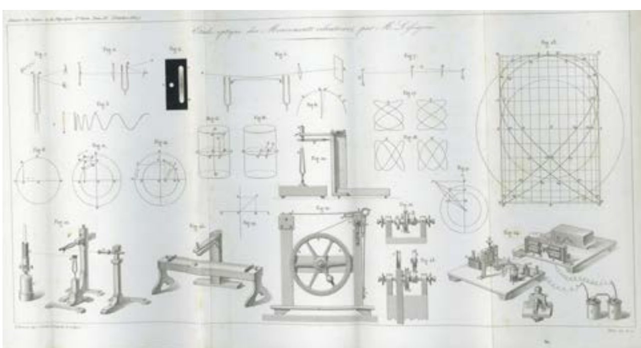
First and Only Edition, second state of the preface omitting the first state's opening paragraph and with the first two pages reset. The first original British work on podiatry. Disappointed at being refused a medical degree from Edinburgh University (a rejection he recounts in an appendix to the present work), Lion, a German Jewish émigré, wrote this book on the treatment of corns (*spinae pedum*) and related skin ailments, taking the unusual step of having his name published in both English and Hebrew characters on the title page. "His odd and arrogant writing led to the book being generally derided by the lay and professional press. In fact it is first class and was based completely on his personal experiences and observations. Stripped of its padding it can be seen to be a great improvement on Laforest's [*L'Art de soigner les pieds* (1781)] . . . The greatest praise we can give to Lion's book is to say that every chiropodial writer since has used and borrowed from *Upon Spinæ Pedum*" (J. C. Dagnall, "The history of chiropodial literature," *Journal of the Society of Chiropodists* 20 [1965]). The copy we are offering is from Dagnall's library. Garrison-Morton.com 9581. 44493





Lissajous Figures

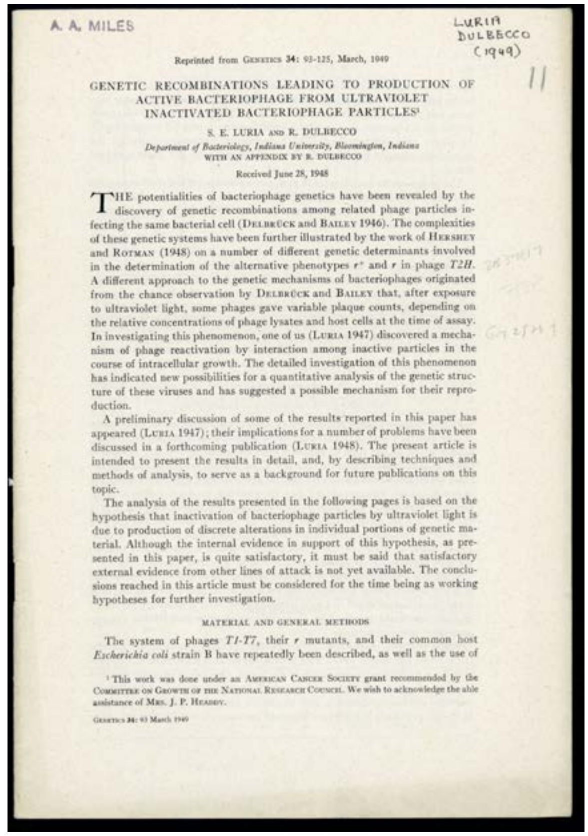
27. Lissajous, Jules Antoine (1822–80). Mémoire sur l'étude optique des mouvements vibratoires. Offprint from *Annales de chimie et de physique*, 3rd series, 51 (1857). 8vo. 87, [1]pp. 2 folding plates with tissue guards. 2 sheets ms. calculations laid in. Paris: Mallet-Bachelier, 1857. 223 x 147 mm. Plain green wrappers c. 1857, front wrapper with *Author's Signed Presentation Inscription*: "à Monsieur Vincent de l'Institut, Souvenir affectueux de l'auteur, J. Lissajous." First signature a bit browned, title a little soiled, scattered foxing especially on tissue guards, otherwise fine. $2750



First Separate Edition. Lissajous's most comprehensive paper on his optical method of studying vibration, which gave rise to the still-useful "Lissajous figures," produced by taking two sine waves and displaying them at right angles to each other. "Like some other physicists of his time, Lissajous was interested in demonstrations of vibration that did not depend on the sense of hearing. . . . [His] most important research, first described in 1855, was the invention of a way to study acoustic vibrations by reflecting a light beam from the vibrating object onto a screen. . . . Lissajous produced two kinds of luminous curves. In the first kind, light is reflected from a tuning fork (to which a small mirror is attached), and then from a large mirror that is rotated rapidly. . . . The second kind of curve, named the 'Lissajous figure,' is more useful. The light beam is successively reflected from mirrors on two forks that are vibrating about mutually perpendicular axes. Persistence of vision causes various curves, whose shapes depend on the relative frequency, phase, and amplitude of the forks' vibrations. . . . If one of the forks is a standard, the form of the curve enables an estimate of the parameters of the other. As Lissajous said, they enable one to study beats (the ellipses rotate as the phase difference changes). 'Lissajous figures' have been, and still are, important in this respect" (*Dictionary of Scientific Biography*). 38038

Gene Recombination

28. Luria, Salvador Edward (1912-91) & **Renato Dulbecco** (1914-2012). Genetic recombinations leading to production of active bacteriophage from ultraviolet inactivated bacteriophage particles. Offprint from *Genetics* 34 (March 1949). 8vo. 93-125pp. Diagrams. 250 x 172 mm. Without wrappers as issued. Light marginal soiling on first leaf, but very good. Ownership stamp & docketing. $4500



A. A. MILES

LURIA
DULBECCO
(1949)

Reprinted from GENETICS **34**: 93-125, March, 1949

GENETIC RECOMBINATIONS LEADING TO PRODUCTION OF ACTIVE BACTERIOPHAGE FROM ULTRAVIOLET INACTIVATED BACTERIOPHAGE PARTICLES[1]

S. E. LURIA AND R. DULBECCO

Department of Bacteriology, Indiana University, Bloomington, Indiana

WITH AN APPENDIX BY R. DULBECCO

Received June 28, 1948

THE potentialities of bacteriophage genetics have been revealed by the discovery of genetic recombinations among related phage particles infecting the same bacterial cell (DELBRÜCK and BAILEY 1946). The complexities of these genetic systems have been further illustrated by the work of HERSHEY and ROTMAN (1948) on a number of different genetic determinants involved in the determination of the alternative phenotypes r^+ and r in phage *T2H*. A different approach to the genetic mechanisms of bacteriophages originated from the chance observation by DELBRÜCK and BAILEY that, after exposure to ultraviolet light, some phages gave variable plaque counts, depending on the relative concentrations of phage lysates and host cells at the time of assay. In investigating this phenomenon, one of us (LURIA 1947) discovered a mechanism of phage reactivation by interaction among inactive particles in the course of intracellular growth. The detailed investigation of this phenomenon has indicated new possibilities for a quantitative analysis of the genetic structure of these viruses and has suggested a possible mechanism for their reproduction.

A preliminary discussion of some of the results reported in this paper has appeared (LURIA 1947); their implications for a number of problems have been discussed in a forthcoming publication (LURIA 1948). The present article is intended to present the results in detail, and, by describing techniques and methods of analysis, to serve as a background for future publications on this topic.

The analysis of the results presented in the following pages is based on the hypothesis that inactivation of bacteriophage particles by ultraviolet light is due to production of discrete alterations in individual portions of genetic material. Although the internal evidence in support of this hypothesis, as presented in this paper, is quite satisfactory, it must be said that satisfactory external evidence from other lines of attack is not yet available. The conclusions reached in this article must be considered for the time being as working hypotheses for further investigation.

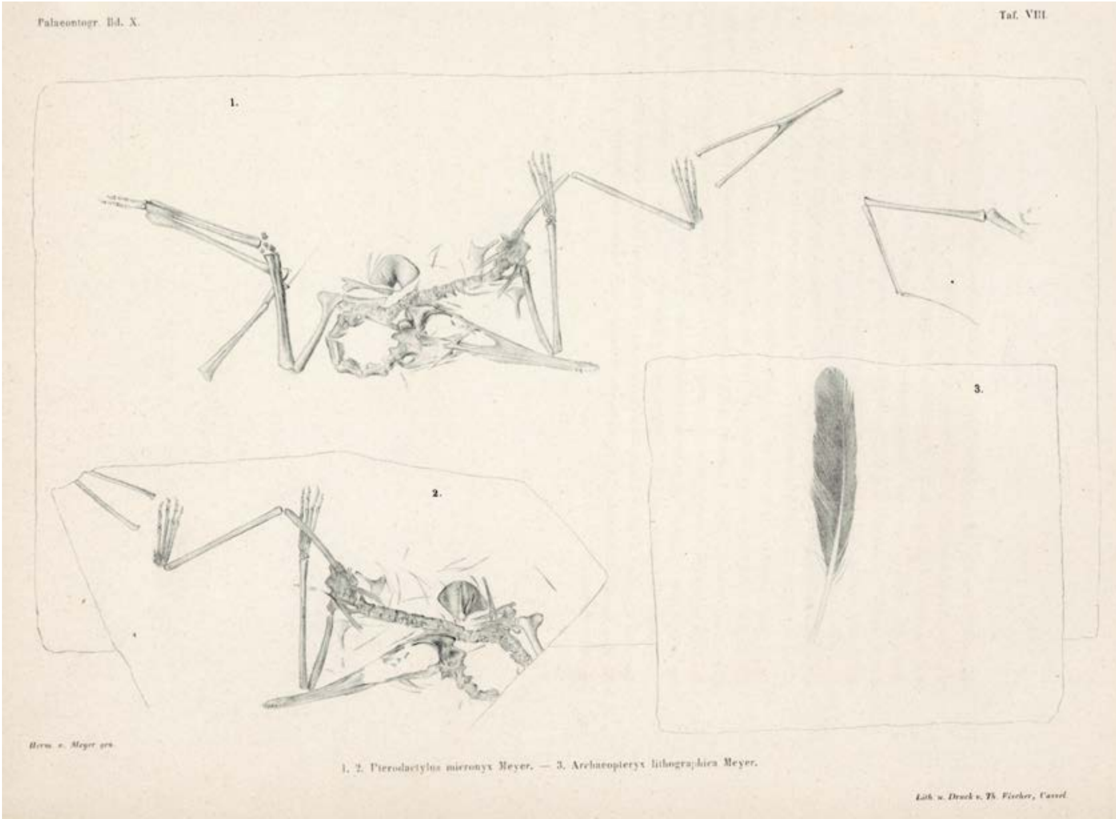
MATERIAL AND GENERAL METHODS

The system of phages *T1-T7*, their *r* mutants, and their common host *Escherichia coli* strain B have repeatedly been described, as well as the use of

[1] This work was done under an AMERICAN CANCER SOCIETY grant recommended by the COMMITTEE ON GROWTH OF THE NATIONAL RESEARCH COUNCIL. We wish to acknowledge the able assistance of MRS. J. P. HEADY.

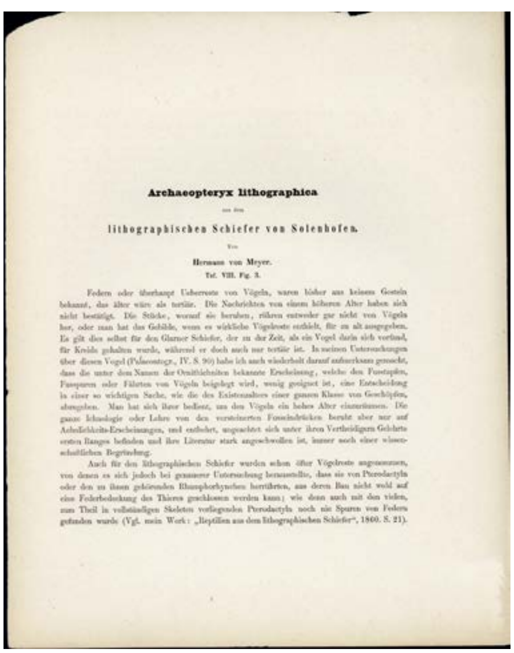
GENETICS **34**: 93 March 1949

First Separate Edition. In the late 1940s Luria discovered "the production of active phage particles when *many inactivated* phages were allowed to infect bacteria. He called this multiplicity reactivation and he explained it in terms of the existence of a 'gene pool' formed by the independent replication of discrete genetic units, from which active phage particles were assembled. The infecting phage was assumed to break up into such units once it entered the host cell. The inactivity of ultraviolet irradiated phage was attributed to the damage to one or several of these units. Damaged units of one type, Luria believed, could be replaced from the gene-pool by undamaged units of another type, and active phage particles successfully assembled. By quantitative techniques Luria and Dulbecco were able to suggest figures for the number of such sub-units in the various phages" (Olby, *The Path to the Double Helix,* p. 299). Luria, a member of Delbrück's "phage group" and a teacher of the young James Watson, received a share of the 1969 Nobel Prize in physiology or medicine for his discoveries regarding the replication mechanism and genetic structure of viruses. His co-author Dulbecco was awarded part of the 1975 Nobel Prize for his research on oncoviruses. Garrison-Morton.com 2526.1. Magill, *The Nobel Prize Winners: Physiology or Medicine,* pp. 1065-72; 1215-24. 37817



First Formal Description of the Archaeopterix

29. Meyer, Hermann von (1801-69). Archaeopteryx lithographica aus dem lithographischen Schiefer von Solenhofen. Offprint or extract from an unidentified periodical [*Jahrbuch für Mineralogie*?], vol. 10 [1861?]: 53-56. Lithographed plate. Loose in old and probably original paper wrappers, a bit chipped, title in ms. on front wrapper. Very good. $2750



Archaeopteryx lithographica

aus dem

lithographischen Schiefer von Solenhofen.

Von

Hermann von Meyer.

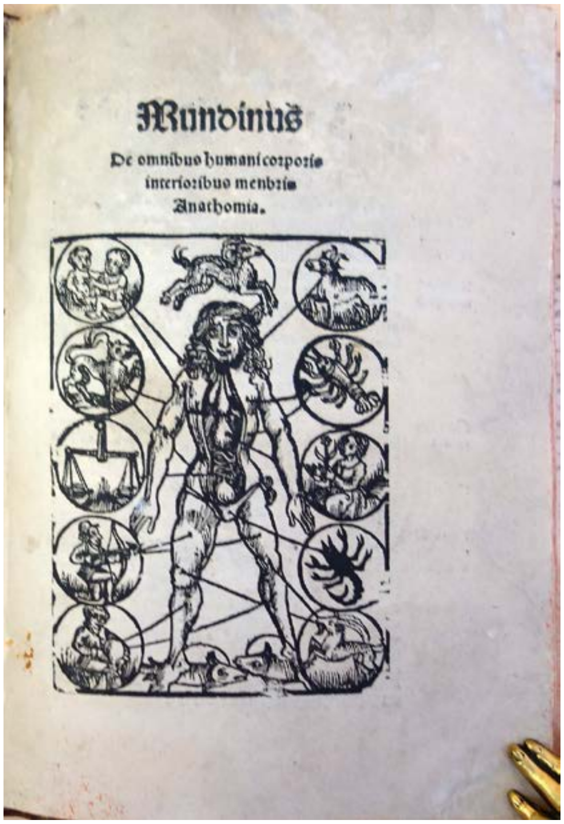
Taf. VIII. Fig. 3.

Federn oder überhaupt Ueberreste von Vögeln, waren bisher aus keinem Gestein bekannt, das älter wäre als tertiär. Die Nachrichten von einem höheren Alter haben sich nicht bestätigt. Die Stücke, worauf sie beruhen, rühren entweder gar nicht von Vögeln her, oder man hat das Gebilde, wenn es wirkliche Vögelreste enthielt, für zu alt ausgegeben. Es gilt dies selbst für den Glarner Schiefer, der zu der Zeit, als ein Vogel darin sich vorfand, für Kreide gehalten wurde, während er doch auch nur tertiär ist. In meinen Untersuchungen über diesen Vogel (Palaeontogr., IV. S. 90) habe ich auch wiederholt darauf aufmerksam gemacht, dass die unter dem Namen der Ornithichniten bekannte Erscheinung, welche den Fusstapfen, Fussspuren oder Fährten von Vögeln beigelegt wird, wenig geeignet ist, eine Entscheidung in einer so wichtigen Sache, wie die des Existenzalters einer ganzen Klasse von Geschöpfen, abzugeben. Man hat sich ihrer bedient, um den Vögeln ein hohes Alter einzuräumen. Die ganze Ichnologie oder Lehre von den versteinerten Fusseindrücken beruht aber nur auf Aehnlichkeits-Erscheinungen, und entbehrt, ungeachtet sich unter ihren Vertheidigern Gelehrte ersten Ranges befinden und ihre Literatur stark angeschwollen ist, immer noch einer wissenschaftlichen Begründung.

Auch für den lithographischen Schiefer wurden schon öfter Vögelreste angenommen, von denen es sich jedoch bei genauerer Untersuchung herausstellte, dass sie von Pterodactyln oder den zu ihnen gehörenden Rhamphorhynchen herrührten, aus deren Bau nicht wohl auf eine Federbedeckung des Thieres geschlossen werden kann; wie denn auch mit den vielen, zum Theil in vollständigen Skeleten vorliegenden Pterodactyln noch nie Spuren von Federn gefunden wurde (Vgl. mein Werk: „Reptilien aus dem lithographischen Schiefer", 1860. S. 21).

First Edition. In 1861 von Meyer, one of the most distinguished 19th-century paleontologists, became the first to describe and name the prehistoric *Archaeopterix lithographica*, fossils of which had recently been discovered in the Jurassic limestone near Solenhofen in Bavaria. *Archaeopteryx* is a transitional fossil between dinosaurs and birds, possessing both avian characteristics, such as feathers, and saurian features such as jaws with teeth and a long, bony tail. *Archaeopteryx*'s discovery provided support for Darwin's evolutionary theories, which had been published two years before.

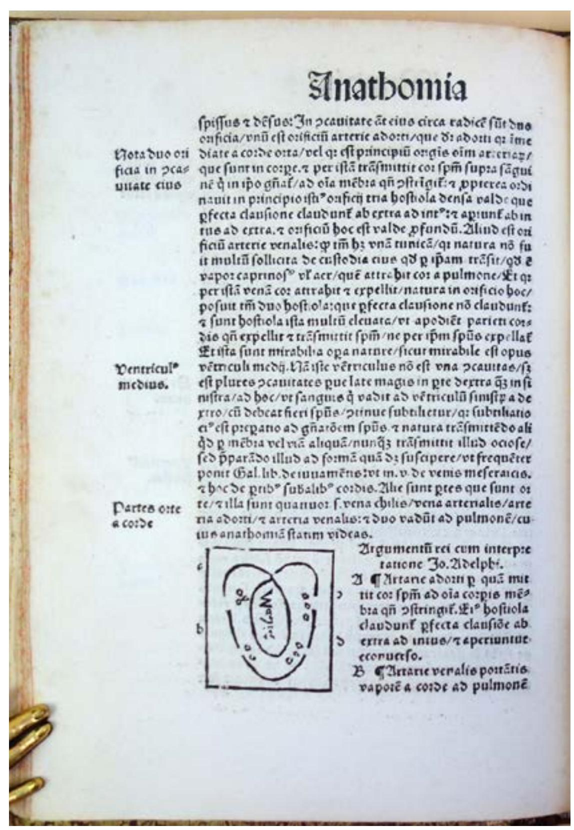
Von Meyer's first informal description of *Archaeopteryx*, published in an earlier paper, was based on a fossil of a single feather. Later that same year a partial fossil skeleton was found bearing excellent impressions of wing and tail feathers, which von Meyer cited in the present paper, identifying it positively as the remains of an ancient bird and proposing the species name *Archaeopteryx lithographica*, by which it is still known. This paper is *extremely rare*. In our 40 years of experience this is the only copy of this paper we have seen for sale. *Dictionary of Scientific Biography*. 37626



Revival of Anatomy, with Rare Heart Illustration Copiously Annotated in a Contemporary Hand

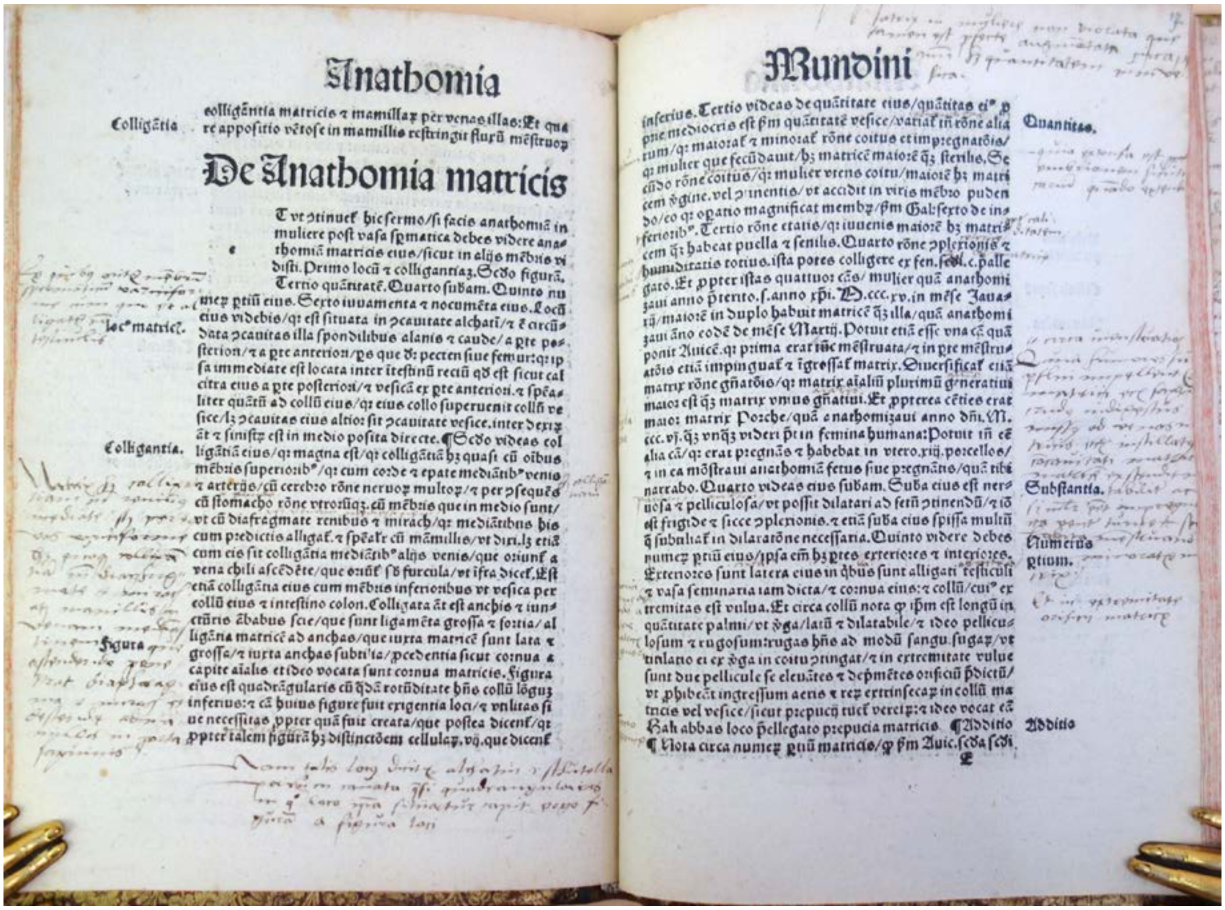
30. **Mondino de' Luzzi** (1275?-1326). De omnibus humani corporis interioris menbris [sic] anathomia. 4to. [79]pp. Woodcut of heart on leaf $F_{iiii}{}^{v}$; "Zodiac Man" woodcut on title and colophon leaf. Strasbourg: Flach, 1513 (colophon). 205 x 145 mm. 18th century red morocco gilt, spine repaired, some wear at spine and edges. Title-leaf repaired without loss of text, minor scattered foxing but very good. Copiously annotated in the margins of approx. 32 pages in a contemporary hand (notes slightly trimmed at margins). Modern bookplates.

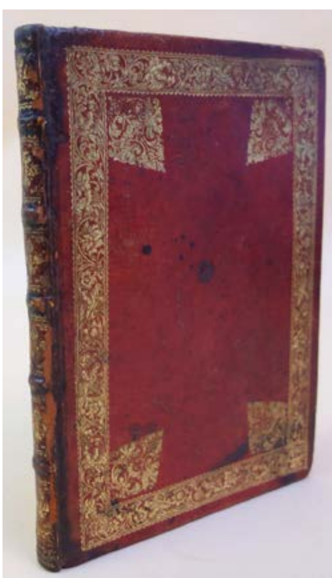
$32,500



Rare Early Illustrated Edition of Mondino's classic anatomy textbook, apparently the only one to contain an image of the heart. This copy features extensive annotations, in what appears to be a 16th-century hand, commenting on Mondino's text, particularly on the pages devoted to the abdominal organs and on the colophon's "Zodiac Man" image. It is therefore a useful witness to how Mondino's text was studied in the 16th century.

Mondino reintroduced human dissection—which had been neglected for the previous 1500 years—to the study of



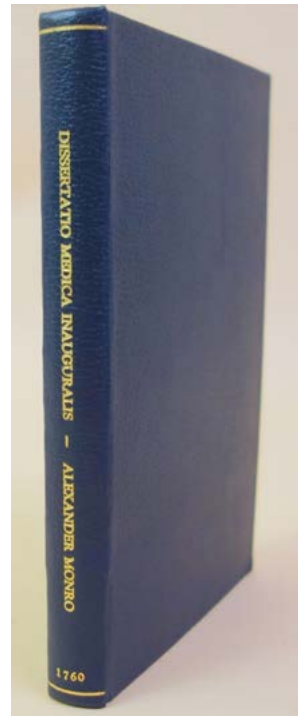


anatomy. His *Anatomia*, originally written in 1316 for the use of his students, first appeared in print in 1487; the work was the first to incorporate new anatomical knowledge gained since classical times. The *Anathomia* remained a standard text-book of anatomy for the next 200 years, unsurpassed until the work of Berengario da Carpi; indeed, Berengario da Carpi's two great anatomical works, *Commentaria cum amplissimis additionibus super anatomia Mundino* (1521), and *Isagogae breves* (1522) are commentaries on Mondino's work.

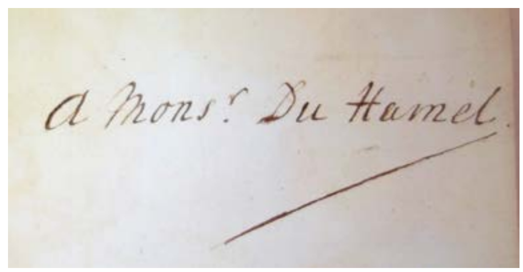
Mondino's work was not intended to be a book of therapies or surgical procedures; rather, "it discoursed on how best to dissect a human body, demonstrated where all the organs lay, and indicated how they might interrelate in life. Like Galen and Celsus in antiquity, Mondino regarded a coherent understanding of the human body not simply as a curious piece of academic learning, but as the foundation of rational medical practice. His dissections were intended for *human* cadavers, rather than those of animals such as pigs and monkeys from which human parallels might be inferred . . . Mondino was the first, or at least the first major, public anatomist to teach directly from human cadavers, a procedure authorized by the Pope at the beginning of the fourteenth century" (Chapman, p. 142).

Mondino's medieval text was unillustrated; some of the later printed editions were illustrated but not consistently. The heart woodcut added to this early 16th-century edition shows the *ventriculus medius*—a supposed "middle ventricle" within the heart's septum—together with the orifices of the coronary vessels. Chapman, *Physicians, Plagues and Progress*, pp. 141-143. Choulant/Frank, pp. 88-96. Garrison-Morton.com 361 (1487 ed.).
44527

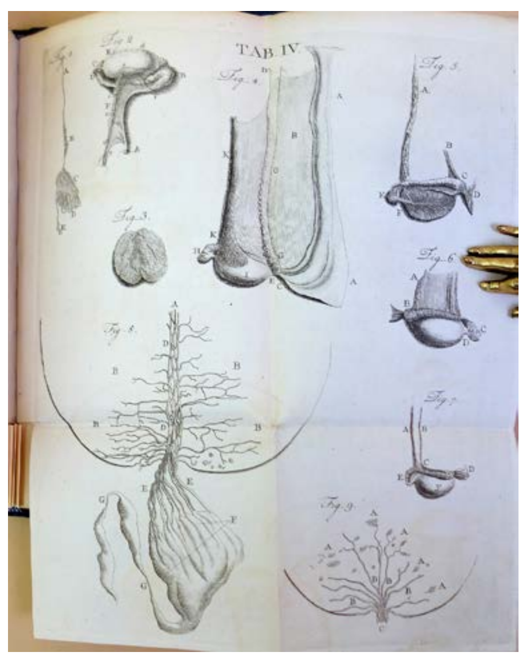

DISSERTATIO MEDICA
INAUGURALIS,
DE
TESTIBUS *et de* SEMINE *in*
variis Animalibus.
QUAM,
ANNUENTE SUMMO NUMINE,
Ex Auctoritate Reverendi admodum Viri
D. JOANNIS GOWDIE,
ACADEMIAE EDINBURGENAE PRAEFECTI;
NEC NON
Amplissimi SENATUS ACADEMICI *consensu*,
Et nobilissimae FACULTATIS MEDICAE *decreto*;
PRO GRADU DOCTORATUS,
SUMMISQUE IN MEDICINA HONORIBUS ET PRIVILEGIIS
RITE ET LEGITIME CONSEQUENDIS,
ERUDITORUM EXAMINI SUBJICIT
ALEXANDER MONRO SCOTO-BRITANNUS.
Ad diem 27 Octobris, horâ locoque solitis.
EDINBURGI:
Apud G. HAMILTON & J. BALFOUR
ACADEMIAE TYPOGRAPHOS,
M.DCC.LV.

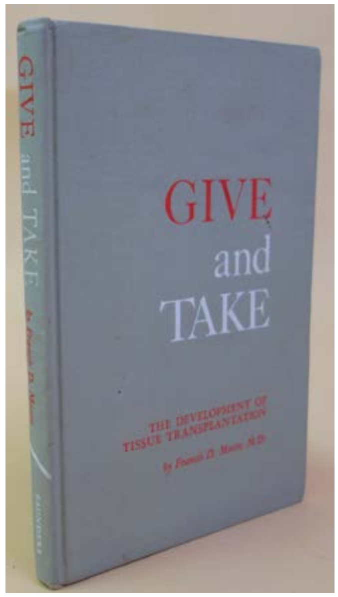


31. Monro, Alexander (1733-1817), *secundus*. Dissertatio medica inauguralis, de testibus et de semine in variis animalibus. 8vo. [4], 90pp. 5 folding engraved plates. Edinburgh: G. Hamilton & J. Balfour, 1755. 205 x 126 mm. Modern half morocco, all edges gilt. Original stab-holes present, occasional minor soiling, but very good. *With Monro's Presentation Inscription*, "A Monsr. Du Hamel," on front flyleaf. **$1500**



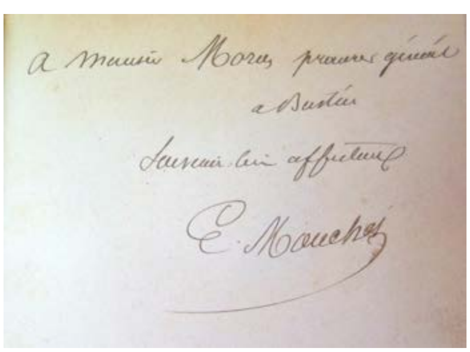
First Edition of Monro *secundus*'s M.D. thesis, a study of the comparative anatomy of testes and seminal vesicles. Monro *secundus* received his medical degree the year following his appointment, at the tender age of 21, as professor of anatomy at Edinburgh University, a post he initially shared with his father Monro *primus*; he occupied Edinburgh's chair of anatomy for the next 63 years. Monro may have presented this copy of his thesis to **Henri Louis Duhamel du Monceau** (1700-1782), the French botanist, agriculturalist and chemist, whom Monro possibly met during his visit to Paris shortly after obtaining his degree. Cole I, 1655. 10807





32. Moore, Francis D. (1913-2001). Give and take: The development of tissue transplantation. xi, 182pp. Text illustrations. Philadelphia & London: W. B. Saunders, 1964. 236 x 156 mm. Original cloth, slightly spotted. Very good. *Presentation Copy*, inscribed to surgeon Gunther P. Nagel (1928-2009): "For Gunther Nagel Greetings to Santa Barbara from O.C. [i.e., Oklahoma City] Francis D. Moore 3.27.65." Autograph letter signed to Nagel from his brother Carl dated Mar. 29, 1965, referencing this inscribed copy, laid in, together with mimeographed 1-sheet agenda of Moore's visit to the Oklahoma State Medical Center in March 1965. $375

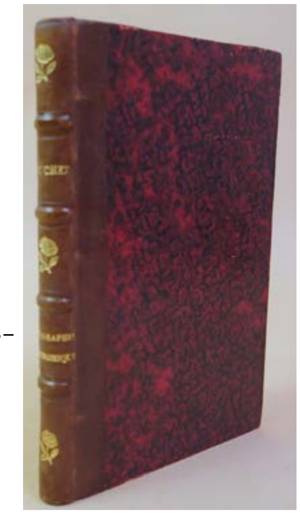
First Edition. Moore, one of the twentieth century's most brilliant surgeon-scientists, helped develop techniques leading to the first successful organ transplants in the early 1960s. His book is "a progress report on one small but rapidly evolving aspect of the new biology: the transplantation of healthy organs into sick people who need them in order to live" (p. v). Garrison-Morton.com 8719. 44233



33. Mouchez, Ernest (1821-92). La photographie astronomique à l'Observatoire de Paris et la carte du ciel. Extracted in part from the Bureau des Longitudes' *Annuaire pour l'an 1887*. 8vo. 107, [1]pp. 7 plates, including 4 with original photographs tipped to mounts, each with printed tissue guard. Paris: Gauthier-Villars, 1887. 188 x 121 mm. Marbled boards c. 1887, rebacked. Paper evenly toned, one plate loose, some light foxing in the plate leaves, otherwise good to very good. *Presentation Copy*, inscribed by the author on the front flyleaf: "A Monsieur Moru, procurer général a […], Souvenir bien affectueux, E. Mouchez." $5750

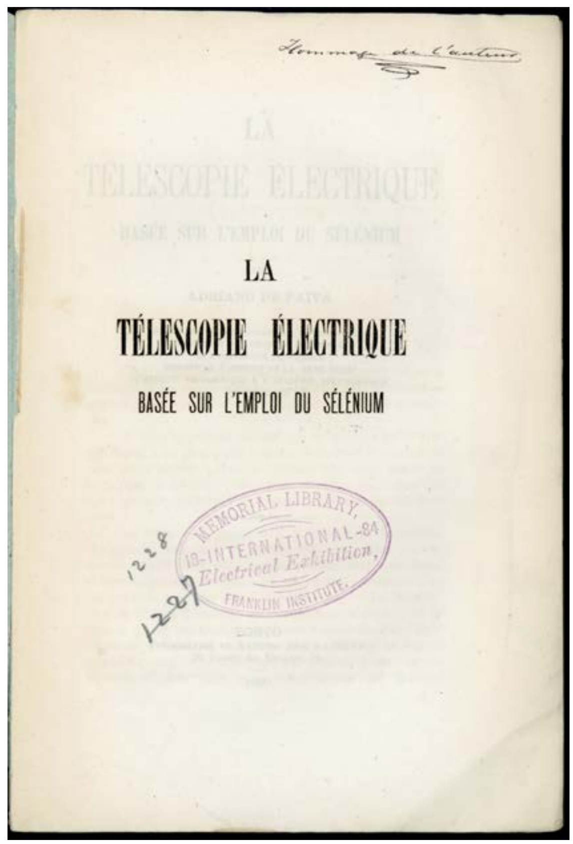
First Edition. In 1880, with the appearance of gelatin-silver bromide plates, "whole programs of astronomical photography were launched, with real scientific vigor and on a scale appropriate to the potential of the photographic medium. Heavenly bodies—stars, galaxies—are visible only by virtue of their emission of light, which can be faithfully recorded on a photographic plate, beyond even the capacity of the human eye . . . From that moment the 'known' universe was no longer defined by limits of human vision, and, since light is only a small part of the totality of electromagnetic radiation, these limits were pushed further and further back as different wavelengths of light were discovered" (Frizel, p. 278).

In 1884 Paul and Prosper Henry, astronomers at the Paris Observatory, adopted photography as a means of augmenting their ability to record stars of the third degree, which give off very little light. They had a special lens made for the purpose, which they used in conjunction with equatorial and refracting telescopes, the movements of which exactly compensate for the earth's rotation in order to prevent any blurring or deformation of the star image during the necessarily long exposure times. In 1887 Rear-Admiral Ernest Mouchez, an astronomer and cartographer, launched a plan to compile a photographic map of the sky, enlisting the help of over a dozen observatories using the Henry's photographic telescope. The present work describes this plan; it includes four striking original photographs of the moon, Saturn, Jupiter and the Hercules Cluster. Mouchez, who became director of the Paris Observatory in 1888, expected that a complete photographic star map would be produced by 1891; however, the project still remains incomplete and may never be realized. Frizel, ed., *A New History of Photography*, pp. 278–79; illustrating one of the plates from this book on p. 273. 38349



First Separate Publication on Television—Presentation Copy

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



Hommage de l'auteur

LA

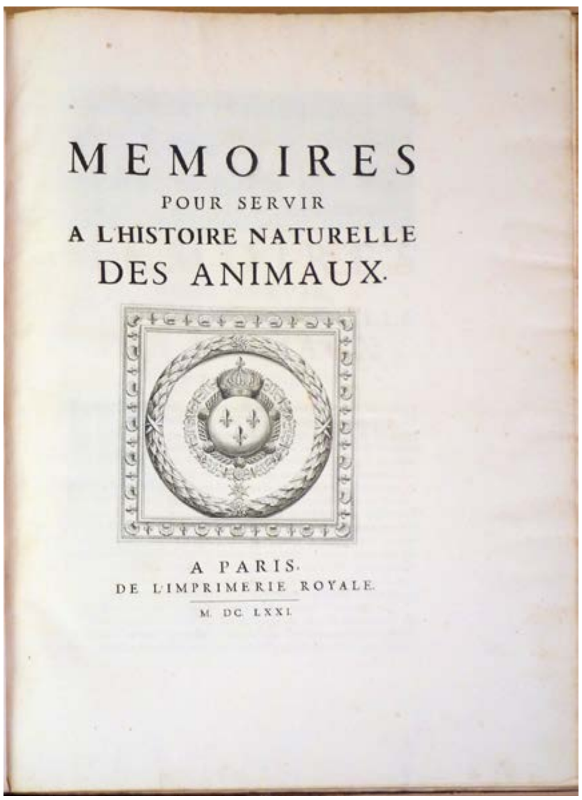
TÉLESCOPIE ÉLECTRIQUE

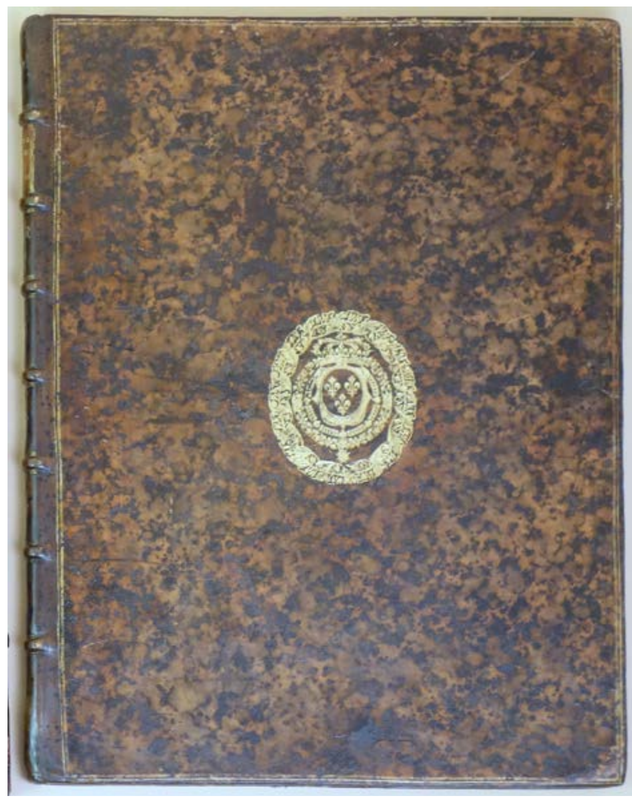
BASÉE SUR L'EMPLOI DU SÉLÉNIUM

First Edition. The first separate publication on television. Paiva, a professor of chemistry and physics at the Polytechnic Academy at Porto (Portugal), became interested in the possibility of transmitting visual images by wire after the demonstration of Alexander Graham Bell's telephone in Lisbon in November 1877, and after reading L. Figuier's report, published in *L'Année Scientifique et Industrielle* (June 1877, but read by Paiva after November 1877), of the "telectroscope," an instrument supposedly invented by Bell for the purpose of visual transmission. In February 1878 Paiva submitted a paper on a proposed telectroscope to the Portuguese journal *O Instituto*; the paper appeared in the March issue. Paiva's paper described an apparatus similar to that reported by Figuier but was the first to suggest "televising" images by means of a selenium-covered plate, which would make use of selenium's peculiar electrical sensitivity to light (discovered in 1873 by Willoughby Smith) to convert light from images into electricity.

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

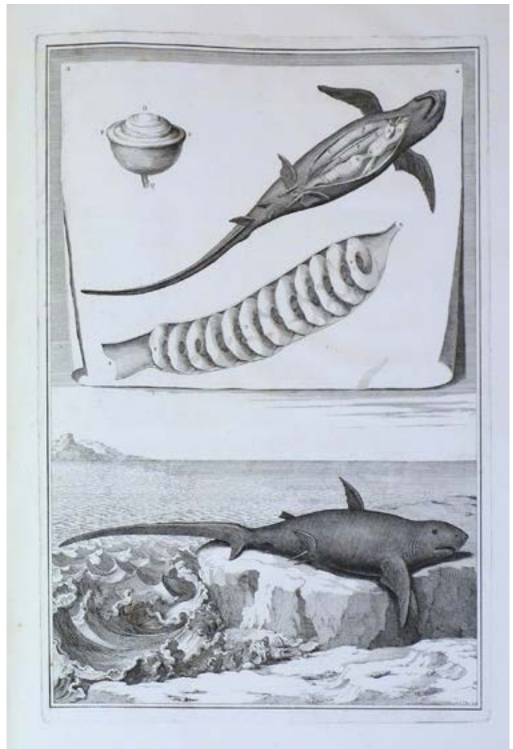
In 1880, in the interests of establishing priority, Paiva published *La téléscopie électrique*, which included reprints of his 1878 and 1879 papers (in both Portuguese and French), several articles on the telectroscope reprinted from scientific journals and newspapers, and an English translation of Paiva's 1878 paper made by his student William Macdonald Smith. This small pamphlet represents not only the first separate publication of Paiva's papers, but their first appearance in languages well known in the wider scientific community. This copy of *La téléscopie électrique* was presented by Paiva to the Franklin Institute in Philadelphia, which featured the work in its 1884 International Electrical Exhibition, the first exhibition on electricity held in the United States. Abramson, *History of Television*, pp. 8–9, 13. Shiers & Shiers, *Early Television: A Bibliographic Guide,* no. 142 ("the first publication of its kind on 'television'"). Lange, André. "La contribution d'Adriano de Paiva (1847–1907) à l'histoire de la télévision: L'hypothèse du recours au sélénium." *Histoire de la télévision*, 2 Mar. 2003. Web. Accessed 24 Jan. 2018. 40037

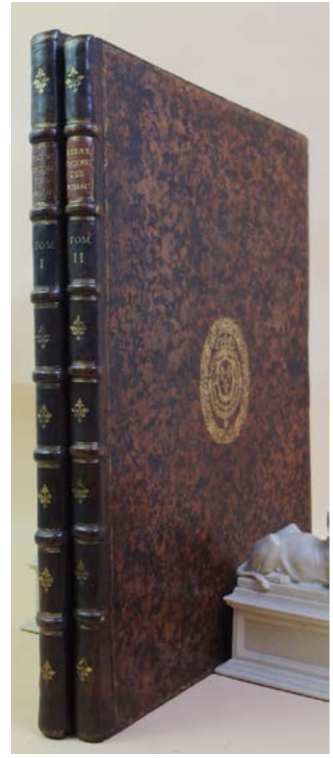




Classic of Comparative Anatomy, with First Accurate Calculation of the Size of the Earth, in Presentation Binding with the Arms of Louis XIV

35. Perrault, Claude (1613-88). Mémoires pour servir à l'histoire naturelle des animaux. [Bound with:] **Picard, Jean-Félix** (1620-82). Mesure de la terre. [12], 91, [1]; [2], 30, [2]pp. Frontispiece and 14 plates by Sébastien LeClerc (*Mémoires*); 5 plates (*Mesure*). [With:] **Perrault.** Suite des mémoires pour servir à l'histoire des animaux. [4], 93-205, [3]pp. 15 engraved plates by LeClerc. Together 3 works in 2 vols., double folio. Paris: Imprimerie Royale, 1671-76. 561 x 403 mm. Mottled calf ca. 1676, rebacked, arms of Louis XIV in gilt on front and back covers, light wear, edge of Vol. II back cover a little





bumped. A few leaves creased, light marginal dampstains on 2 or 3 plates, but very good. 19th century armorial bookplate; bookplate of Arthur and Charlotte Vershbow. $15,000

First Editions. Perrault was the leader of a team of comparative anatomists that included Guichard Joseph Duverney, Jean Pecquet, Moyse Charas and Philippe de la Hire; they were often called the "Parisians" in contemporary literature because of their membership in the Académie Royale des Sciences. Their investigations began with a thresher shark and lion from the royal menagerie and went on to encompass forty-nine vertebrate species. "Although some of the discoveries on which the Parisians most prided themselves—including the nictitating membrane that Perrault first observed in a cassowary, the external lobation of the kidneys in the bear, and the castoreal glands of the beaver—had been observed earlier, no such detailed and exact descriptions and illustrations had been published before" (*Dictionary of Scientific Biography*). In the spirit of rationalism, Perrault and his team investigated and debunked many popular myths attached to certain species, such as the legend that salamanders live in fire or that chameleons subsist on air. They also recorded their methods of work along with their results, providing the only contemporary disclosure of how such anatomical research was conducted in the seventeenth century.

The *Mémoires* were originally issued in two parts in 1671 and 1676, as in our copy; they were later reissued in 1676 (with slight changes) as one volume with a new title-leaf. The two volumes of the *Mémoires* contain descriptions of twenty-nine species, including the lion, the chameleon, the shark, the lynx, the porcupine, the eagle, the cormorant and the ostrich. Our copy was bound for presentation by Louis XIV, patron of the Académie des Sciences; a significant portion of the edition was bound this way.

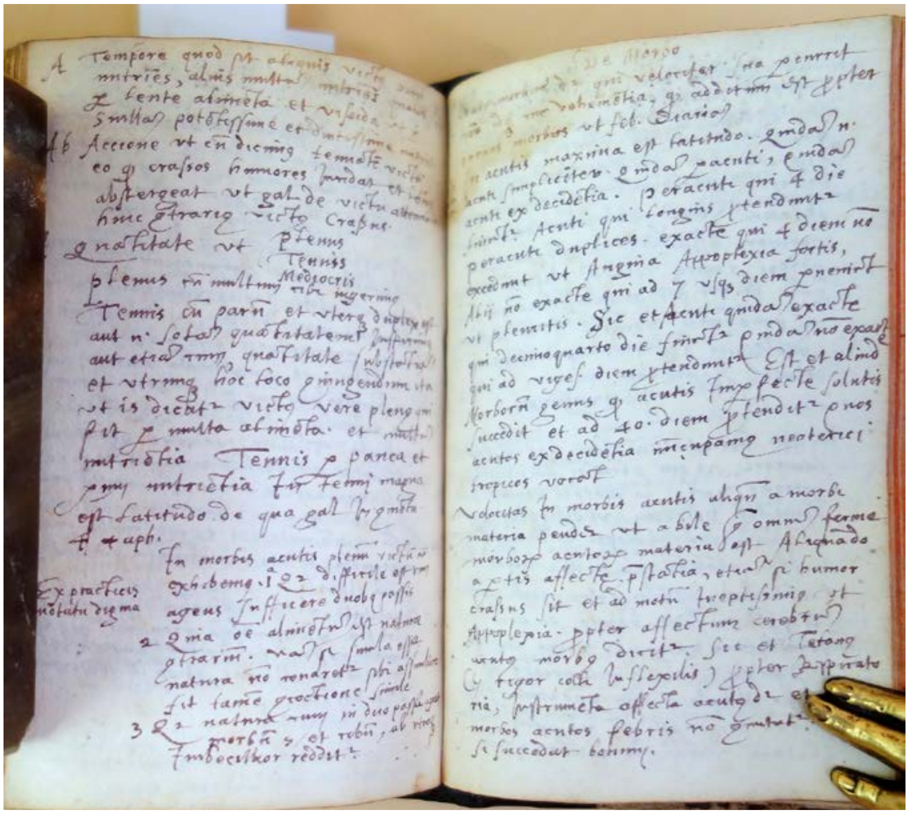
Vol. I of our copy also includes the first edition of Jean-Félix Picard's *Mesure de la terre* (1671), which contains the first reasonably accurate calculation of the size of the Earth. Picard based his calculation on his measurements of a degree of latitude along the Paris meridian. Using sophisticated instruments, Picard obtained a value for the Earth's polar radius of 6328.9 kilometers, only 0.44% below the correct value of 6357 km.; his results were thirty to forty times more precise than any that had been obtained previously. Dibner, *Heralds of Science*, 84. Norman 1687 (Perrault). 44411

Edited by Rabelais; Extensively Annotated in at Least Two 16th-Century Hands

36. [**Rabelais, François** (1494? – 1553).] **Hippocrates** (460 – 370 B.C.E.). Aphorismorum Hippocratis sectiones septem. Ex Franc. Rabelaesi recognitione. 16mo. Collation: $\alpha - \delta^8$, $a - u^8$; signatures a – d and leaves e1 – e2 interleaved and bound after signature u in this copy. [64], 318 pp. Lyon: Apud Seb. Gryphium, 1543. 118 x 72 mm. Calf ca. 1543, rebacked, some edgewear, minor worming, holes for leather ties present on front and rear covers. Very good copy. Extensively annotated in at least two 16th-century hands, in the text, front endpapers and on interleaved pages; 18 leaves of manuscript notes and commentary in what appears to be the same hands bound in the back, followed by 16 blank leaves. Old woodcut armorial bookplate of D'Esbiey tipped to verso of title; later signature "A. de Grateloup" on bookplate. "Collection Victor Jansen" in blue ink on front pastedown.

$7500

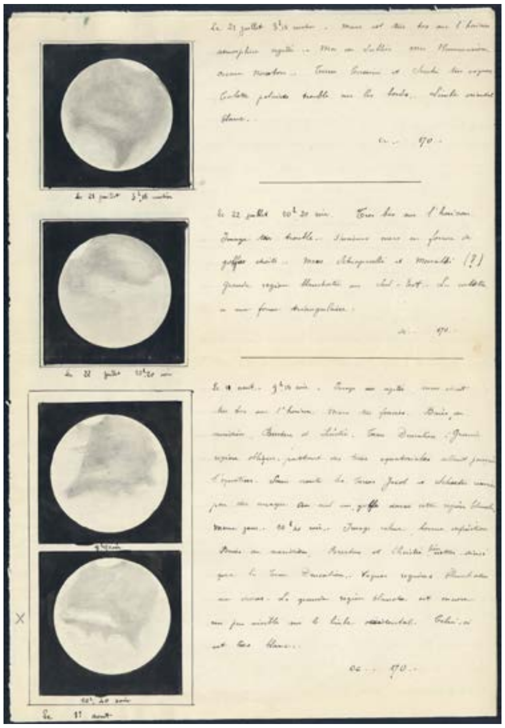
Very rare second edition, first published in 1532, of the *Aphorisms* of Hippocrates edited by François Rabelais (1494?-1553), the great Renaissance humanist writer and scholar. Rabelais entered monastic life at the age of sixteen, spending about fifteen years at the Franciscan convent of Fontenay-le-Comte before leaving around 1525 to join the more liberal Benedictine order. It was at about this time that he began training as a physician in Paris and Montpellier, obtaining his Bachelor of Medicine degree in 1530 and spending the following year studying Hippocrates' *Aphorisms* and Galen's *Ars parva.* In 1532, after moving to Lyon to serve as physician to the city's *Hôtel-Dieu*, Rabelais published the work on which his reputation as a

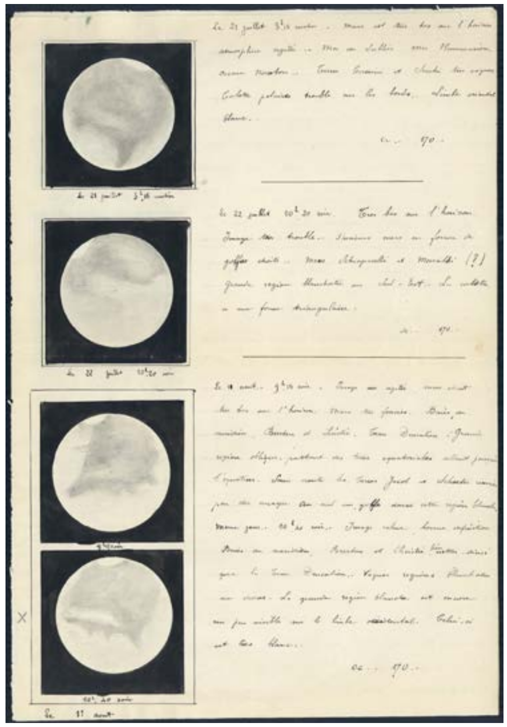


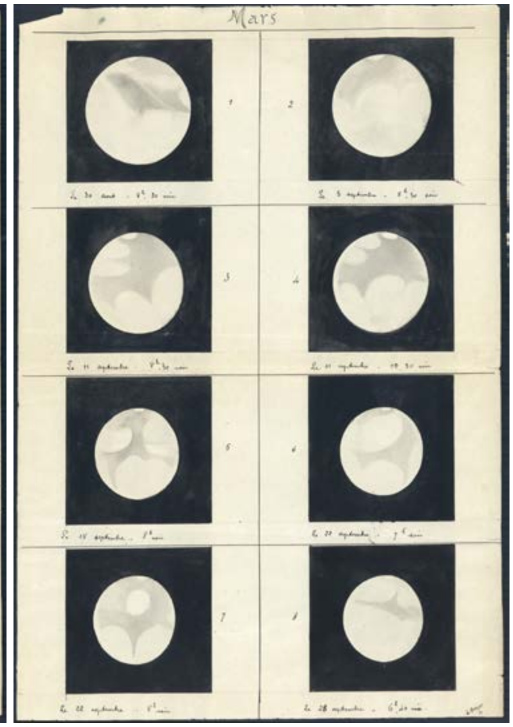
serious humanist scholar rests: A small 16mo volume containing Latin translations (by other scholars) of Hippocrates' *Aphorisms, Presages, De natura humani* and *De ratione victus* and Galen's *Ars medicinalis*, augmented with his own annotations.

> Rabelais's role [in preparing this edition of the *Aphorisms*] was that of editor. He had in his possession a Greek manuscript for which he claims the twin virtues of age and unimpeachable clarity. While lecturing at Montpellier he had used this to check the Latin translations current among his pupils and had discovered them to be incomplete and incorrect. He then embodied the result of his observations in a set of notes; and the following year, while he was at Lyons, Stephanus Gryphius saw these notes and suggested their incorporation in a pocket edition of Hippocrates. Rabelais was annoyed by the smallness of the proposed format which meant that his remarks had to be fitted into a very small space, but, pressed by Gryphius, he consented. He took as the basis of his work an edition of the relevant parts of Hippocrates and Galen which Colines had published in 1524. It was decided to reprint this and then to add Rabelais's notes in the form of interpolation and marginal comment; and Rabelais's Greek text of the *Aphorisms* according to his much vaunted manuscript was printed as an appendix (Bolgar, p. 63).

Our copy of the second Rabelais edition begins with the Greek text of the *Aphorisms* (signatures $\alpha - \delta^8$, unpaginated), which has its own title-page; in most copies, these signatures are bound at the end of the work. It is likely that the interleaving and eccentric arrangement of the remaining signatures was done at the request of the 16th-century owner whose copious annotations, written in a tiny, beautiful and legible italic hand, fill most of the interleaved sheets as well as the margins of many text pages. Some notes in a different hand are also found on several leaves. Adams H-576, H-558. Bakhtin, *Rabelais and his World*, p. 361. Bolgar, "Rabelais's edition of the *Aphorisms,*" *Modern Language Review* 350 (1940): 62-66. 44304

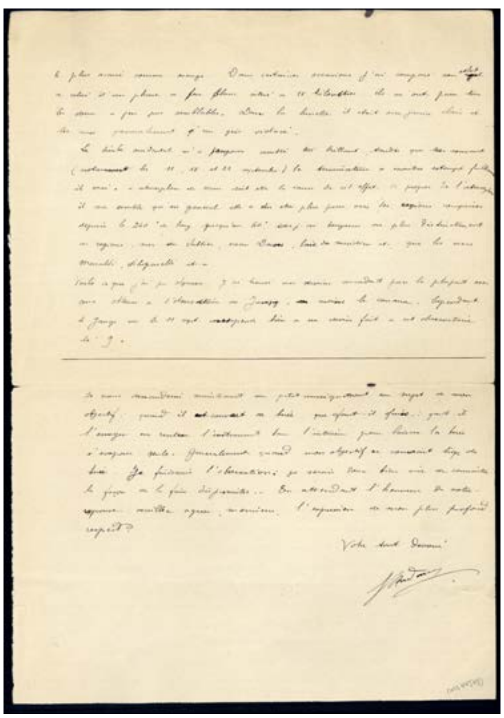






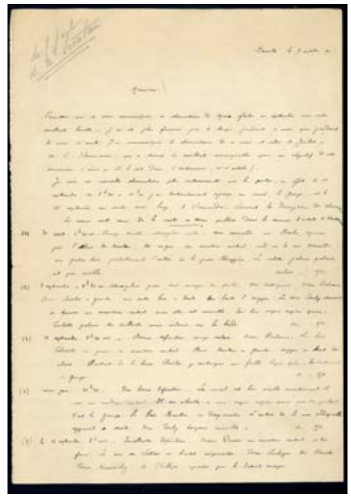
"I Distinctly Perceived a Canal"—With Original Drawings of Mars

37. Rudaux, Lucien (1874-1947). (1) Observations de Mars. Illustrated autograph document signed, in French. 3-1/2pp. on three sheets. Donville, ca. August 1892. (2) Autograph letter signed, in French, most likely to G. Secretan, manufacturer of scientific instruments; includes sheet with drawings of Mars. 4pp. on 3 sheets. Donville, 9 October 1892. "De la part de M. Secretan" inscribed in pencil on the first sheet in another hand. Together 2 items, 6 sheets total. Approx. 300 x 202 mm. Edges a bit frayed, small tears along some folds. Very good. $2750



Excellent illustrated manuscript and letter by Lucien Rudaux, one of the founders of modern space art, who was the first to create accurate images of our moon and Mars. The Rudaux crater on Mars, and the Lucien Rudaux Memorial Award honoring masters of space art, are both named for him. He was the author of *Sur les autres mondes* (1937), a classic work containing over 400 illustrations of our solar system's planets and moons. "Never before had readers seen such an accurate and spectacular depiction of the worlds of the solar system. So accurate were [Rudaux's] paintings that many of them look as though they were done last year instead of more than 70 years ago" (Miller).

Rudaux's "Observations de Mars," which he wrote when he was just 18, contains 10 beautifully rendered ink and wash drawings of Mars made between June 10 and August 15, 1892 in Donville, Normandy, using a 95 mm. lunette (small telescope) manufactured by the firm of G. Secretan. Each illustration is accompanied by Rudaux's notes detailing times, weather conditions and observed planetary features, including the Martian "seas" and polar icecaps. In his letter of October 9, 1892, most likely written to Secretan, Rudaux

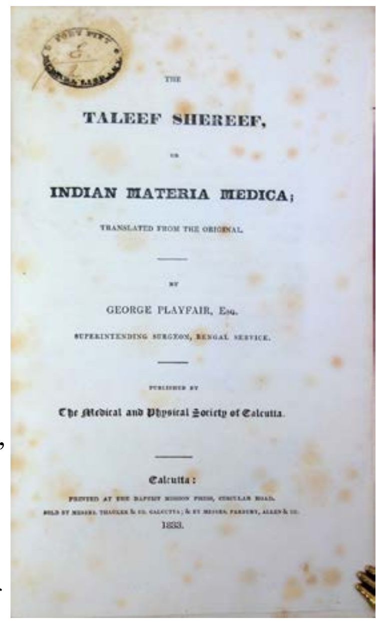


expressed his satisfaction with Secretan's "excellente lunette" and enclosed a further series of eight Mars observations taken during the month of September.

> I was more favored by the weather during this month than during the month of August. I communicated the observations for this month and those for July to M. C. Flammarion, who found the results remarkable for an objective of this dimension (as he said in the October number of *L'Astronomie*).
>
> I believe these new observations to be more interesting that the others; in fact, on 11 September between 8:30 and 10:30 I distinctly perceived a canal . . . (translation ours).

"Flammarion" refers to astronomer Camille Flammarion (1842-1925), author of the classic *La Planète Mars et ses Conditions d'Habitabilité* (1892) and editor of the journal *L'Astronomie*. Miller, Ron, "The First Science Artist to Draw Accurate Pictures of Mars and the Moon." *io9*, io9.Gizmodo.com, 16 Jan. 2012. Accessed 1/12/18. 44548

38. [**Sharif Khan, Hakim Muhammad** (1722-1807?).] **Playfair, George.** The Taleef Shereef, or Indian materia medica; translated from the original . . . Published by the Medical and Physical Society of Calcutta. 8, 189pp.; 24-page publisher's catalogue of Parbury, Allen & Co., dated May 1833, bound in back. Calcutta: Printed at the Baptist Mission Press; sold by Messrs. Thacker & Co., . . . & by Messrs. Parbury, Allen & Co., 1833. 226 x 141 mm. (uncut and largely unopened). Modern quarter morocco, cloth boards. Some foxing and toning, but very good. 19th century stamp of the Fort Pitt Medical Library on title. $950



THE

TALEEF SHEREEF,

OR

INDIAN MATERIA MEDICA;

TRANSLATED FROM THE ORIGINAL.

BY

GEORGE PLAYFAIR, Esq.

SUPERINTENDING SURGEON, BENGAL SERVICE.

PUBLISHED BY

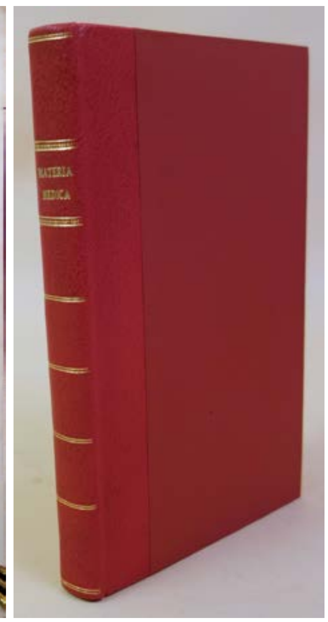
The Medical and Physical Society of Calcutta.

Calcutta:

PRINTED AT THE BAPTIST MISSION PRESS, CIRCULAR ROAD.

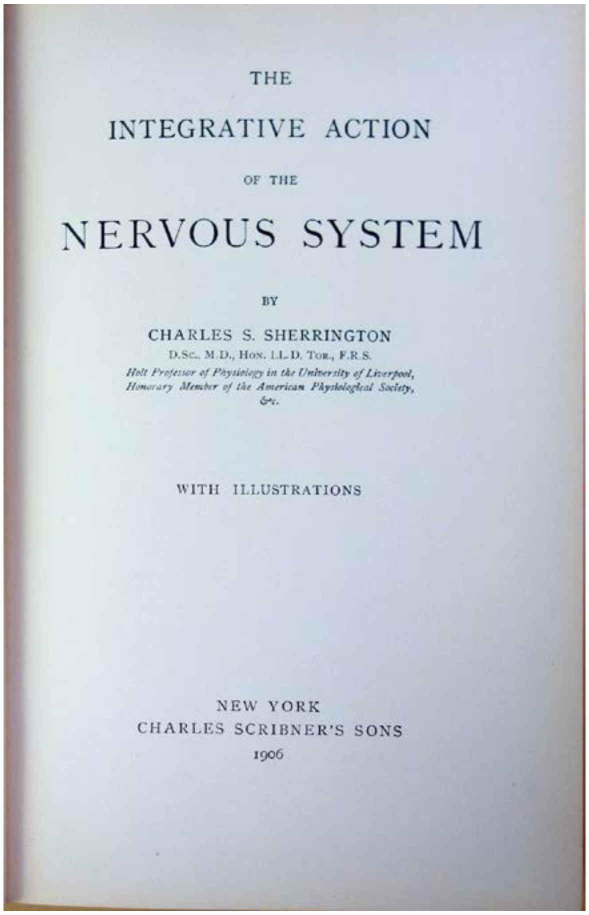
SOLD BY MESSRS. THACKER & CO. CALCUTTA; & BY MESSRS. PARBURY, ALLEN & CO.

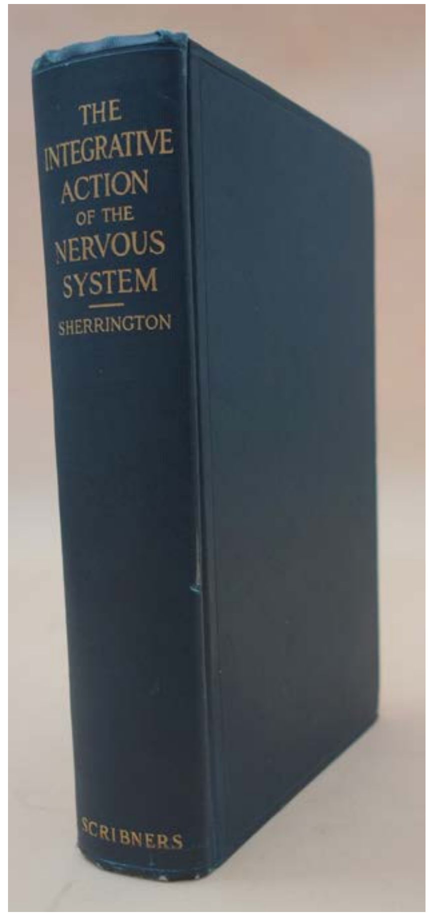
1833.



First Edition in English of the *Talif-i-Sharifi* by the Muslim physician Hakim Muhammad Sharif Khan, physician to Shah Alam II, who ruled India's Mogul Empire from 1759 to 1806. Sharif Khan, who was of Persian descent, practiced the Perso-Arabic traditional medicine known as *Yunani* (Greek), based on the teachings of Hippocrates and Galen as transmitted in Ibn Sina's 11th-century *Canon of Medicine*. Sharif Khan's *Talif-i-Sharifi* deals with the actions and properties of Indian drugs and foods (both vegetable and animal) and gives recipes for preparing various Indian medicines.

The work's translator, George Playfair, was a superintending surgeon in Britain's Bengal Service; little else is known about him. In his preface, Playfair stated that he prepared the translation as a guide to "the properties of native medicines, which I had frequently seen, in the hands of the Physicians of Hindoostan, productive of the most beneficial effects in many diseases, for the cure of which our Pharmacopoeia supplied no adequate remedy" (p. iii). Playfair's translation includes both the original Persian terms and English transliterations "guided solely by the pronunciation, without altering the sound given to the letters in English . . . from the conviction, that by this method, the names would be more familiar, and better understood, by the Natives in researches after the different drugs" (*ibid.*). Garrison-Morton.com 8208. 44219



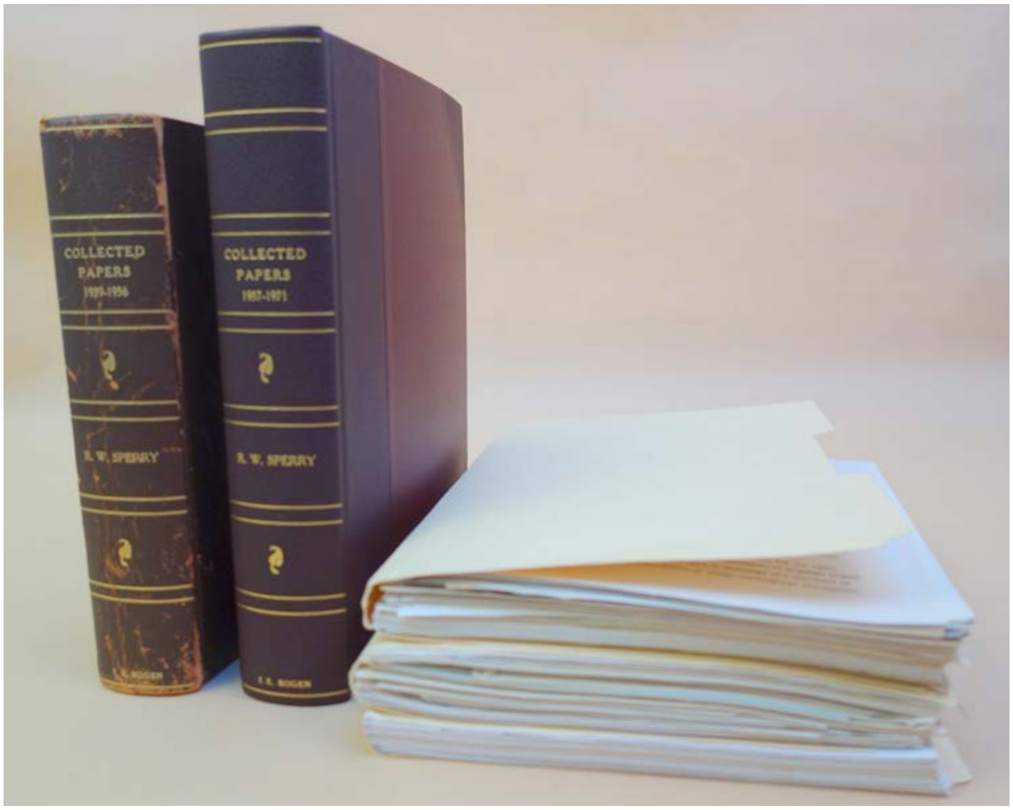


"True Foundation of Modern Neurophysiology"

39. Sherrington, Sir Charles (1857–1952). The integrative action of the nervous system. 8vo. xvi, 411pp. Text illustrations (some full-page). New York: Charles Scribner's Sons, 1906. 223 x 148 mm. Original cloth, light edgewear, inner hinges just beginning to crack. Minor toning but very good. Ownership stamp on front endpaper. $2750

First Edition. Sherrington's classic work "stands as the true foundation of modern neurophysiology" (*Garrison's History of Neurology,* p. 229). 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.

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. Garrison-Morton.com 1432. Fulton, *Sherrington,* p. 182. Grolier Club, *100 Books Famous in Medicine,* 90. Norman 1939. *Printing and the Mind of Man* 397. 44555

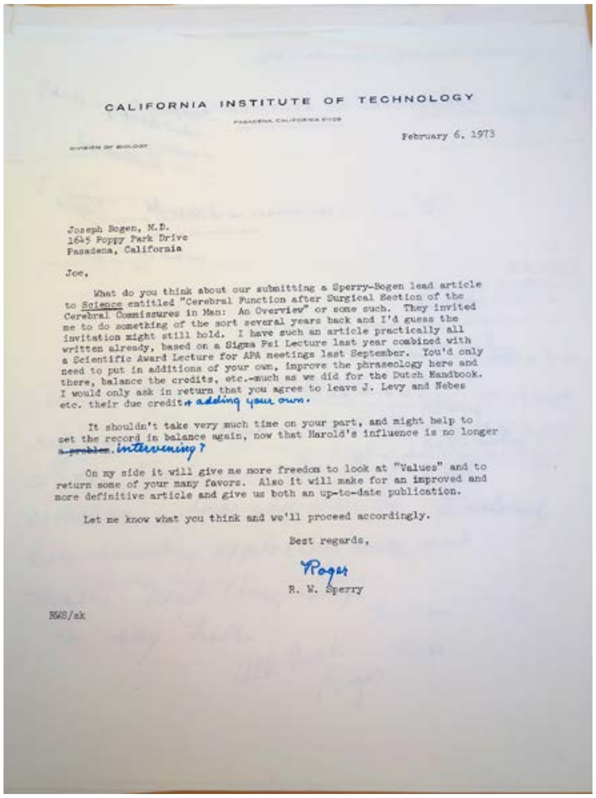


Left Brain, Right Brain—His Collaborator's Collection

40. Sperry, Roger W. (1913-1994). Collection of materials originally assembled by Sperry's longtime collatorator Joseph Bogen, including offprints (consisting of 2 bound volumes containing ca. 135 offprints published between 1937 and 1971, and a group of ca. 30 loose offprints published after 1971), typescripts (including a xerox copy of the typescript of his Nobel Lecture, corrected by Bogen), correspondence and related materials. Various sizes. V.p., 1939-1995. Many of the items bear Bogen's signature and / or notes. Offprint volumes bound in half morocco, first vol. worn; Bogen's name tooled in gilt on spines. Typewritten indexes in each volume. Remaining materials boxed. Complete listing of materials is available; **click here**.

$27,500

A unique collection of offprints, abstracts, correspondence and biographical materials by and about the neuroscientist Roger Sperry, including his seminal papers on his famous split-brain studies, for which he was awarded half of the 1981 Nobel Prize for Physiology or Medicine. Sperry's split-brain studies, performed on human subjects whose corpus callosum (the nerve cable connecting the left and right brain hemispheres) had been severed surgically, yielded unexpected and astonishing information about the nature of human consciousness, which permanently altered science's conception about how the brain works.



CALIFORNIA INSTITUTE OF TECHNOLOGY

PASADENA, CALIFORNIA 91109

DIVISION OF BIOLOGY

February 6, 1973

Joseph Bogen, M.D.
1645 Poppy Park Drive
Pasadena, California

Joe,

What do you think about our submitting a Sperry-Bogen lead article to Science entitled "Cerebral Function after Surgical Section of the Cerebral Commissures in Man: An Overview" or some such. They invited me to do something of the sort several years back and I'd guess the invitation might still hold. I have such an article practically all written already, based on a Sigma Psi Lecture last year combined with a Scientific Award Lecture for APA meetings last September. You'd only need to put in additions of your own, improve the phraseology here and there, balance the credits, etc.–much as we did for the Dutch Handbook. I would only ask in return that you agree to leave J. Levy and Nebes etc. their due credit + adding your own.

It shouldn't take very much time on your part, and might help to set the record in balance again, now that Harold's influence is no longer ~~a problem~~. intervening?

On my side it will give me more freedom to look at "Values" and to return some of your many favors. Also it will make for an improved and more definitive article and give us both an up-to-date publication.

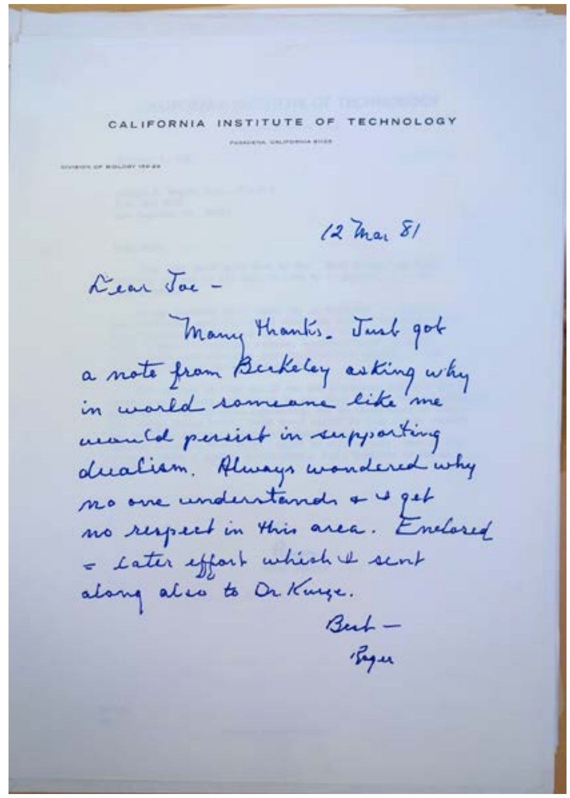
Let me know what you think and we'll proceed accordingly.

Best regards,

Roger

R. W. Sperry

RWS/sk



CALIFORNIA INSTITUTE OF TECHNOLOGY

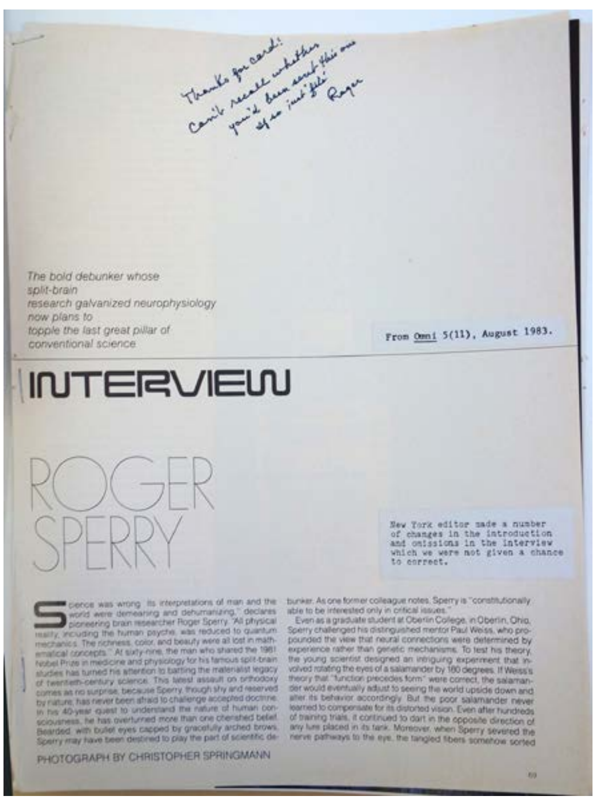
12 Mar 81

Dear Joe –

Many thanks. Just got a note from Berkeley asking why in world someone like me would persist in supporting dualism. Always wondered why no one understands + I get no respect in this area. Enclosed = later effort which I sent along also to Dr Kunze.

Best –

Roger



Thanks for card! Can't recall whether you'd been sent this one. If so just file. Roger

The bold debunker whose split-brain research galvanized neurophysiology now plans to topple the last great pillar of conventional science

From Omni 5(11), August 1983.

INTERVIEW

ROGER SPERRY

New York editor made a number of changes in the introduction and omissions in the interview which we were not given a chance to correct.

"Science was wrong. Its interpretations of man and the world were demeaning and dehumanizing," declares pioneering brain researcher Roger Sperry. "All physical reality, including the human psyche, was reduced to quantum mechanics. The richness, color, and beauty were all lost in mathematical concepts." At sixty-nine, the man who shared the 1981 Nobel Prize in medicine and physiology for his famous split-brain studies has turned his attention to battling the materialist legacy of twentieth-century science. This latest assault on orthodoxy comes as no surprise, because Sperry, though shy and reserved by nature, has never been afraid to challenge accepted doctrine. In his 40-year quest to understand the nature of human consciousness, he has overturned more than one cherished belief. Bearded, with bullet eyes capped by gracefully arched brows, Sperry may have been destined to play the part of scientific debunker. As one former colleague notes, Sperry is "constitutionally able to be interested only in critical issues."

Even as a graduate student at Oberlin College, in Oberlin, Ohio, Sperry challenged his distinguished mentor Paul Weiss, who propounded the view that neural connections were determined by experience rather than genetic mechanisms. To test his theory, the young scientist designed an intriguing experiment that involved rotating the eyes of a salamander by 180 degrees. If Weiss's theory that "function precedes form" were correct, the salamander would eventually adjust to seeing the world upside down and alter its behavior accordingly. But the poor salamander never learned to compensate for its distorted vision. Even after hundreds of training trials, it continued to dart in the opposite direction of any lure placed in its tank. Moreover, when Sperry severed the nerve pathways to the eye, the tangled fibers somehow sorted

PHOTOGRAPH BY CHRISTOPHER SPRINGMANN

69

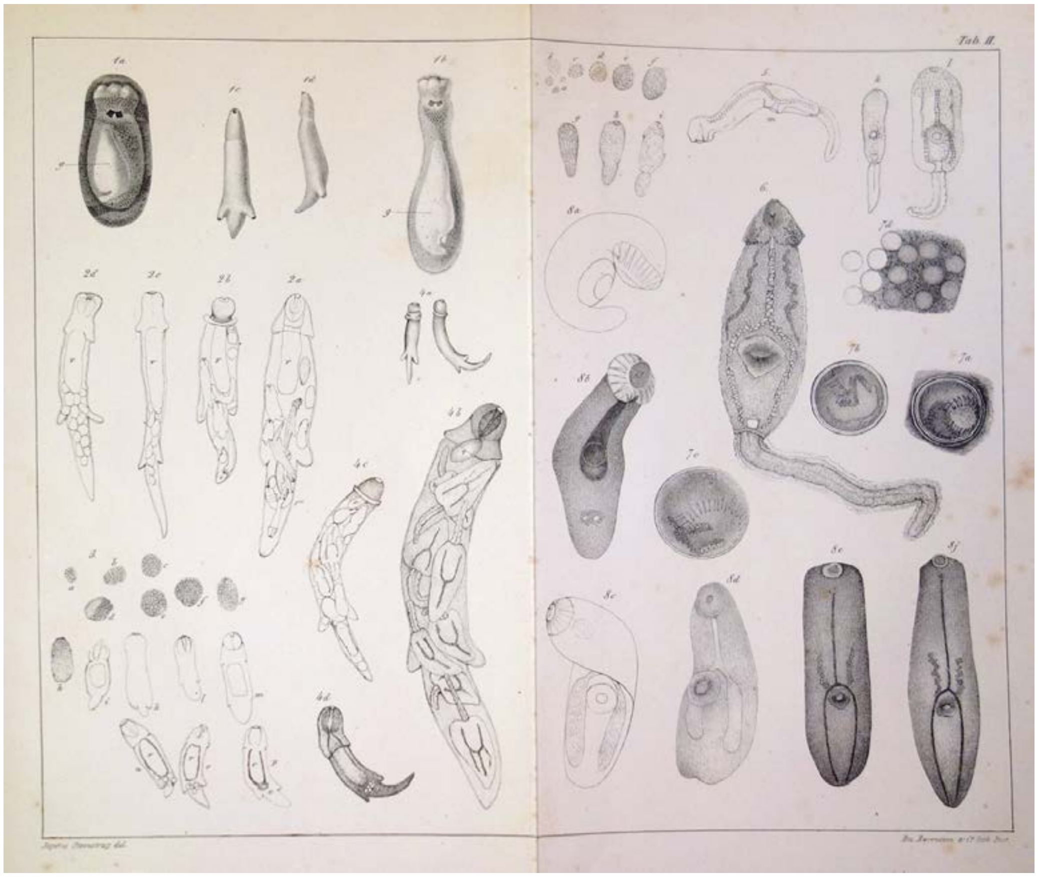
Sperry's experiments showed that each of the hemispheres is capable of functioning independently of the other, and each has its own unique attributes: the left hemisphere is "primarily verbal, logical and sequential," while the right is "more intuitive and emotional, specializing in visual-spatial problems and other situations in which a single impression or mental image is worth a thousand words" (*Omni Magazine*, "Interview with Roger Sperry" [August 1983], p. 70). In addition, the right hemisphere of the brain, previously been thought of as "retarded" compared to the left hemisphere because it could not generate language, was found to be able to interpret the written and spoken word at a fairly high level. The corpus callosum, whose function was not previously well understood, is now known to serve as the neural link between the two hemispheres, communicating information from one side to the other as needed.

Sperry's research "awakened a new understanding of those people who are artistically proficient but have severe reading problems, of those who have an aptitude for music but have difficulty reading and writing and understanding mathematics. It is rare that the kind of research for which the Nobel Prize in Physiology or Medicine is usually awarded has the enormous humanistic implications that characterize Sperry's work. Through it, many lay people have come to understand the broad area of consciousness that will inform and direct learning theory for decades to come" (Magill, *The Nobel Prize Winners: Physiology or Medicine,* p. 1379). "The Nobel award to Sperry . . . serves as an inspiration to those who believe that understanding the human conscious process is the ultimate objective of neuroscience and that it can be studied with scientific rigor . . .

In fact, it can be said that it is Roger Sperry's overall body of work that has served to conceptualize the objectives and questions pursued in much of current neuroscience" (Gazzaniga, "1981 Nobel Prize for Physiology or Medicine," *Science* 214 [1981], p. 517).

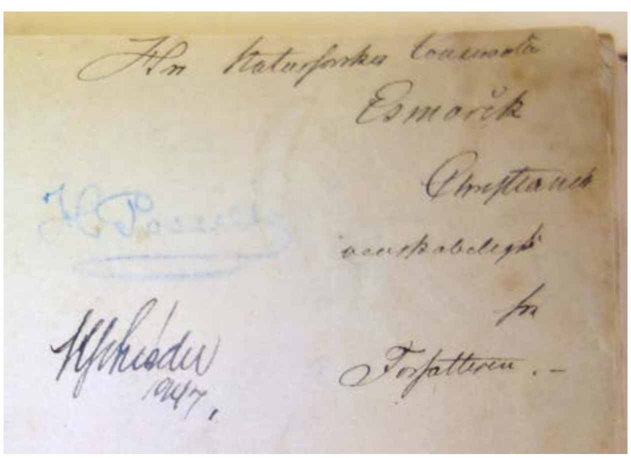
Sperry's scientific career can be divided roughly into three periods. In the first, Sperry focused on the embryogenesis of neural nets, proving, in an ingenious series of animal experiments, that neural connections are determined by highly precise genetic mechanisms rather than by experience. "Appearing in the 1940s, [Sperry's] first papers on the subject went against the then accepted principle that experience and conditioning could transform an equipotential mesh of randomly connected neurons into a structured, purposefully oriented neural network" (Damasio, "Reflecting on the work of R. W. Sperry," *Trends in Neurosciences* 5, p. 222). These researches led to Sperry's investigation of the biochemical uniqueness of individual nerve cells, which showed that the nerve cell's growth and repair was dependent on its chemical constituents. During the late 1940s and early 1950s, Sperry began focusing on the brain activity of laboratory animals whose brain hemispheres had been surgically disconnected, demonstrating experimentally that "the hemispheres of the brain function independently following commissurotomy [severing of the corpus callosum], despite the seeming normalcy of most of the subjects who undergo such surgery" (Magill, p. 1377). These experiments led to the celebrated split-brain work described above, for which Sperry received the Nobel Prize. In the third and final period, Sperry devoted himself to the problem of mind-brain relationships, devising a biological theory of consciousness that he believed could provide a scientific basis for moral and ethical values.

The items in this collection were assembled by the neurosurgeon Joseph Bogen, who worked closely with Sperry for over thirty years. In 1961 Bogen, already familiar with Sperry's animal researches, severed the corpus callosum in a patient suffering from intractable epilepsy in a last attempt to cure his disease. It was Sperry's early association with this patient, and his observations of Bogen's split-brain patients over the next decade, that resulted in his Nobel Prize-winning work. The materials in the archive can be grouped into three major categories: offprints of papers by Sperry (with or without co-authors); correspondence; and printed materials relating to Sperry. The correspondence includes a fascinating and **unpublished** series of letters regarding Sperry's dispute in the early 1980s with his former student and collaborator Michael Gazzaniga, whom Sperry accused of claiming credit for many of his own (Sperry's) split-brain findings. Included in the materials relating to Sperry are two detailed physician's reports on Sperry's amyotrophic lateral sclerosis (Lou Gehrig's disease), which afflicted him during the last two decades of his life. Garrison-Morton.com 9647, 9648. Magill, *The Nobel Prize Winners: Physiology or Medicine,* pp. 1373-80. 43993

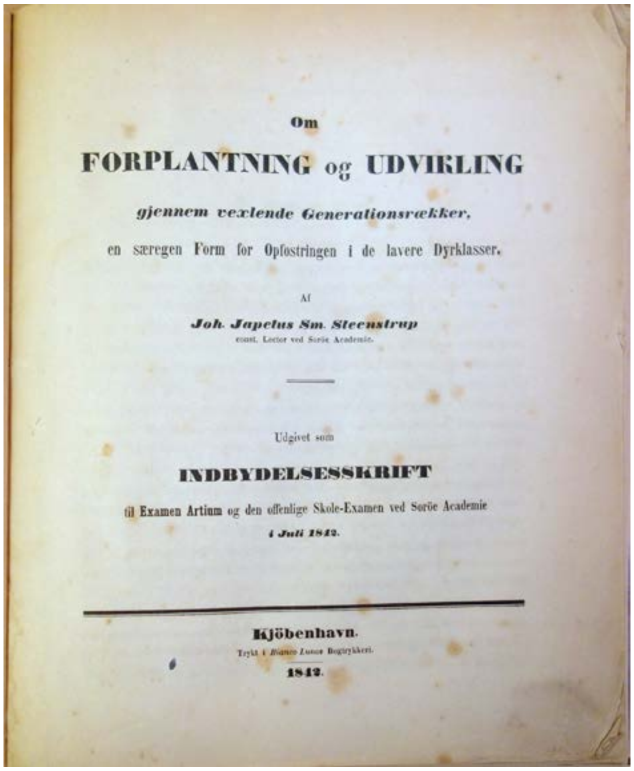


Heterogenesis: Alternation of Generations

41. Steenstrup, Johannes Japetus Smith (1813-97). (1) Om Forplantning og Udvikling gjennem vexlende Generationsraekker . . . iv, 76pp. 3 folding plates. Copenhagen: Bianco Lunos Bogtrykkeri, 1842. *Presentation Copy, Inscribed by the Author* on the front flyleaf: "Hrn Naturforsker [. . .] Esmarck Christiania [. . .] fra Forfatteren." Two later ownership signatures on the same leaf. (2) Undersögelser over Hermaphroditismens Tilvaerelse i Naturen. xiv, 88pp. 2 folding plates. Copenhagen: Bianco Luno, 1845. Together 2 works in 1. 246 x 200 mm. Modern half calf, marbled boards in period style. Minor browning and foxing, a few leaves frayed at the lower corners, but very good. $4500



(1) First Edition of Steenstrup's classic work on the "alternation of generations" or heterogenesis, a type of animal reproduction in which generations alternate between sexual and asexual forms. This curious biological process was made famous by Steenstrup, who "identified 'alternation of generations' with the following phenomenon: one living being sexually produced an offspring that did not resemble itself. When that offspring, which he called the 'nurse' form, reproduced again (asexually, through budding), its own progeny returned to the original form, if not in the next immediate generation then in a later one . . . Steenstrup showed that this pattern, previously thought to be an isolated



Om

FORPLANTNING og UDVIKLING

gjennem vexlende Generationsrækker,

en særegen Form for Opfostringen i de lavere Dyrklasser.

Af

Joh. Japetus Sm. Steenstrup

const. Lector ved Soröe Academie.

Udgivet som

INDBYDELSESSKRIFT

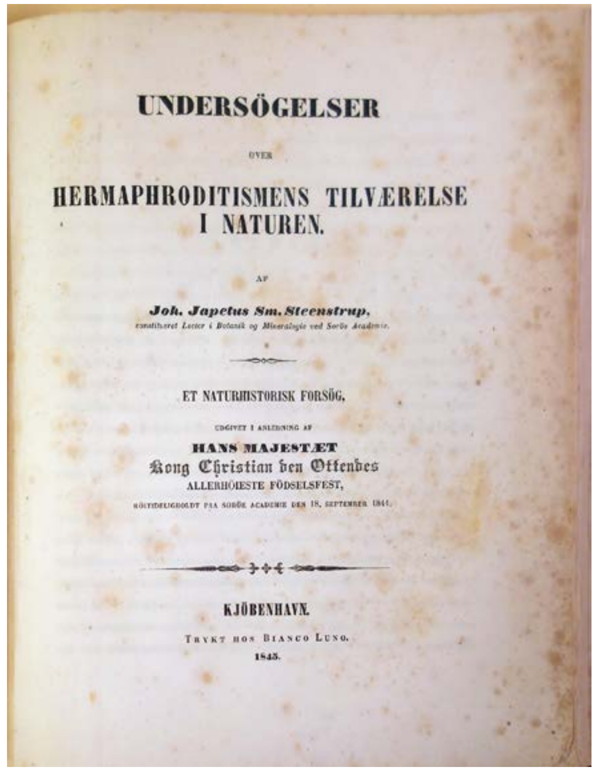
til Examen Artium og den offenlige Skole-Examen ved Soröe Academie

i Juli 1842.

Kjöbenhavn.

Trykt i Bianco Lunos Bogtrykkeri.

1842.



UNDERSÖGELSER

OVER

HERMAPHRODITISMENS TILVÆRELSE

I NATUREN.

AF

Joh. Japetus Sm. Steenstrup,

constitueret Lector i Botanik og Mineralogie ved Soröe Academie.

ET NATURHISTORISK FORSÖG,

UDGIVET I ANLEDNING AF

HANS MAJESTÆT

Kong Christian den Ottendes

ALLERHÖIESTE FÖDSELSFEST,

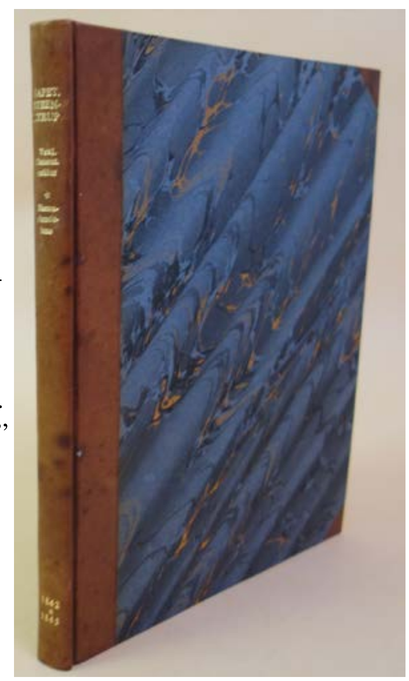
HÖITIDELIGHOLDT PAA SORÖE ACADEMIE DEN 18. SEPTEMBER 1844.

KJÖBENHAVN.

TRYKT HOS BIANCO LUNO.

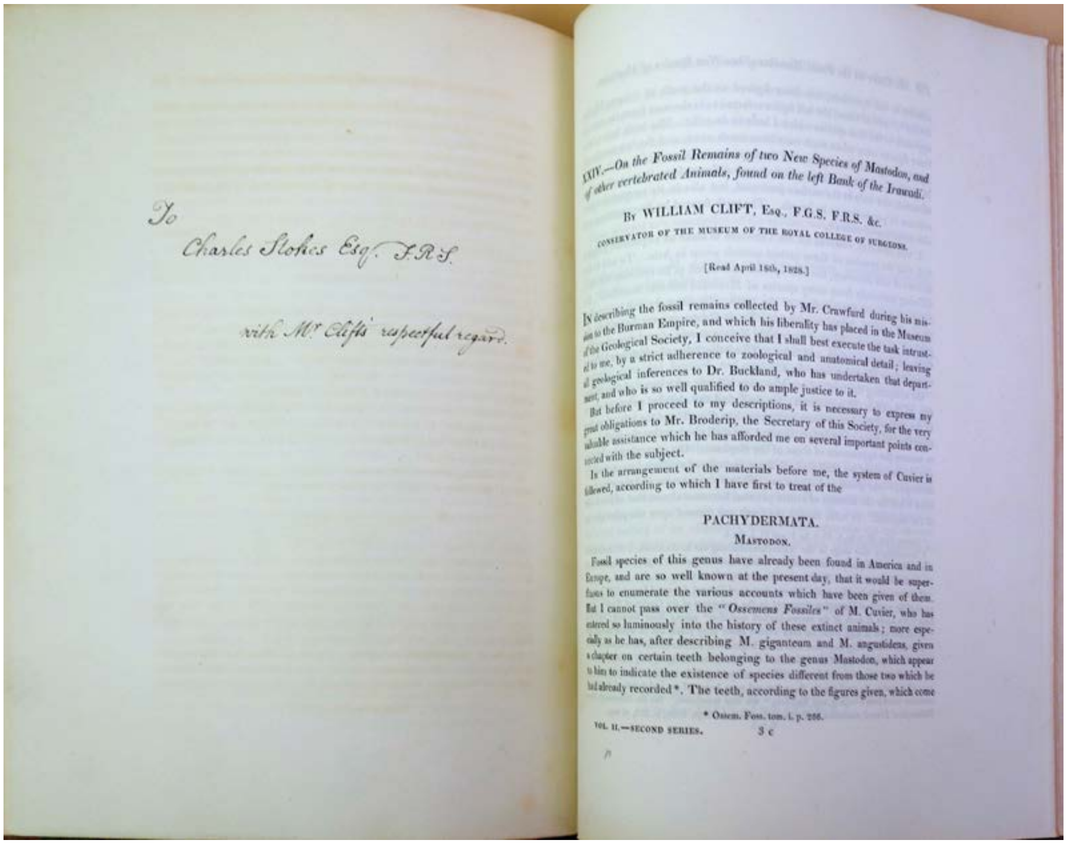
1845.

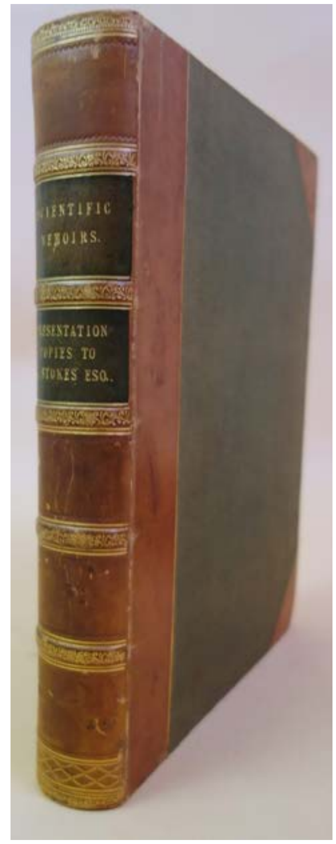
phenomenon, appeared in a broad range of invertebrate groups" (Nyhart and Lidgard, pp. 130-131). Steenstrup's work on heterogenesis earned widespread acclaim and helped win him an appointment as professor of zoology at the University of Copenhagen. A German translation of his memoir was published in 1842, and an English translation appeared in 1845.



The recipient of this presentation copy may have been the Norwegian mineralogist Hans Morten Thrane Esmark (1801-82), discoverer of the mineral thorite. Garrison-Morton.com 217. Nyhart and Lidgard, "Alternation of generations and individuality, 1851," in *Biological Individuality: Integrating Scientific, Philosophical, and Historical Perspectives* (2017), pp. 129-157.

(2) First Edition of Steenstrup's investigation of hermaphroditism in nature. Steenstrup rejected the then-current belief that many of the so-called "lower" organisms were naturally hermaphroditic and denied that genuine hermaphroditism—which he defined as the simultaneous presence of masculinity and femininity in each part of an organism—could even exist. Garrison-Morton.com 217. Sengoopta, *Otto Weiniger: Sex, Science and Self in Imperial Vienna,* p. 72. 44501



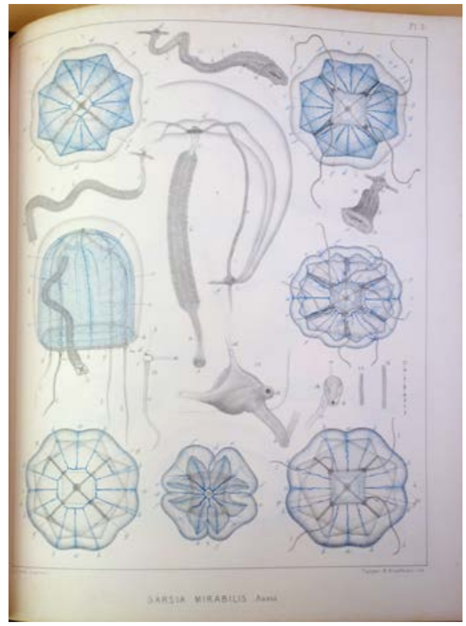


Very Rare Offprints by Important 19th-Century Authors on Geology, Paleontology and Natural History, Several Inscribed to Geologist Charles Stokes

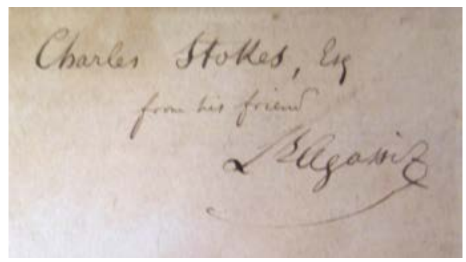
42. [**Stokes, Charles** (1785-1853).] (1) **Agassiz, Louis** (1807-73). Contributions to the natural history of the Acalephae of North America. Part 1.—On the naked-eyed Medusae of the shores of Massachusetts, in their perfect state of development. Offprint from *Memoirs of the American Academy of Arts and Sciences*, new series, 4 (1850). 221-316pp. 8 plates. Original front wrapper preserved. *Presentation Copy*, with the front wrapper inscribed: "Charles Stokes Esq from his friend L. Agassiz." (2) **Clift, William** (1775-1849). On the fossil remains of two new species of Mastodon, and of other vertebrate animals, found on the left bank of the Irawadi. Offprint from *Transactions of the Geological Society of London*, 2nd series, 2 (1828). 369-375, [6]pp. 9 plates. Original front wrapper preserved, with *Presentation Inscription* on the verso: "To Charles Stokes Esq. F. R. S. with Mr. Clift's respectful regard." (3) **Falconer, Hugh** (1808-65); **Proby T. Cautley** (1802-71). Sivatherium giganteum, a new fossil ruminant genus from the valley of the Markanda, in the Sivalik branch of the sub-Himalayan mountains. Offprint from Asiatick Researches, or Transactions of the Society Instituted in Bengal, for Inquiring into the History of Antiquities, the Arts, Sciences and Literature of Asia 19 (1836). 24pp. Plate. *Presentation Copy*, with the first leaf inscribed: "To Charles Stokes Esq. from the authors." Bound with 21 other offprints / pamphlets in one quarto volume. 279 x 220 mm. Half calf, gilt spine, cloth boards ca. 1850, minor edgewear, a few scratches on spine. Minor foxing and offsetting, but very good. From the library of Charles Stokes, amateur geologist and vice president of the Geological Society; 12 of the 24 items in this volume bear presentation inscriptions to Stokes; **click here** to see the list.

$4000

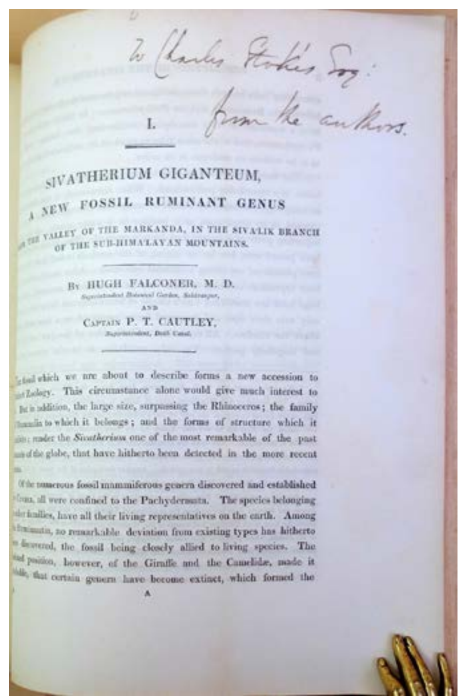
(1) First Edition, Offprint Issue. Agassiz's important paper on the hydromedusae of Massachusetts contains the first description and illustrations of nerves in jellyfish, making Agassiz "the first person to discover a nervous system in any member of the Cnidaria" (Mackie, p. 27). "Included in [Agassiz's] 1850 paper are descriptions of nerves in several medusae, including *Sarsia mirabilis* Agassiz and *Hippocrene superciliaris* Agassiz. Previously no one had claimed that coelenterates had nerves of any sort, and Agassiz's report was evidently treated with considerable skepticism. Contemporary workers found it hard to conceive of a nervous system that had no center, but consisted simply of strands or cords of nervous tissue as Agassiz described it" (*ibid.*). Faced with criticism, Agassiz retracted his description, but recent research has confirmed that he was in fact correct in his identification of nervous tissue in hydromedusae. Mackie, "The first description of nerves in a cnidarian: Louis Agassiz's account of 1850," *Hydrobiologia* 530/531 (2004): 27-32.



(2) First Edition, Offprint Issue. Clift's memoir contains the first description of *Stegolophodon latidens,* a new species of mastodon discovered in the fossil collection shipped from Burma to England by colonial administrator John Crawfurd (1783-1868). Crawfurd's important fossil collection was further discussed by William Buckland in his "Geological account of a series of animal and vegetable remains and of rocks, collected by J. Crawfurd, Esq.," also included in this volume.



Clift's paper provided important confirmation for Cuvier's concept of extinction, introduced in his famous "Mémoire sur les espèces d'éléphans vivantes et fossiles" (1799). In that paper Cuvier demonstrated anatomically that fossil mammoths and living elephants were distinct species and made a convincing case for the reality of species extinction, challenging the widely held view that the natural world was complete and perfect as created by God. Skeptics countered that mammoths, while extinct in Europe, could still possibly be living in other parts of the world; however, Crawfurd's discovery of mammoth fossils in Burma lent credence to Cuvier's argument.


To Charles Stokes Esq:
from the authors.

I.

SIVATHERIUM GIGANTEUM,

A NEW FOSSIL RUMINANT GENUS

THE VALLEY OF THE MARKANDA, IN THE SIVALIK BRANCH OF THE SUB-HIMALAYAN MOUNTAINS.

By HUGH FALCONER, M. D.

AND

CAPTAIN P. T. CAUTLEY,

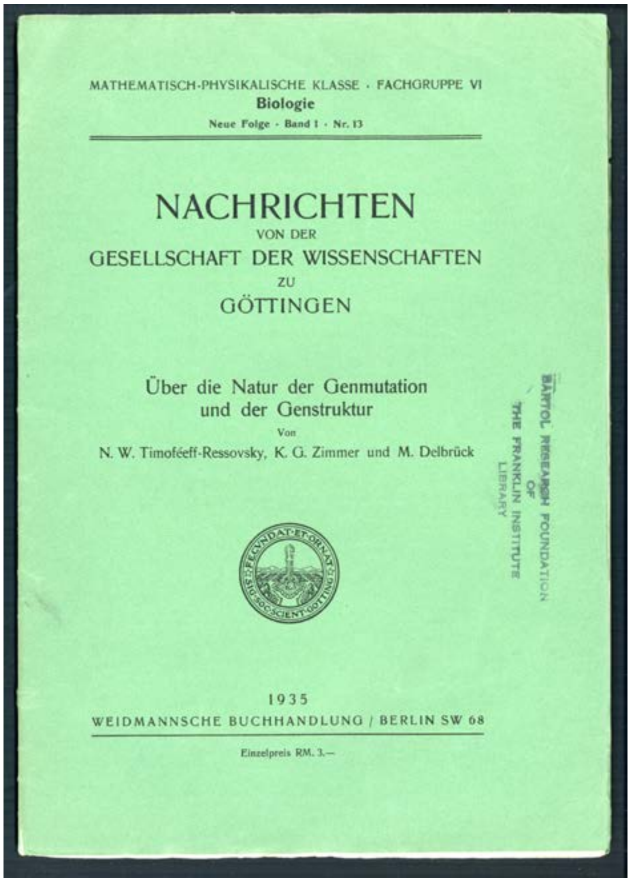
fossil which we are about to describe forms a new accession to Zoology. This circumstance alone would give much interest to But in addition, the large size, surpassing the Rhinoceros; the family to which it belongs; and the forms of structure which it render the *Sivatherium* one of the most remarkable of the past of the globe, that have hitherto been detected in the more recent

Of the numerous fossil mammiferous genera discovered and established all were confined to the Pachydermata. The species belonging families, have all their living representatives on the earth. Among no remarkable deviation from existing types has hitherto discovered, the fossil being closely allied to living species. The position, however, of the Giraffe and the Camelidæ, made it that certain genera have become extinct, which formed the

A

(3) First Edition, Offprint Issue. Falconer, a surgeon with the British East India Company, discovered the Siwalik fossil beds in the outer Himalayas and established his reputation as a paleontologist with his descriptions of the fossil animals found there. He often collaborated in these researches with British engineer Proby T. Cautley, designer of the Ganges Canal and an active participant in the Siwalik Hills fossil excavations. Falconer and Proby's paper, published in an Indian scientific journal, contains the first account of *Sivatherium giganteum*, an extinct giraffid species that ranged throughout Africa to the Indian subcontinent. *Sivatherium giganteum* is the largest giraffid known and may represent the largest ruminant of all time: Recent estimates assign it a height of three meters at the shoulder and a body weight of about 1250 kg (2760 lbs.).

These three significant papers, all with presentation inscriptions from their authors, are bound in a collection of 24 papers on geology, paleontology and natural history by several well-known British and American scientists. Among the authors represented are William Buckland (four papers), author of *Reliquiae diluvianae* (1823) and the first to publish a full account of a dinosaur; William Clift (two papers), comparative anatomist and the first curator of the Royal College of Surgeons' Hunterian Museum; and American naturalist Isaac Hays, whose "Description of a fragment of the head of a new fossil animal" (included in this collection) established the new fossil genus *Saurodon*. The volume is from the library of Charles Stokes, a wealthy stockbroker who numbered Charles Darwin and the painter J. M. W. Turner among his clients; he was also an amateur geologist who served a vice president of the Geological Society of London and amassed a large collection of geological and natural history specimens. Twelve of the 24 papers contained in the volume are inscribed to Stokes. For a list of the papers in the volume **click here.** 44479



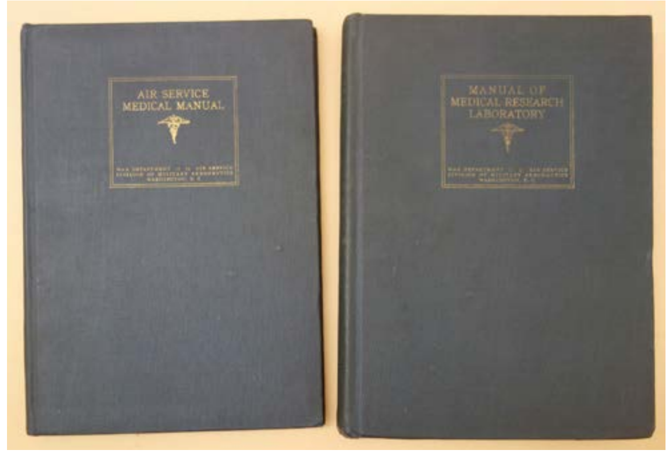
43. Timofeeff-Ressovsky, Nikolai Vladimirovich (1900–1981), **K. G. Zimmer** and **Max Delbrück** (1906–81). Ueber die Natur der Genmutation und der Genstruktur. Whole number of *Nachr. Ges. Wiss. Göttingen, math-fis. Kl.*, Fachgr. 6, 1 (1935). 8vo. [189]-245pp. Berlin: Weidmannsche Buchhandlung, 1935.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

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

"Ueber die Natur der Genmutation und der Genstruktur" (often referred to as "the green paper" after the color of its wrappers, or the "Dreimänner" paper after the number of its authors) is divided into four sections. The first, by Timoféeff-Ressovsky, describes the mutagenic effects of x-rays and gamma rays on *Drosophila melanogaster*; the second part, by Zimmer, analyzes Timoféeff-Ressovsky's results theoretically. The third and most remarkable section, by Delbrück, puts forth a model of genetic mutation based on atomic physics that "shows the maturity, judgment and breadth of knowledge of someone who had been in the field for years . . . its carefully worded predictions have stood the test of time" (Perutz, p. 557). The three authors of the paper "concluded that a mutation is a molecular rearrangement within a particular molecule, and the gene a union of atoms with which a mutation, in the sense of a molecular rearrangement or dissociation of bonds, can occur . . . the entire approach to the problem of mutation and the gene adopted by the three collaborators was highly stimulating to other investigators" (*Dictionary of Scientific Biography* [suppl.]).

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

44. United States War Department, Air Service, Division of Military Aeronautics. (1) Air Service medical manual. 38pp. 31 plate leaves. Washington, DC: Government Printing Office, 1918. 261 x 178 mm. Original cloth, spine a bit faded, small split in inner front hinge. Small marginal tear in one plate leaf. Government stamp on front pastedown. (2) Manual of medical research laboratory. 255pp. 40 plate leaves. Washington, DC: Government Printing Office, 1918. 259 x 177 mm. Original cloth, spine faded, split in inner front hinge. Together 2 items. Very good. $375

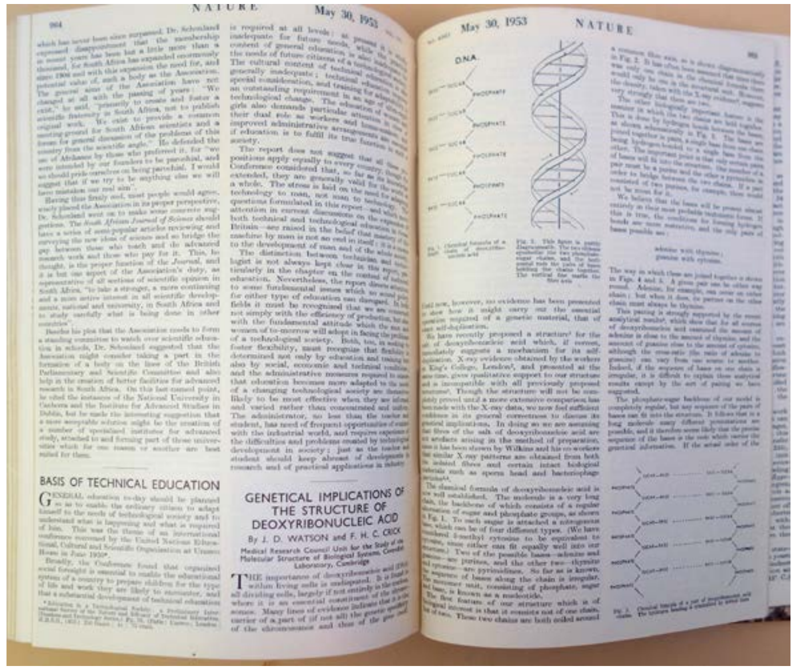


(1) First Edition. "The first U. S. work dedicated to the medical aspects of military pilot selection. According to the National Museum of Health and Medicine, this manual was written by William Holland Wilmer (1863-1936), then director of the Medical Research Laboratory at Mineola, Long Island. This placed Wilmer at the forefront of training for flight surgeons and in the classification of pilot candidates as they used novel devices and instruments to simulate high-altitude conditions. He pioneered efforts to produce oxygen delivery systems to pilots" (Garrison-Morton.com 8107).

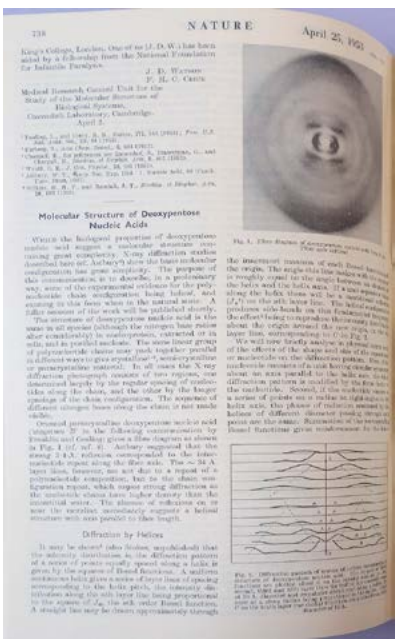
(2) First Edition. Wilmer also authored the *Manual of Medical Research Laboratory,* a longer and more detailed work "intended for the information and instruction of those who are interested in the medical problems of aviation" (p. 5). Garrison Morton.com 95957. 44564

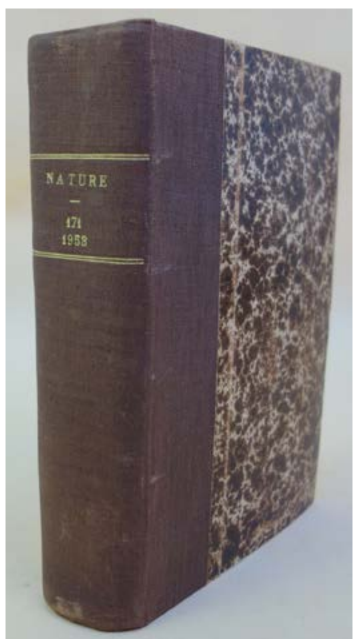
45. Volta, Alessandro (1745-1827). Engraved portrait by Luigi Rados (1773-1840) after Roberto Focosi. Milan: presso l'Editore Proprietario Luigi Rados, 1828. 490 x 347 mm. Small repairs to margins, some faint stains, otherwise very good. $4000

This fine portrait, engraved after Volta's death, shows him seated at a table, his left hand inside his coat and his right resting on the table, with an example of his "crown of cups" battery at his right and a Voltaic pile behind him. A 7-line caption in Italian gives a brief resumé of Volta's achievements. Volta, the inventor of the first electric battery, published his first paper on it in the *Philosophical Transactions* in 1800; his investigations proved the identity of Galvani's "animal" electricity with the electricity generated by his apparatus. The Voltaic pile made possible the experiments leading to the decomposition of water, electro-deposition of metal, and creation of the electro-magnet, initiating the electrical age. Benezit for the engraver. 38664



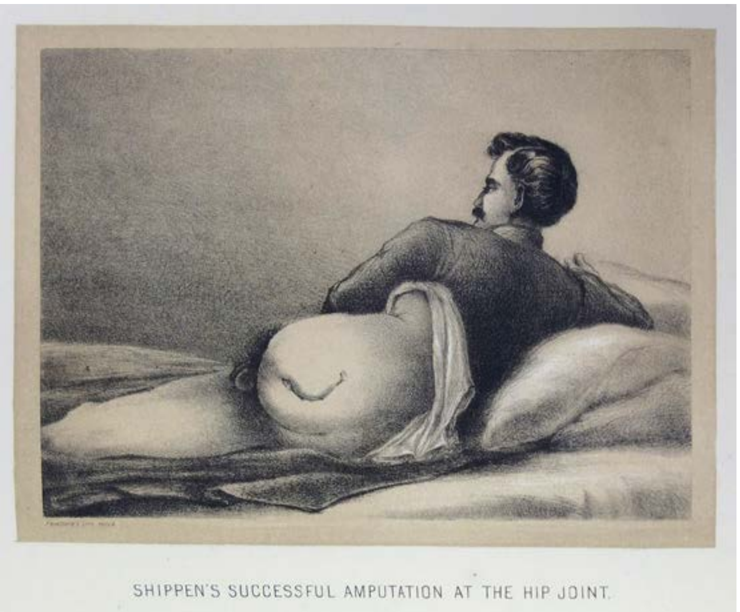
DNA





46. Watson, James D. (1928–) and **Francis H. C. Crick** (1916–2004). Molecular structure of nucleic acids. A structure for deoxyribose nucleic acid. With: **Wilkins, Maurice** (1916–2004); **A. R. Stokes; H. R. Wilson.** Molecular structure of deoxypentose nucleic acids. With: **Franklin, Rosalind** (1920–58) and **R. G. Gosling.** Molecular configuration in sodium thymonucleate. With: **Watson** and **Crick**. Genetical implications of the structure of deoxyribonucleic acid. Together 4 papers. In *Nature* 171 (Jan.–June 1953): 737–738; 738–740; 740–741; 964–967. 247 x 170 mm. Quarter cloth, marbled boards, light edgewear. Margins trimmed touching a few page headings, but very good. Library stamp on volume title. $2750

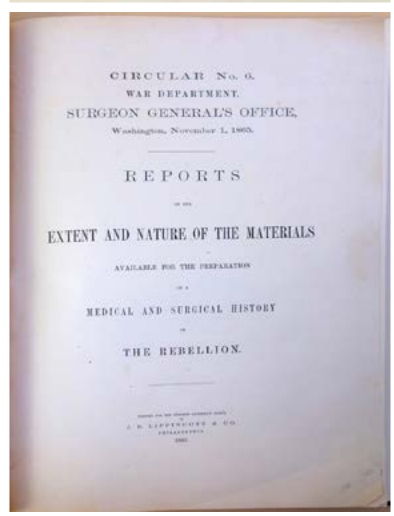
First Edition, journal issue of the three key DNA papers, plus Watson and Crick's "Genetical implications of the structure of deoxyribonucleic acid," their second DNA paper, in which they proposed the molecule's means of replication. This discovery has been called as significant or possibly even more significant than the original discovery of the structure of DNA. The Franklin and Gosling paper "reports Franklin's discovery of the existence of DNA in two forms, and conditions for readily and rapidly changing from one to the other. Its phosphates were on the outside." (Maddox, *Rosalind Franklin: The Dark Lady of DNA,* p. 195) The Watson-Crick model of the double helix was in large part derived from her work. Garrison-Morton.com 256.3, 7138 (Watson & Crick papers); 6847 (Franklin & Gosling paper). 44553



47. Woodward, Joseph Janvier (1833-84). Reports on the extent and nature of the materials available for the preparation of a medical and surgical history of the Rebellion. [2], 166pp. 5 plates, 2 charts, 2 full-page unpaginated illustrations. Philadelphia: J. B. Lippincott, 1866. 312 x 237 mm. Modern quarter morocco, cloth boards. Light toning but very good. $1250

First Edition of what is essentially the prospectus of *The Medical and Surgical History of the War of the Rebellion* (1870-88), the magisterial six-volume set that has been called "the first comprehensive American medical book" and "one of the most remarkable works ever published on military medicine" (Garrison-Morton.com 2171). This scarce report, written by one of the *Medical and Surgical History*'s co-authors, is not listed in Rutkow's comprehensive bibliographical *History of Surgery in the United States 1775-1900*.

Woodward's report, issued as Circular No. 6 of the War Department, Surgeon-General's Office, contains a detailed illustrated summary of the wartime medical and surgical data available in the Surgeon-General's office on such topics as gunshot wounds, amputations, excisions, camp diseases, military ambulances, mortality rates from disease and injury, and hospital construction and organization. The illustrations for the *Medical and Surgical History* represent a landmark in American medical illustration; several of these excellent plates are included in the present *Report,* including duotone lithographs of a gunshot wound and an amputation at the hip, a chromolithograph of a section of intestine showing the pathology of "typho-malarial fever," and a lithograph done after a photomicrograph of a section of ulcerated colon. Garrison-Morton.com 9529. 44481


CIRCULAR No. 6.
WAR DEPARTMENT,
SURGEON GENERAL'S OFFICE,
Washington, November 1, 1865.

REPORTS

EXTENT AND NATURE OF THE MATERIALS

MEDICAL AND SURGICAL HISTORY

THE REBELLION.