Catalogue 256

Selections from the Mathematical Library of

HAROLD LEVINE (c.1922-2017)

Professor Emeritus of Mathematics,
Stanford University

LOGIC, MATH & PHYSICS

JEFF WEBER
RARE BOOKS
MONTREUX, SWITZERLAND

Catalogue 256

SELECTIONS FROM THE MATHEMATICAL LIBRARY OF

HAROLD LEVINE (c.1922-2017)

Professor Emeritus of Mathematics,
Stanford University

FEATURING:

George BOOLE**,** *A Treatise on Differential Equations* – Inscribed by Boole

Jan Hendrik DE BOER*, Collection of 21 offprints.*

Jean-Fermin DEMONFERRAND, *Manuel d'Electricité Dynamique*. 1823.

EUCLID; Isaac BARROW, *Euclidis Elementorum*. 1678.

Sir John F. W. HERSCHEL, *Outlines of Astronomy. 1859.*

Karl PEARSON, *The Ethic of Freethought,* 1888.

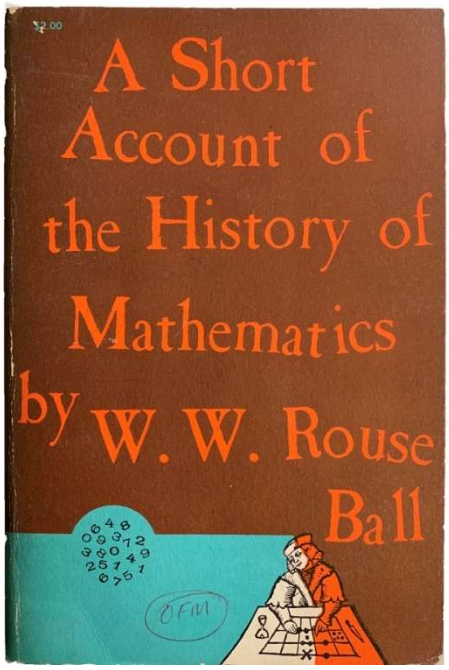
TODHUNTER, *A History of the Theory of Elasticity and of the Strength of Materials*, 1893.

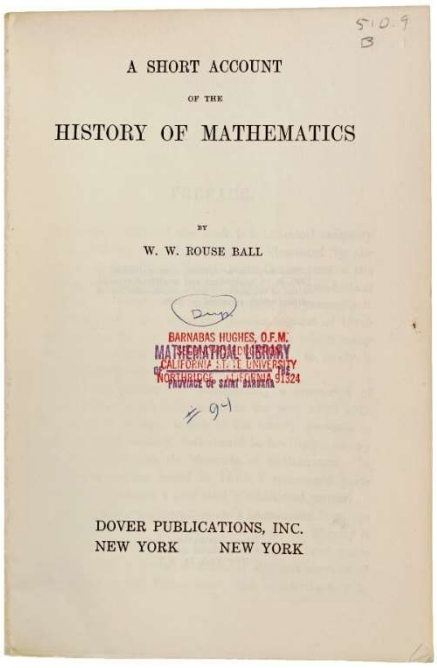
John WILKINS, *Mathematicall Magick,* 1648.

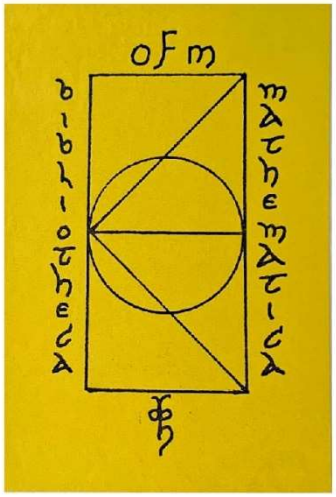
LOGIC, MATH & PHYSICS

JEFF WEBER RARE BOOKS

MONTREUX, SWITZERLAND



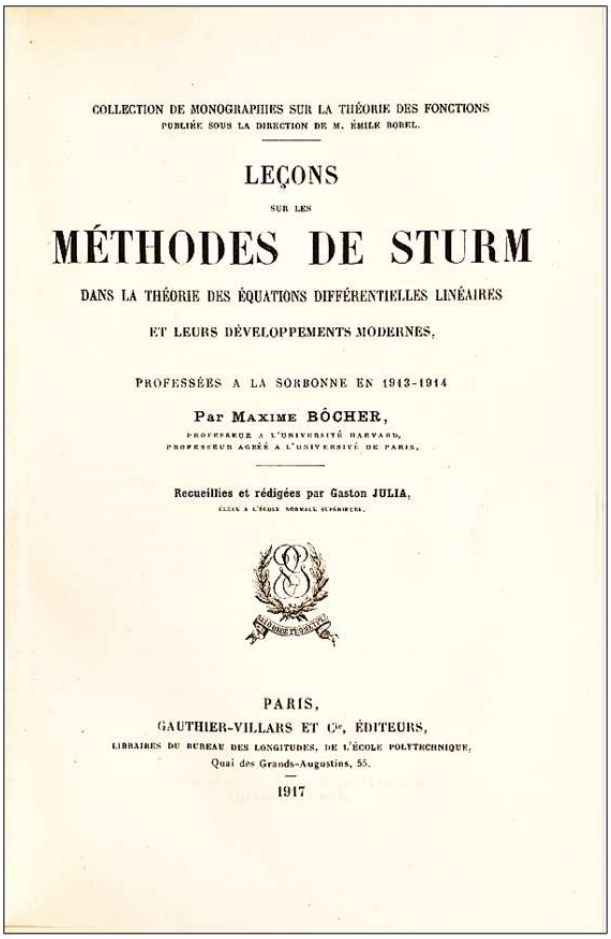




1. **BALL, W.W. Rouse** (1850-1925). *A Short Account of the History of Mathematics.* New York: Dover, n.d. ¶ Reprint of 1908 edition. 12mo. xxiv, 522 pp. Index. Printed wrappers; ink initials on cover, rubbed. Bookplate of Barnabas Hughes, ex-library stamps on title. Good. SS11582

$ 5

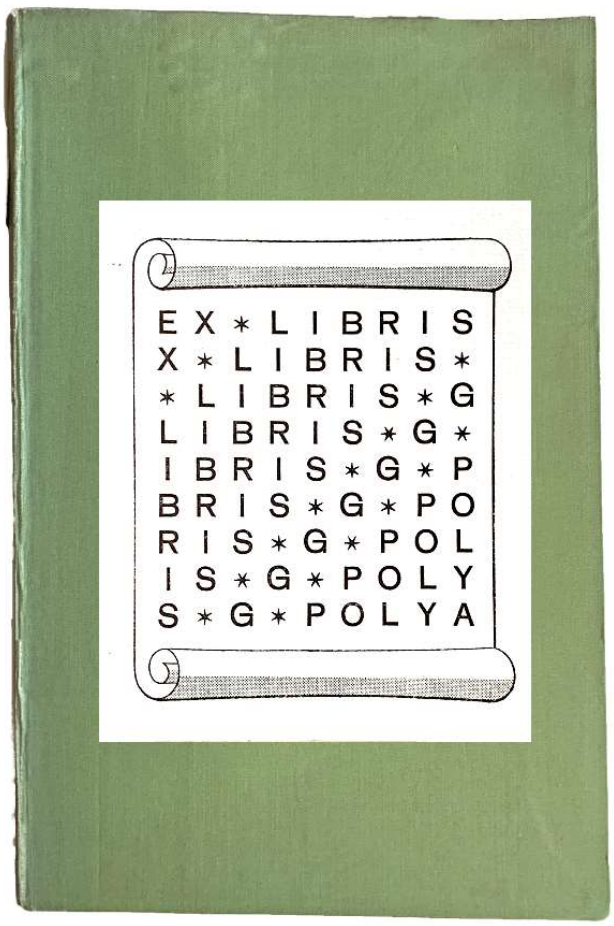
Walter William Rouse Ball, British mathematician & lawyer, fellow at Trinity College, Cambridge (1878-1905). His histories of mathematics are still authoritative. Ball was a keen amateur magician and served as the founding president of the Cambridge Pentacle Club (1919), one of the world's oldest magic societies.



COLLECTION DE MONOGRAPHIES SUR LA THÉORIE DES FONCTIONS
PUBLIÉE SOUS LA DIRECTION DE M. ÉMILE BOREL.

LEÇONS
SUR LES
MÉTHODES DE STURM
DANS LA THÉORIE DES ÉQUATIONS DIFFÉRENTIELLES LINÉAIRES
ET LEURS DÉVELOPPEMENTS MODERNES,
PROFESSÉES A LA SORBONNE EN 1913-1914
Par MAXIME BÔCHER,
PROFESSEUR A L'UNIVERSITÉ HARVARD,
PROFESSEUR AGRÉÉ A L'UNIVERSITÉ DE PARIS,
Recueillies et rédigées par Gaston JULIA,
ÉLÈVE A L'ÉCOLE NORMALE SUPÉRIEURE.

PARIS,
GAUTHIER-VILLARS ET Cie, ÉDITEURS,
LIBRAIRES DU BUREAU DES LONGITUDES, DE L'ÉCOLE POLYTECHNIQUE,
Quai des Grands-Augustins, 55.
1917



2. **BÔCHER, Maxime** (1867-1918). *Leçons sur les Méthodes de Sturm dans la théorie des équations différentielles linéaires et leurs développements modernes*. Paris: Gauthier-Villars et cie, 1917. ¶ Series: *Collection de monographies sur la théorie des fonctions.* 8vo. vi, 118 pp. Later full lime green cloth, hand-typed title on paper mounted on spine. Bookplate of G Polya. SS11589

$ 175

First edition. Maxime Bôcher was an American mathematician who published about 100 papers on differential equations, series, and algebra. He also wrote elementary texts such as Trigonometry and Analytic Geometry. Bôcher's theorem, Bôcher's equation, and the Bôcher Memorial Prize are named after him. Bôcher was president of the American Mathematical Society from 1908 to 1910.

PROVENANCE: George Polya (1887-1985) was a Hungarian mathematician and professor of mathematics from 1914 to 1940 at ETH Zurich and from 1940 to 1953 at Stanford University. He made fundamental contributions to combinatorics, number theory, numerical analysis and probability theory. Harold Levine was also at Stanford's mathematics dept. and thus acquired some of Polya's personal library.

XIX. *On the Differential Equations which determine the form of the Roots of Algebraic Equations.*

By GEORGE BOOLE, *F.R.S., Professor of Mathematics in Queen's College, Cork.*

Received April 27,—Read May 26, 1864.

1. Mr. HARLEY* has shown that any root of the equation

$$y^n - ny + (n-1)x = 0$$

satisfies the differential equation

$$y - \frac{\left(\mathrm{D}-\frac{2n-1}{n}\right)\left(\mathrm{D}-\frac{3n-2}{n}\right)..\left(\mathrm{D}-\frac{n^2-n+1}{n}\right)}{\mathrm{D}(\mathrm{D}-1)..(\mathrm{D}-n+1)} e^{(n-1)\theta} y = 0, \quad . \quad . \quad . \quad . \quad (1)$$

in which $e^\theta = x$, and $\mathrm{D} = \frac{d}{d\theta}$, provided that n be a positive integer greater than 2. This result, demonstrated for particular values of n, and raised by induction into a general theorem, was subsequently established rigorously by Mr. CAYLEY by means of LAGRANGE's theorem.

For the case of $n=2$, the differential equation was found by Mr. HARLEY to be

$$y - \frac{\mathrm{D}-\frac{3}{2}}{\mathrm{D}} e^\theta y = \tfrac{1}{2} e^\theta. \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (2)$$

Solving these differential equations for the particular cases of $n=2$ and $n=3$, Mr. HARLEY arrived at the actual expression of the roots of the given algebraic equation for these cases. That all algebraic equations up to the fifth degree can be reduced to the above trinomial form, is well known.

A solution of (1) by means of definite triple integrals in the case of $n=4$ has been published by Mr. W. H. L. RUSSELL; and I am informed that a general solution of the equation by means of a definite single integral has been obtained by the same analyst.

While the subject seems to be more important with relation to differential than with reference to algebraic equations, the connexion into which the two subjects are brought must itself be considered as a very interesting fact. As respects the former of these subjects, it may be observed that it is a matter of quite fundamental importance to ascertain for what forms of the function $\varphi(\mathrm{D})$, equations of the type

$$u + \varphi(\mathrm{D}) e^{n\theta} u = 0 \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (3)$$

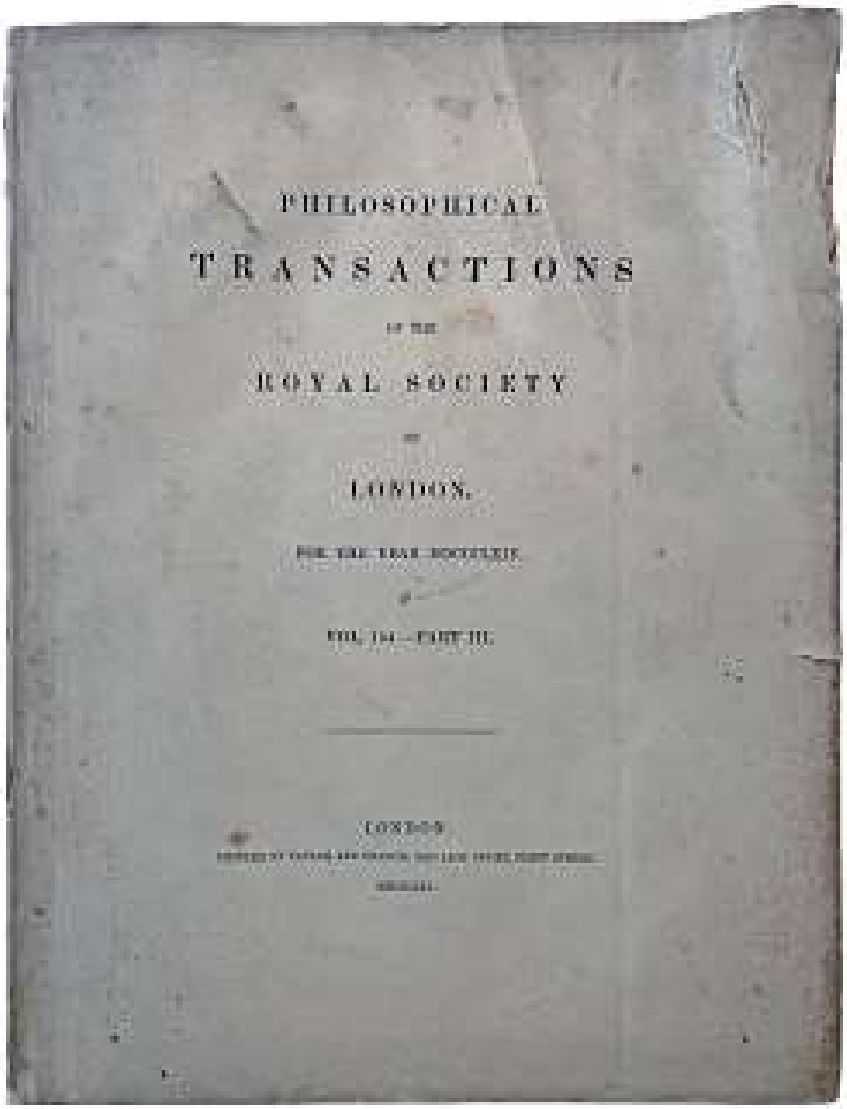
admit of finite solution. We possess theorems which enable us to deduce from each known integrable form an infinite number of others. Yet there is every reason to think

* Proceedings of the Literary and Philosophical Society of Manchester, No. 12, Session 1861–62.

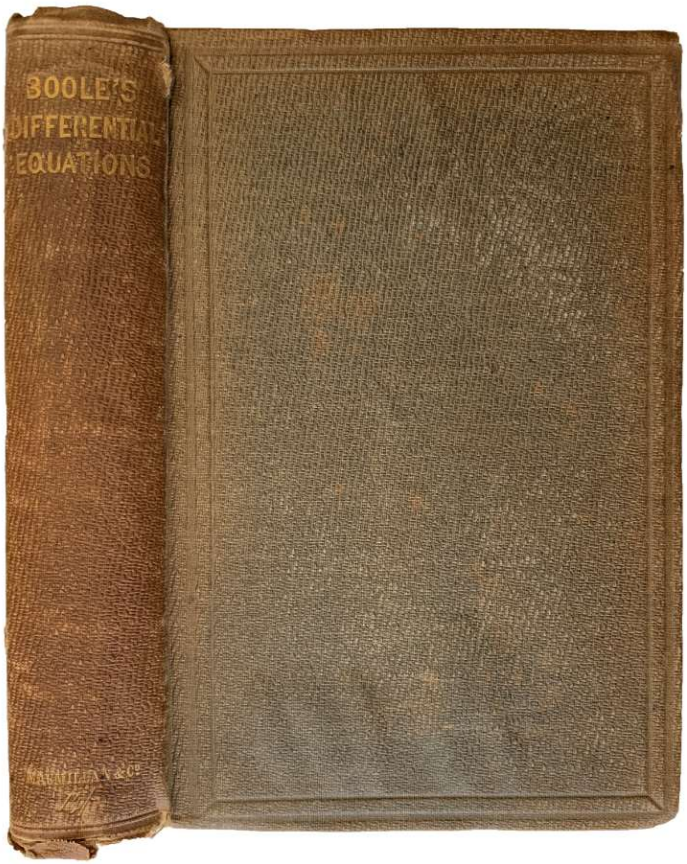
[3] BOOLE

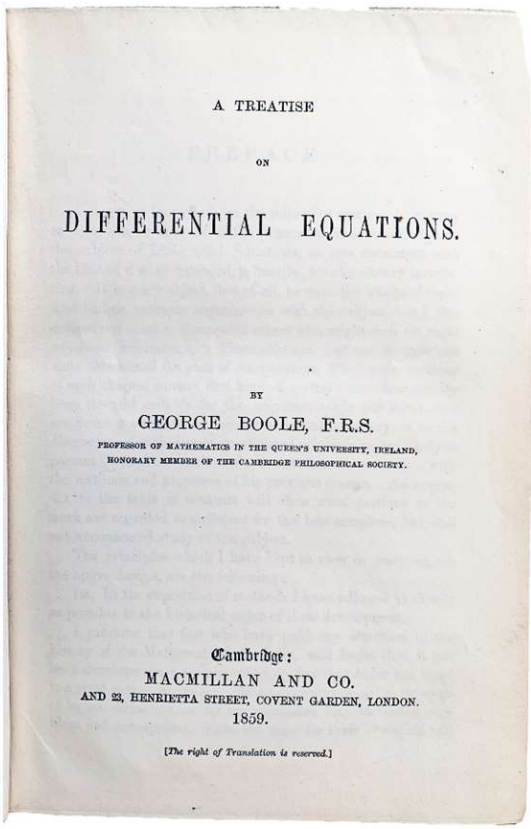
3. **BOOLE, George** (1815-1864). *On the differential equations which determine the form of the roots of algebraic equations. In: Philosophical Transactions of the Royal Society of London. For the Year MDCCCLXIV, Vol. 154, Part III*. London: Taylor and Francis, 1865. ¶ 300 x 231 mm. 4to. Pages 733-755. [Entire volume: [viii], v, [iii], 445-760, 24 pp.] Original printed wrappers; covers soiled, top cover and preliminaries damaged at top corner. Good. SS4119

$ 250


PHILOSOPHICAL
TRANSACTIONS
OF THE
ROYAL SOCIETY
OF
LONDON.

This paper on differential equations is among Boole's "most remarkable" contributions. *DNB*. This paper appeared a year after George Boole died, having walked in the rain to a class he was teaching and lectured in wet clothes, which led to his fatal illness. Boole's scientific writings consist of some fifty papers, two textbooks, and two volumes dealing with mathematical logic. The two textbooks, on differential equations (1859) and finite differences (1860), remained in use in the United Kingdom until the end of the century. The majority of Boole's papers published after 1850 dealt with differential equations in relation to the theory of probability. *DNB*, II, pp. 831-832; *DSB*, II, pp. 293-298.





A TREATISE

ON

DIFFERENTIAL EQUATIONS.

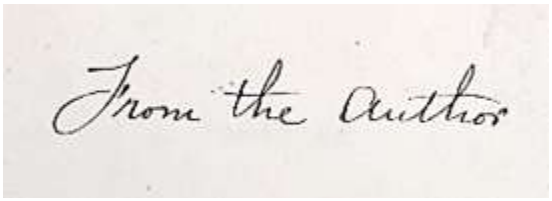
BY

GEORGE BOOLE, F.R.S.

PROFESSOR OF MATHEMATICS IN THE QUEEN'S UNIVERSITY, IRELAND,
HONORARY MEMBER OF THE CAMBRIDGE PHILOSOPHICAL SOCIETY.

Cambridge:
MACMILLAN AND CO.
AND 23, HENRIETTA STREET, COVENT GARDEN, LONDON.
1859.

[The right of Translation is reserved.]



"From the Author" George Boole

4. **BOOLE, George** (1815-1864). *A Treatise on Differential Equations [with] Treatise on Differential Equations. Supplementary Volume*. Cambridge: Macmillan, 1859-65. ¶ 2 volumes. 8vo. xv, [1 blank], 494; xi, [1], 235, [1 blank], 53, [ads 2] pp. Vol. 1 folding plate. I: Original double blind-ruled pale brown cloth, gilt-stamped spines; spine ends frayed, inner hinges cracked; II [Supple.]: Original double-ruled green cloth, gilt-stamped spines; 1 signature starting, heavily faded with spine ends worn, joints splitting. INSCRIBED "FROM THE AUTHOR" at Vol. 1 half-title. Vol. 1 errata slip and ownership signature of J. Bluason [or similar to Zhasor?], 1939. Vol. 2 title-page rubber stamp of Dr. George F. McEwin. Good. SS11540

$ 1250

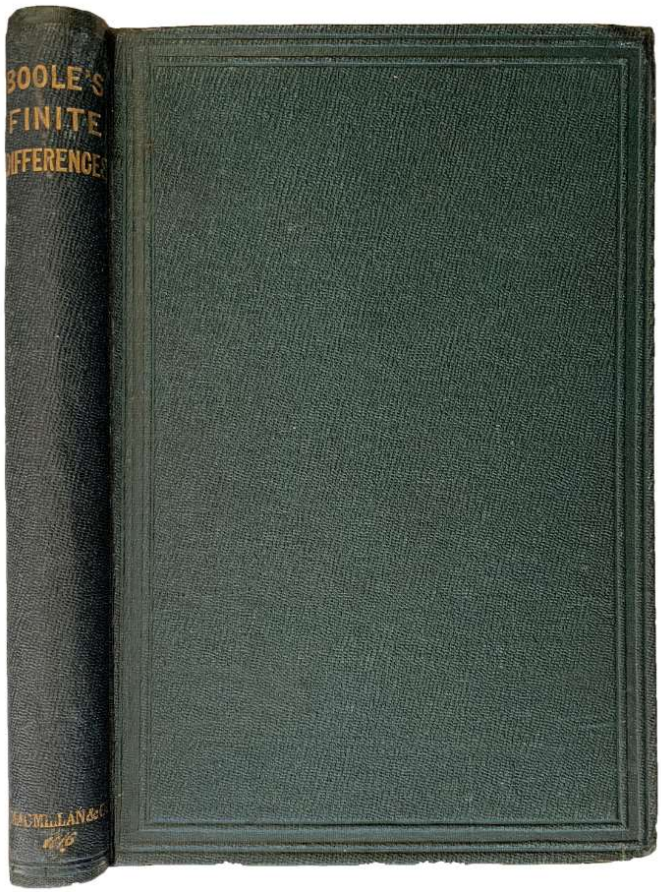
FIRST EDITION of Boole's insightful works on differential equations and symbolic logic, with the rare accompanying supplementary volume. "George Boole is today best remembered for his contributions to logic—as a man who, by breaking with the traditional, syllogistic methodology expounded in the logic textbooks, initiated the modern, mathematical study of logic" (Ewald, p. 442). "There is an aspect of Boole's work that is not closely related to his treatises in logic or the theory of sets but which is familiar to every student of differential equations. This is the algorithm of differential operators, which he introduced to facilitate the treatment of linear differential equations. If, for example, we wish to solve the differential equation ay + by + cy = 0, the equation is written in the notation (aD2 + bD + c)y = 0. Then, regarding D as an unknown quantity rather than an operator, we solve the algebraic quadratic equation aD2 + bD + c = 0. . . . There are many other situations in which Boole, in his Treatise on Differential Equations of 1859, pointed out parallels between the properties of the differential operator (and its inverse) and the rules of algebra. British mathematicians in the second half of the nineteenth century were thus again becoming leaders in algorithmic analysis, a field in which, fifty years earlier, they had been badly deficient" (Hook & Norman 225). "Boole stands somewhat apart from his three algebraic predecessors. Unlike them, he was not educated at Cambridge. . . apart from a few years of elementary school, George Boole was entirely self-educated" (Ewald, p. 442).

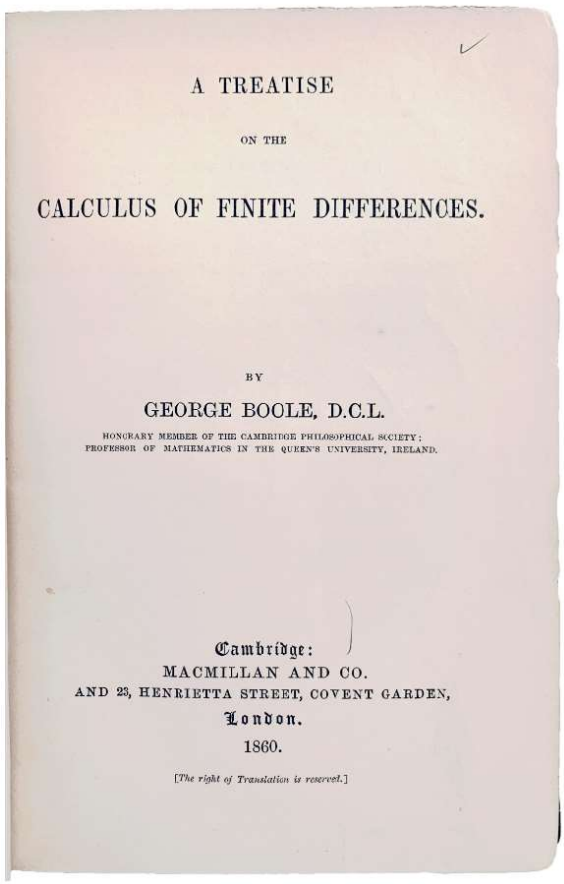
"Boole's scientific writings consist of some fifty papers, two textbooks, and two volumes dealing with mathematical logic. The two textbooks [including the present one] remained in use in the United Kingdom until the end of the century. They contain much of Boole's original work, reproducing and extending material published in his research papers" (DSB, II, p. 294).

PROVENANCE: Dr. George F. McEwin (1882-1972) pioneered "phases of physical oceanography which had attracted worldwide recognition." Born in Manchester, Iowa, studied at Iowa State College in Ames, and then attended Stanford University, graduating with his baccalaureate degree and Phi Beta Kappa honors in 1908. He then pursued his Ph.D. in physics and mathematics also at Stanford. "McEwen was a pioneer in the U.S. in the field of dynamical and physical oceanography. Although his later studies often involved development and application of theory, his first paper (1910) was a more descriptive preliminary report on hydrographic work carried on by the then Marine Biological Station of San Diego. In this paper he noted the occurrence of unseasonably cold water in a narrow belt along the California coast and cited an explanation based on upwelling of deeper water in replacement of surface waters carried offshore by the wind. In subsequent studies (1912, 1929, 1934) he further developed the explanation for the phenomenon using Ekman's theory of wind-driven currents, and made several estimates of the rate of upward movement of

the nutrient-rich water that is so important in increasing biological productivity in coastal areas." – In Memoriam July 1975 – Robert S. Arthur Denis L. Fox Carl L. Hubbs Russell W. Raitt, in: Calisphere.

☼ Ewald, William Bragg. From Kant to Hilbert, Volume 1: A Source Book in the Foundations of Mathematics. Oxford: Oxford University Press, 2005; Hook, Diana H. & Jeremy M. Norman. Origins of Cyberspace: A Library on the History of Computing and Computer-Related Telecommunications. Novato, CA: Norman Publishing, 2002.




A TREATISE

ON THE

CALCULUS OF FINITE DIFFERENCES.

BY

GEORGE BOOLE, D.C.L.

HONORARY MEMBER OF THE CAMBRIDGE PHILOSOPHICAL SOCIETY;
PROFESSOR OF MATHEMATICS IN THE QUEEN'S UNIVERSITY, IRELAND.

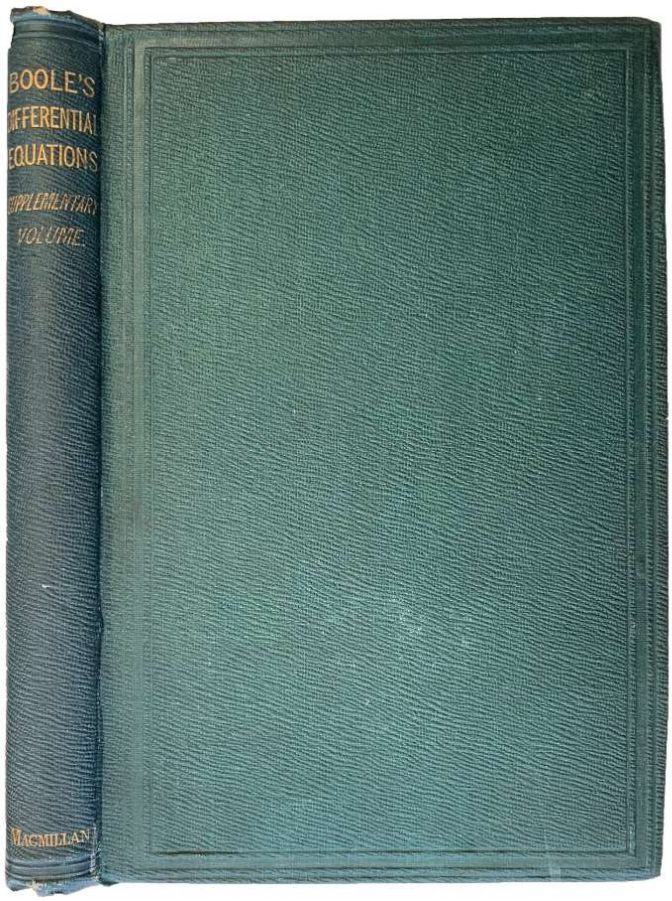
Cambridge:
MACMILLAN AND CO.
AND 23, HENRIETTA STREET, COVENT GARDEN,
London.
1860.

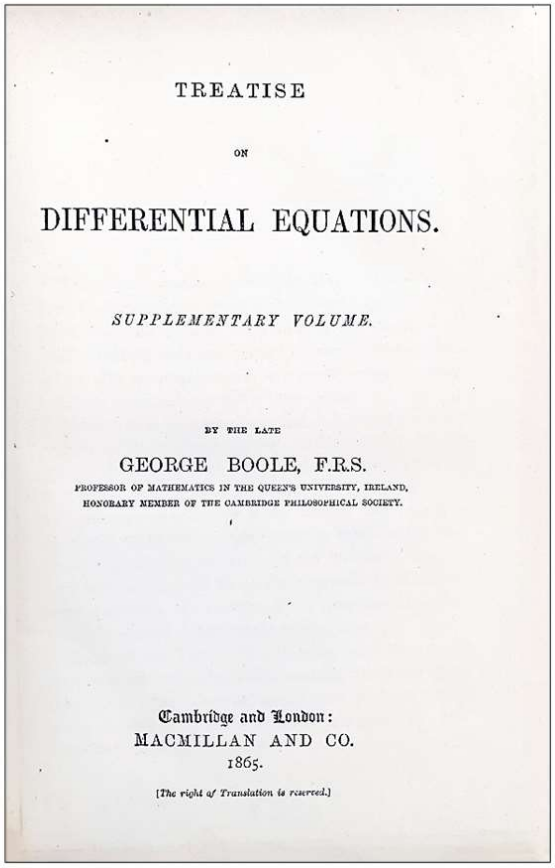
[The right of Translation is reserved.]

5. **BOOLE, George** (1815-1864). *A Treatise on the Calculus of Finite Differences*. London: Macmillan, 1860. ¶ 8vo. [viii], 248, pp. Rebacked preserving original green cloth, gilt spine. FINE. SS8818

$ 750

FIRST EDITION. Boole was one of the great mathematicians of his age, and this work remained a standard textbook in Britain until the turn of the century. In this work, Boole provides much original material as well as extensions of earlier research papers. *DSB* vol. II; Bell, *Men of Mathematics*, pp. 433-447.





TREATISE

ON

DIFFERENTIAL EQUATIONS.

SUPPLEMENTARY VOLUME.

BY THE LATE

GEORGE BOOLE, F.R.S.

PROFESSOR OF MATHEMATICS IN THE QUEEN'S UNIVERSITY, IRELAND,
HONORARY MEMBER OF THE CAMBRIDGE PHILOSOPHICAL SOCIETY.

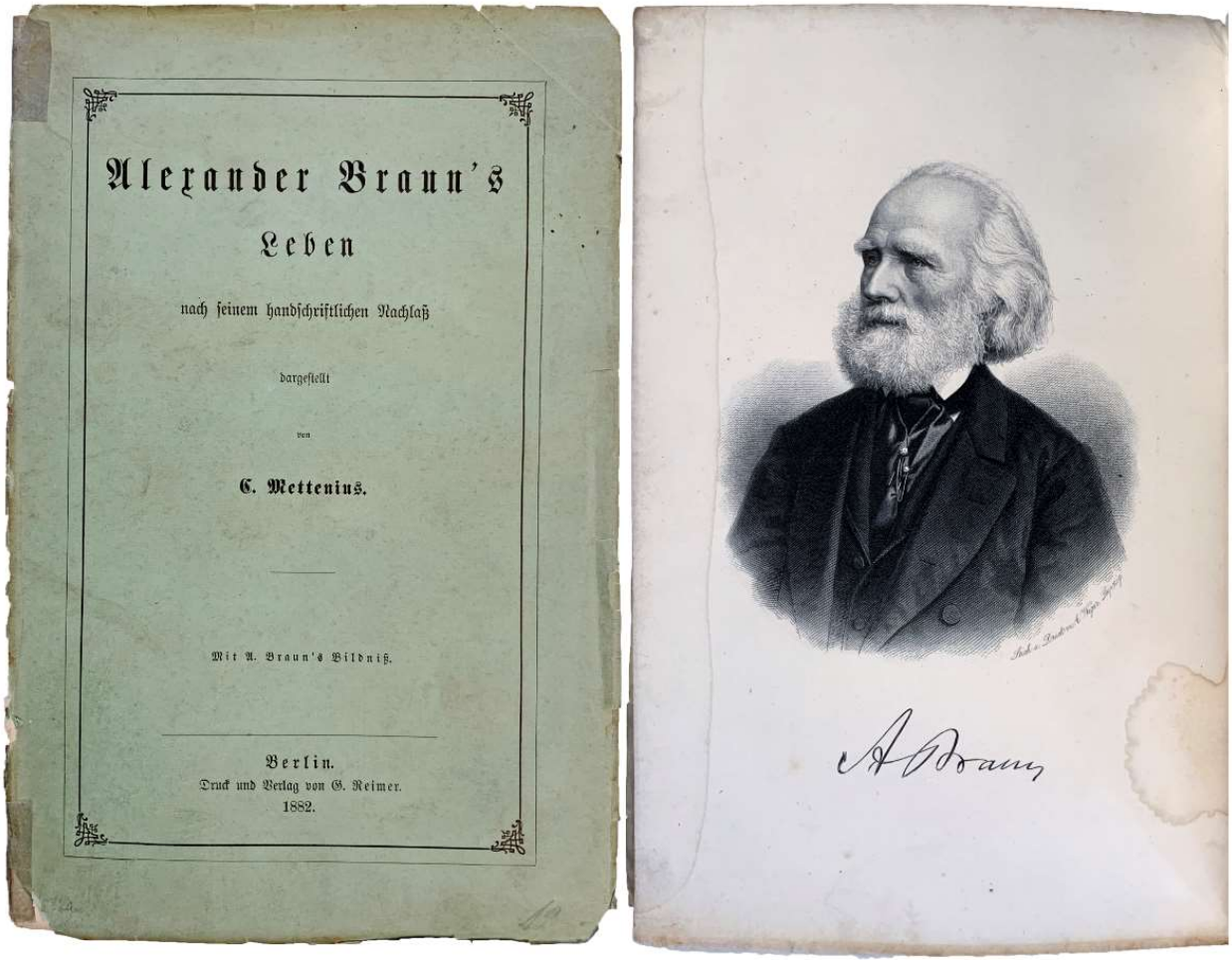
Cambridge and London:
MACMILLAN AND CO.
1865.

[*The right of Translation is reserved.*]

6. **BOOLE, George** (1815-1864). *A Treatise on Differential Equations. Supplementary Volume.* Cambridge & London: Macmillan, 1865. ¶ 8vo. xi, 235, [ads.] 30 pp. Original green cloth, gilt spine; spine head lightly frayed, else A very good copy. SS8486

$ 600

FIRST EDITION. Published posthumously this important volume by the brilliant Irish mathematician was "compiled from Boole's notes by Isaac Todhunter, and containing a list of Boole's publications." – *DSB* II, p. 298.



7. [**BRAUN, Alexander** (1805-1877)] **METTENIUS, Cecile**. *Alexander Braun's Leben nach seinem handschriftlichen Nachlass*. Berlin: G. Reimer, 1882. ¶ 8vo. VIII, 706 pp. Frontispiece portrait. Original green printed wrappers; spine mended. Very good. S13848

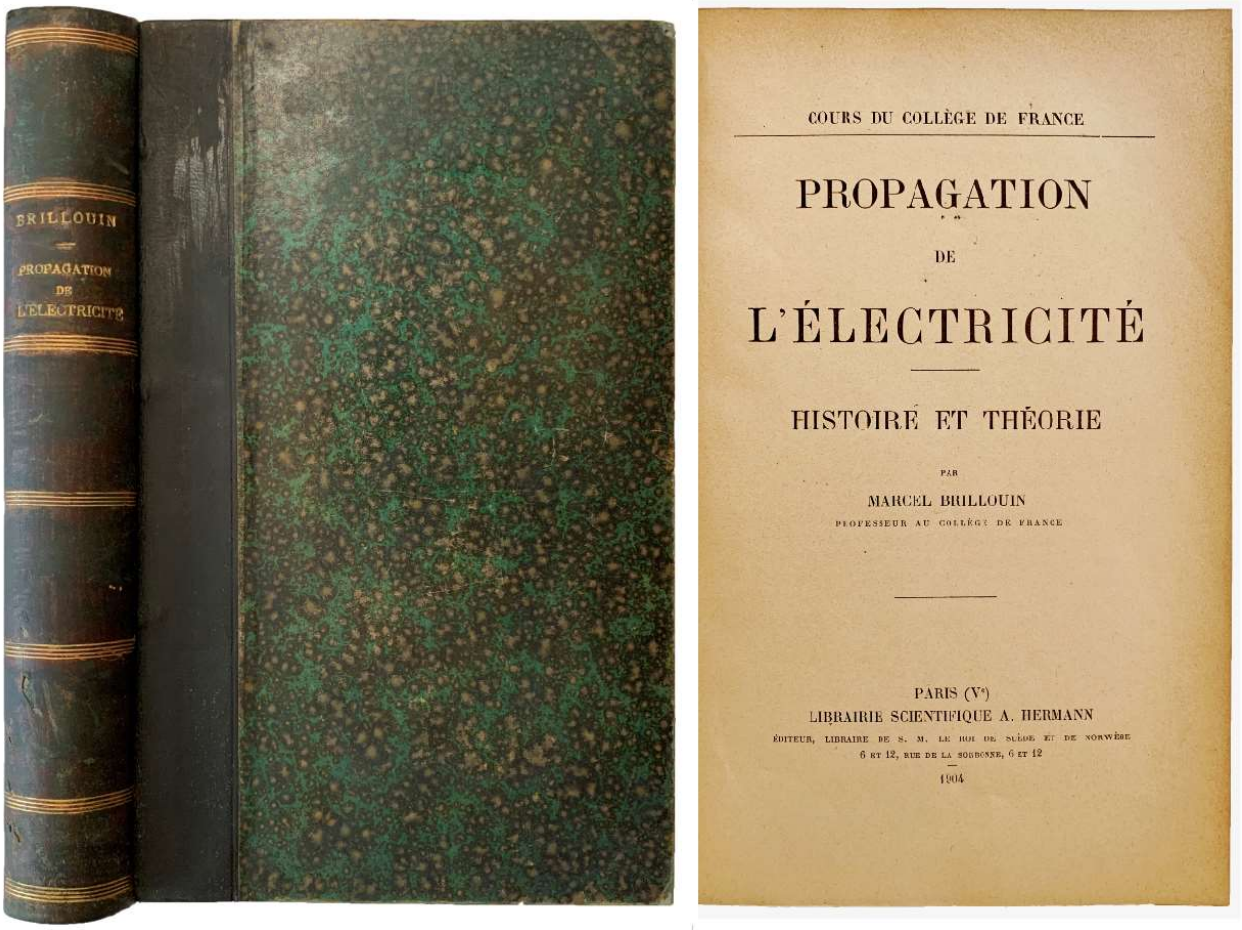
$ 50

First edition. This is the life and work of the German botanist, Alexander Braun.

"Braun is largely known for his research involving plant morphology. He accepted evolution but was a critic of Darwinism. He was a proponent of vitalism, a popular 19th-century speculative theory that claimed that a regulative force existed within living matter in order to maintain functionality. Braun made important contributions in the field of cell theory." [Wikip.].

Georg Heinrich Mettenius (1823-1866), German botanist, born in Frankfurt am Main, received his medical doctorate from the University of Heidelberg (1845), son-in-law

to botanist Alexander Braun (1805–1877). In 1852 he became a full professor at the University of Leipzig as well as director of its botanical garden. Cholera took his life in 1866 at the age of 42. Some attribute this book to Georg Heinrich Mettenius, but more properly it should be authored by one who lived in 1882, that should be Cecile Mettenius.



8. **BRILLOUIN, Marcel** (1854-1948). *Propagation de l'Electricité; histoire et théorie*. Paris: A. Hermann, 1904. ¶ Head of title: *Cours du Collège de France*. 8vo. ix, 398 pp. Figs., 4 folding plates. Early quarter dark green gilt-stamped calf, marbled boards. Generally very good. SS11594

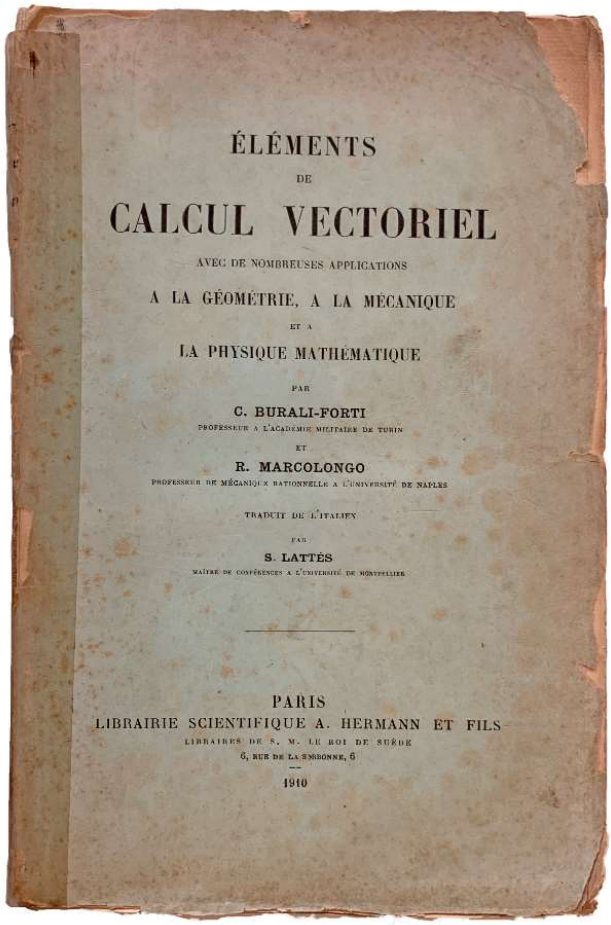
$ 125

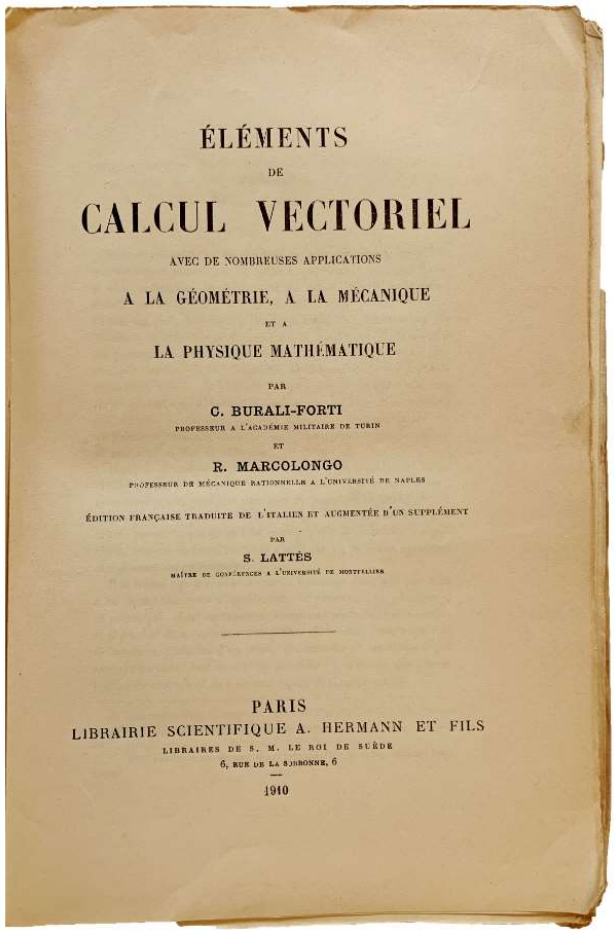
In 1911 Brillouin was one of only six French physicists invited to the first Solvay Conference. He was awarded the Prix La Caze for 1912. He was elected to the Académie des Sciences in 1921. He was an officer of the Legion of Honour.

"This book is a fairly faithful reproduction of the lessons I taught at the College de France during the year 1901-1902. It is by no means a complete and methodical treatise on electricity; it is, in accordance, I believe, with the spirit of the teaching of the College of France, a course of lessons, very unequally developed, according to whether the subject with which they treat is more or less known by French texts, or that it seemed to me to include some new historical or theoretical remarks. As for the mode of exposition and sequence of ideas and facts, I do not give it as preferable to any other, but as quite different from those which are usually adopted by French authors, and in itself quite satisfactory in the field studied to provoke comparison, make the reader think and help him build for himself the edifice best suited to the nature of his mind."

"I am thinking of following this volume with a second which would contain the essential parts of the lessons of 1902-1903 and 1903-1904, leading to the theory of electrons, which now rests on a solid experimental basis."

"I was helped in the drafting of this book by MM Blanc and Blein, agrégés of Physics, former students of the École Normale, who wrote the lessons and reviewed the calculations with a zeal and care for which I thank them; I therefore hope that I have not let slip any serious error, and that there are few errors in signs or notation. Almost the whole volume was printed at the beginning of the year 1903, before the experiments of MM Peuder and Crémieu put beyond doubt the magnetic effect of electric convection; but publication was delayed for several months by the last chapter. In fact I had to resume the theory of oscillations of the ellipsoid, and it seemed to me necessary to carry out the numerical calculations essential to make usable the functions which define the distribution on ellipsoids, and the law of emission by ellipsoids. These calculations were made by M Kannapell; quite a number of checks and controls were carried out; I believe that one can have full confidence in the tables which end the volume. It would be great if they were more developed; but as such, they take the H and S functions out of the limbo of pure analysis and allow them to be used in most circumstances, without being stopped by preliminary calculations of an off-putting length." – Preface (translated).


ÉLÉMENTS
DE
CALCUL VECTORIEL
AVEC DE NOMBREUSES APPLICATIONS
A LA GÉOMÉTRIE, A LA MÉCANIQUE
ET A
LA PHYSIQUE MATHÉMATIQUE
PAR
C. BURALI-FORTI
PROFESSEUR A L'ACADÉMIE MILITAIRE DE TURIN
ET
R. MARCOLONGO
PROFESSEUR DE MÉCANIQUE RATIONNELLE A L'UNIVERSITÉ DE NAPLES
TRADUIT DE L'ITALIEN
PAR
S. LATTÈS
MAÎTRE DE CONFÉRENCES A L'UNIVERSITÉ DE MONTPELLIER
PARIS
LIBRAIRIE SCIENTIFIQUE A. HERMANN ET FILS
LIBRAIRES DE S. M. LE ROI DE SUÈDE
6, RUE DE LA SORBONNE, 6
1910


ÉLÉMENTS
DE
CALCUL VECTORIEL
AVEC DE NOMBREUSES APPLICATIONS
A LA GÉOMÉTRIE, A LA MÉCANIQUE
ET A
LA PHYSIQUE MATHÉMATIQUE
PAR
C. BURALI-FORTI
PROFESSEUR A L'ACADÉMIE MILITAIRE DE TURIN
ET
R. MARCOLONGO
PROFESSEUR DE MÉCANIQUE RATIONNELLE A L'UNIVERSITÉ DE NAPLES
ÉDITION FRANÇAISE TRADUITE DE L'ITALIEN ET AUGMENTÉE D'UN SUPPLÉMENT
PAR
S. LATTÈS
MAÎTRE DE CONFÉRENCES A L'UNIVERSITÉ DE MONTPELLIER
PARIS
LIBRAIRIE SCIENTIFIQUE A. HERMANN ET FILS
LIBRAIRES DE S. M. LE ROI DE SUÈDE
6, RUE DE LA SORBONNE, 6
1910

9. **BURALI-FORTI, Cesare** (1861-1931); **R. MARCOLONGO**. *Elements de Calcul Vectoriel. Traduit de l'Italien*. Paris: A. Hermann et fils, 1910. ¶ 8vo. 229 pp. Original printed wrappers; spine heavily taped, extremities chipped, signatures coming loose (stopped by plastic tape). Good. SS11598

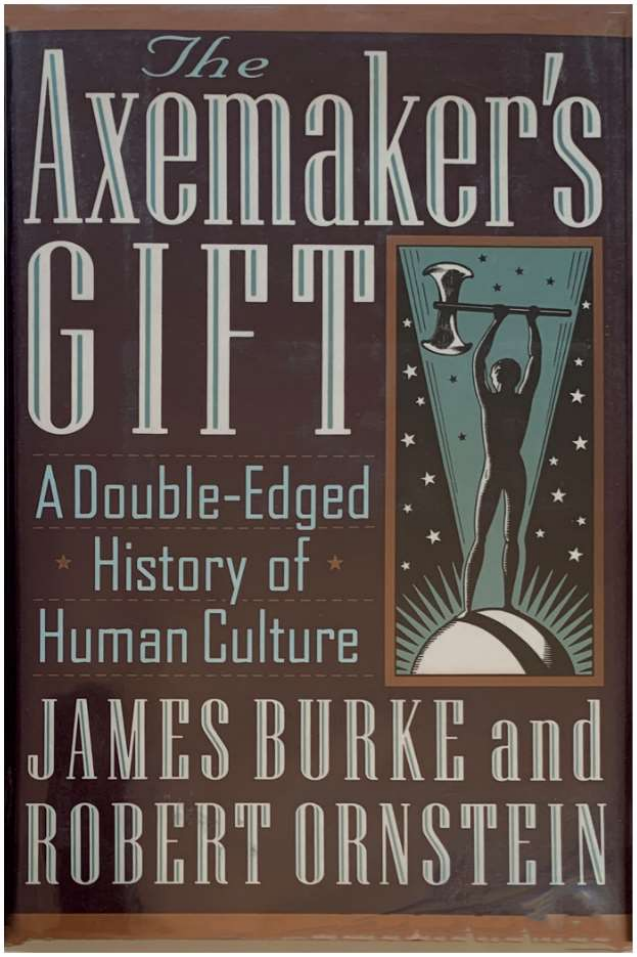
$ 18

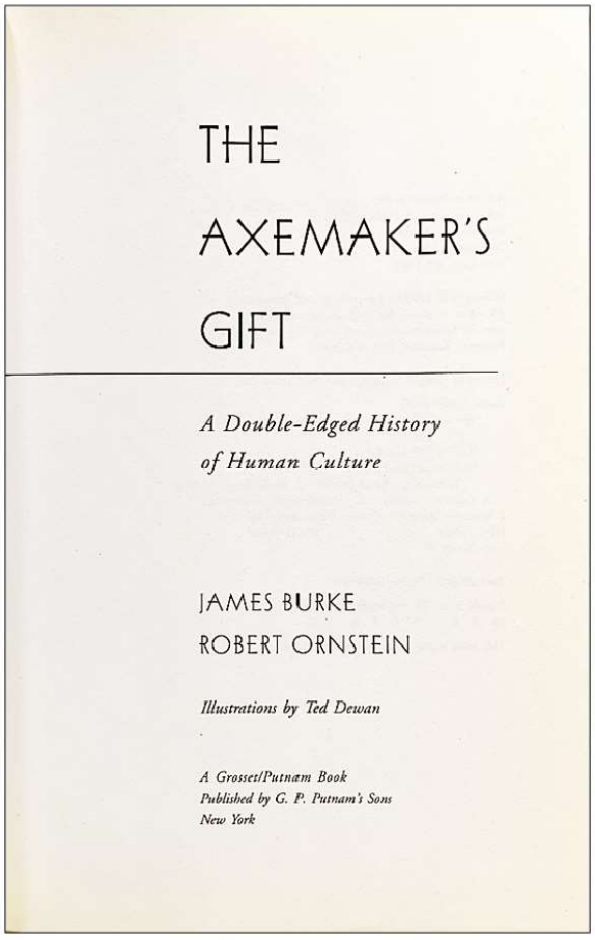
The Burali-Forti paradox is the oldest paradox of naive set theory, published on March 28, 1897. It describes the contradiction at which the formation of the number of all ordinal numbers fails. It is named after its discoverer Cesare Burali-Forti, which showed that such a set of all ordinal numbers would correspond to an ordinal number, even an ordinal number, "displaystyle", omega, which could be made up of a larger successor ordinal number, which would be less than or equal to the "displaystyle", which

would result in the impossible inequality of "Displaystyle" "[Omega] Ω <"[Omega] Ω +1" "[Omega] Ω "\Omega <\[Omega] Ω +1\leq \[Omega] Ω Followed.

Georg Cantor described the paradox only in 1899 as a generalization of the first Cantorian antinomy, with which he proved that the class of all cardinal numbers is not a quantity. This class can be considered a true subclass of ordinal numbers.

In the axiomatic Zermelo set theory or Zermelo-Fraenkel set theory (ZF), the Burali-Forti paradox can be understood as proof that no quantity of all ordinal numbers exists. In quantity gauges that work with classes, it provides proof that the class of all ordinal numbers is a real class.





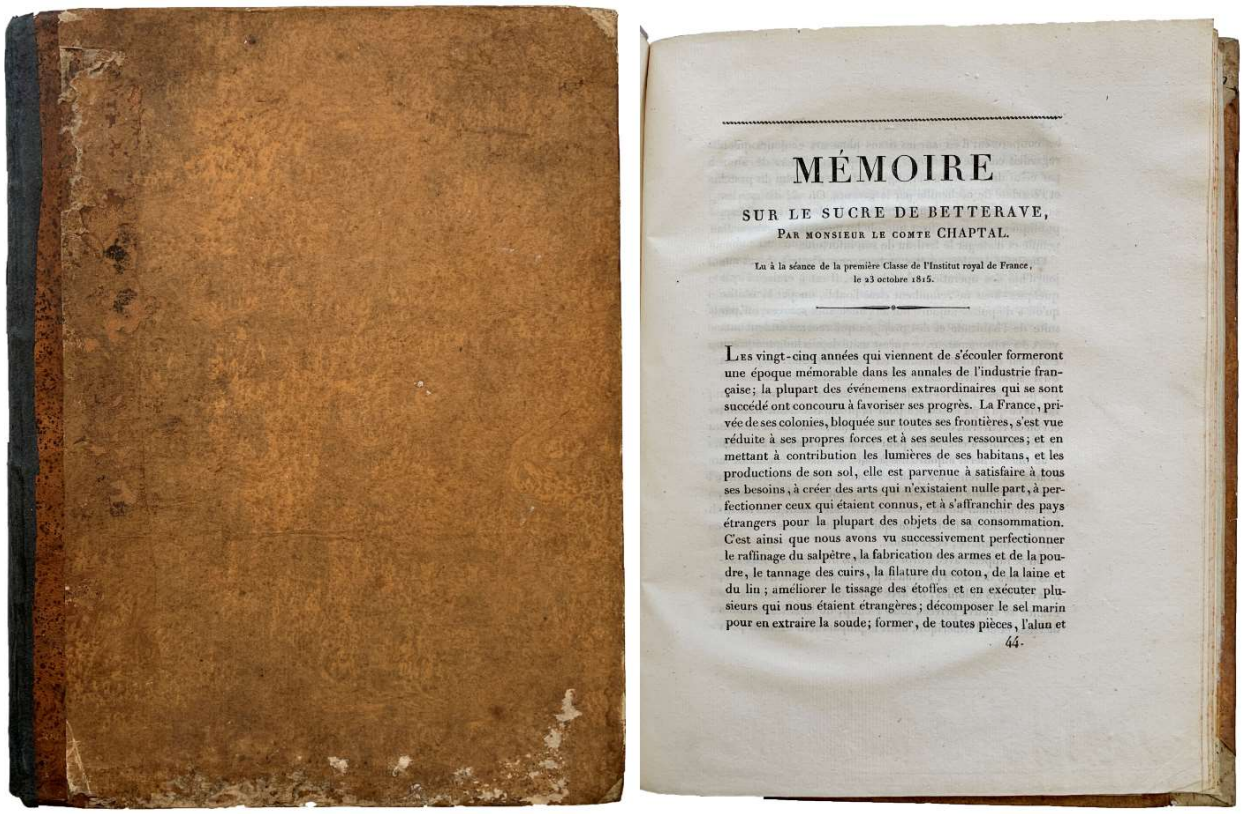
10. **BURKE, James; Robert ORNSTEIN**. *The Axemaker's Gift; A Double-Edged History of Human Culture*. New York: G.P. Putnam & Sons, 1995. ¶ 8vo. xvii, 348 pp. Illus., index. Cloth, dust-jacket. Fine. ISBN: 0399140883 / 0-399-14088-3 [SS11936]

$ 5

The book makes the point that with every advancement or invention, man's efforts thus also have a counter, or less positive impact on civilization. "For example, writing--first the alphabet and subsequently the printing press--was a great achievement. But it also gave leaders the ability to organize and to control. It structured the way people could think, validating some kinds of thinking and dismissing others."

"James Burke and Robert Ornstein argue in "*The Axemaker's Gift*" that the answer is much less clear. They have written a history of civilization that portrays the history of knowledge as a Faustian bargain: We have made a pact with the devil in exchange for the knowledge we have and the comforts we enjoy."

"Since prehistoric times, they say, when agriculture was invented and people learned to make simple tools, every new discovery and invention--every new gift--has meant increased regimentation, increased conformity, increased social control and increased power in the hands of a few at the expense of the many." – Lee Dembert, July 27, 1995, *LA Times Book Review*.



MÉMOIRE

SUR LE SUCRE DE BETTERAVE,

PAR MONSIEUR LE COMTE CHAPTAL.

Lu à la séance de la première Classe de l'Institut royal de France, le 23 octobre 1815.

LES vingt-cinq années qui viennent de s'écouler formeront une époque mémorable dans les annales de l'industrie française; la plupart des événemens extraordinaires qui se sont succédé ont concouru à favoriser ses progrès. La France, privée de ses colonies, bloquée sur toutes ses frontières, s'est vue réduite à ses propres forces et à ses seules ressources; et en mettant à contribution les lumières de ses habitans, et les productions de son sol, elle est parvenue à satisfaire à tous ses besoins, à créer des arts qui n'existaient nulle part, à perfectionner ceux qui étaient connus, et à s'affranchir des pays étrangers pour la plupart des objets de sa consommation. C'est ainsi que nous avons vu successivement perfectionner le raffinage du salpêtre, la fabrication des armes et de la poudre, le tannage des cuirs, la filature du coton, de la laine et du lin; améliorer le tissage des étoffes et en exécuter plusieurs qui nous étaient étrangères; décomposer le sel marin pour en extraire la soude; former, de toutes pièces, l'alun et

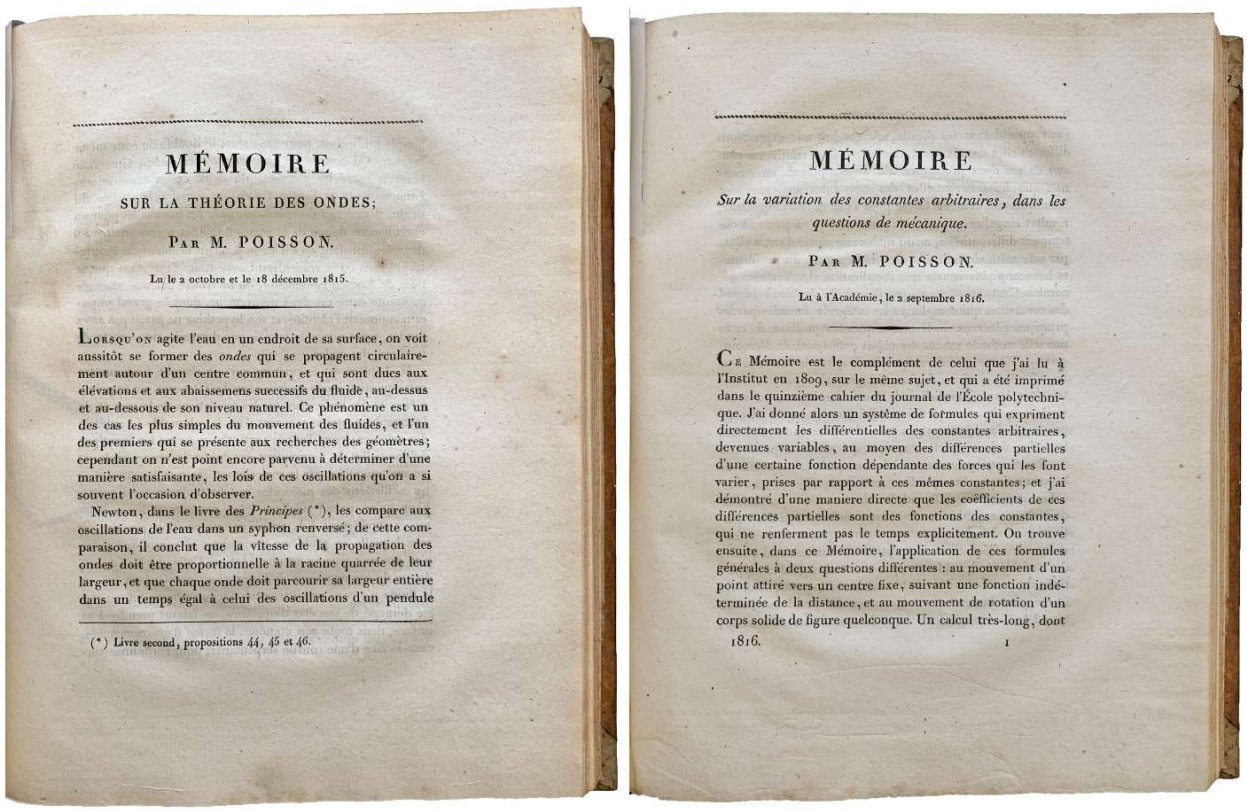
44.

On Beet Sugar

11. **CHAPTAL, Jean Antoine** (1756-1832). *"Mémoire sur le sucre de betterave. Lu à la séance de la première classe de l'Institut Royal de France, le 23 octobre 1815." In: Mémoires de l'Académie Royale des Sciences de l'Institute de France. Année 1816, Tome 1er.* Paris: Chez Firmin Didot, 1818. ¶ 264 x 203 mm. 4to. 347-388 pp. [Entire volume included: xii, clxiv, 388 pp.] Light water-stain (sometimes mold) along bottom margin. Quarter calf, boards, spine replaced with dark kozo, simple paper spine label; rubbed. Bookplate of the Bibliothèque de Liancourt. Very good. SS2493

$ 125

Chaptal was a constant advocate of France's self-sufficiency and an early enthusiast of the possibility of replacing cane sugar with beet sugar. "In 1811 he was a member of a committee appointed by the First Class of the Institute to examine the possible production of beet sugar. It was not until 1815, when the end of the war permitted the resumption of trade with the West Indies and threatened the ruin of the sugar beet industry, that Chaptal presented a memoir on the subject to the Institute. He was anxious to show that the industry, if efficiently run, could justify itself economically. It was largely due to his efforts, with the later support of Thenard, that this industry continued to function in France." – *DSB*, III, p. 202.



MÉMOIRE

SUR LA THÉORIE DES ONDES;

PAR M. POISSON.

Lu le 2 octobre et le 18 décembre 1815.

LORSQU'ON agite l'eau en un endroit de sa surface, on voit aussitôt se former des *ondes* qui se propagent circulairement autour d'un centre commun, et qui sont dues aux élévations et aux abaissemens successifs du fluide, au-dessus et au-dessous de son niveau naturel. Ce phénomène est un des cas les plus simples du mouvement des fluides, et l'un des premiers qui se présente aux recherches des géomètres; cependant on n'est point encore parvenu à déterminer d'une manière satisfaisante, les lois de ces oscillations qu'on a si souvent l'occasion d'observer.

Newton, dans le livre des *Principes* (*), les compare aux oscillations de l'eau dans un syphon renversé; de cette comparaison, il conclut que la vitesse de la propagation des ondes doit être proportionnelle à la racine quarrée de leur largeur, et que chaque onde doit parcourir sa largeur entière dans un temps égal à celui des oscillations d'un pendule

(*) Livre second, propositions 44, 45 et 46.

MÉMOIRE

Sur la variation des constantes arbitraires, dans les questions de mécanique.

PAR M. POISSON.

Lu à l'Académie, le 2 septembre 1816.

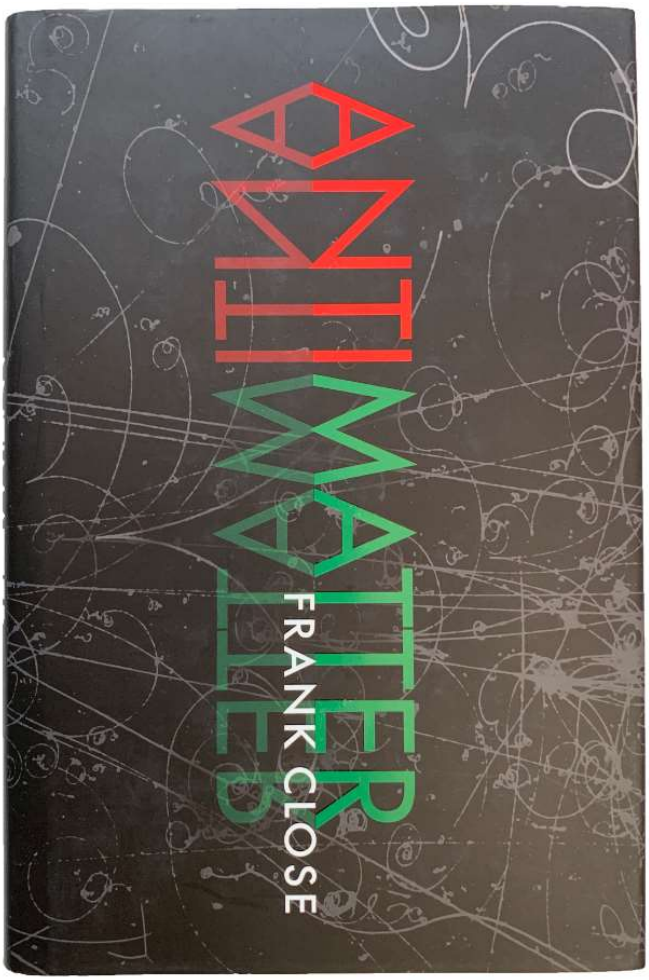
CE Mémoire est le complément de celui que j'ai lu à l'Institut en 1809, sur le même sujet, et qui a été imprimé dans le quinzième cahier du journal de l'École polytechnique. J'ai donné alors un système de formules qui expriment directement les différentielles des constantes arbitraires, devenues variables, au moyen des différences partielles d'une certaine fonction dépendante des forces qui les font varier, prises par rapport à ces mêmes constantes; et j'ai démontré d'une maniere directe que les coëfficients de ces différences partielles sont des fonctions des constantes, qui ne renferment pas le temps explicitement. On trouve ensuite, dans ce Mémoire, l'application de ces formules générales à deux questions différentes : au mouvement d'un point attiré vers un centre fixe, suivant une fonction indéterminée de la distance, et au mouvement de rotation d'un corps solide de figure quelconque. Un calcul très-long, dont

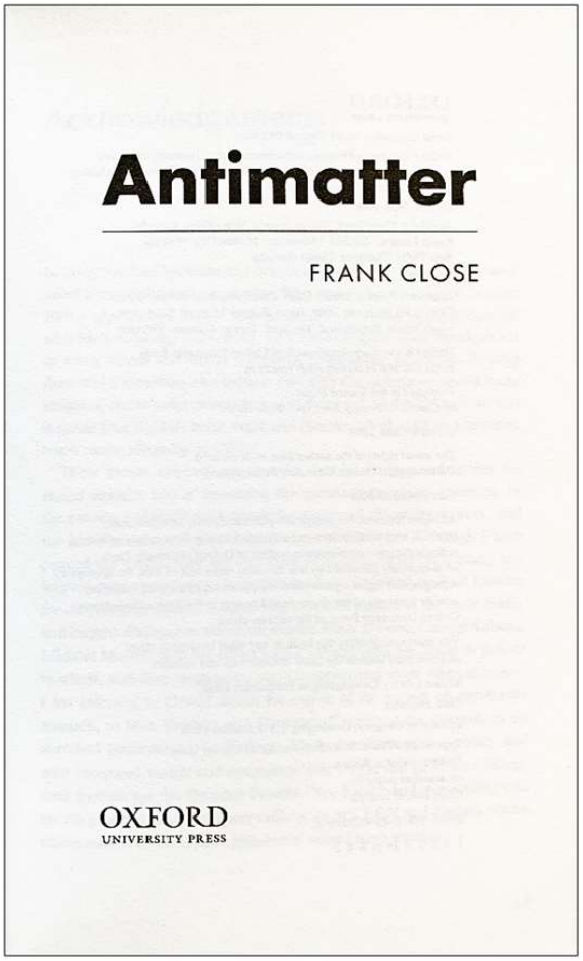
1816. 1

Chaptal is known for his leadership in the field of applied chemistry. In 1780 Chaptal was appointed to a specially created chair of chemistry at Montpellier. He came to Paris in 1798 and on November 6, 1800 he became minister of the interior. "For four crucial years in the reconstruction of post-revolutionary France Chaptal held the key post in the government. As minister of the interior he was responsible, through the system of prefects, for the general administration of the whole of France. In particular he was responsible for education, religion, public works, customs and excise, theaters, state factories, palaces and museums, hospitals, and prisons." *DSB*, III, p. 199.

Chaptal made few original contributions to pure chemistry, but he was one of the greatest chemical manufacturers of his age. Included in this volume of the Memoires is an essay by Jean-Baptiste Biot on the laws of the polarization of light, two essays by Pierre-Simon Girard on hydraulic engineering, and summary articles on the past year's developments in physics by Georges Cuvier and mathematics by Jean Baptiste Joseph Delambre.

SELECTED CONTENTS: Delambre, *Notice sur la vie et les ouvrages de M. L'Eveque*; Georges Cuvier, *Analyse des Travaux de l'Académie Royale des Sciences, pendant l'année 1816*; Simeon-Denis Poisson, *Mémoire Sur la variation des constants arbitraires, dans les questions de mécanique*.; Simeon-Denis Poisson, *Mémoire sur la Théorie des Ondes*; Pierre-Simon Girard, *Mémoire Sur l'écoulement linéaire de diverses substances liquides par des tubes capillaires de verre*; Jean-Baptiste Biot, *Mémoire Sur l'utilité des lois de la polarisation de la lumière, pour reconnaître l'état de cristallisation et de combinaison. . .*





12. **CLOSE, Frank** (1945-). *Antimatter*. Oxford: Oxford University Press, 2009. ¶ Small 8vo. x, 166 pp. Figs., index. Black silver-stamped cloth, dust-jacket. Fine. ISBN: 9780199550166 [SS11941]

$ 4

"This compact book is a wonderful source of information on antimatter and offers us a meticulously researched account of the nature, properties and applications of the often overlooked entities in the fantastic antiworld around us." - Chemistry World.

"Antimatter explores a strange mirror world, where particles have identical yet opposite properties to those that make up the familiar matter we encounter every day; where left becomes right, positive becomes negative;

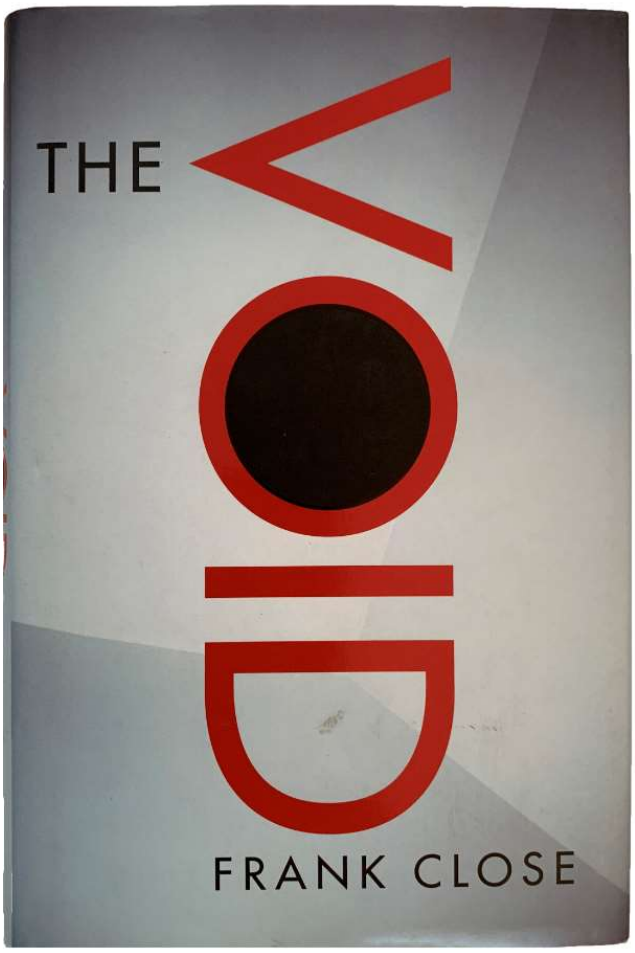
and where, should matter and antimatter meet, the two annihilate in a blinding flash of energy that makes even thermonuclear explosions look feeble by comparison.

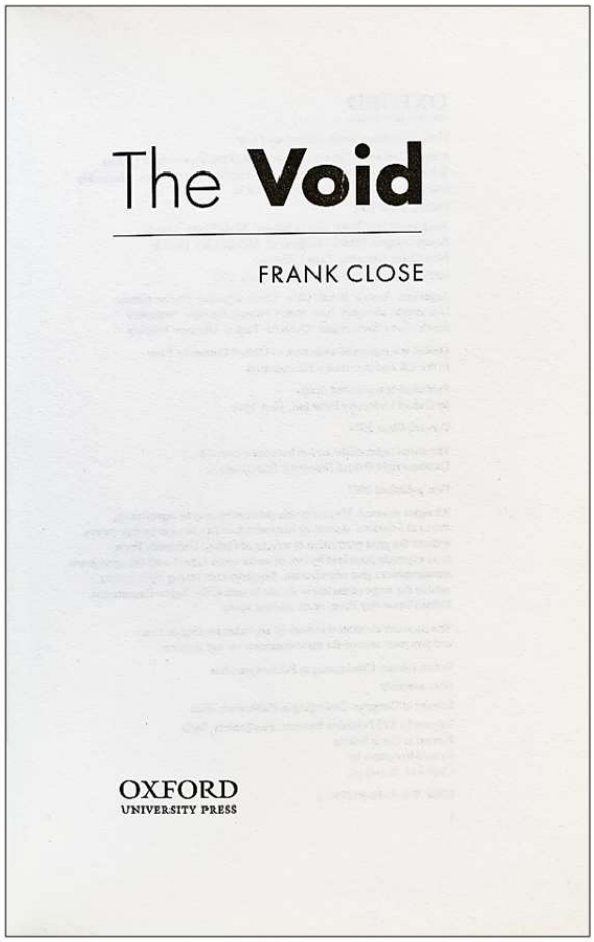
It is an idea long beloved of science-fiction stories—but here, renowned science writer Frank Close shows that the reality of antimatter is even more fascinating than the fiction itself.

We know that once, antimatter and matter existed in perfect counterbalance, and that antimatter then perpetrated a vanishing act on a cosmic scale that remains one of the greatest mysteries of the universe. Today, antimatter does not exist normally, at least on Earth, but we know that it is real for scientists are now able to make small pieces of it in particle accelerators, such as that at CERN in Geneva." [OUP]. Cosmology

CONTENTS: Foreword: 'Genesis' – 1:Antimatter: Fact or Fiction? – 2:The Material World – 3:Tablets of Stone – 4:A Cosmic Discovery – 5:Annihilation – 6:Storing Antimatter – 7:The Mirror Universe – 8:Why is There Anything at All? – 9:Revelations – Appendix: The Cost of Antimatter – Appendix: 'The Dirac Code' – Notes – Bibliography – Index.

Frank Close, Emeritus Professor of Physics, Oxford University, and Fellow, Exeter College, Oxford. Frank Close is an eminent research theoretical physicist in nuclear and particle physics. Currently Emeritus Professor of Physics at Oxford University and a Fellow of Exeter College, he was formerly the Head of the Theoretical Physics Division at the Rutherford Appleton Laboratory. He served as Chair of the UK Space Exploration Working Group 2007 which culminated with Tim Peake's launch to the ISS.





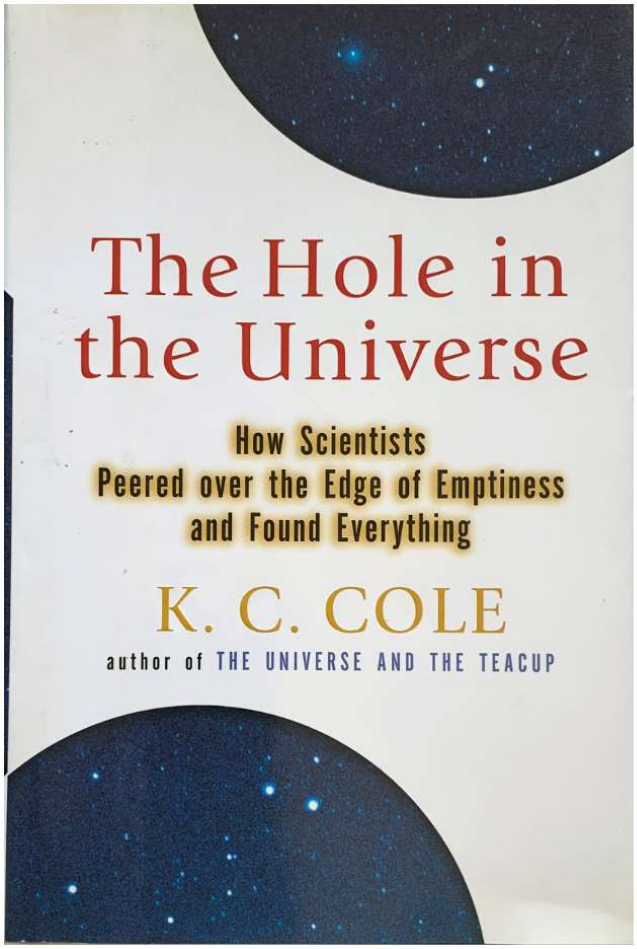
13. **CLOSE, Frank** (1945-). *The Void.* Oxford: Oxford University Press, 2007. ¶ Small 8vo. ix, 166 pp. Index. Black silver-stamped cloth, dust-jacket. Fine. ISBN: 9780199225903 [SS11942]

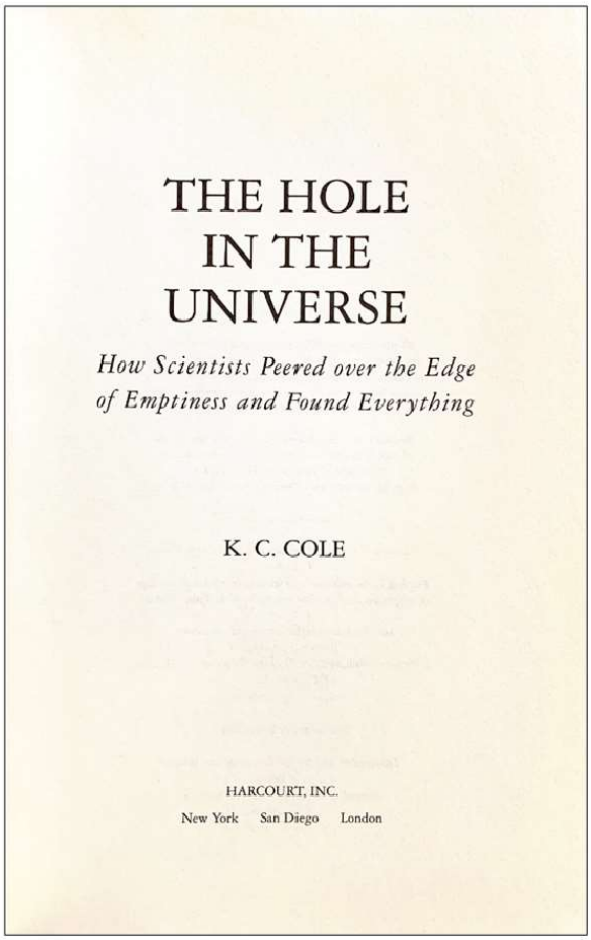
$ 12

"*The Void* by Frank Close — eminent particle theorist, award-winning science writer and former head of communication and public education activities at CERN — takes the vacuum as its theme on a whirlwind tour of the frontiers of modern physics and cosmology. Moreover, counter to the recent trends, Close seeks to cover all this ground — plus the Lamb shift, the Casimir force and a few other nooks and crannies that rarely feature in popular physics books — in a mere 166 pages. Although the breadth of topics covered is impressive, the book gives the impression of being written and published in a hurry. / Non-physicists will certainly

struggle with some of the explanations in the book, whereas physicists might wonder why CERN is the only particle physics lab to be mentioned, or why Philip Anderson is (rightly) mentioned in connection with the Higgs mechanism, but lots of other theorists who made important contributions — notably Robert Brout and François Englert, who shared the 2004 Wolf prize with Peter Higgs — are not. (My own theory is that Close has noticed that Anderson, who reviews a lot of physics books, routinely criticizes authors who overlook the role played by condensed matter physicists in the history of the Higgs mechanism.) And physicists and non-physicists alike will wonder why the author bothers to discuss Stephen Hawking and James Hartle's notoriously difficult to understand 'imaginary time' in such a desultory manner in the last chapter." – Peter Rodgers is the chief editor of Nature Nanotechnology.

Frank Close, Emeritus Professor of Physics, Oxford University, and Fellow, Exeter College, Oxford. Frank Close is an eminent research theoretical physicist in nuclear and particle physics. Currently Emeritus Professor of Physics at Oxford University and a Fellow of Exeter College, he was formerly the Head of the Theoretical Physics Division at the Rutherford Appleton Laboratory. He served as Chair of the UK Space Exploration Working Group 2007 which culminated with Tim Peake's launch to the ISS.



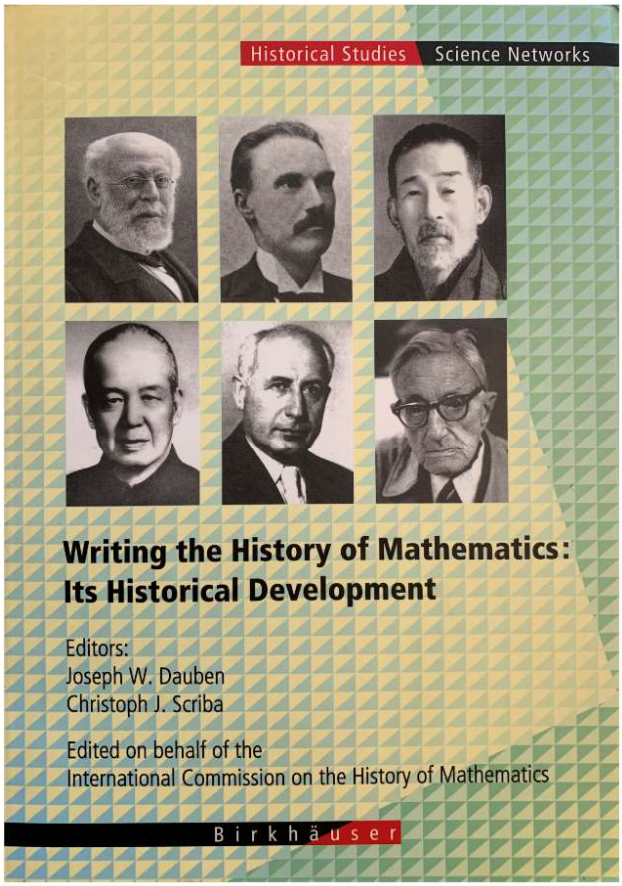


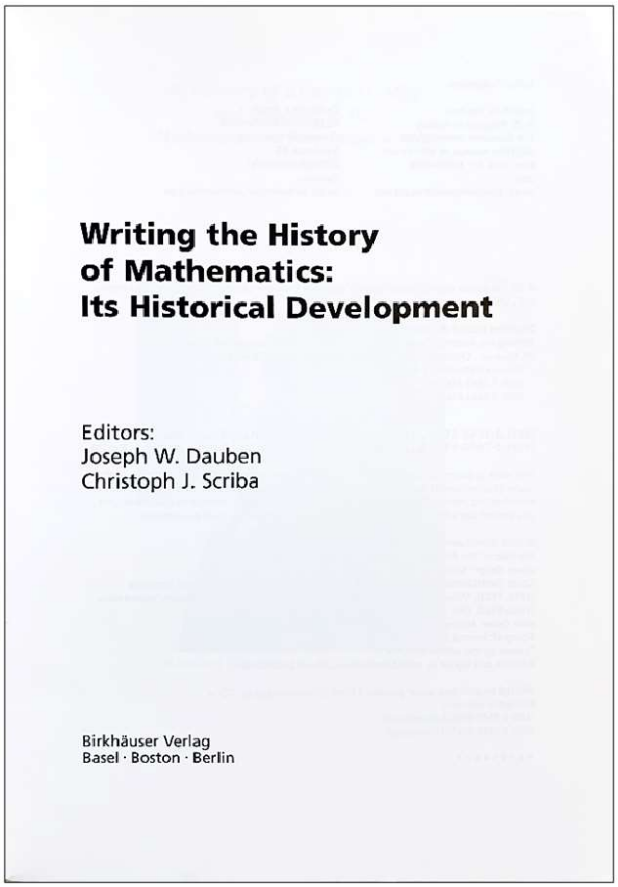
14. **COLE, K.C**. *The Hole in the Universe; How Scientists Peered over the Edge of Emptiness and Found Everything*. New York: Harcourt, 2001. ¶ 8vo. xii, 274 pp. Figs., index. Two-tone boards, dust-jacket. Near fine. ISBN: 015100398X / 0-15-100398-X [SS11943]

$ 5

"An adventure into the heart of Nothing by best-selling author K. C. Cole. / Once again, acclaimed science writer K. C. Cole brings the arcane and academic down to the level of armchair scientists in The Hole in the Universe, an entertaining and edifying search for nothing at all. Open the newspaper on any given day and you will read of a newly discovered planet, star, and so on. Yet scientists and mathematicians have spent generations searching the far reaches of the universe for that one elusive state—nothingness. / Although this may sound like a simple task, every time the absolute void appears within reach, something new is discovered in its place: a black hole, an undulating string, an additional dimension of space or time—even another universe. A fascinating and literary tour de force, The Hole in the Universe is a virtual romp into the unknown that you never knew wasn't there." – [publisher]. COLE is "a popular science columnist for the Los Angeles Times and teacher at UCLA, K.C.

Cole is a recipient of the 1995 American Institute of Physics Award for Best Science Writing. She is also the author of the internationally bestselling The Universe and the Teacup, First You Build a Cloud, and The Hole in the Universe. Cole lives in Santa Monica, California."





15. **DAUBEN, Joseph W**. (1944-) & **Christoph J. SCRIBA** (eds.). *Writing the History of Mathematics: It's Historical Development*. Basel, Boston, Berlin: Birkhauser, (2002). ¶ 8vo. xxxvii, 689 pp. 24 small portraits of significant authors, index. Printed wrappers. very good +. "As an historiographic monograph, this book offers a detailed survey of the professional evolution and significance of an entire discipline devoted to the history of science." 32 contributors. ISBN: 3764361670 / 3-7643-6167-0 [SS11610]

$ 125

"As an historiographic monograph, this book offers the first detailed survey of the professional evolution and significance of an entire discipline devoted to the history of science. Basically, Writing the History of Mathematics provides both an intellectual and a social history of the development of the subject from the first such effort written by the ancient Greek author Eudemus in the Fourth Century BC, to the founding of the international journal, Historia Mathematica, by Kenneth O. May in the early 1970s. A special project of the International Commission on History of Mathematics, this work is the result of more than ten years of collaboration by a team of 32 experts, each writing about the history of mathematics in their own countries or regions, and drawing upon extensive research and archival study.

Divided into three parts, Writing the History of Mathematics begins with country-by-country surveys from ancient times to the end of the 20th century, covering virtually every part of the world where the history of mathematics has been written. In addition to individuals, such institutions as universities, academies, institutes, libraries, and the like are also covered, including journals, encyclopedias, and other collective projects that promote history of mathematics. The second part of the book contains biographies of 300 historians of mathematics, along with bibliographies of their works and relevant biographical sources. The third part of the book provides a comprehensive bibliography of the most important literature devoted to the history of mathematics in Western languages. The book also includes portraits of twenty-five historians of mathematics."

REVIEW: "This book, a historiographical one, is very useful as a reference.... The book is unique. It should be in all libraries that support graduate level history and philosophy of science and mathematics. Other libraries should consider purchasing it. Individuals familiar with the subject may wish to own it. Beginners should start with histories." —Mathematical Reviews.

pp. 319-333

XIV. *On the Temperature of Man.*

By John Davy, *M.D., F.R.S.L. & E., Inspector-General of Army Hospitals.*

Received May 8,—Read June 19, 1845.

It has been too generally taken for granted that the temperature of man in health, as measured by a thermometer placed under the tongue, is a constant one. I have endeavoured to prove from the results of observations, that this is not strictly correct; that when not disturbed by disease it is subject to variation, to rise and fall under certain influences, especially of heat and cold, rest and exercise*.

In the present communication I propose to submit to the Royal Society some further observations on the same subject, made with an instrument better adapted for the inquiry than the medical thermometer commonly used, and which has afforded results of a precise and satisfactory kind.

The thermometer I have employed is a bent one, about twelve inches and a half long, its bulb about an inch long, and, where widest, half an inch thick; its curvature about three and a half inches from the bulb, and its stem, to which the scale is attached, nearly at right angles to the bulb, so that when inserted under the tongue, the observer has no difficulty in distinguishing accurately the degrees himself, whether near-sighted or the contrary; in the latter instance using merely a common magnifying glass. Each degree of the scale is a little more than half an inch (·6 inch), and is divided into ten parts; and each of these parts is sufficiently large to admit of subdivision by the eye.

It may be right to premise a few words regarding the manner of observing with this instrument; and to notice some precautions which it is necessary to take to avoid error.

First, as to the placing of the thermometer: it is requisite that the bulb should be introduced under the tongue, and as far back as possible; and that whilst in the mouth, respiration should be carried on entirely through the nostrils. If the thermometer is placed in the side of the mouth, between the teeth and the cheek, the temperature indicated is from three-tenths to one-tenth of a degree less, according to the degree of coldness of the atmosphere.

Next, as to time: it is necessary that the thermometer remain in the mouth many minutes, till the observer is sure that the maximum height is attained. If the mouth has been kept closed for a quarter of an hour previously, a shorter time is required, than if allowed to be open and the passage of respiration. This is well shown by trials with the thermometer raised a few degrees above the temperature of the mouth

* Researches, Physiological and Anatomical, vol. i. p. 162; and Philosophical Transactions for 1844, p. 61.

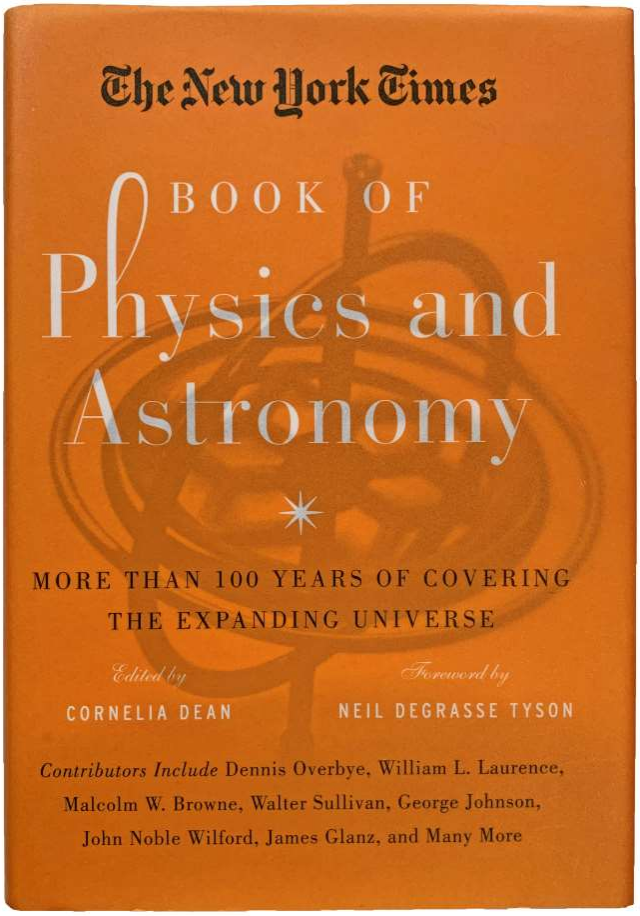
[16] John DAVY

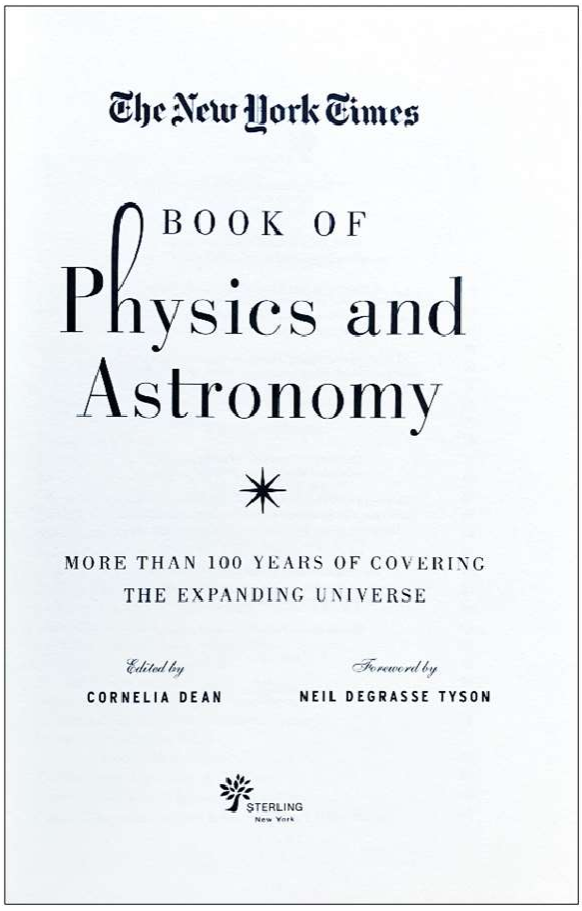
16. **DAVY, John** (1790-1868). On the temperature of man. Extract from: Philosophical Transactions of the Royal Society of London, Volume 135, Part II. London: Richard and John E. Taylor, 1845. 300 x 234 mm. 4to. Pages 319-333. Numerous tables. Dis-bound. SS4147

$ 35

John Davy served the British Army in Ceylon, the Mediterranean islands, and the West Indies. Davy made detailed studies of the life habits and cultural practices of the native population wherever he went. Davy "dosed their bodies, took their temperatures, dissected their domestic and wild animals, and analyzed their minerals. . . . A voluminous output of papers on a broad miscellany of small topics reflects the range of opportunities that his travels presented to his ever alert but rather superficial curiosity. . .. His most sustained interest was in animal heat, and some of his observations on temperatures within the pulmonary circulation were widely cited at the time. He made thousands of temperature readings of men and beasts in all stages of health and sickness throughout the world." - *DSB*.

John Davy received his M.D. from the University of Edinburgh in 1814. Serving in Brussels during the Battle of Waterloo, Davy embarked on a career in the army medical service; he rose to the rank of inspector general of hospitals. John Davy was the younger brother of Sir Humphrey Davy (1778-1829). *DNB*, V, pp. 645-646; *DSB*, III, pp. 604-605.





17. **DEAN, Cornelia** (ed.). *The New York Times Book of Physics and Astronomy. More than 100 years of covering the expanding universe. Foreword by Neil deGrasse Tyson*. New York: Sterling, 2013. ¶ 8vo. xviii, 557 pp. Figs., index. Pictorial hardcover, dust-jacket. Fine. ISBN: 9781402793202 [SS11948]

$ 12

"From the discovery of distant galaxies and black holes to the tiny interstices of the atom, here is the very best on physics and astronomy from the New York Times! The newspaper of record has always prided itself on its award-winning science coverage, and these 125 articles from its archives are the very best, covering more than a century of breakthroughs, setbacks, and mysteries. Selected by former science editor Cornelia Dean, they feature such esteemed and Pulitzer Prize-winning writers as Malcolm W. Browne on teleporting, antimatter atoms, and the physics of traffic jams; James Glanz on string theory; George Johnson on quantum physics; William L. Laurence on Bohr and Einstein; Dennis Overbye on the recent discovery of the Higgs Boson; Walter Sullivan on the colliding beam machine; and more."

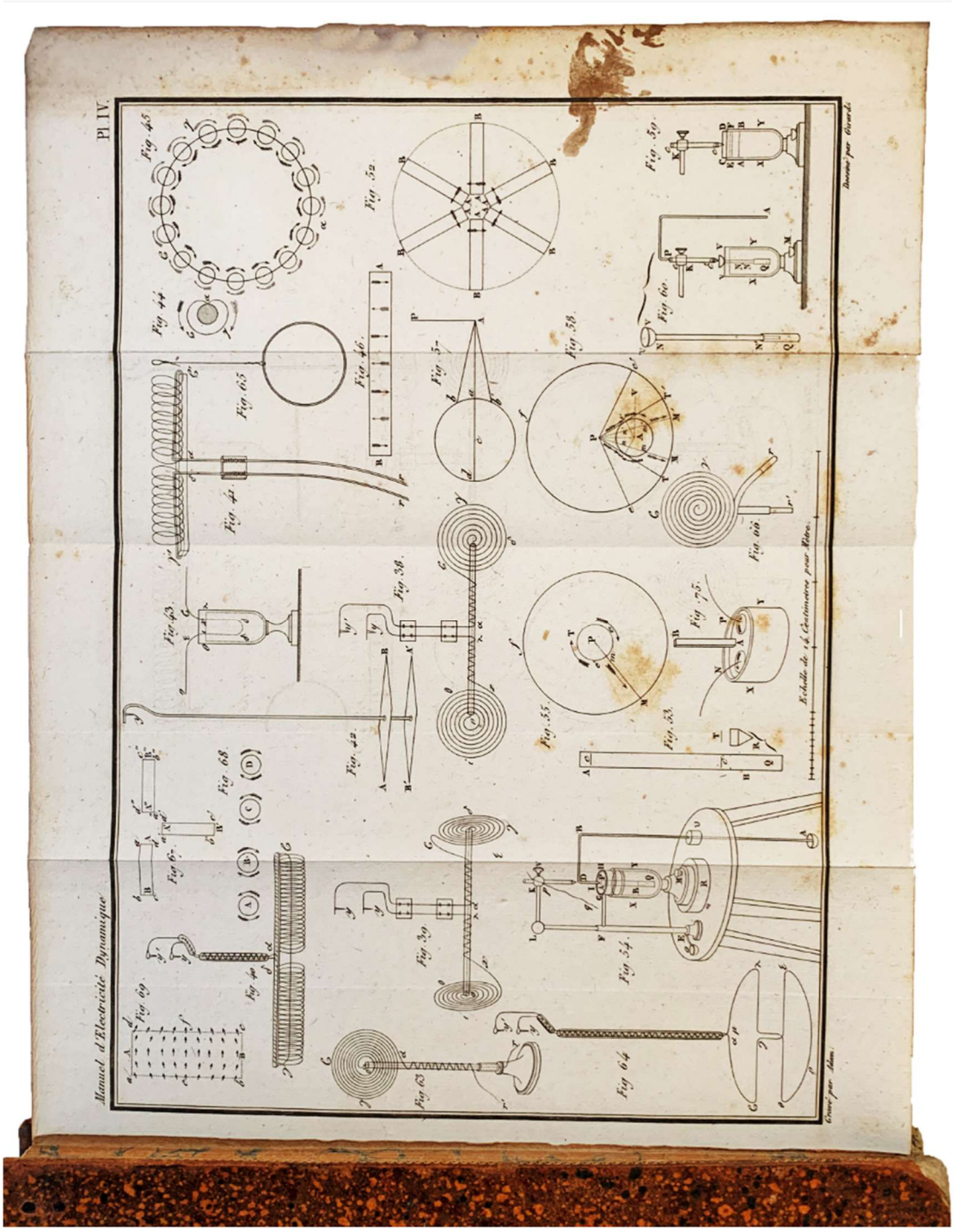
18. **DE BOER, Jan Hendrik** (1899–1971). (21 offprints). Includes: DE BOER, & A. MICHELS. "Contribution to the Quantum-Mechanical Theory of the Equation of State and the Law of Corresponding States. Determination of the Law of Force of Helium." Offprint from: *Physica* 5, no. 10, Dec. 1938. No place: Physica, 1938. ¶ *Communications of the "Van der Waals-Fund.* No. 60." 8vo. pp. 945-957. Figs. Original printed wrappers. Ownership mark of "v. d. S." FINE. SS7198

$ 650

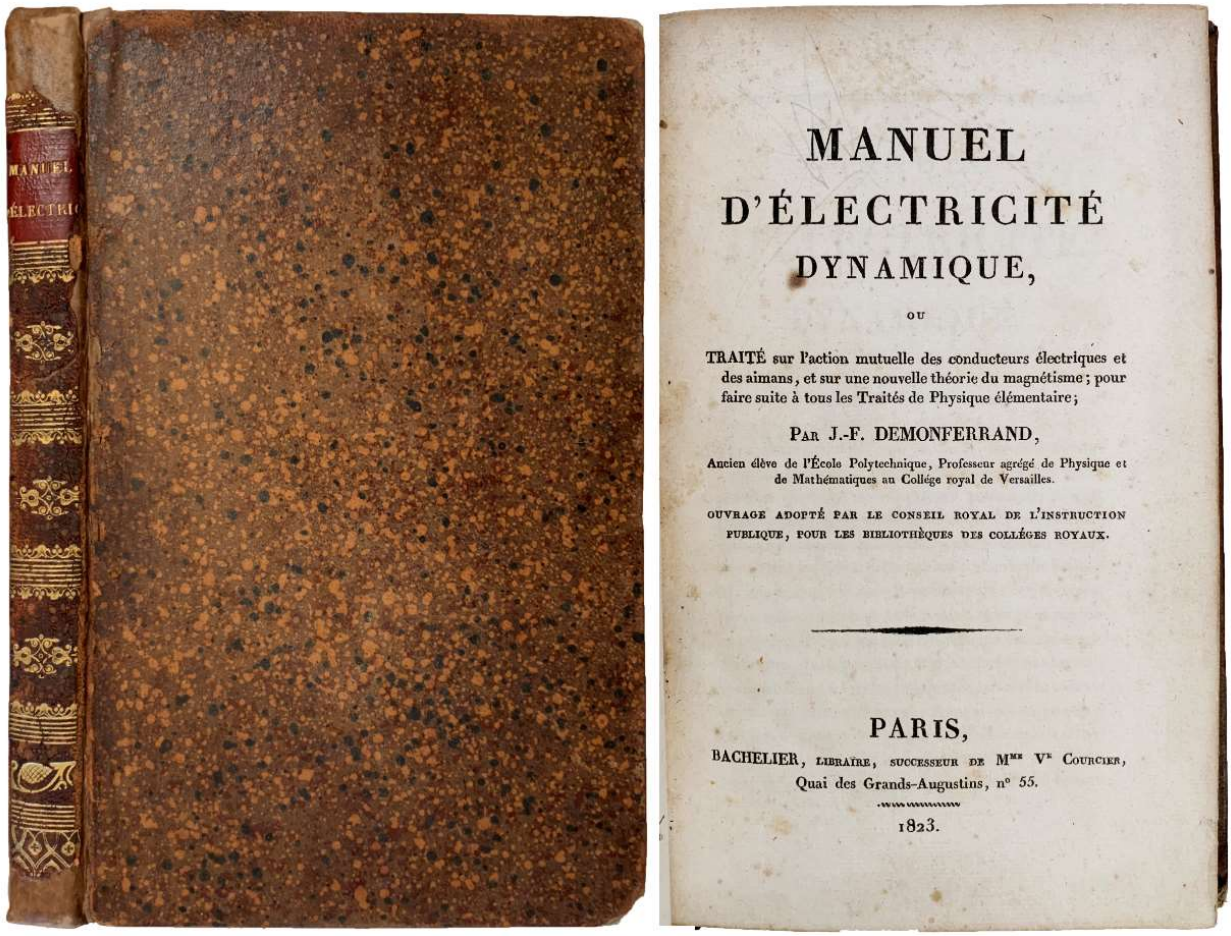
De Boer had a huge impact on theoretical physics in Amsterdam, and quite apart from his papers (which are still highly regarded), he created the Institute for Theoretical Physics at the University of Amsterdam which was to drive forward theoretical physics and spawn numerous experts in the field. He often worked in the van der Waals Laboratory, Amsterdam and wrote several important papers with A. Michels who was a pioneering experimental physicist, and who did innovative work with high pressure thermodynamics.

WITH: DE BOER, J. "The Non Spherical Potential Field Between Two Hydrogen Molecules." Offprint from: Physica IX, 1942. 8vo. pp. 363-382. Green printed wrappers. Fine. WITH: DE BOER, J. "The Caloric and Thermal Equation of State in

Quantum Statistical Mechanics." Offprint from: Physica 15, no. 10, Oct. 1949. 8vo. pp. 843-848. Self wraps. Fine. Full list provided on request.



[19] DEMONFERRAND



19. **DEMONFERRAND, Jean-Fermin**. *Manuel d'Electricité Dynamique, ou Traite sur l'action mutuelle des conducteurs électriques et des aimans, et sur une nouvelle théorie du magnetism; pour faire suite a tous les Traites de Physique élémentaire*. Paris: Bachelier, 1823. ¶ 8vo. 8.25 x 5.25 inches. [4], 210, [2] pp. It appears that this work was issued in two printings in 1823. There is no mention of two issues in any reference work, so we can only guess at which issue is the first. Some institutional copies (such as the Wheeler copy) are numbered to page 210 (like ours) and in those copies the address of the publisher given on the title page is "Quai des grands-Augustins, no. 55" (with the issue point of a lower case "g" in "grands"). ILLUSTRATIONS: Five folding engraved plates with light scattered foxing, but overall in very good plus condition. BINDING: Handsomely bound in modern calf over marbled boards with gilt-stamped spine label; corners rubbed, spine carefully repaired with ends missing small pieces. INTERIOR: Endpapers renewed. Some light foxing to half-title page and an occasional small, light brown spot scattered in the text, but overall the interior is in near fine condition. SS11082

$ 750

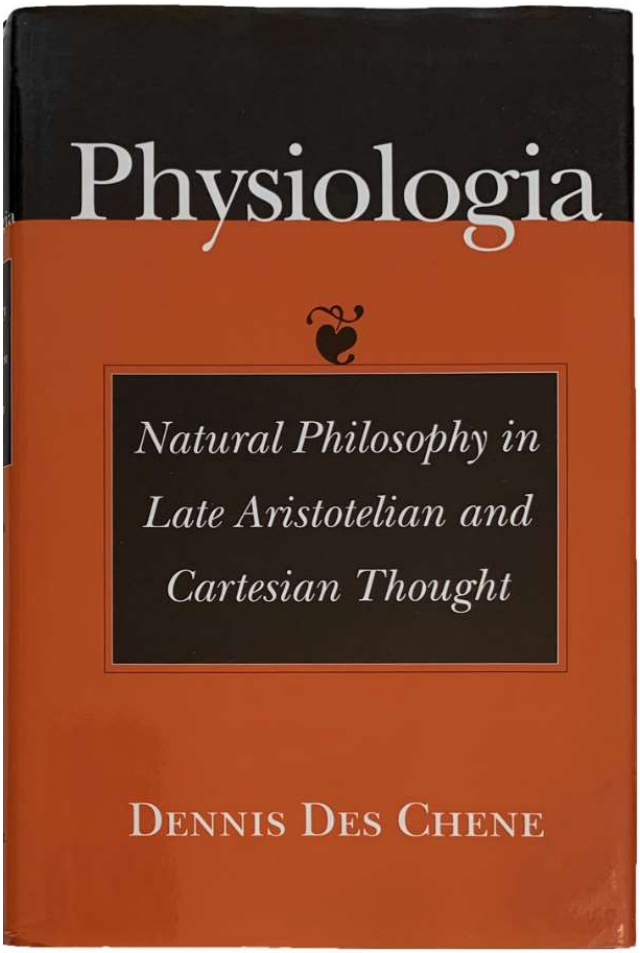
This work was translated into English by James Cumming in 1872 as A Manual of Electro Dynamics, or, Treatise on the Mutual Action of Electric Conductors and Magnets. Scarce.

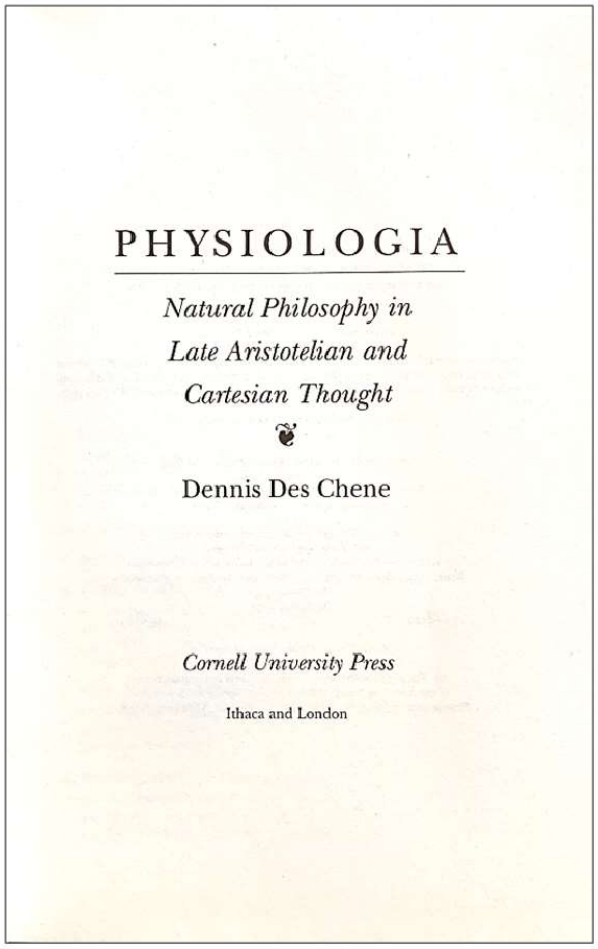
FIRST EDITION of the first textbook on electrodynamics to incorporate the newly made discoveries of Ampere and Oersted (Bakken 174; Poggendorff, 548). Demonferrand's Manuel d'Electricite Dynamique illuminates the "fundamental phenomena and laws of electro-dynamics" and represents a first, important, and comprehensive treatment (written in scientific and mathematical language) of Ampere's theory of electromagnetism (Wheeler 797).

"Demonferrand's account is more informative in some other respects than either of the previous written versions. . . The notion of an equilibrium is reported here for the first time, yet it agrees with a much later account given by Ampere himself in1833. Furthermore, Demonferrand indicated. . . that the object of [one of his] experiment[s] was to throw light on the question of whether electric currents already exist in iron when it is in the unmagnetized condition, or if they are brought into being as a result of magnetization. The result of the experiment did not settle this question. . . But once again we find Demonferrand anticipating a later statement (1833) by Ampere of his objective in performing the experiment. . . .Some years later, after the publication of Faraday's discovery, the history of this experiment suddenly acquired some importance" (Ross 92).

"Demonferrand's account of the Ampere-de La Rive experiment has a certain precision of description that suggests he may have derived it in part from Ampere himself; it is, at all events, a more explicit account than any previously published. . . Ampere, himself, promoted Demonferrand's work, sending many copies of Manuel d'Electricite Dynamique abroad, including one to Michael Faraday" (Ross 90). Demonferrand (1795-1844) was a pupil of Ampere and a professor of mathematics and physics at the Colege Royale in Versailles. In this work, he describes many of Ampere's theories, supplemented with experimental research and theories of his own.

Ronalds 132; Bakken 174; Poggendorff 548; Catalogue of the Wheeler Gift of Books 797; Ross, Sydney in Nineteenth-century Attitudes: Men of Science. 1991, pp. 92-94.

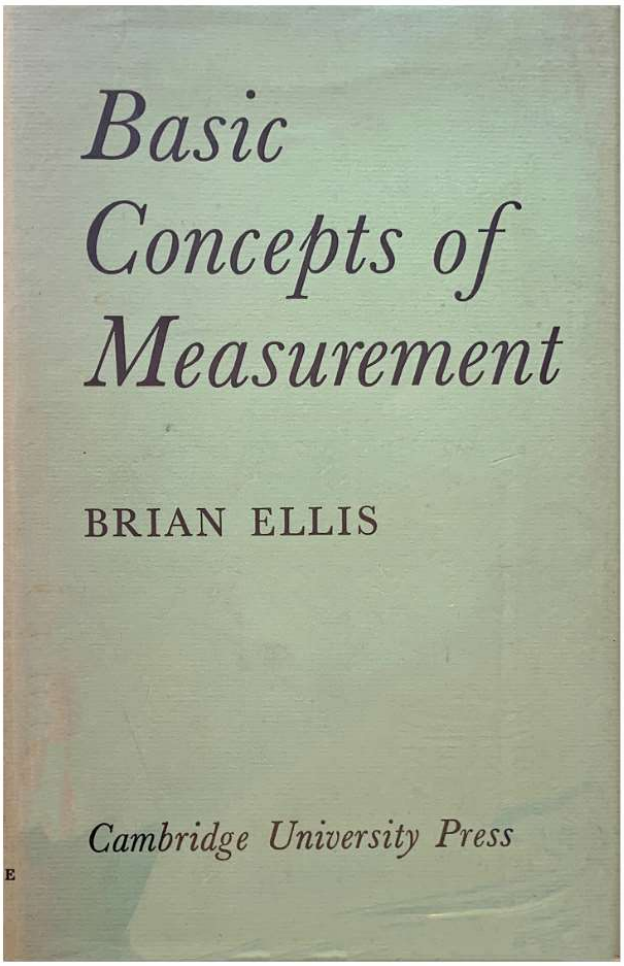


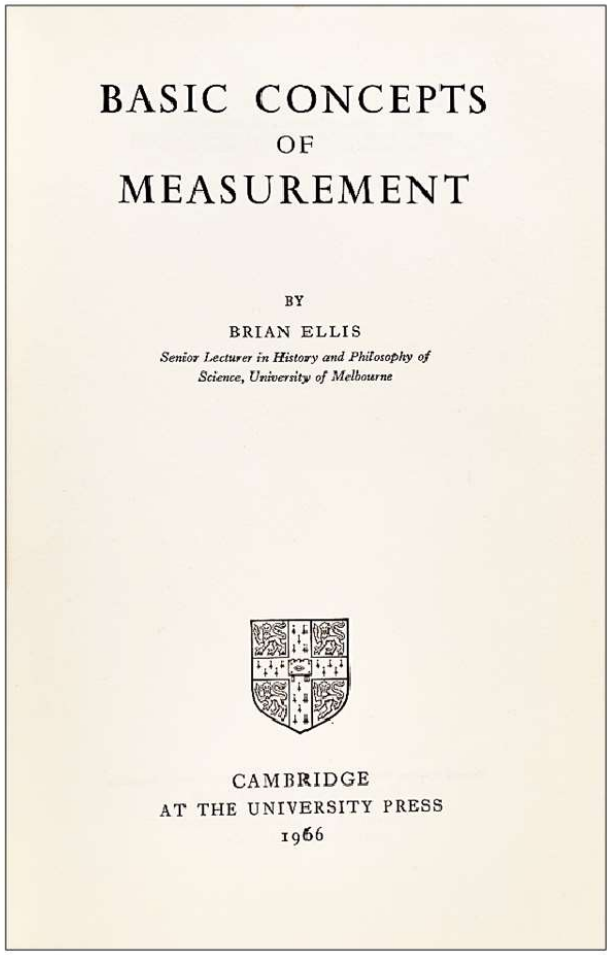


20. **DES CHENE, Dennis.** *Physiologia; Natural Philosophy in Late Aristotelian and Cartesian Thought*. Ithaca: Cornell University Press, 1996. ¶ 8vo. xiii, 426 pp. Index. Brick red gilt-stamped cloth, dust-jacket. Previous ink ownership signature. Fine. ISBN: 0801430720 / 0-8014-3072-0 [SS11949]

$ 37

"Professor Des Chene has published on natural philosophy and the sciences of life in the seventeenth century. More recently he has been working on theories of the passions and on animals and automata. Other interests include aesthetics and the philosophy of art, especially of music, and the history and philosophy of mathematics." [author].

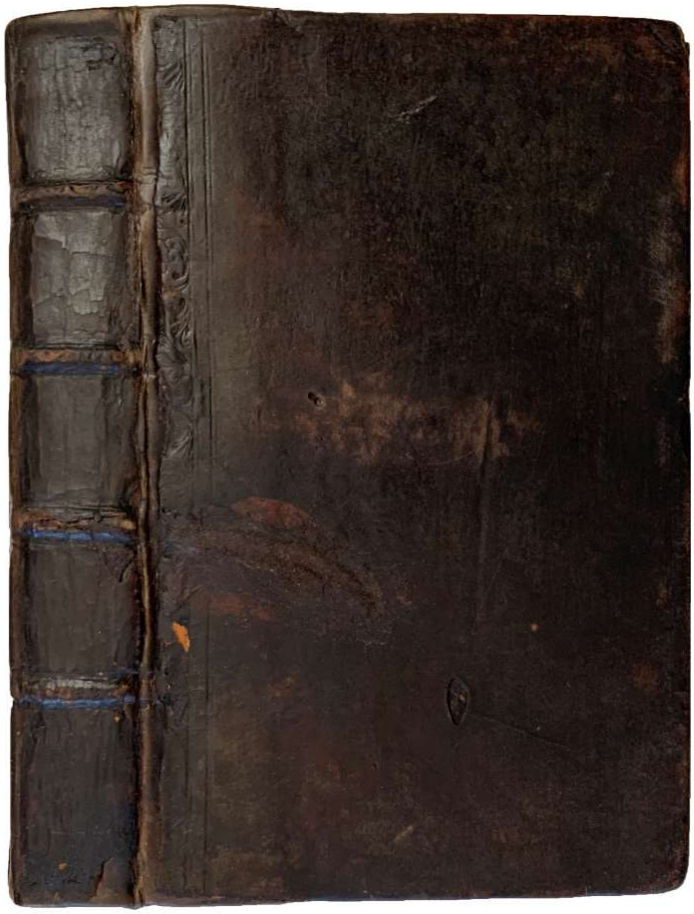


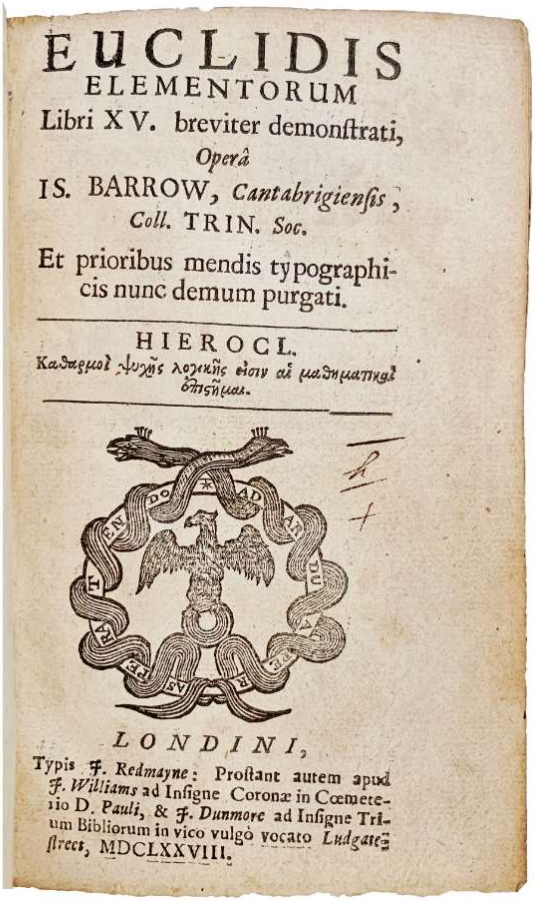


21. **ELLIS, Brian**. *Basic Concepts of Measurement*. Cambridge: Cambridge University Press, 1966. ¶ 8vo. 219, [1] pp. Index. Red gilt-stamped cloth; some foxing to edges. Very good. SS11957

$ 25

First edition. Brian Ellis (b.1929) is an Emeritus Professor in the philosophy department at La Trobe University in Victoria, Australia, and a proponent of the New Essentialist school of philosophy of science.





EUCLIDIS
ELEMENTORUM
Libri XV. breviter demonſtrati,
Operâ
IS. BARROW, *Cantabrigienſis*,
Coll. TRIN. *Soc.*
Et prioribus mendis typographicis nunc demum purgati.

HIEROCL.
Καθαρμοὶ ψυχῆς λογικῆς εἰσιν αἱ μαθηματικαὶ ἐπιστῆμαι.

LONDINI,
Typis *J. Redmayne*: Proſtant autem apud *J. Williams* ad Inſigne Coronæ in Cœmeterio D. *Pauli*, & *J. Dunmore* ad Inſigne Trium Bibliorum in vico vulgò vocato *Ludgate-ſtreet*, MDCLXXVIII.

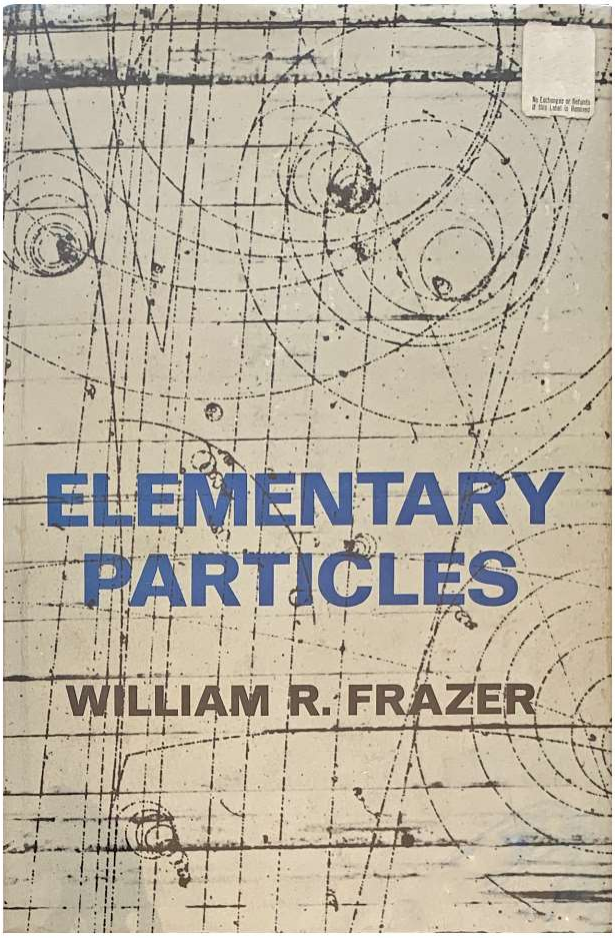
22. **EUCLID** (c. 300 BC); **BARROW, Isaac** (1630-1677). *Euclidis Elementorum Libri XV. breviter demonstrati, Opera Is. Barrow, . . . et prioribus mendis typographicis nunc demun purgati. [with]: Euclidis data succincte demonstrata.* . . London: J. Redmayne, 1678. ¶ 2 parts bound as 1. Small 8vo. [xvi], 352, 363-401, [1] [i.e. 391] pp. Title woodcut vignette, figs., "Euclidis data" with separate title at p. 347. Contemporary full blind-stamped calf, handsomely re-backed with matching calf. PROVENANCE: Inscribed (at rear), "R. Redding e Castro Windsor preb: . . . " Very good. Scarce. SS13405

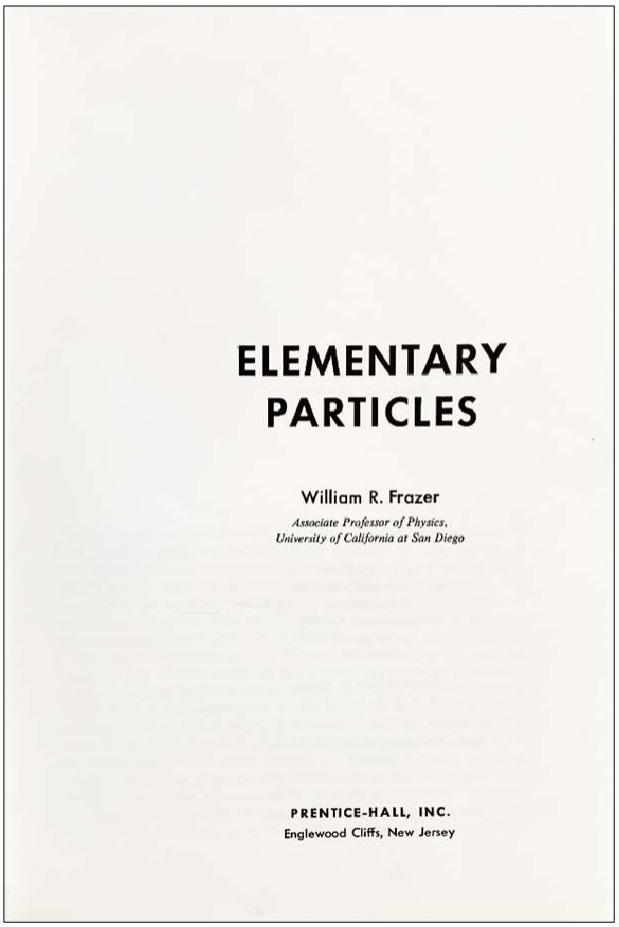
$ 750

Third edition. Barrow was an English mathematician remembered for discovering the fundamental theorem of calculus. He was the first Lucasian Professor of Mathematics at Cambridge. "The elementary portion of Euclid's Elements was part of Barrow's college syllabus, but some time before 1652 he went on to read not only Euclidean commentaries by Tacquet, Héigone, and Oughtred, but also more advanced Greek

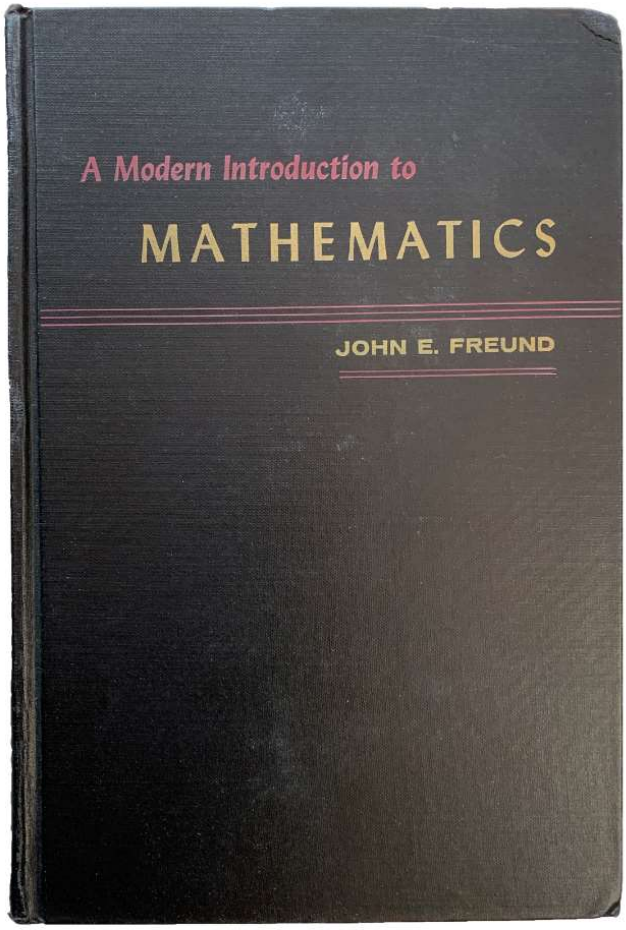
works by Archimedes and possibly Apollonius and Ptolemy. His first published work, his epitomized Euclidis Elementorum libri XV (probably written by early 1654), is designed as a quadrivium undergraduate text, with emphasis on its deductive structure rather than on its geometrical content, its sole concessions to contemporary mathematical idiom being its systematic use of Oughtred's symbolism and a list'ex P. Herigono' of numerical constants relating to inscribed polyhedra." - DSB I, p. 474.

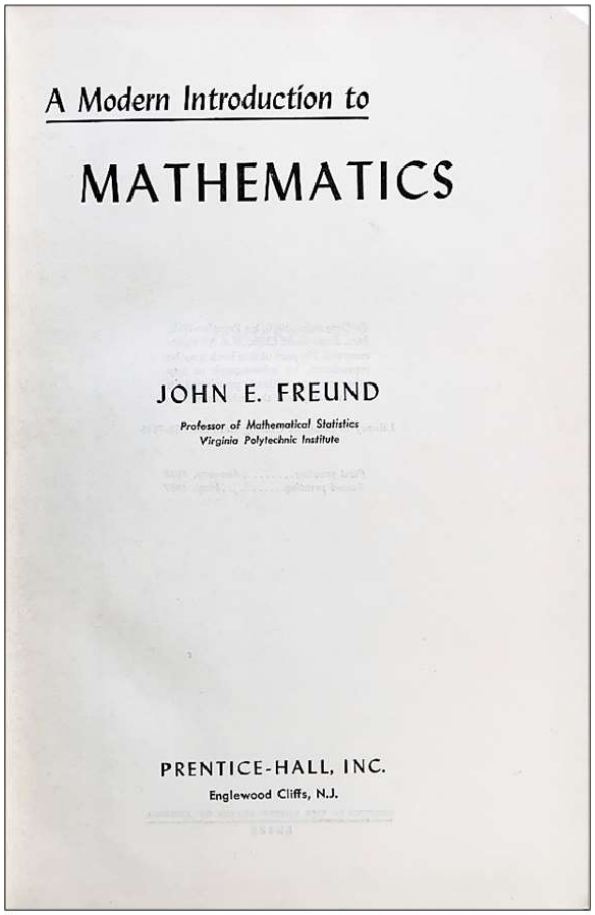
REFERENCES: Max Steck, Bibliographia Euclideana, IV, 67; Wing (2nd ed., 1994), E3395.





23. **FRAZER, William R**. *Elementary Particles*. Englewood Cliffs: Prentice-Hall, 1966. ¶ 8vo. ix, 190 pp. Index. Blue gilt and white-stamped cloth, dust-jacket. Very good. SS11967 $ 7

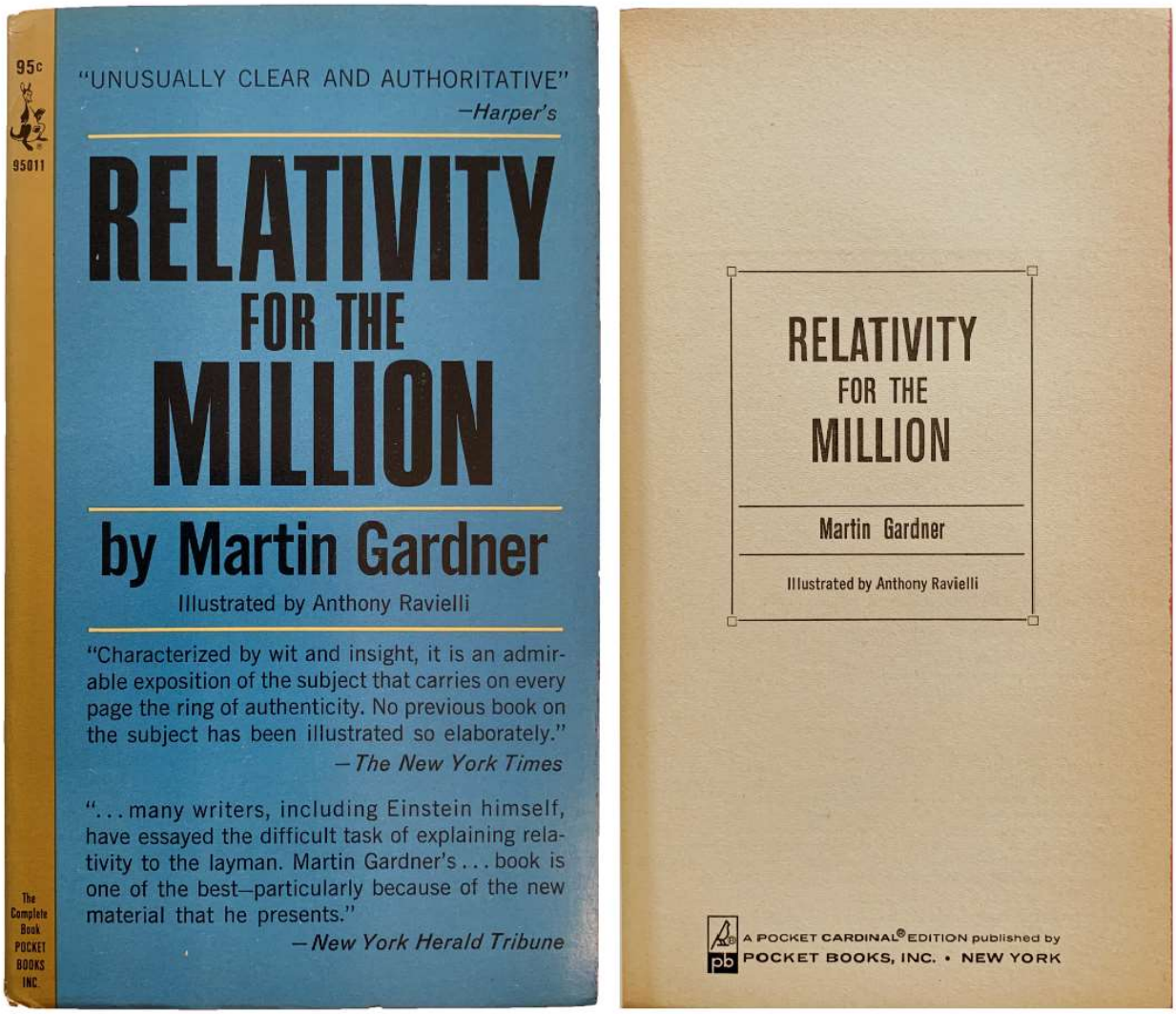




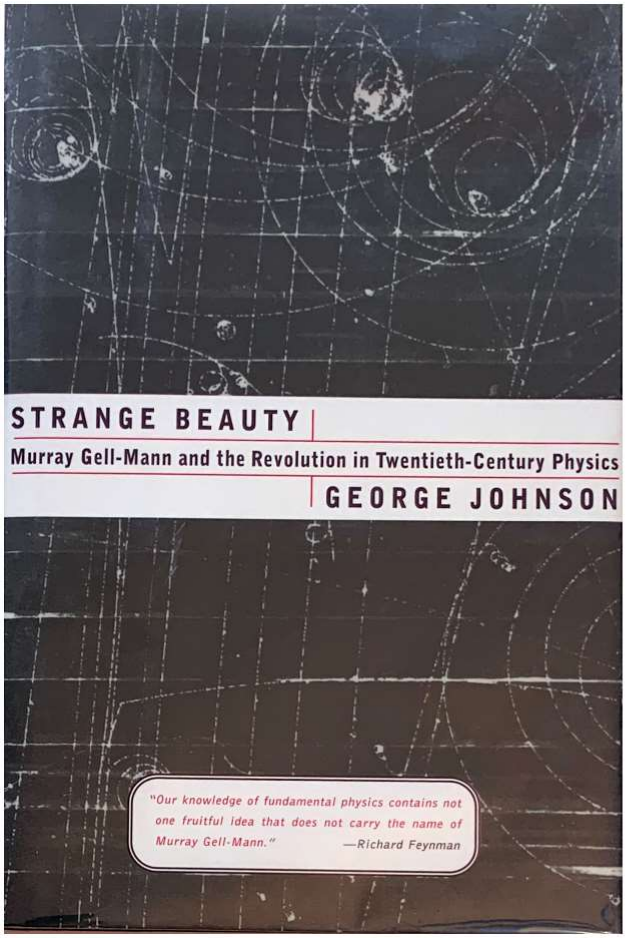
24. **FREUND, John E**. (1921-2004). *A Modern Introduction to Mathematics*. Englewood Cliffs: Prentice-Hall, 1957. ¶ 8vo. xvi, 543 pp. Black cloth. Very good. SS11969

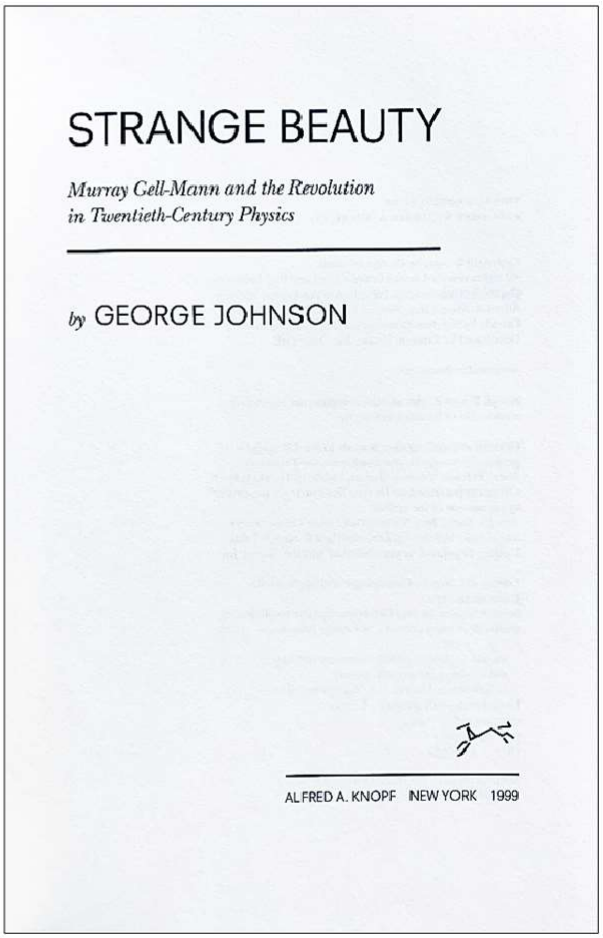
$ 10

Second printing. John Ernst Freund (1921–2004), author of textbooks on statistics, and mathematics professor at Arizona State University. Born in Berlin, Germany, he emigrated to Palestine in the 1930s – studied at the University of London and at the University of California at Los Angeles – Columbia University, University of Pittsburgh (doctorate, 1952) – elected a Fellow of the American Statistical Association (1960).



25. **GARDNER, Martin** (1914-2010). *Relativity for the Million. Illustrated by Anthony Ravielli.* New York: Pocket Books, 1965. ¶ Small 8vo. 209 pp. Illus., index. Paperback. Very good. SS11972 $ 5





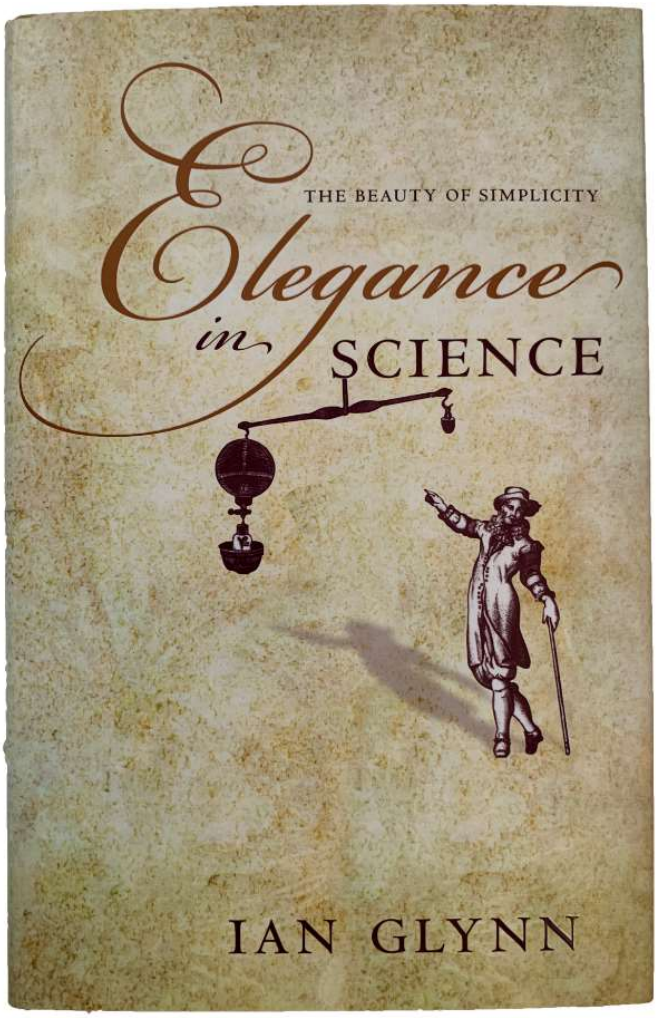
26. **[GELL-MANN, Murray** (1929-2019)] **George JOHNSON**. *Strange Beauty; Murray Gell-Mann and the Revolution in Twentieth-Century Physics*. New York: Alfred A. Knopf, 1999. ¶ 8vo. x, 434 pp. Illus., index. Black silver-stamped boards, dust-jacket. Near fine. ISBN: 0679437649 / 0-679-43764-9 [SS11974]

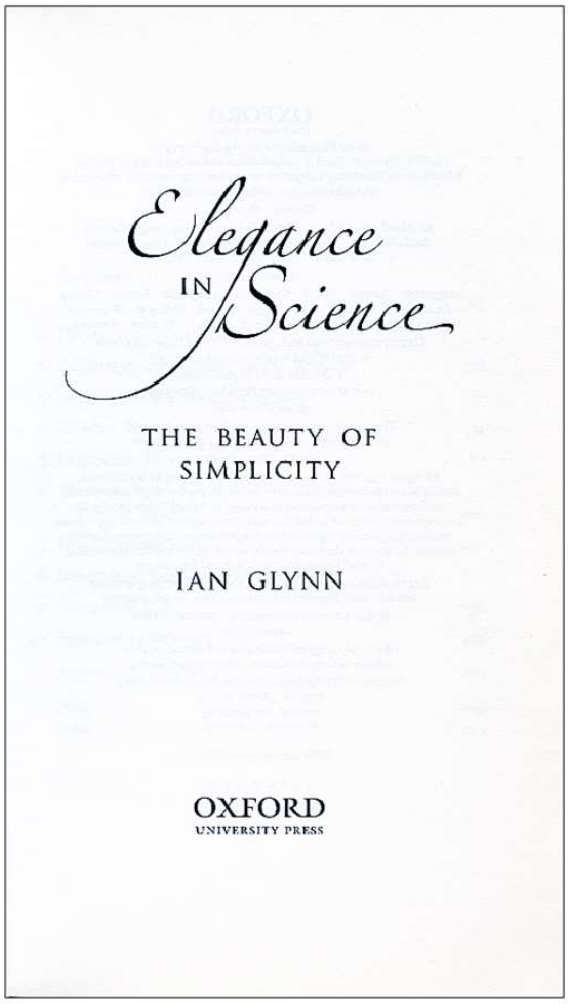
$ 5

"The author George Johnson has written a biography of Gell-Mann, STRANGE BEAUTY: MURRAY GELL-MANN, AND THE REVOLUTION IN 20TH-CENTURY PHYSICS (1999), which was shortlisted for the Royal Society Book Prize. Gell-Mann himself criticized Strange Beauty for some inaccuracies, with one interviewer reporting him wincing at the mention of it. In a review in the Caltech magazine Engineering & Science, Gell-Mann's colleague, the physicist David

Goodstein, wrote: "I don't envy Murray the weird experience of reading so penetrating and perceptive a biography of himself. . . . George Johnson has written a fine biography of this important and complex man." Physicist and Nobel laureate Philip Anderson, called the book "a masterpiece of scientific explication for the layman" and a "must read" in a review for the Times Higher Education Supplement and in his chapter on Gell-Mann from a 2011 book. Sheldon Lee Glashow, another Nobel laureate, gave Strange Beauty a generally positive review while noting some inaccuracies, and physicist and science historian Silvan S. Schweber called the book "an elegant biography of one of the outstanding theorists of the twentieth century" though he noted that Johnson did not go into depth about Gell-Mann's work with military-industrial organizations like the Institute for Defense Analyses. Johnson has written that Gell-Mann was a perfectionist and that THE QUARK AND THE JAGUAR was consequently submitted late and incomplete." [Wikip.].

Murray Gell-Mann, American physicist, received the 1969 Nobel Prize in Physics for his work on the theory of elementary particles. He was the Robert Andrews Millikan Professor of Theoretical Physics Emeritus at the California Institute of Technology, and a distinguished fellow and one of the co-founders of the Santa Fe Institute.

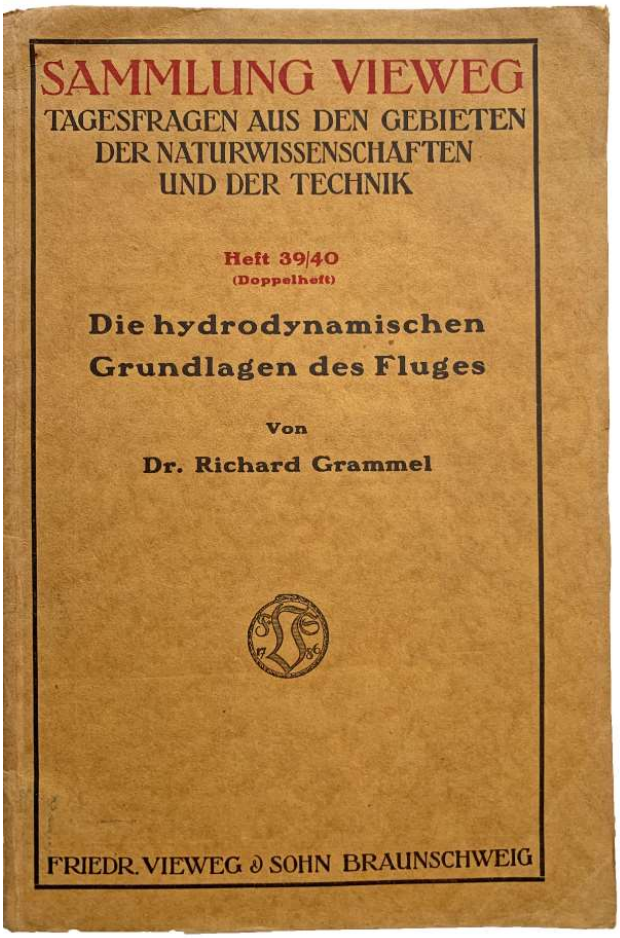


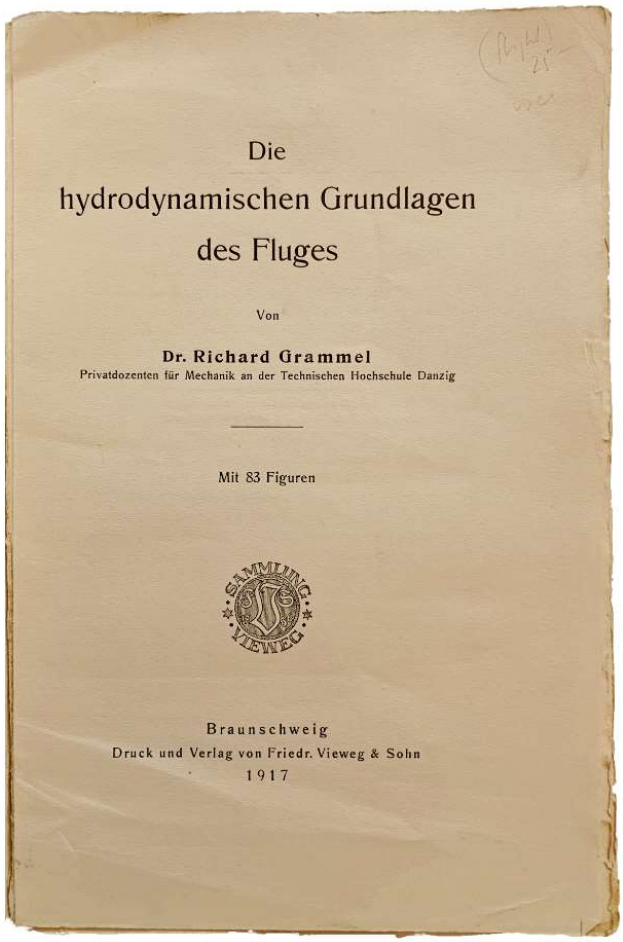


27. **GLYNN, Ian Michael FRS FRCP** (1928-). *Elegance in Science; The beauty of simplicity*. Oxford: Oxford University Press, 2010. ¶ 8vo. xvii, 271 pp. Figs., index. Black gilt-stamped cloth, dust-jacket. Fine. ISBN: 9780199578627 [SS11977]

$ 5

This "entertaining" book explains the elegant experiments that led Galilei, Joule and Mendel to formulate their insightful descriptions of nature. – Florian Fisch [LA Times]. Glynn is a British biologist and a Fellow of the Royal Society, former Professor of Physiology, University of Cambridge, (1986–95), and now Professor Emeritus.

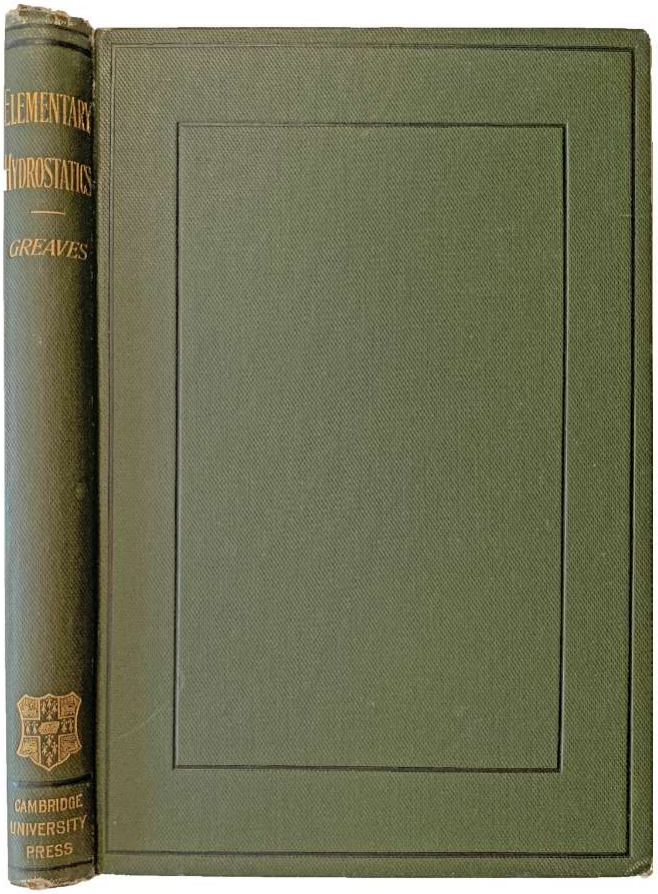


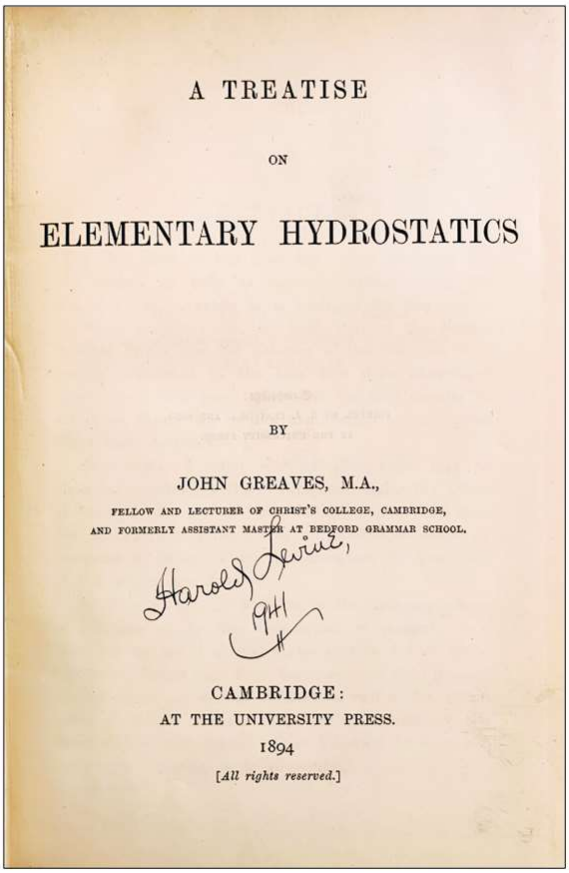


28. **GRAMMEL, Richard** (1889-1964). *Die hydrodynamischen Grundlagen des Fluges*. Braunschweig: Friedr. Vieweg & Sohn, 1917. ¶ 8vo. IV, [2], 135, [1] pp. Original printed wrappers. Very good. SS11648

$ 35

On the hydrodynamic principles of flight. In 1913 Grammel received his doctorate in Tübingen with a thesis on n-dimensional vector symbolism (1916). He wrote another work on the physicals of ballistics. He took up a teaching position at the University of Halle (1917). In 1920 he accepted a full professorship of technical mathematics and thermodynamics at the TH Stuttgart, which remained his scientific home until retirement (1957).




A TREATISE

ON

ELEMENTARY HYDROSTATICS

BY

JOHN GREAVES, M.A.,

FELLOW AND LECTURER OF CHRIST'S COLLEGE, CAMBRIDGE,
AND FORMERLY ASSISTANT MASTER AT BEDFORD GRAMMAR SCHOOL.

Harold Levine,
1941

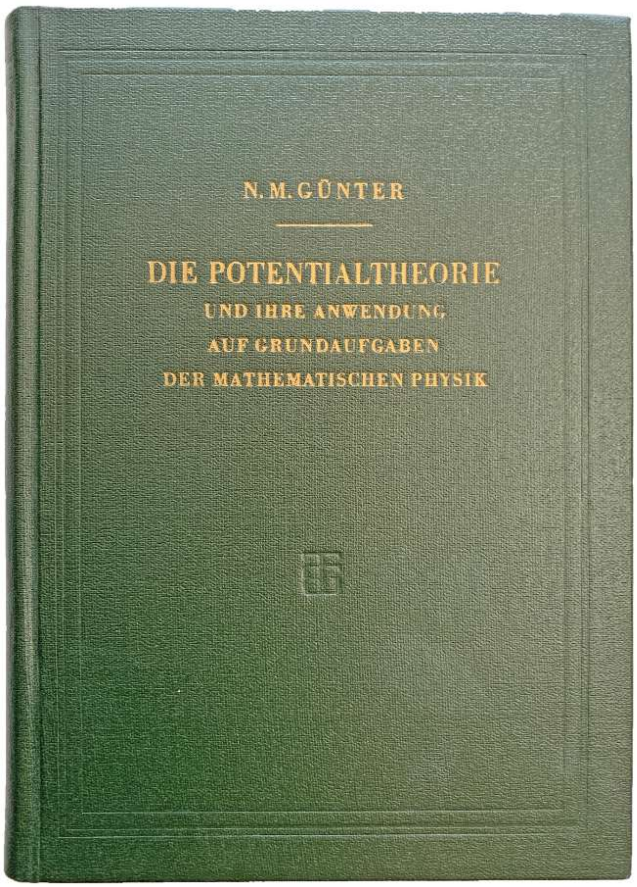
CAMBRIDGE:
AT THE UNIVERSITY PRESS.
1894

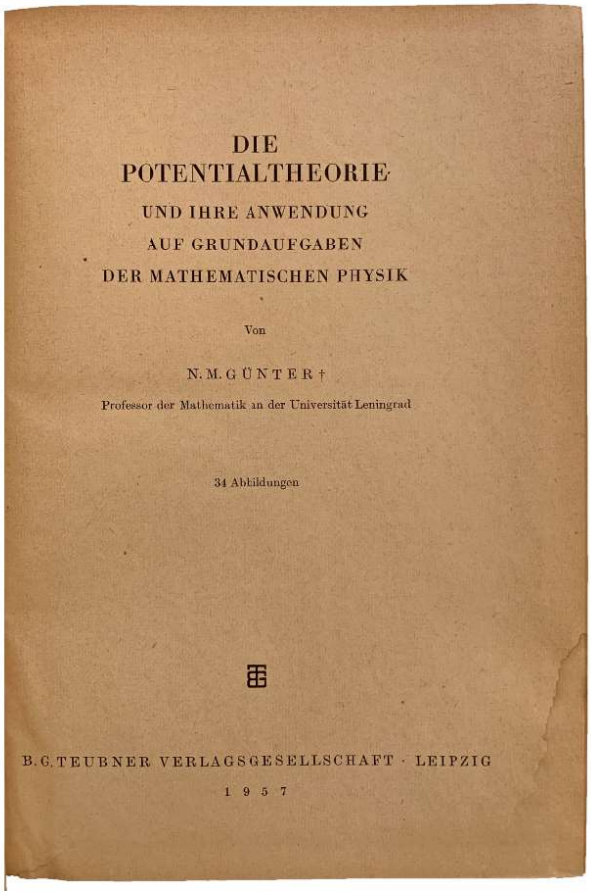
[*All rights reserved.*]

29. **GREAVES, John** (1867-1913). *A Treatise on Elementary Hydrostatics*. Cambridge: University Press, 1894. ¶ Small 8vo. xi, 204 pp. Figs., index. Original black, blind and gilt-stamped olive-green cloth; spine ends lightly worn. Title ink signature of Harold Levine, 1941. Very good. SS11652

$ 30

First edition. Greaves was a mathematical lecturer at Christ's College, Cambridge.

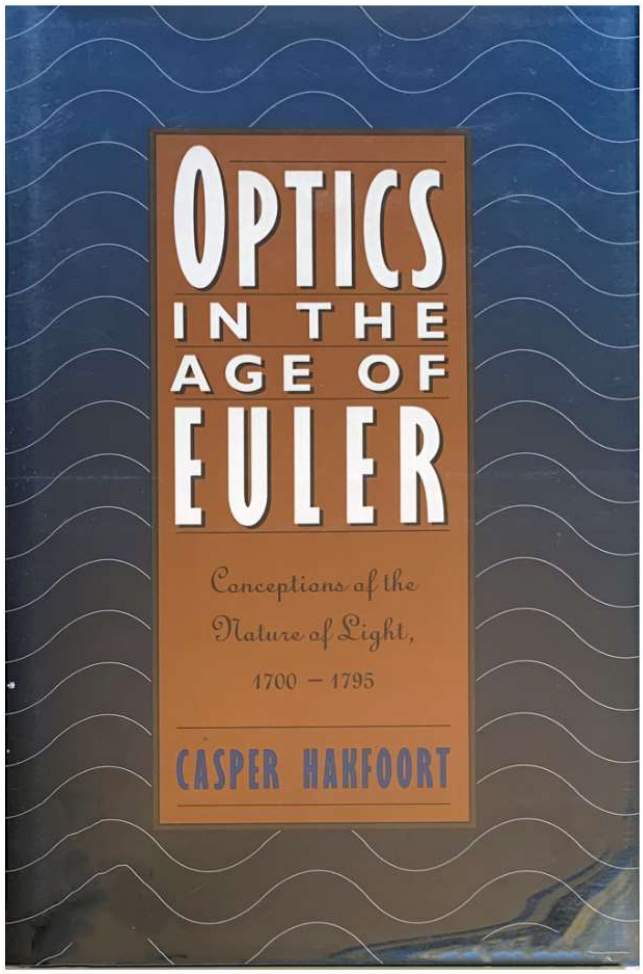


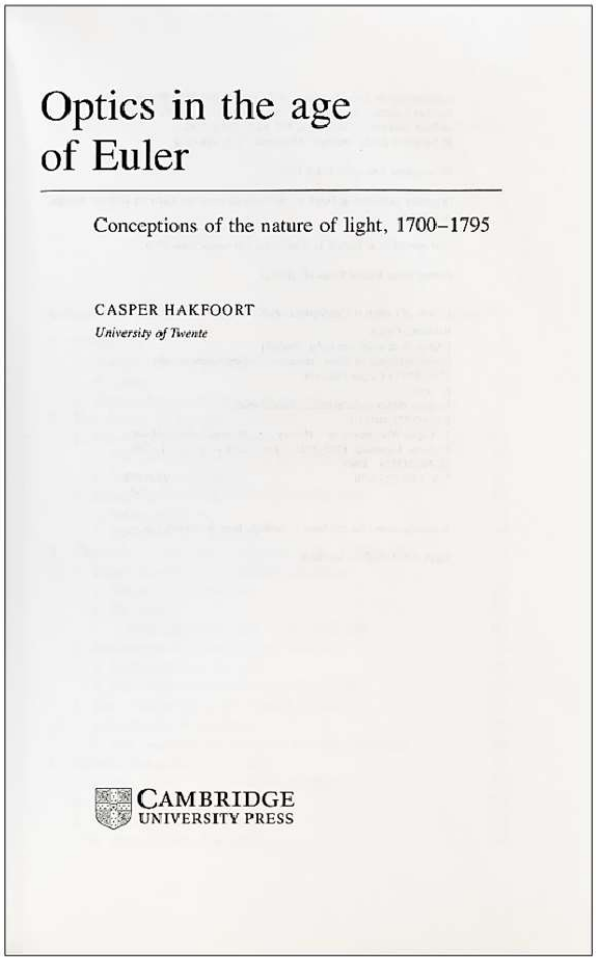


30. **GUNTHER, Nikolai Maximovich** (1871-1941). *Die Potentialtheorie und ihre Anwendung auf Grundaufgaben der Mathematischen Physik*. Leipzig: B.G. Teubner, 1957. ¶ 8vo. X, 341, [1] pp. 34 figs., index. Dark green blind and gilt-stamped cloth; lower margin waterstained. Russian mathematician known for his work in potential theory and in integral and partial differential equations. Good+. SS11656

$ 10

German translation, from the Russian, of his noted work, "Potential theory and its application to basic problems in mathematical physics." Günther, Russian mathematician, known for his achievement in potential theory and in integral and partial differential equations. In addition, later studies have demonstrated his contributions to the theory of Gröbner bases.




Optics in the age of Euler

Conceptions of the nature of light, 1700–1795

CASPER HAKFOORT
University of Twente

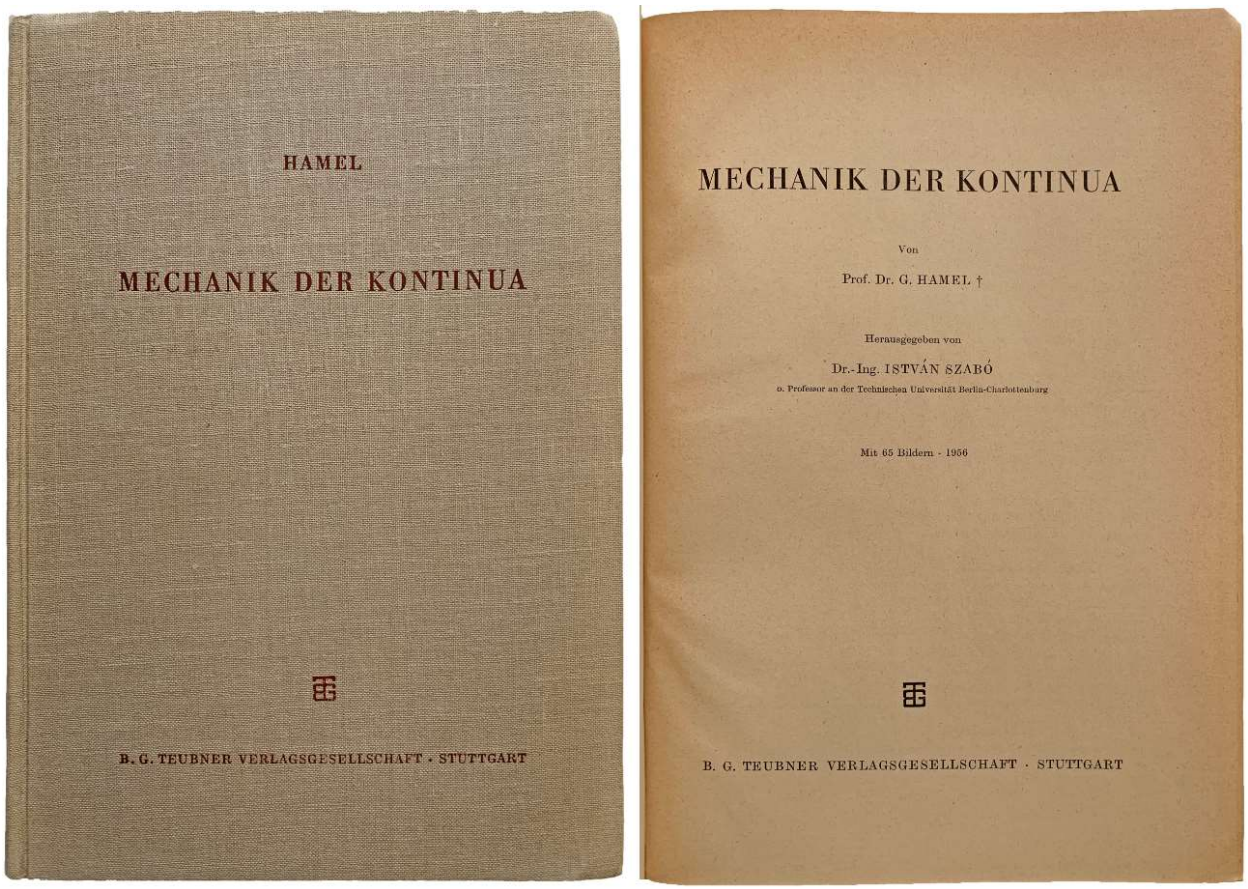
CAMBRIDGE UNIVERSITY PRESS

31. **HAKFOORT, Casper** (1955-1999). *Optics in the Age of Euler; Conceptions of the Nature of Light, 1700-1795*. Cambridge: Cambridge University Press, 1995. ¶ 8vo. vi, 243 pp. Bibliography, index. Bright blue cloth, gilt-stamped spine, dust-jacket. Burndy bookplate. Fine. ISBN: 0521404711 [SS11985]

$ 80

"According to received historiography, the fundamental issue in eighteenth-century optics was whether light could be understood as the emission of particles, or as the motion of waves in a subtle medium. Moreover, the emission theory of light was supposed to have been dominant in the eighteenth century, backed by Newton's physical arguments. This picture is enriched and qualified by focusing on the

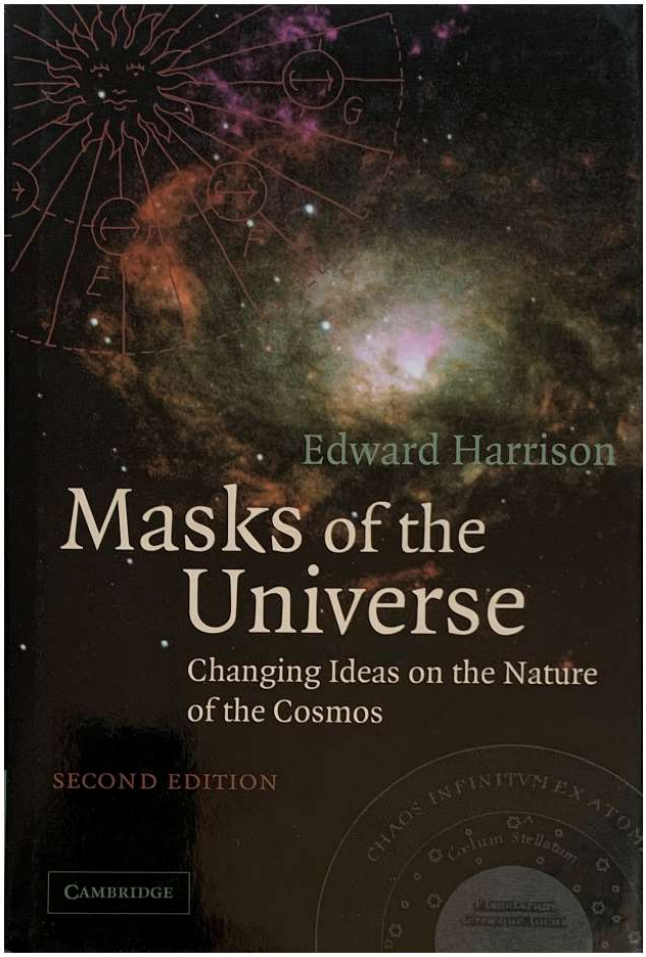
origins, contents and reception of the wave theory of light, published by Leonhard Euler in 1746, here studied in depth for the first time. Contrary to what has been assumed, . . . the particle–wave debate only starts with Euler. In addition, Euler's wave theory was the most popular theory in Germany for thirty-five years. Finally, when the emission view of light suddenly became dominant in Germany around 1795, new chemical experiments proved crucial. Reflecting on the mathematical, experimental and metaphysical aspects of physical optics, Casper Hakfoort provides as an epilogue a general picture of early modern science." - [publisher]. "As a bright pupil at school in ’s-Heerenberg he was attracted to the study of physics. Deciding to pursue further studies in this area he registered at the Catholic University of Nijmegen in 1973, transferring to the University of Utrecht two years later and obtaining his first degree in 1980. However, physics did not fully satisfy his intellectual strivings and he sought answers to fundamental questions that are not engaged in most physics courses. This dissatisfaction prompted him to forsake the study of physics and instead to register for a Ph.D. in the history of science under the supervision of Professor H. A. M. Snelders at the University of Utrecht, where he studied from 1980 to 1985. In the following year he successfully defended his dissertation, entitled ‘Optica in de eeuw van Euler’, later published in Amsterdam, in 1986." – [CUP].

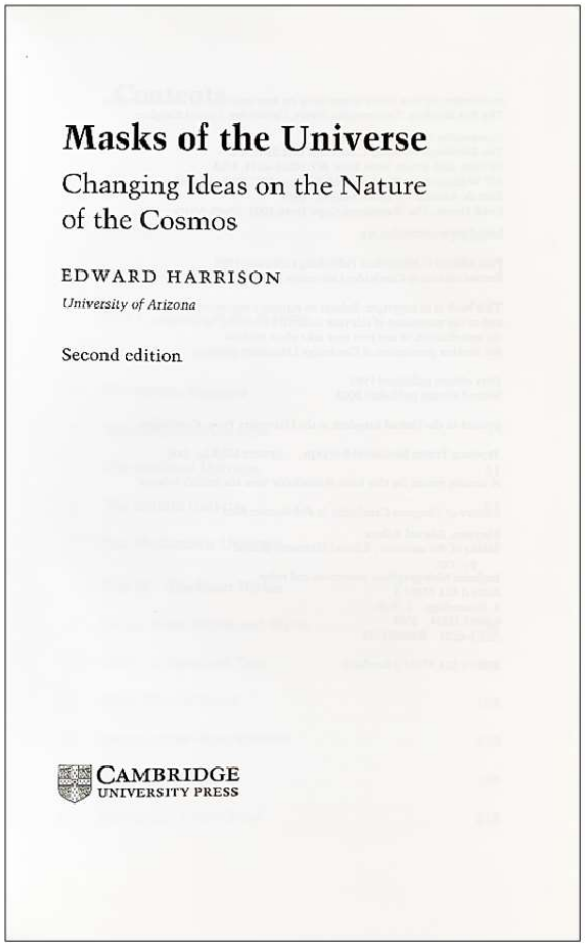


32. **HAMEL, Georg** (1877-1954). *Mechanik der Kontinua. Herausgegeben von Istvan Szabo*. Stuttgart: B. G. Teubner, 1956. ¶ 8vo. 210, [1] pp. 65 figs., index. Beige-olive brown stamped cloth; some fading. Very good. SS11660

$ 38

Georg Karl Wilhelm Hamel (1877–1954), German mathematician, his doctoral adviser was David Hilbert, took his degrees from at Aachen, Berlin, Göttingen, and Karlsruhe. His academic interests were in mechanics, and the foundations of mathematics and function theory.





33. **HARRISON, Edward** (1919-2007). *Masks of the Universe; Changing Ideas on the Nature of the Cosmos*. Cambridge: Cambridge University Press, 2002. ¶ 8vo. ix, 331 pp. Figs., index. Black gilt-stamped cloth. Near fine. ISBN: 0521773512 / 0-521-77351-2 [SS11988]

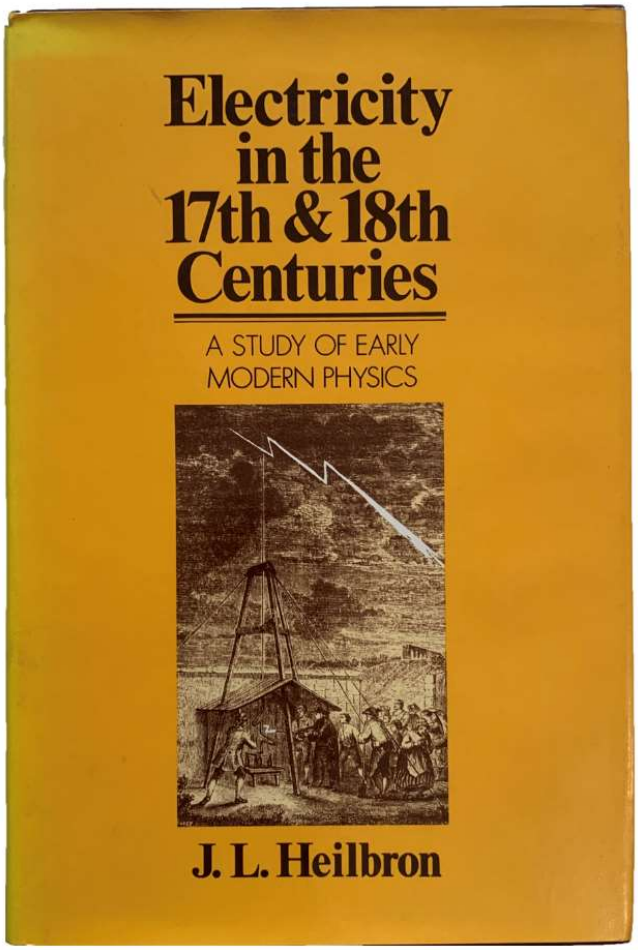
$ 20

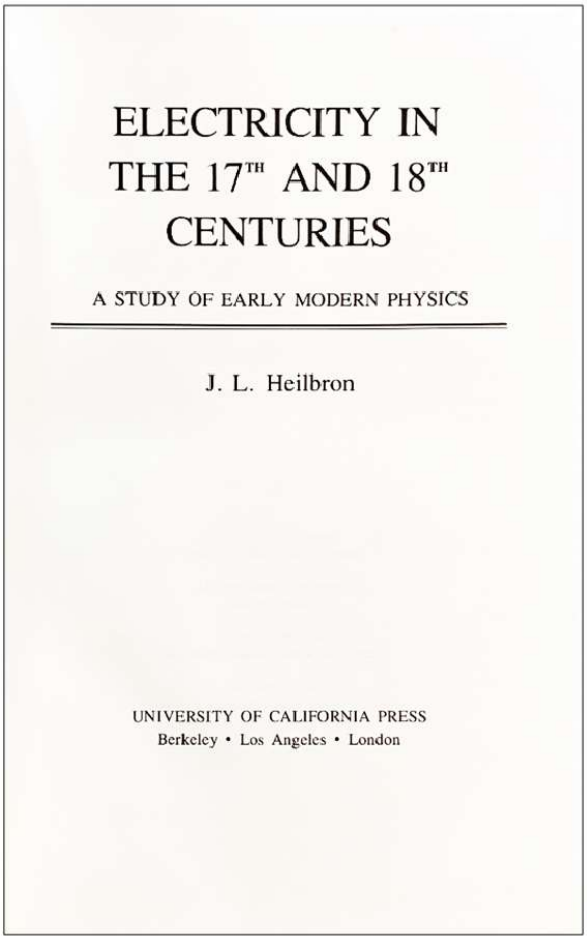
Second edition. 'In an age where philosophers and social scientists are trying to outdo one another in imitating physicists, it's refreshing and perhaps fitting that a physicist should remind them that there are important subjects that can't be approached in this way … Harrison has done a marvelous piece of historical research, and the book is filled with gems … He speaks in the language of science about mankind's age-old need to find meaning and order in a seemingly senseless Universe.' – [book review], James Trefil, New York Times. "To the ancient Greeks the universe

consisted of earth, air, fire, and water. To Saint Augustine it was the Word of God. To many modern scientists it is the dance of atoms and waves, and in years to come it may be different again. What then is the real Universe? History shows that in every age each society constructs its own universe, believing it to be the real and final Universe. Yet each universe is only a model or mask of the unknown Universe. Originally published in 2003, this book brings together fundamental scientific, philosophical, and religious issues in cosmology, raising thought-provoking questions. In every age people have pitied the universes of their ancestors, convinced that they have at last discovered the ultimate truth. Does the modern model stand at the threshold of discovering everything, or will it, like all the rest, come to be pitied?" [CUP].

CONTENTS: Preface – Introducing the masks – Part I. Worlds in the Making: – 1. The magic Universe – 2. The mythic Universe – 3. The geometric Universe – 4. The medieval Universe – 5. The infinite Universe – 6. The mechanistic Universe – Part II. The Heart Divine: – 7. Dance of the atoms and waves – 8. Fabric of space and time – 9. Nearer to the heart's desire – 10. The cosmic tide – 11. Do dreams ever come true? – Part III. The Cloud of Unknowing: – 12. The witch universe – 13. The spear of Archytas – 14. All that is made – 15. The cloud of unknowing – 16. Learned ignorance.

The author is a former distinguished professor of physics and astronomy at the University of Massachusetts, then the University of Arizona.





34. **HEILBRON, John Lewis** (1934-). *Electricity in the 17th and 18th Centuries; a study of early modern physics*. Berkeley & Los Angeles: University of California Press, 1979. ¶ 8vo. xiv, 606 pp. Illus., index. Cloth, dust-jacket. Ink ownership signature of David C. Lindberg. Very good. ISBN: 0520034783 [SS11989]

$ 200

"This is an impressive book. The result of many years of painstaking research, it traces the theory and practice of electrical science through two centuries and across the learned world. Drawing on a health of published and manuscript sources Heilbron provides a strong thesis showing how the study of electricity emerged from the realm of speculation to become a branch of mathematical physics. The first third of the book … [the author] provides the reader to the conceptual apparatus, such as the concepts of

attraction, force, and quantitative relation. [In the second}, he provides an institutional study indicating the employment patterns of some three hundred writers on electricity. … The remainder of the book examines meticulously the history of electrical science from William Gilbert to John Robison and Charles-August Coulomb…" – G. N. Cantor, Book review, *The British Journal for the History of Science*. Volume 13, Issue 3, November 1980, pp. 270–2.

PROVENANCE: David C. Lindberg (1935-2015), the Hilldale Professor Emeritus of the History of Science at the University of Wisconsin–Madison and past-president of the History of Science Society. His scholarship focused on the history of medieval and early modern science, especially physical science and the relationship between religion (especially Islam) and science.

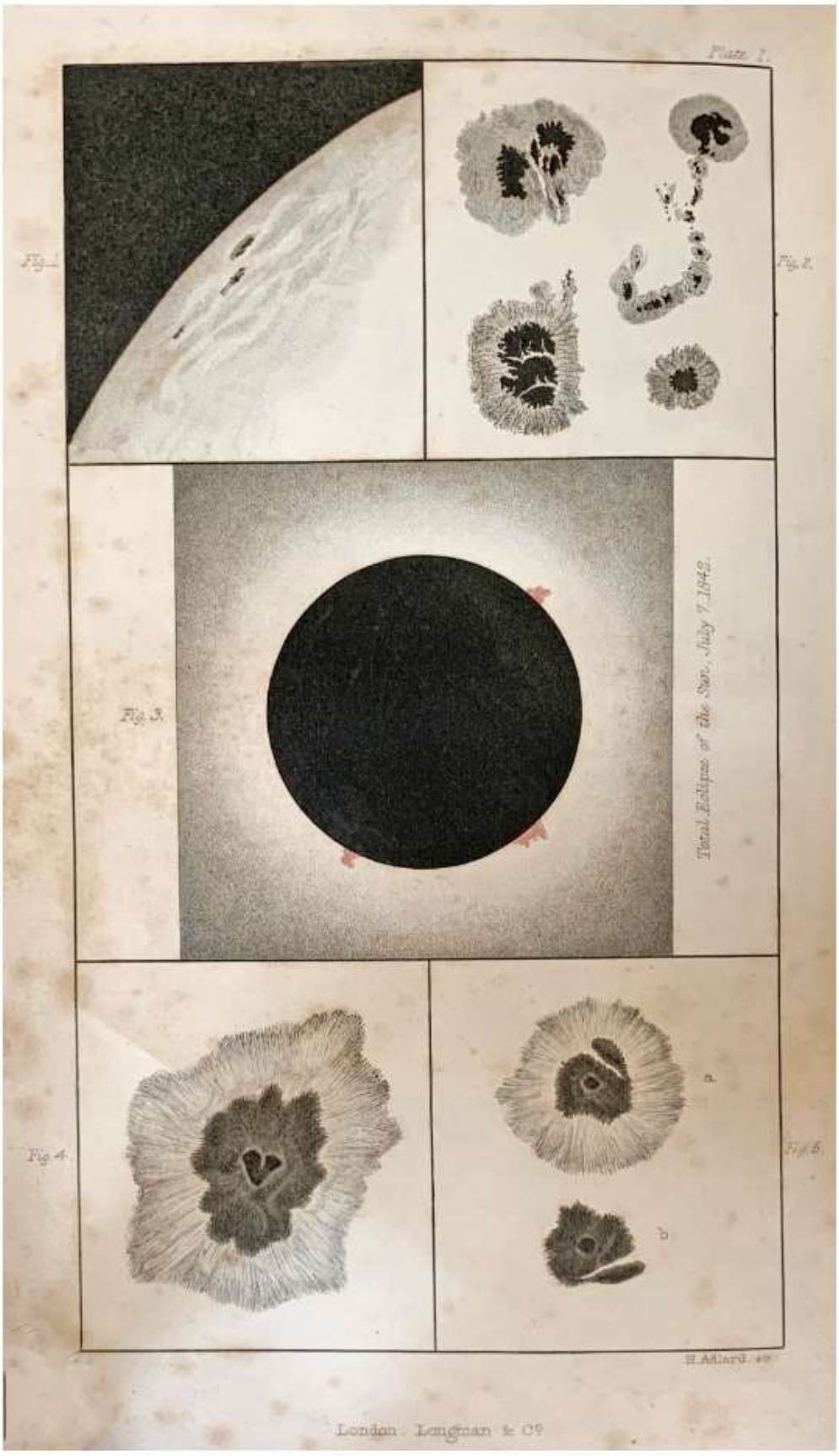
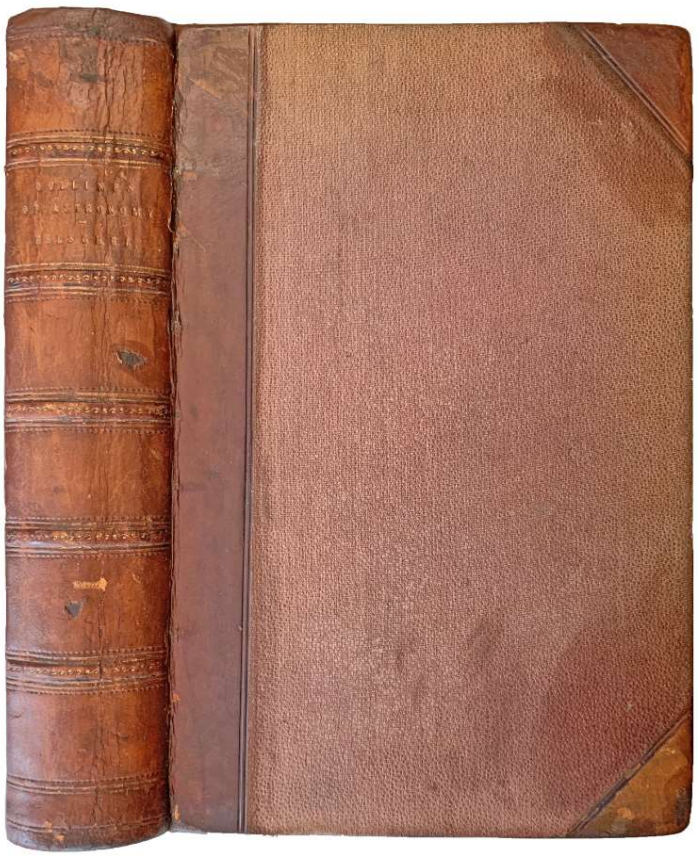
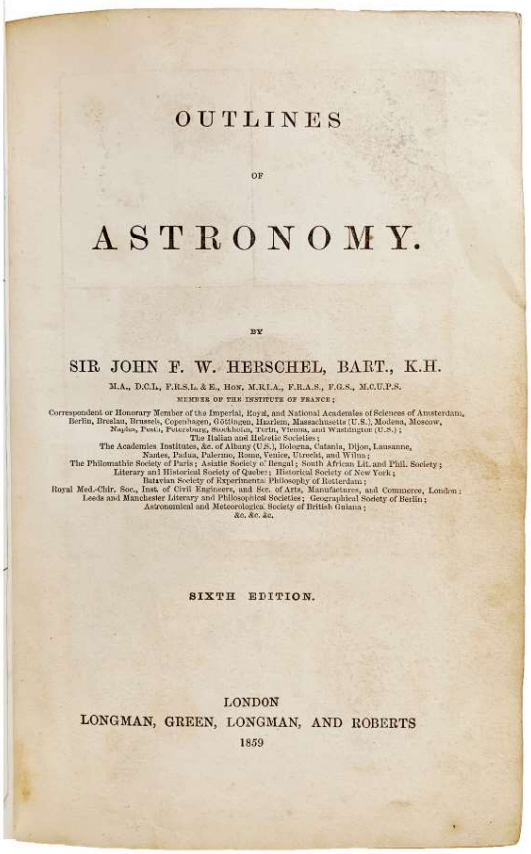


Plate I.
Fig. 1.
Fig. 2.
Fig. 3.
Total Eclipse of the Sun, July 7. 1842.
Fig. 4.
Fig. 5.
a
b
H. Adlard sc.
London. Longman & Co

[35]





OUTLINES

OF

ASTRONOMY.

BY

SIR JOHN F. W. HERSCHEL, BART., K.H.

M.A., D.C.L., F.R.S.L. & E., Hon. M.R.I.A., F.R.A.S., F.G.S., M.C.U.P.S.

MEMBER OF THE INSTITUTE OF FRANCE;

Correspondent or Honorary Member of the Imperial, Royal, and National Academies of Sciences of Amsterdam, Berlin, Breslau, Brussels, Copenhagen, Göttingen, Haarlem, Massachusetts (U.S.), Modena, Moscow, Naples, Pesth, Petersburg, Stockholm, Turin, Vienna, and Washington (U.S.);
The Italian and Helvetic Societies;
The Academies Institutes, &c. of Albany (U.S.), Bologna, Catania, Dijon, Lausanne, Nantes, Padua, Palermo, Rome, Venice, Utrecht, and Wilna;
The Philomathic Society of Paris; Asiatic Society o' Bengal; South African Lit. and Phil. Society; Literary an1 Historical Society of Quebec; Historical Society of New York;
Batavian Society of Experiments: Philosophy of Rotterdam;
Royal Med.-Chir. Soc., Inst. of Civil Engineers, and Soc. of Arts, Manufactures, and Commerce, London;
Leeds and Manchester Literary and Philosophical Societies; Geographical Society of Berlin;
Astronomical and Meteorological Society of British Guiana;
&c. &c. &c.

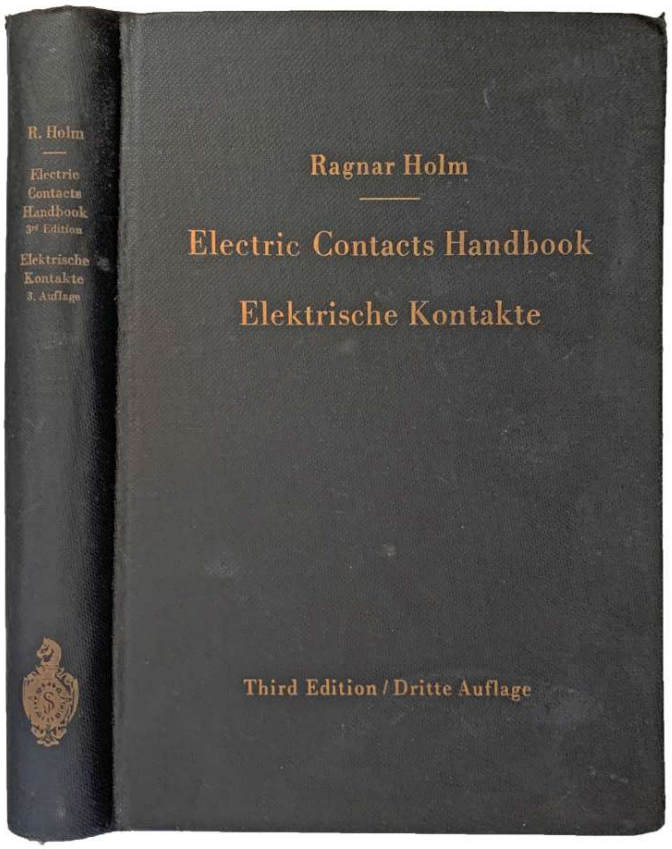
SIXTH EDITION.

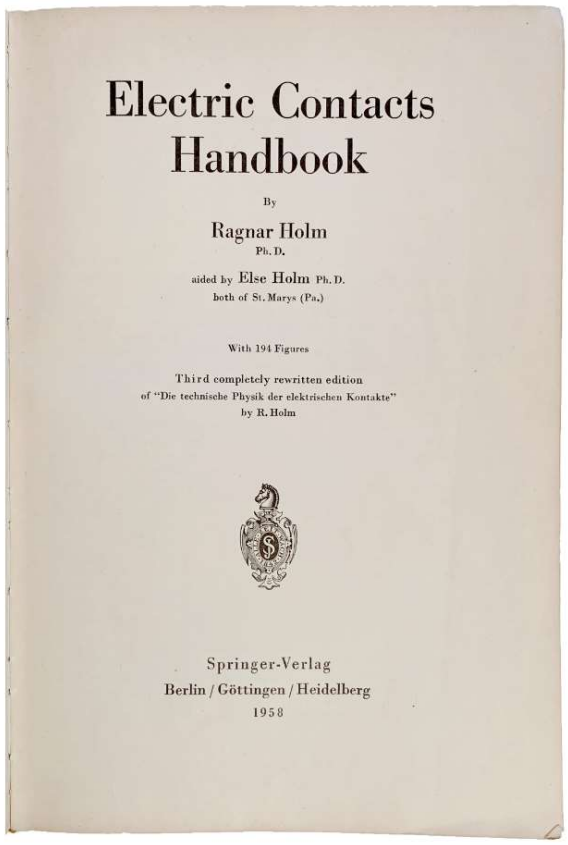
LONDON
LONGMAN, GREEN, LONGMAN, AND ROBERTS
1859

35. **HERSCHEL, Sir John F. W.** (1792-1871). *Outlines of Astronomy. Sixth edition*. London: Longman, Green, Longman, and Roberts, 1859. ¶ 8vo.xxiv, 714 pp. 6 plates (1 folding), index. Original half calf, brown cloth; rubbed. Ex-library bookplate and rubber-stamp Heythrop College, University of London]. Very good copy. S13844

$ 175

"OUTLINES OF ASTRONOMY (1849), an updated and expanded version of his 1833 TREATISE ON ASTRONOMY, went through eleven editions in two decades and was translated into several languages. OUTLINES examines terrestrial and celestial phenomena, providing the reader with a wide range of knowledge about the physical world as a whole. The work is an important textbook, the object of which 'is not to convince or refute opponents, nor to inquire … for principles of which we are all the time in full possession – but simply to teach what is known'." [CUP].



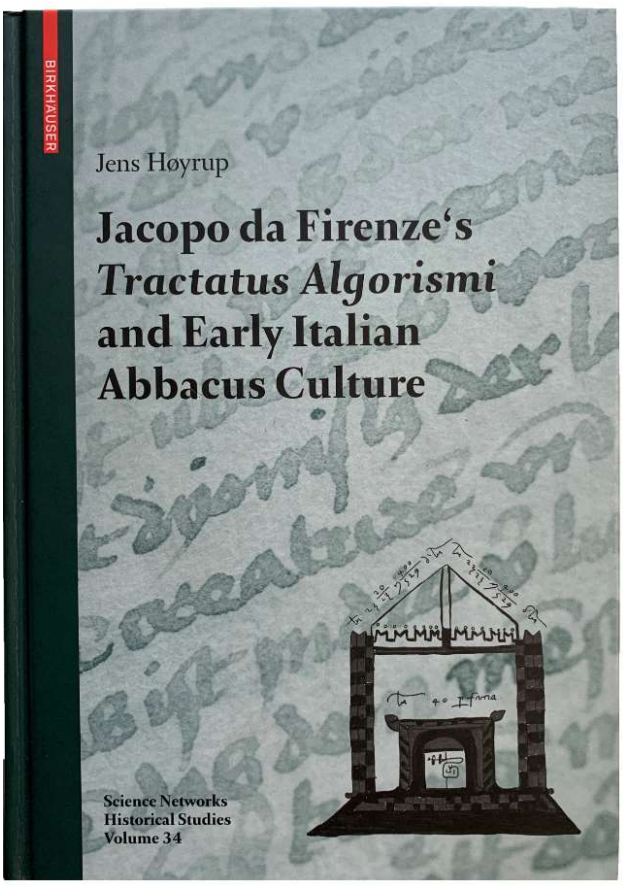


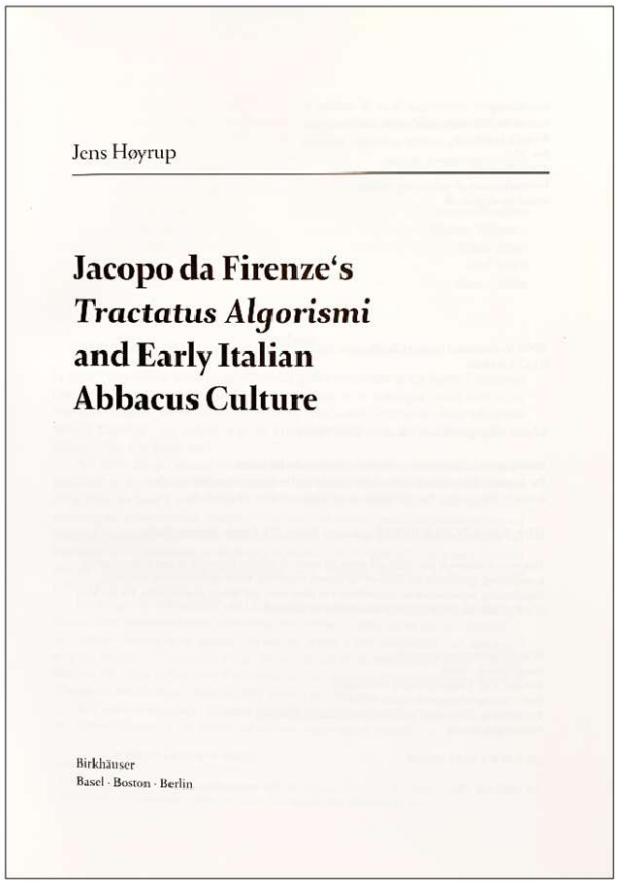
36. **HOLM, Ragnar** (1879-1970). *Electric Contacts Handbook. Third completely rewritten edition. Elektrische Kontakte*. Berlin: Springer-Verlag, 1958. ¶ 8vo. XVIII, 522 pp. 194 figs., index. Black gilt-stamped cloth. Very good. S13845

$ 60

First English edition. Includes a "history of early investigations on contacts."

Holm, Swedish physicist, also wrote on electrical engineering. "Holm's research was partly electrical discharges, but mainly electrical contact, where he was a world authority. His book Electric contact, which appeared in its first edition in 1946, used in its fourth edition of 1967 remains as a standard work in the field." In 1971, the year after Holm's death, established the IEEE The Ragnar Holm Scientific Achievement Award ("Ragnar Holm Award") for initiatives in electrical contact. The prize has been awarded annually since 1972.



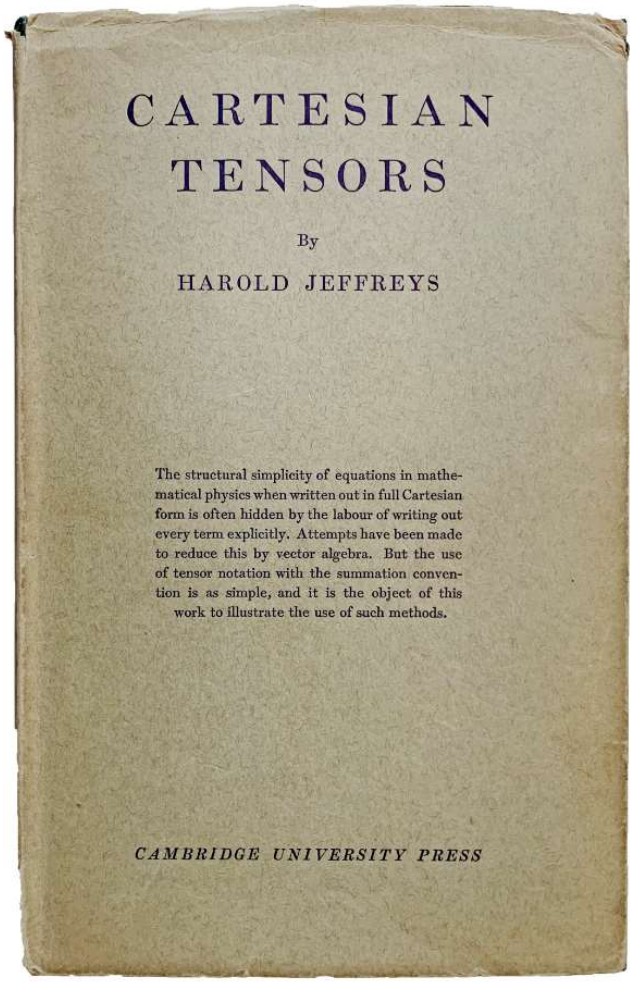


Inscribed by the Author

37. **HOYRUP, Jens** (1943-). *Jacopo da Firenze's Tractatus Algorismi and Early Italian Abbacus Culture*. Basel, Boston, Berlin: Birkhauser, (2007). ¶ Series: Science Networks Historical Studies, vol. 34. 8vo. xii, 482 pp. inscription by author and owner's name on fly leaf, figs. diags. INSCRIBED BY THE AUTHOR; ownership signature of Barnabas Hughes. Very good +. Scarce. ISBN: 9783764383909 [SS11681]

$ 50

One of the first treatises on the abacus and the first to give algebra. This text translates into English a manuscript copy from ca. 1450. Jens Egede Høyrup, born in Copenhagen, Danish historian of mathematics, particularly pre-modern and early modern mathematics, and especially ancient Mesopotamian mathematics.

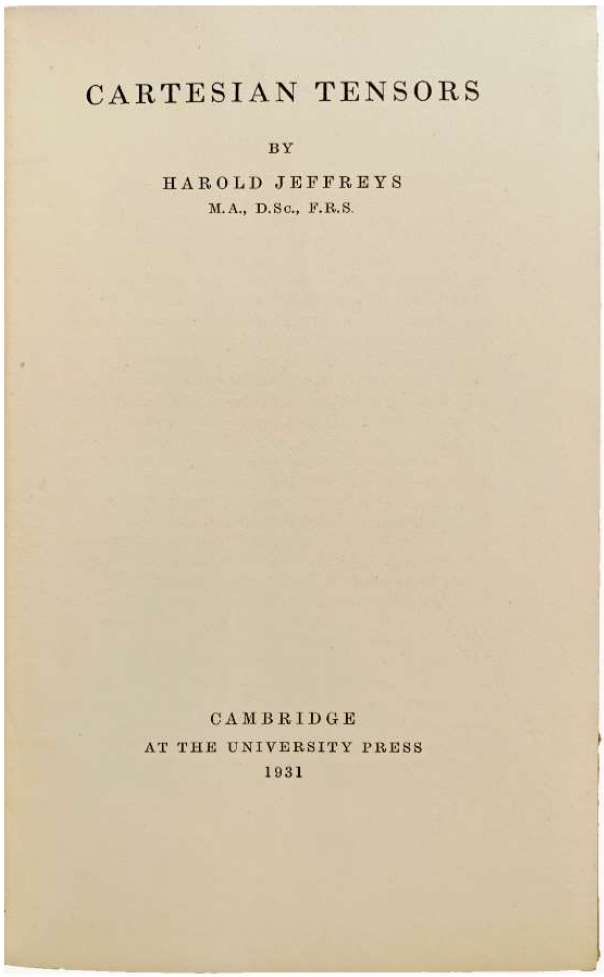

CARTESIAN
TENSORS

By

HAROLD JEFFREYS

The structural simplicity of equations in mathematical physics when written out in full Cartesian form is often hidden by the labour of writing out every term explicitly. Attempts have been made to reduce this by vector algebra. But the use of tensor notation with the summation convention is as simple, and it is the object of this work to illustrate the use of such methods.

CAMBRIDGE UNIVERSITY PRESS


CARTESIAN TENSORS

BY

HAROLD JEFFREYS

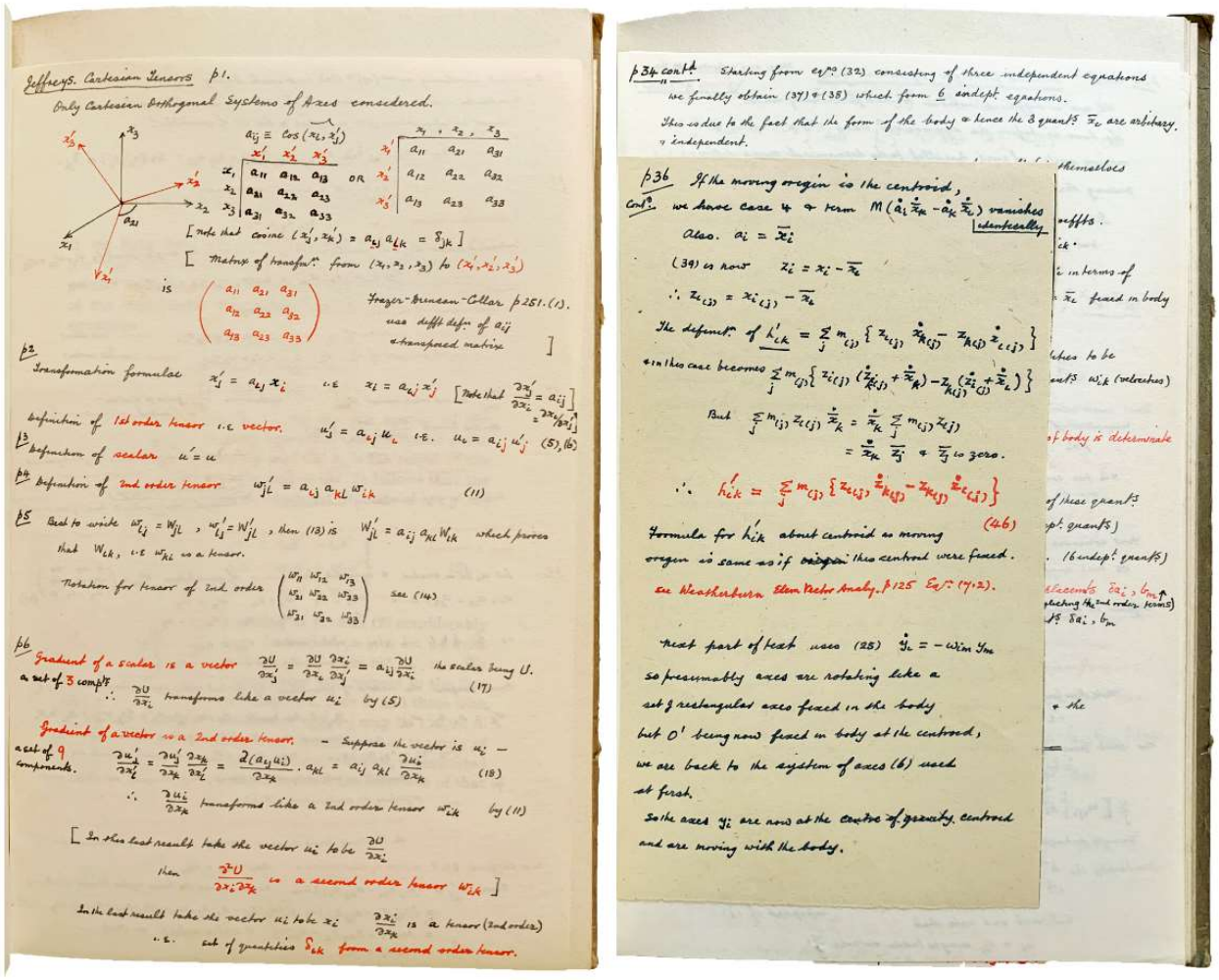
M.A., D.Sc., F.R.S.

CAMBRIDGE
AT THE UNIVERSITY PRESS
1931

38. **JEFFREYS, Harold** (1891-1989). *Cartesian Tensors*. Cambridge: University Press, 1931. ¶ 8vo. vi, [2], 92, [1] pp. Index. Dark green gilt-stamped cloth, dust-jacket; jacket extremities worn. HEAVILY ANNOTATED THROUGHOUT by Charles H. Kebby with his notes mostly on inserted sheets written in red and black ink [not signed by Kebby, but because we have other items from his library we can compare his handwriting favorably). SS11692

$ 30

"The contents consist of some of the properties of cartesian tensors, followed by some applications of them in the fields of Geometry, Dynamics, Statics, Elasticity and Hydrodynamics. Considering the date at which the book was written the treatment is still remarkably modern on the whole. It is a book which should be very useful for colleges and universities, and at a price of 8/6 it should be within the reach of most students." – G. Eason [for CUP].



Jeffreys. Cartesian Tensors p1.

Only Cartesian orthogonal systems of Axes considered.

$a_{ij} \equiv \cos(x_i, x'_j)$

	x'_1	x'_2	x'_3
x_1	a_{11}	a_{12}	a_{13}
x_2	a_{21}	a_{22}	a_{23}
x_3	a_{31}	a_{32}	a_{33}

OR

	x_1	x_2	x_3
x'_1	a_{11}	a_{21}	a_{31}
x'_2	a_{12}	a_{22}	a_{32}
x'_3	a_{13}	a_{23}	a_{33}

[note that cosine $(x'_j, x'_k) = a_{ij}\, a_{ik} = \delta_{jk}$]

[Matrix of transf^n from (x_1, x_2, x_3) to (x'_1, x'_2, x'_3) is $\begin{pmatrix} a_{11} & a_{21} & a_{31} \\ a_{12} & a_{22} & a_{32} \\ a_{13} & a_{23} & a_{33} \end{pmatrix}$ Frazer-Duncan-Collar p251.(1). uses diff^t defn of a_{ij} & transposed matrix]

p2 Transformation formulae $x'_j = a_{ij}\, x_i$ i.e $x_i = a_{ij}\, x'_j$ [Note that $\frac{\partial x'_j}{\partial x_i} = a_{ij} = \frac{\partial x_i}{\partial x'_j}$]

Definition of 1st order tensor i.e. vector. $u'_j = a_{ij}\, u_i$ i.e. $u_i = a_{ij}\, u'_j$ (5), (6)

p3 Definition of scalar $u' = u$

p4 Definition of 2nd order tensor $w'_{jL} = a_{ij}\, a_{kL}\, w_{ik}$ (11)

p5 Used to write $w_{ij} = W_{jL}$, $w'_{ij} = W'_{jL}$, then (13) is $W'_{jL} = a_{ij}\, a_{kL}\, W_{ik}$ which proves that W_{ik}, i.e w_{kL} is a tensor.

Notation for tensor of 2nd order $\begin{pmatrix} w_{11} & w_{12} & w_{13} \\ w_{21} & w_{22} & w_{23} \\ w_{31} & w_{32} & w_{33} \end{pmatrix}$ see (14)

p6 Gradient of a scalar is a vector $\frac{\partial U}{\partial x'_j} = \frac{\partial U}{\partial x_i}\frac{\partial x_i}{\partial x'_j} = a_{ij}\frac{\partial U}{\partial x_i}$ the scalar being U. (17)

a set of 3 compts $\therefore \frac{\partial U}{\partial x_i}$ transforms like a vector u_i by (5)

Gradient of a vector is a 2nd order tensor. - Suppose the vector is u_i -

a set of 9 components. $\frac{\partial u'_j}{\partial x'_L} = \frac{\partial u'_j}{\partial x_k}\frac{\partial x_k}{\partial x'_L} = \frac{\partial (a_{ij} u_i)}{\partial x_k} \cdot a_{kL} = a_{ij}\, a_{kL}\frac{\partial u_i}{\partial x_k}$ (18)

$\therefore \frac{\partial u_i}{\partial x_k}$ transforms like a 2nd order tensor w_{ik} by (11)

[In the last result take the vector u_i to be $\frac{\partial U}{\partial x_i}$

then $\frac{\partial^2 U}{\partial x_i \partial x_k}$ is a second order tensor w_{ik}]

In the last result take the vector u_i to be x_i $\frac{\partial x_i}{\partial x_k}$ is a tensor (2nd order)

i.e. set of quantities δ_{ik} form a second order tensor.

p34 cont^d Starting from eq^{n}s (32) consisting of three independent equations we finally obtain (37) & (38) which form 6 indep^t equations.

This is due to the fact that the form of the body & hence the 3 quant^s $\bar{x}_i$ are arbitrary, & independent.

p36 cont^d If the moving origin is the centroid, we have case 4 & term $M(\dot{a}_i \dot{\bar{x}}_k - \dot{a}_k \dot{\bar{x}}_i)$ vanishes identically

Also. $a_i = \bar{x}_i$

(39) is now $z_i = x_i - \bar{x}_i$

$\therefore z_{i(j)} = x_{i(j)} - \bar{x}_i$

The defin^n of $h'_{ik} = \sum_j m_{(j)} \{ z_{i(j)}\, \dot{x}_{k(j)} - z_{k(j)}\, \dot{z}_{i(j)} \}$

+ in this case becomes $\sum_j m_{(j)} \{ z_{i(j)} (\dot{\bar{x}}_{j(j)} + \dot{\bar{x}}_k) - z_{k(j)} (\dot{\bar{z}}_{i(j)} + \dot{\bar{x}}_i) \}$

But $\sum_j m_{(j)} z_{i(j)}\, \dot{\bar{x}}_k = \dot{\bar{x}}_k \sum_j m_{(j)} z_{ij}$

$= \dot{\bar{x}}_k\, \bar{z}_i + \bar{z}_j$ is zero.

$\therefore h'_{ik} = \sum_j m_{(j)} \{ z_{i(j)}\, \dot{z}_{k(j)} - z_{k(j)}\, \dot{z}_{i(j)} \}$ (46)

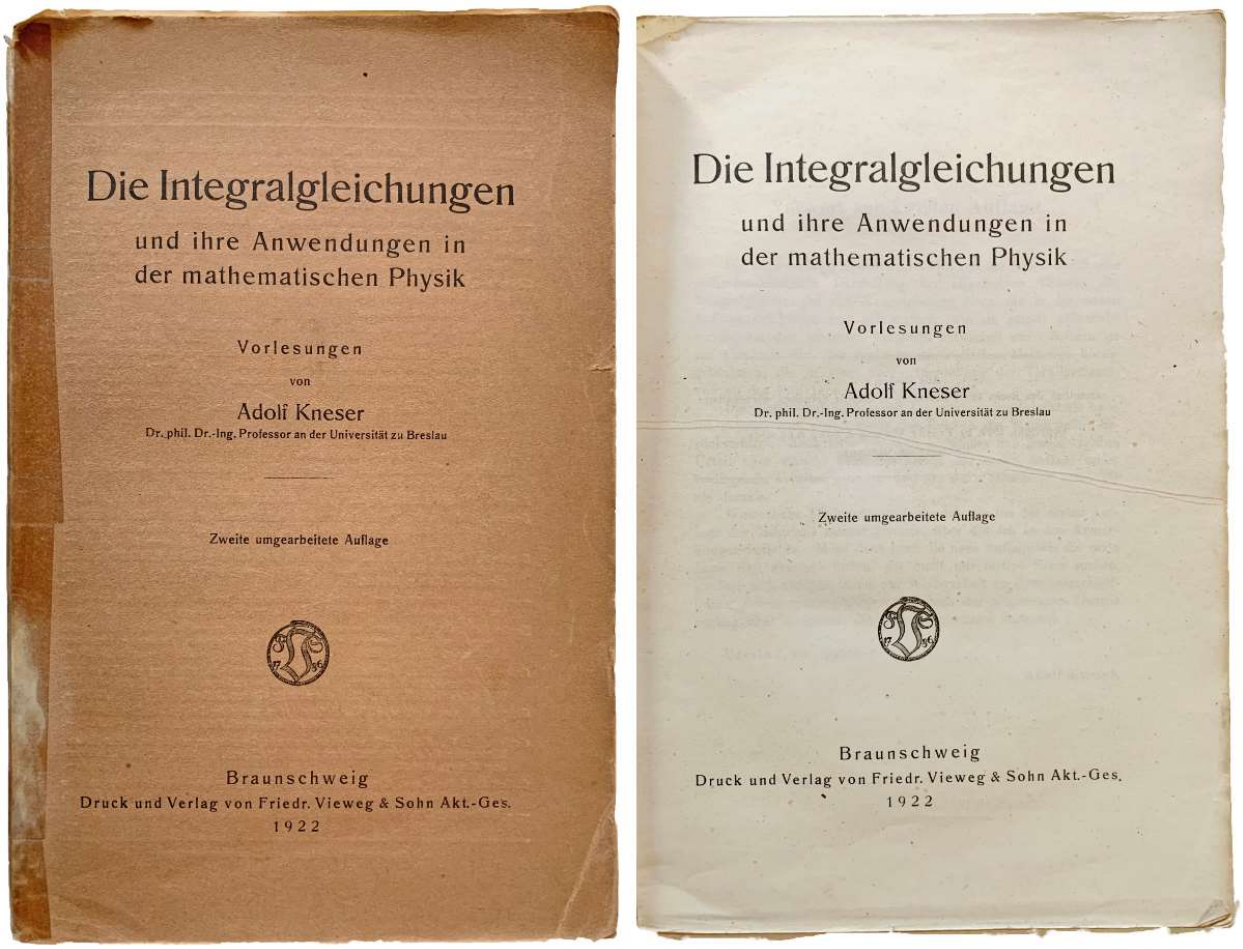
Formula for h'_{ik} about centroid as moving origin is same as if this centroid were fixed.

see Weatherburn Elem Vector Analy. p125 Eq^n (7.12).

next part of text uses (25) $\dot{y}_i = -w_m y_n$

so presumably axes are rotating like a set of rectangular axes fixed in the body but O' being now fixed in body at the centroid, we are back to the system of axes (b) used at first.

So the axes y_i are now at the centre of gravity, centroid and are moving with the body.

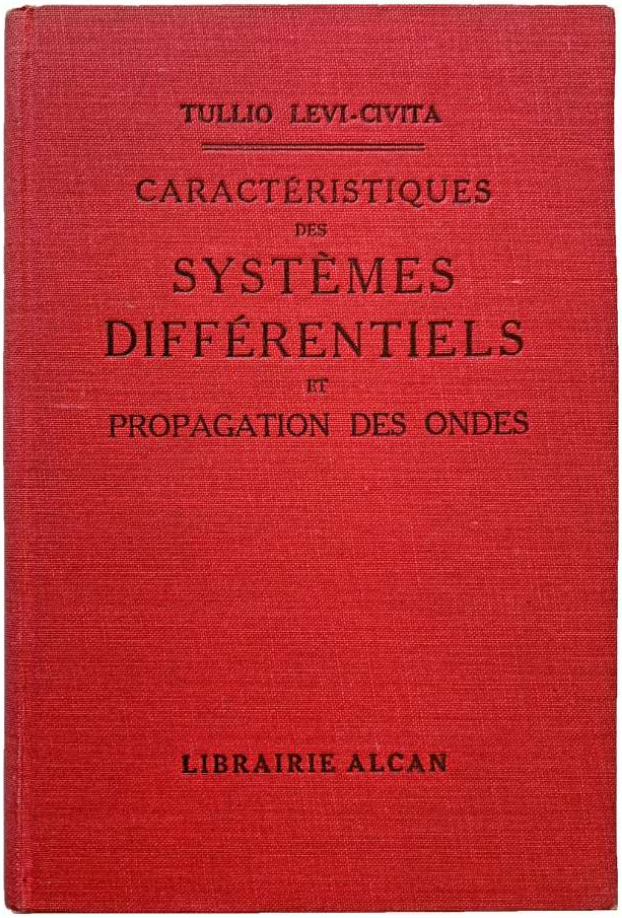


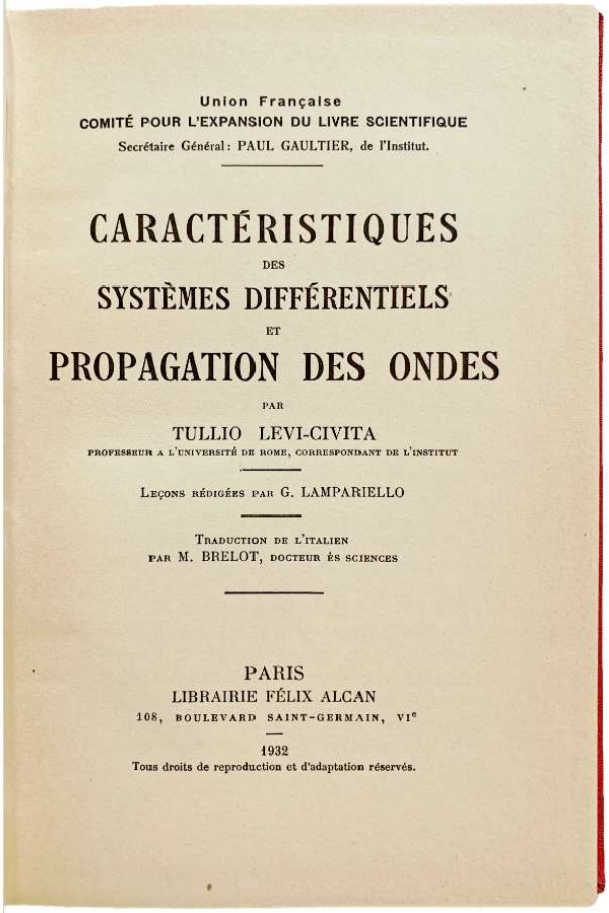
39. **KNESER, Adolf** (1862-1930). *Die Integralgleichungen und ihre Anwendungen in der mathematischen Physik. Zweite umgearbeitete Auflage*. Braunschweig: Friedrich Vieweg & Sohn, 1922. ¶ Second edition, revised. 8vo. viii, 292 pp. Original printed wrappers; spine heavily over-taped with cellophane tape. Scarce. SS11707

$ 10

First issued in 1911, this work on integral equations and mathematical physics, was written by the distinguished mathematician Kneser. DSB VII, pp. 407-408.

"In 1911 Kneser published his famous text, *Die Integralgleichungen und ihre Anwendungen in der mathematischen Physik: Vorlesungen an der Universität zu Breslau*. [Helmut] Wielandt, writing in his obituary of Hellmuth Kneser, describes Adolf Kneser as: – "... the first to introduce Hilbert's new methods into analysis in his textbook on integral equations. He devoted himself to the task of putting general results into concrete form by applying them to the functions of mathematical physics. In a sense, he made the boundary between the old and new mathematics his field of work." [St. Andrews math, on-line].

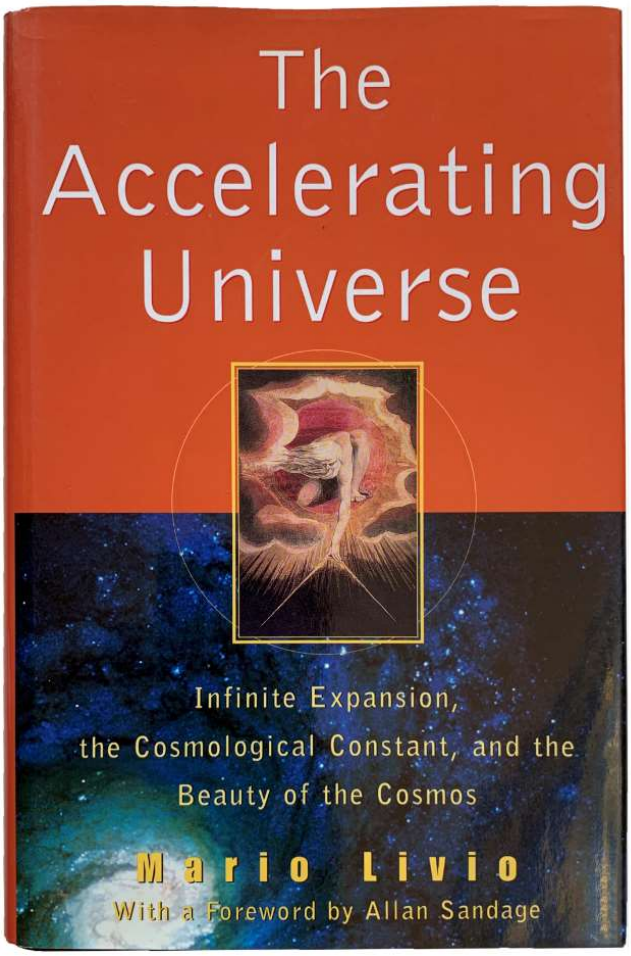


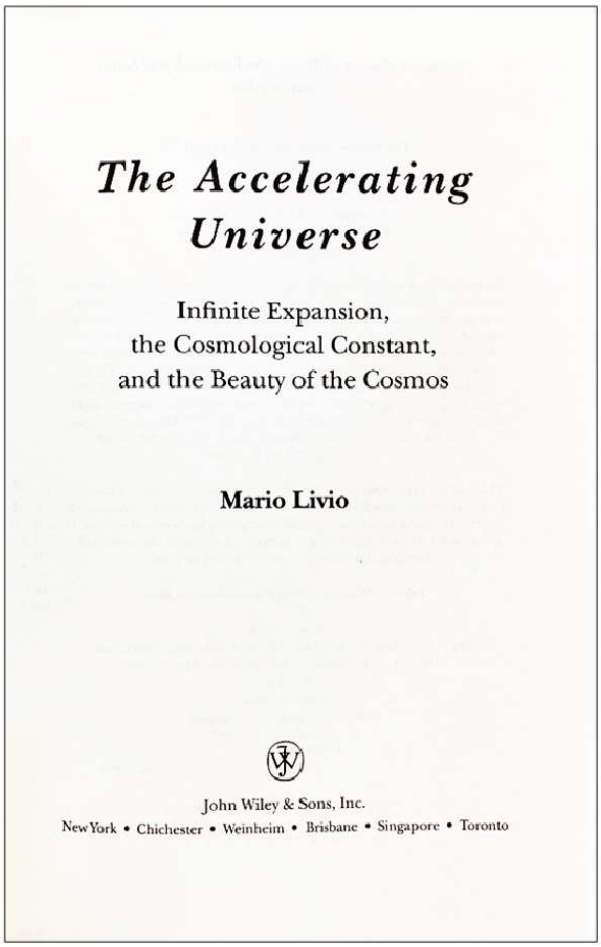


40. **LEVI-CIVITA, Tullio** (1873-1941). *Caracteristiques des Systemes Differentiels et Propagation des Ondes. Traduction de l'Italien*. Paris: Felix Alcan, 1932. ¶ Small 8vo. x, 114 pp. Index. Red brown-stamped cloth. Near fine. SS11722

$ 20

"On the Characteristics of Differential Systems and Propagation of Waves", is the work Levi-Civita is best known for, on the absolute differential calculus and with its applications to the theory of relativity. "He also wrote on the theory of systems of ordinary and partial differential equations. In [it], the authors argue that Levi-Civita was interested in the theory of stability and qualitative analysis of ordinary differential equations for three reasons: his interest in geometry and geometric models; his interest in classical mechanics and celestial mechanics, in particular, the three-body problem; and his interest in stability of movement in the domain of analytic mechanics. He added to the theory of Cauchy and Kovalevskaya and wrote up this work in an excellent book written in 1931." – School of Mathematics and Statistics, University of St Andrews, Scotland [on-line].



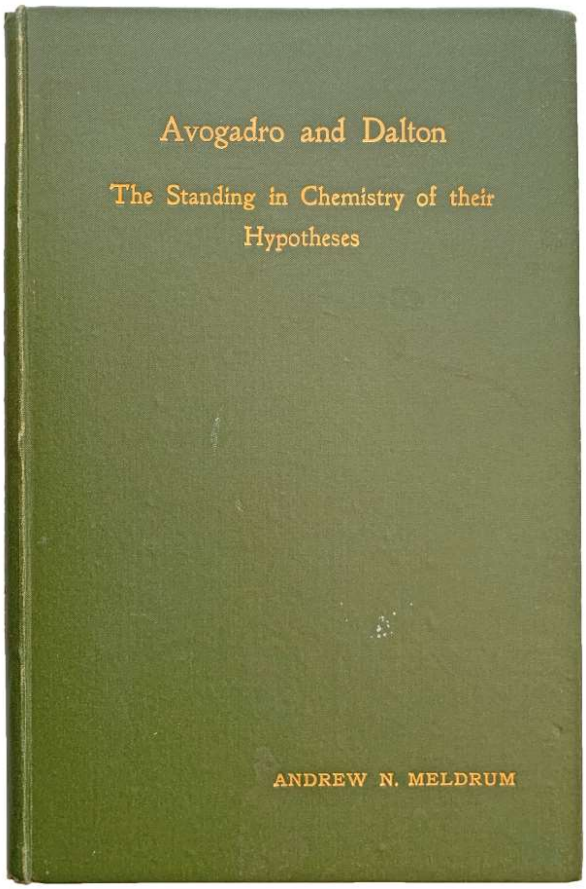


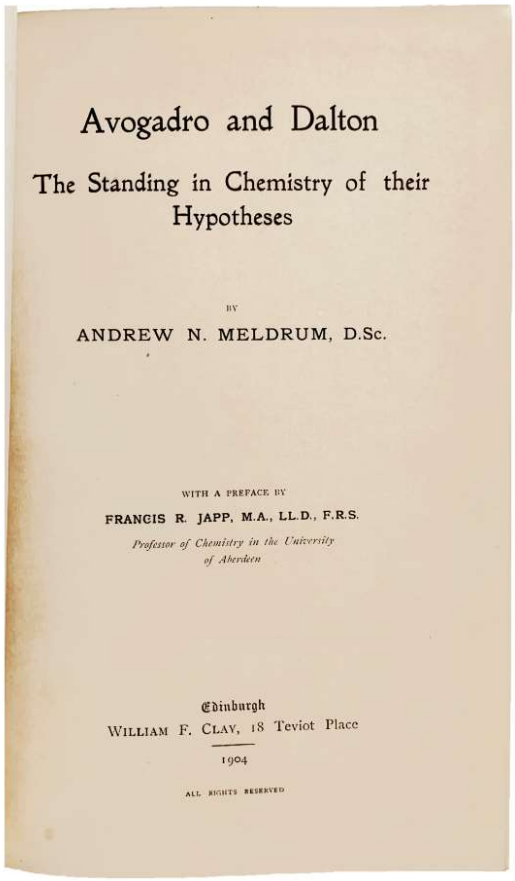
41. **LIVIO, Mario** (1945-). *The Accelerating Universe; Infinite Expansion, the Cosmological Constant, and the Beauty of the Cosmos*. New York: John Wiley & Sons, 2000. ¶ 8vo. xiv, 274 pp. Index. Black gilt-stamped boards, dust-jacket. Title is a cancel. Near fine. ISBN: 047132969X / 0-471-32969-X [SS12001]

$ 3

"One of the most important recent discoveries in cosmology--and science in general--is that the expansion rate of the universe is not staying steady or getting slower, as most scientists had assumed; on the contrary, it is accelerating. Something is counteracting gravity and making it so that in billions of years, the universe will be an even vaster, emptier realm, filled with stars and galaxies flickering out one by one until there is only darkness. In this book, Livio, a senior scientist at Baltimore's Space Telescope Science Institute, evaluates current theories about the universe in terms of whether or not they are "beautiful." Livio defines beauty for purely scientific purposes: a beautiful scientific theory, he explains, must be symmetric and simple (reductionist), and it must follow the Copernican principle that man is not the center of the universe--it need not be elegant. Livio's discussion, however, carefully constructed (like a well-laid-out mathematical proof), certainly is elegant. Readers who

only hazily remember high school math and science classes will enjoy the author's clear, jargon-free explanation of such complicated astronomical concepts as inflationary theory, "pocket" or multiple universes and the anthropic principle. Although the opening chapters are weighed down with extraneous references to art and literature, once Livio gets into his subject, he employs such references more selectively. Any educated individual interested in current theories about the past and future of the universe will want to read this lucid book." [Pub. Weekly].

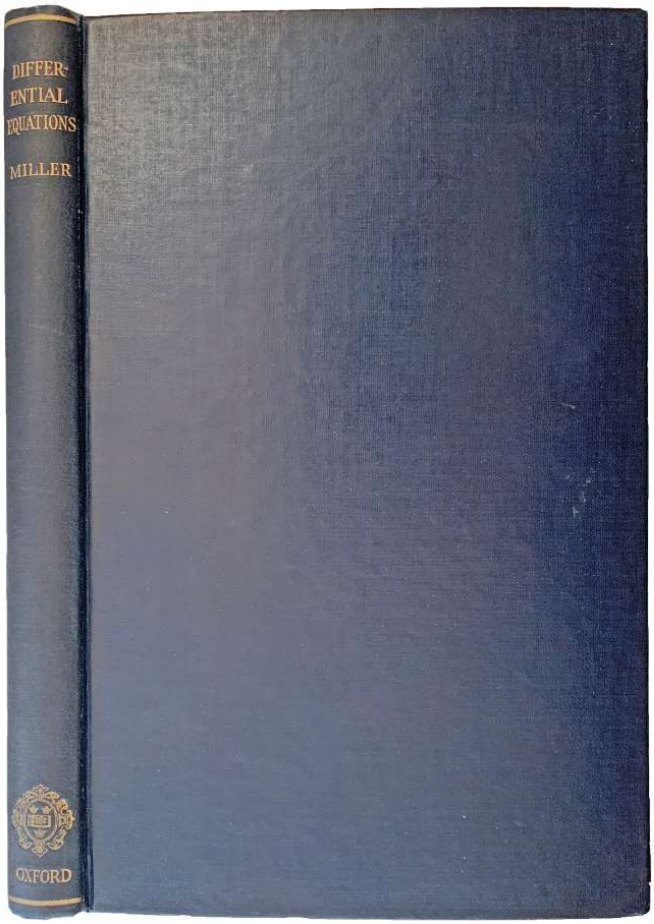


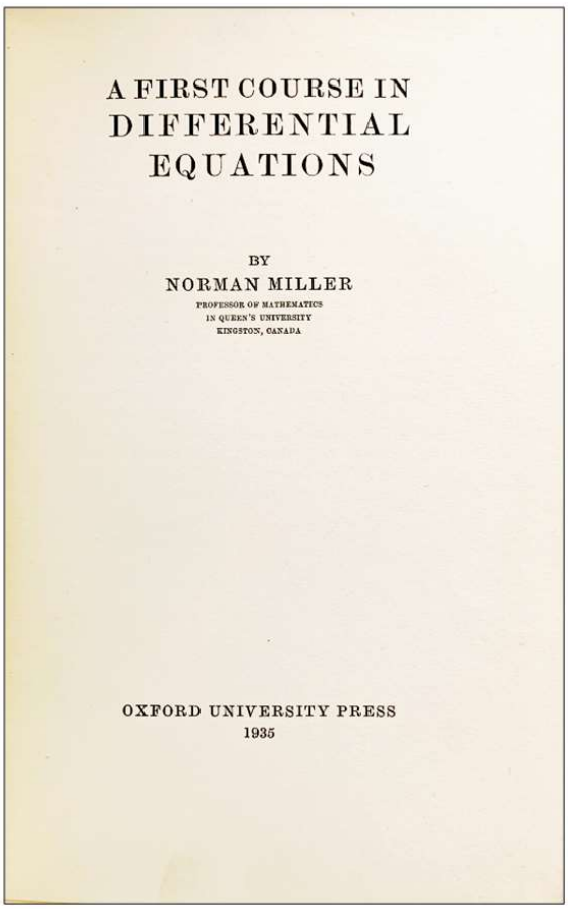


42. **MELDRUM, Andrew N.** (1876-1934). *Avogadro and Dalton; The Standing in Chemistry of their Hypotheses.* Edinburgh: William F. Clay, 1904. ¶ 8vo. 113 pp. Original green gilt stamped cloth. Very good. SS10128

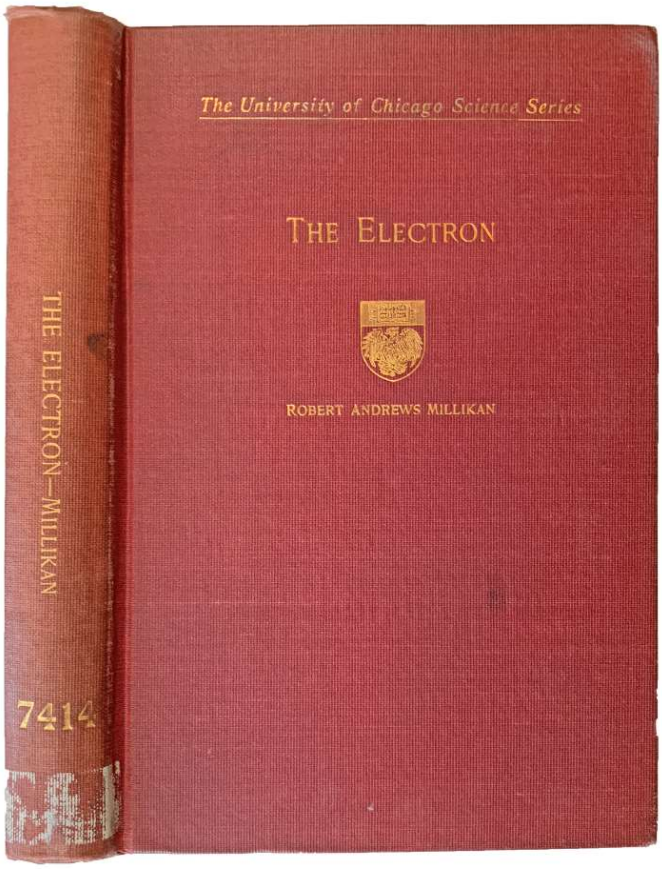
$ 20

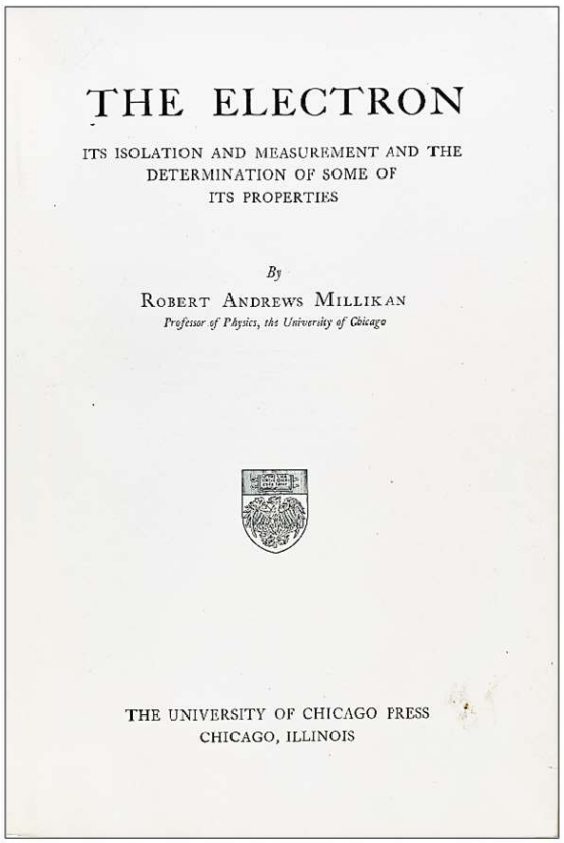
Meldrum, a Scottish organic chemist, studied at Aberdeen, and "taught at the universities of Aberdeen, Liverpool, Sheffield and Manchester, and entered the Indian Education Service in 1912. His appointments in India included the Chair of Chemistry at the Madhavlal Ranchodal Science Institute in Ahmedabad, and finally, from 1925 until his retirement in 1931, principal of the Royal Institute of Science (University of Bombay)."





43. **MILLER, Norman** (1889-1984). *A first course in differential equations*. (London): Oxford Univ. Press, 1935. ¶ 226 x 145 mm. 8vo. [vii], 148 pp. Figs., index. Navy cloth. Fine. SS2248 $ 15

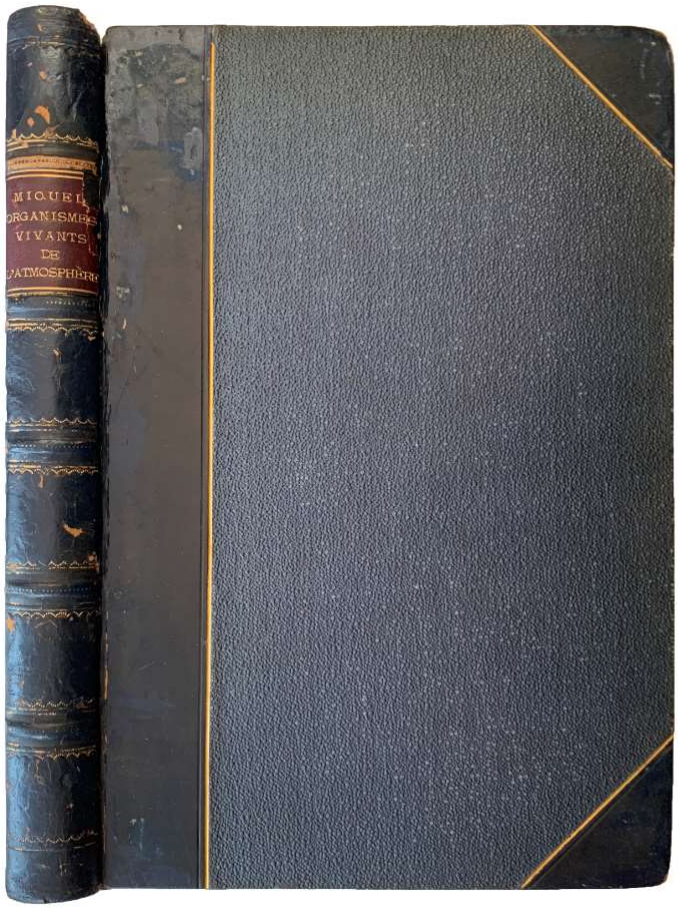


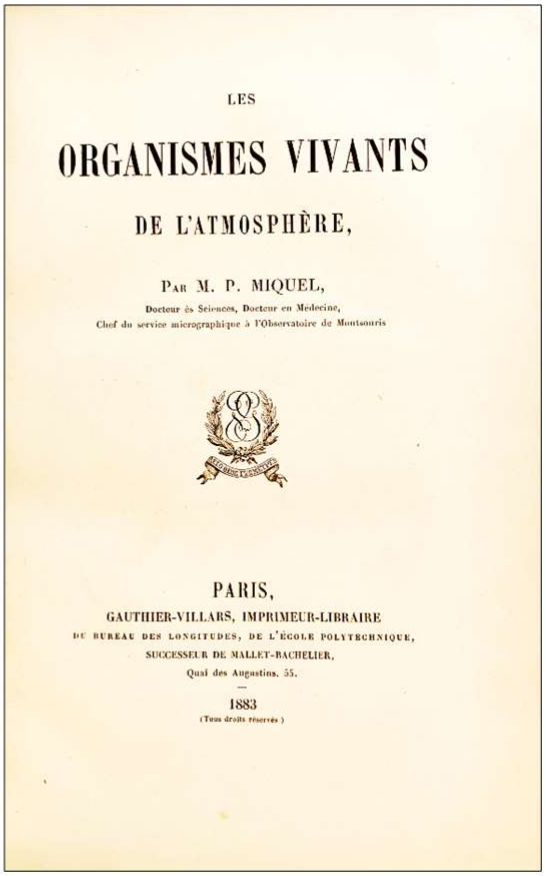


44. **MILLIKAN, Robert Andrews** (1868-1953). *The Electron; Its Isolation and Measurement and the Determination of Some of Its Properties*. Chicago: University of Chicago Press, (1917). ¶ 8vo. xii, 268 pp. 33 figures (including on plates), diagrams, tables, chart of the elements at Appendix H, appendices, indexes; rubber ink stamped on Contents page (p. xi). Gilt-stamped maroon cloth; edges gnawed, white tape residue on lower spine. Ex-library copy [Dominion Astronomical Observatory, Ottawa, Canada]. SS11751

$ 50

First Edition. "In 1909 Millikan measured the charge of the electron, a feat for which he won the 1923 Nobel Prize in physics." (Concise DSB). "As a scientist, Millikan made numerous momentous discoveries, chiefly in the fields of electricity, optics, and molecular physics. His earliest major success was the accurate determination of the charge carried by an electron, using the elegant “falling-drop method”; he also proved that this quantity was a constant for all electrons (1910), thus demonstrating the atomic structure of electricity." [Nobel Prize]. Physics





LES

ORGANISMES VIVANTS

DE L'ATMOSPHÈRE,

PAR M. P. MIQUEL,

Docteur ès Sciences, Docteur en Medecine,
Chef du service micrographique à l'Observatoire de Montsouris

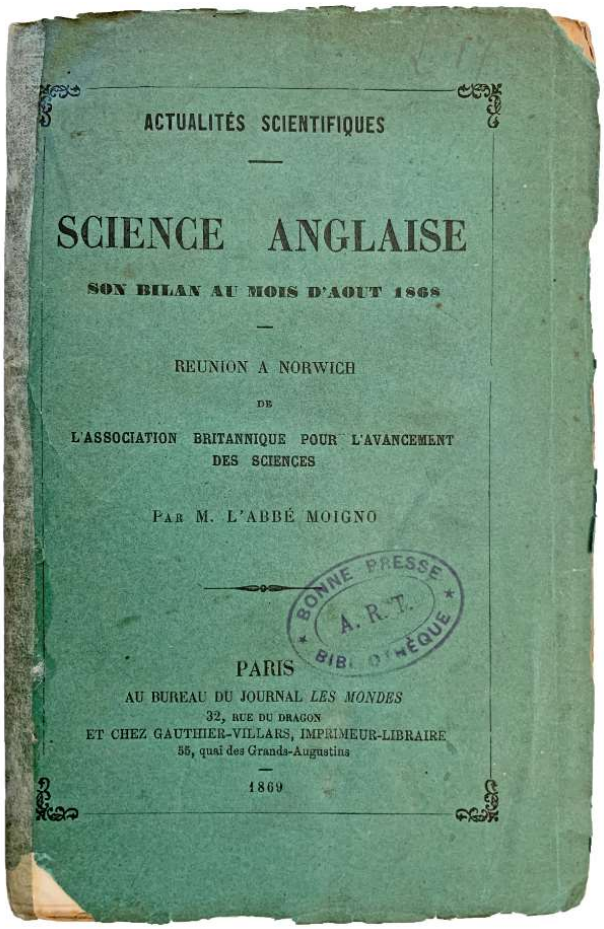
PARIS,
GAUTHIER-VILLARS, IMPRIMEUR-LIBRAIRE
DU BUREAU DES LONGITUDES, DE L'ÉCOLE POLYTECHNIQUE,
SUCCESSEUR DE MALLET-BACHELIER,
Quai des Augustins, 55.

1883
(Tous droits réservés)

45. **MIQUEL, Pierre** (1850-1922). *Les Organismes Vivants de L'Atmosphère*. Paris: Gauthier-Villars, 1883. ¶ 8vo. viii, 310 pp. 86 figures, 2 lithographic plates. Quarter blue calf, morocco boards, raised bands; corners showing. Bookplates of Institute of Chemistry of Great Britain and Ireland, and Metchnikoff Memorial Library. Very good. First edition. RARE. SS11753

$ 100

Miquel "made elaborate investigations on the bacteria of air, water, and soil, and became the authority on the subject." – Bulloch, *The History of Bacteriology*. p. 384.



ACTUALITÉS SCIENTIFIQUES

SCIENCE ANGLAISE

SON BILAN AU MOIS D'AOUT 1868

REUNION A NORWICH

DE

L'ASSOCIATION BRITANNIQUE POUR L'AVANCEMENT DES SCIENCES

PAR M. L'ABBÉ MOIGNO

PARIS

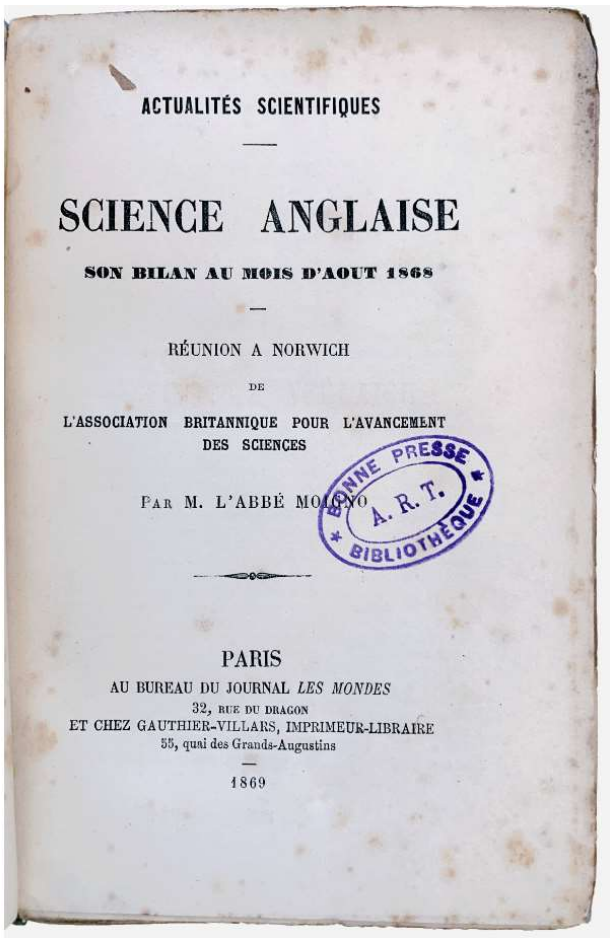
AU BUREAU DU JOURNAL *LES MONDES*

32, RUE DU DRAGON

ET CHEZ GAUTHIER-VILLARS, IMPRIMEUR-LIBRAIRE

55, quai des Grands-Augustins

1869



ACTUALITÉS SCIENTIFIQUES

SCIENCE ANGLAISE

SON BILAN AU MOIS D'AOUT 1868

RÉUNION A NORWICH

DE

L'ASSOCIATION BRITANNIQUE POUR L'AVANCEMENT DES SCIENCES

PAR M. L'ABBÉ MOIGNO

PARIS

AU BUREAU DU JOURNAL *LES MONDES*

32, RUE DU DRAGON

ET CHEZ GAUTHIER-VILLARS, IMPRIMEUR-LIBRAIRE

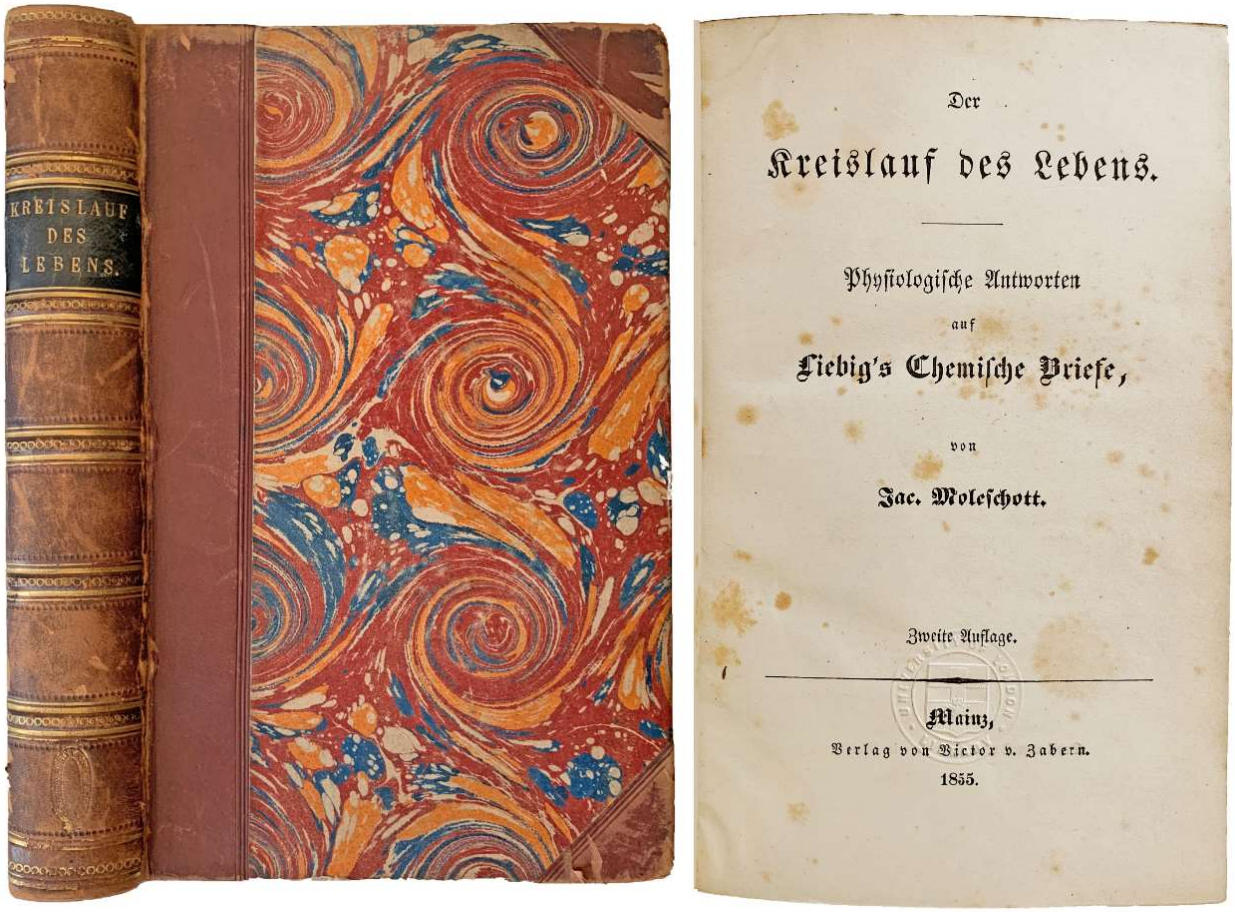
55, quai des Grands-Augustins

1869

46. **MOIGNO, Francois-Napoleon-Marie** (1804-1884) [editor]. *Science Anglaise son Bilan au Mois d'Aout 1868. Reunion a Norwich de l'Association Britannique pour l'Avancement des Sciences*. Paris: Chez Gauthier-Villars, 1869. ¶ *Bureau du Journal Les Mondes*. 8vo. [4], xii, 236 pp. Foxing throughout, many pages unopened. Original green printed wrappers; spine replaced with kozo paper. Rubber stamps on upper cover, half-title, and title-page. RARE. Very good. SS11185

$ 17

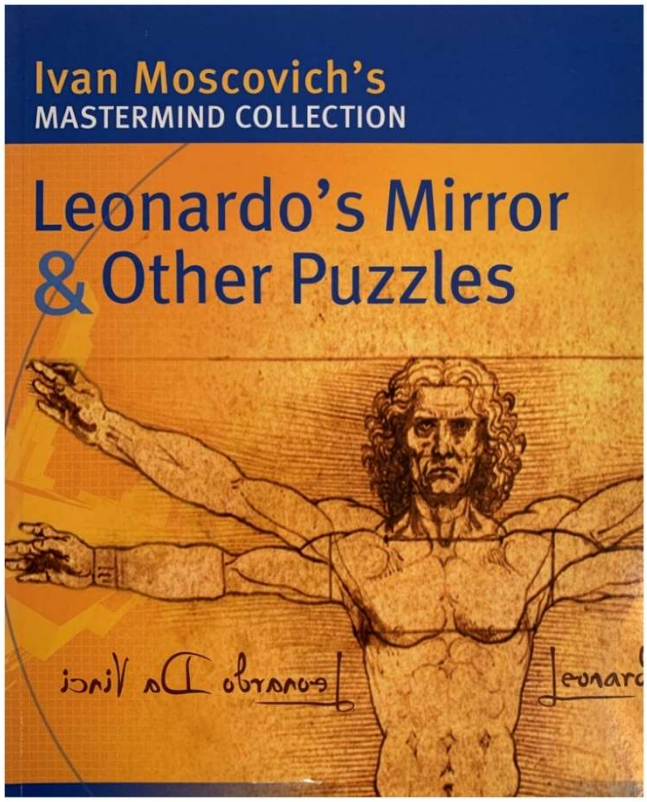
With contributions by Hooker, Tyndall, Frankland, Godwin-Austin, Berkeley, Huxley, Odling, etc. Moigno, known as Abbe Moigno (1804-1884) was a French Jesuit physicist and author who considered himself a student of Cauchy.



47. **MOLESCHOTT, Jacob der Kreislauf** (1822-1893). *Der Kreislauf des Lebens. Physiologische Antworten auf Liebig's Chemische Briefe*. Mainz: Victor v. Sabern, 1855. ¶ Second edition. 8vo. vi, 507, [1] pp. Endleaves foxed, else text clean. Half leather over marbled paper-backed boards, gilt-stamped spine; extremities rubbed. Rubber stamp. Very good. SS11188

$ 25

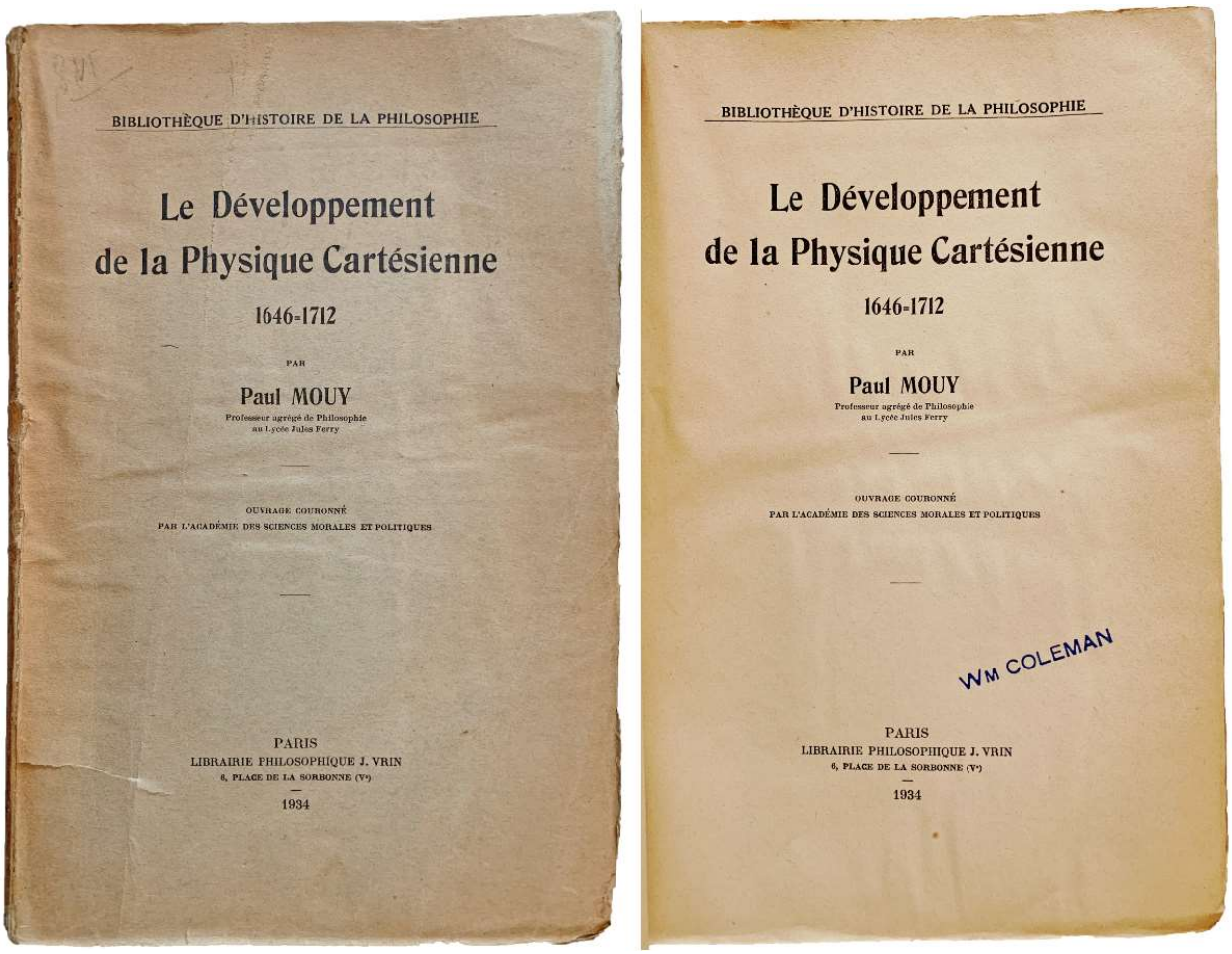
"Jacob Moleschott . . ., physiologist and philosopher noted for his belief in the material basis of emotion and thought. His most important work, *Kreislauf des Lebens* (1852; "*The Circuit of Life*"), added considerable impetus to 19th-century materialism by demanding "scientific answers to scientific questions." [Britannica].



48. **MOSCOVICH, Ivan** (1926-). *Leonardo's Mirror & Other Puzzles*. Ivan Moscovich's Mastermind Collection. New York: Sterling, (2004). ¶ 4to. 128 pp. Illus., diags. Printed wrappers. Fine. [BH] SS11775

$ 5

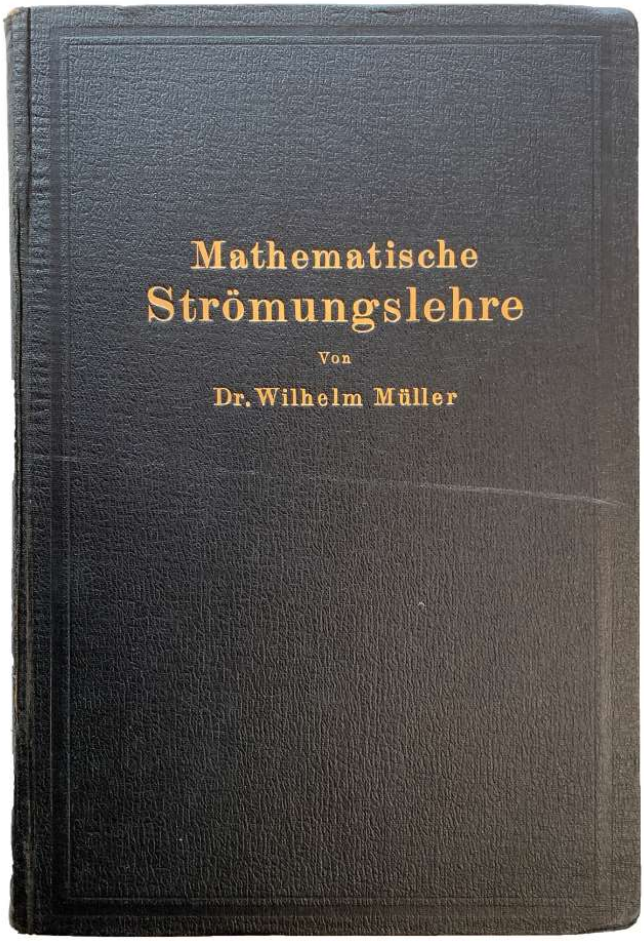
Ivan Moscovich is a designer and commercial developer of puzzles, games, toys, and educational aids.

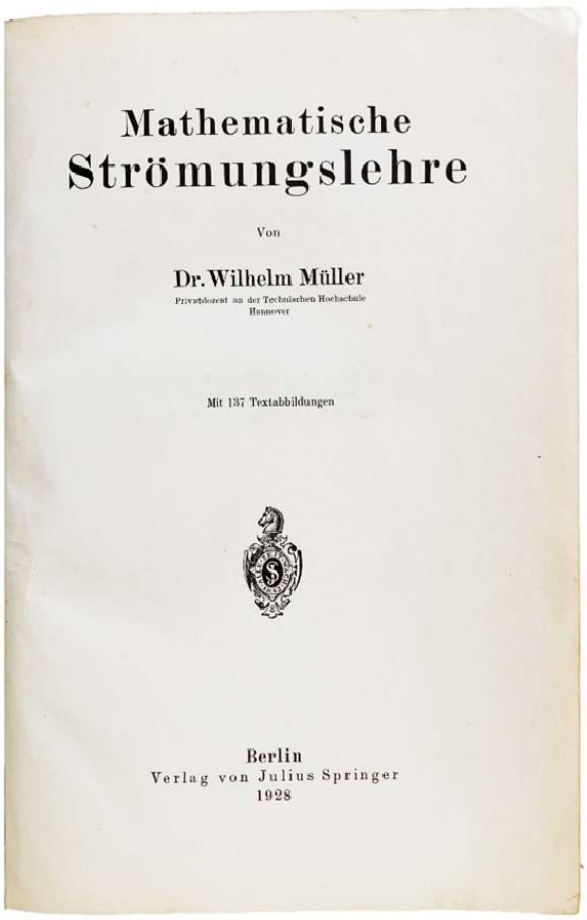


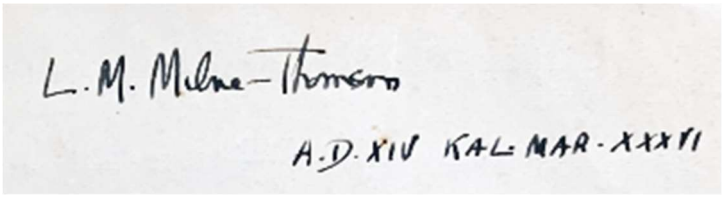
49. **MOUY, Paul** (1888-1946). *Le développement da la physique Cartésienne 1646-1712*. Paris: Librairie Philosophique J. Vrin, 1934. ¶ Series: *Bibliothèque d'Histoire de la Philosophie*. 8vo. 343 pp. Original printed wrappers; some wrinkling to text block. Ownership signature on half-title, ink stamp on title-page (William Coleman). Very good. RARE. SS10886

$ 40

Paul Mouy (1888-1946), French philosopher, long worked on the Cartesian revolution. He criticized Descartes severely, stressing the lack, according to him, of a mathematical rigor. According to him, Cartesian physics developed in the Principles of Philosophy was a mathematical physics without mathematics. For all that, Descartes and Kant remain scientific philosophers, beyond the Christian religious thought of the time.



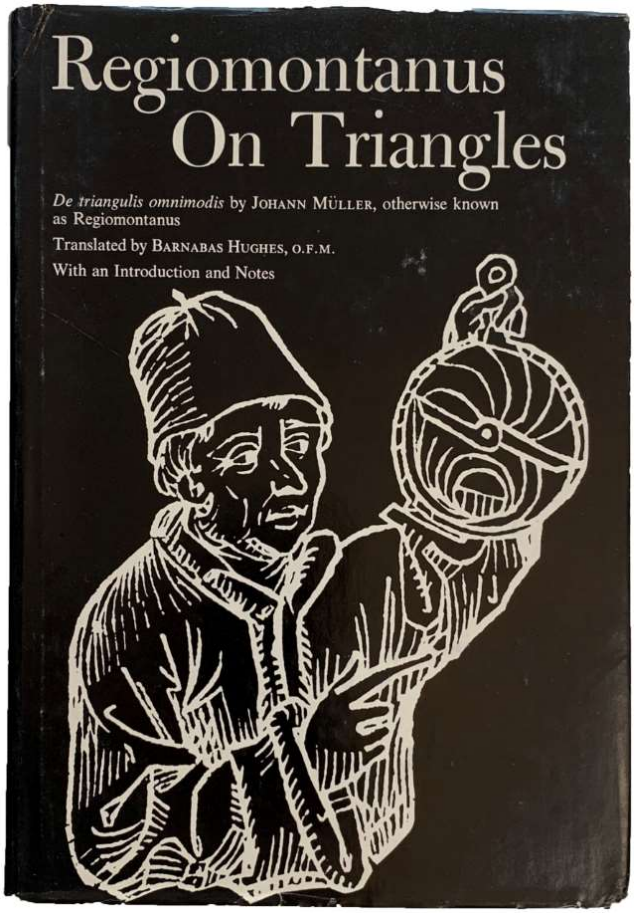


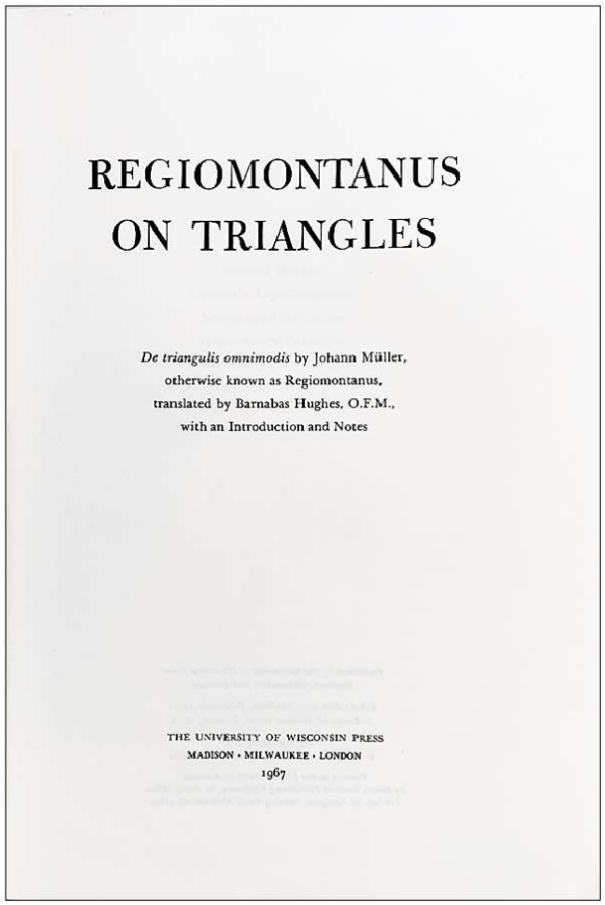


L. M. MILNE-THOMSON'S copy with his annotations

50. **MULLER, Wilhelm**. *Mathematische Stromungslehre*. Berlin: Julius Springer, 1928. ¶ 8vo. IX, 239 pp. 137 figs. Pencil marginalia p. 3; ink marginalia p. 30, 52 (by MILNE-THOMSON). Original black gilt-stamped cloth; some minor wear to extremities. Very good. L.M. MILNE-THOMSON'S copy with his annotations (pencil or ink), most on blank page facing foreword. Louis Melville Milne-Thomson (1891-1974) was a well-known English mathematician. [HL] SS11777

$ 95

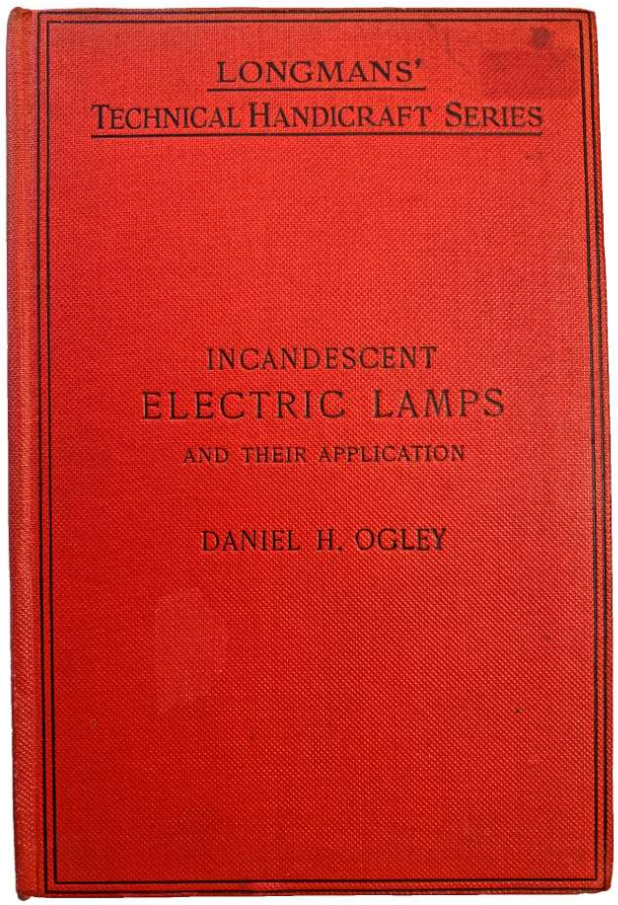


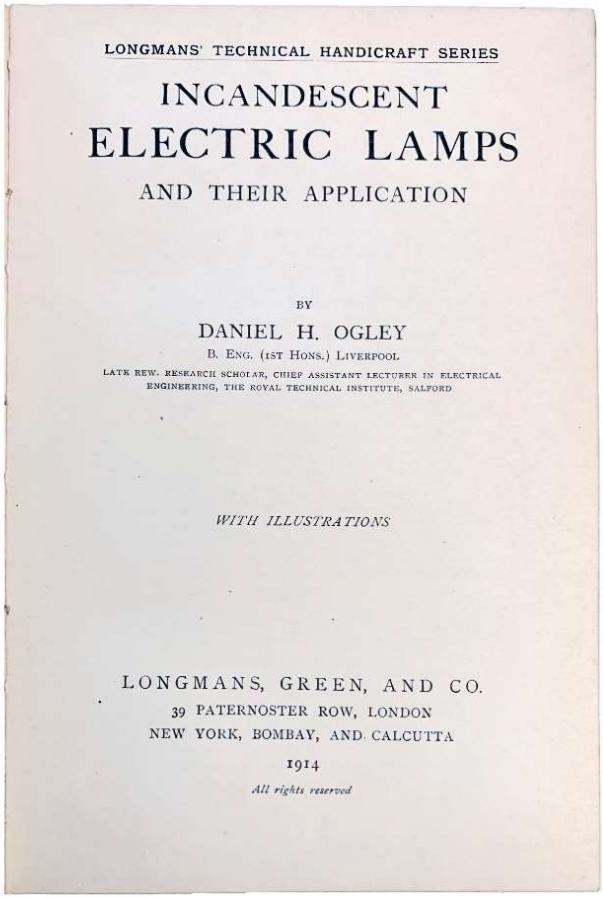


51. **MULLER, Johann** [alias **REGIOMONTANUS**]. *Regiomontanus on Triangles: De Triangulis Omnimodis by Johann Muller, Otherwise Known as Regiomontanus. Translated [from the Latin] by Barnabas Hughes, with an introduction and notes*. Madison, WI: University of Wisconsin Press, 1967 ¶ 8vo. vii, 298 pp. Frontispiece, bibliography, index. Gray-green cloth, gilt-stamped spine, dust-jacket; jacket extremities rubbed, top edge lightly stained/soiled. Very good. SS12010

$ 50

English translation opposite facsimile original publication.

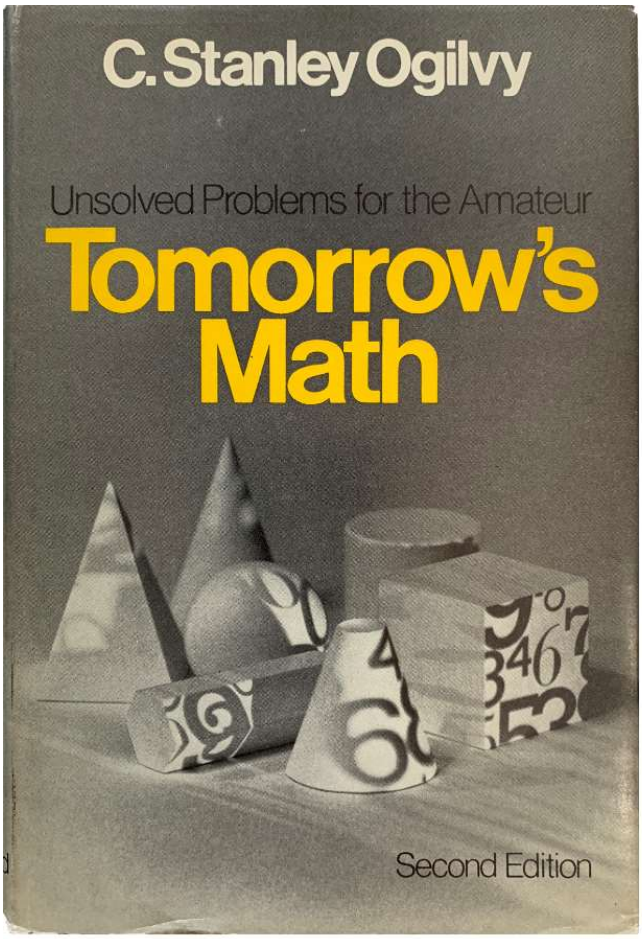


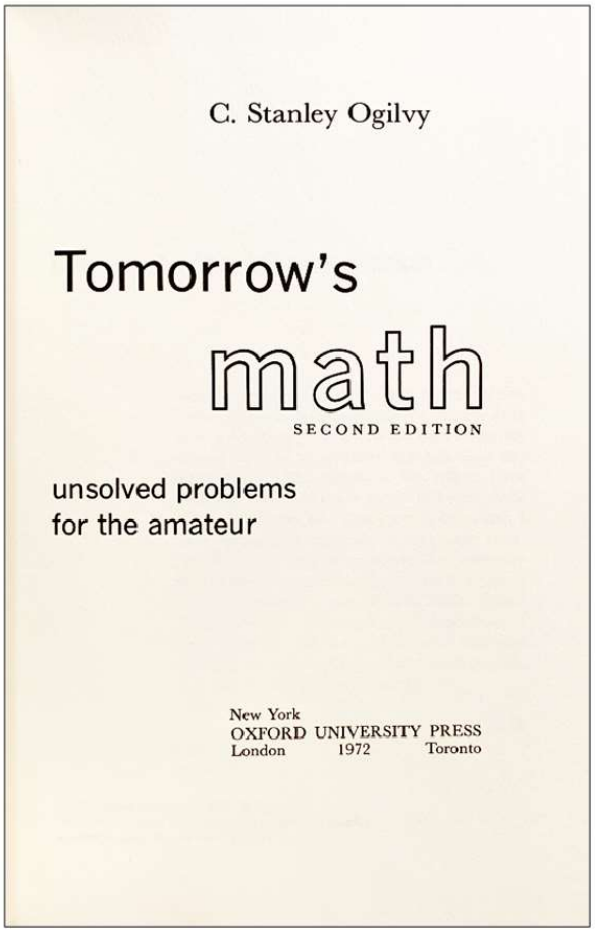


52. **OGLEY, Daniel H**. *Incandescent Electric Lamps and their applications*. London: Longmans, Green & Co., 1914. ¶ Small 8vo. x, [2], 107, [1] pp. 59 figures or illustrations, index. Original red cloth, black-stamped. Presentation for a student prize for L.A. Cronk, signed by Sir David Milne-Watson, May 1914, for The gas Light & Coke Company. Nice copy. M13599

$ 55

PROVENANCE: With the signature of Sir David Milne-Watson, 1st Baronet (1869–1945). He was Governor and Managing Director of the Gas Lighting & Coke Company and Vice-President of the Federation of British Industries. The third Baronet was Managing Director of the Gas Lighting & Coke Company and Deputy Chairman of the British Steel Corporation.

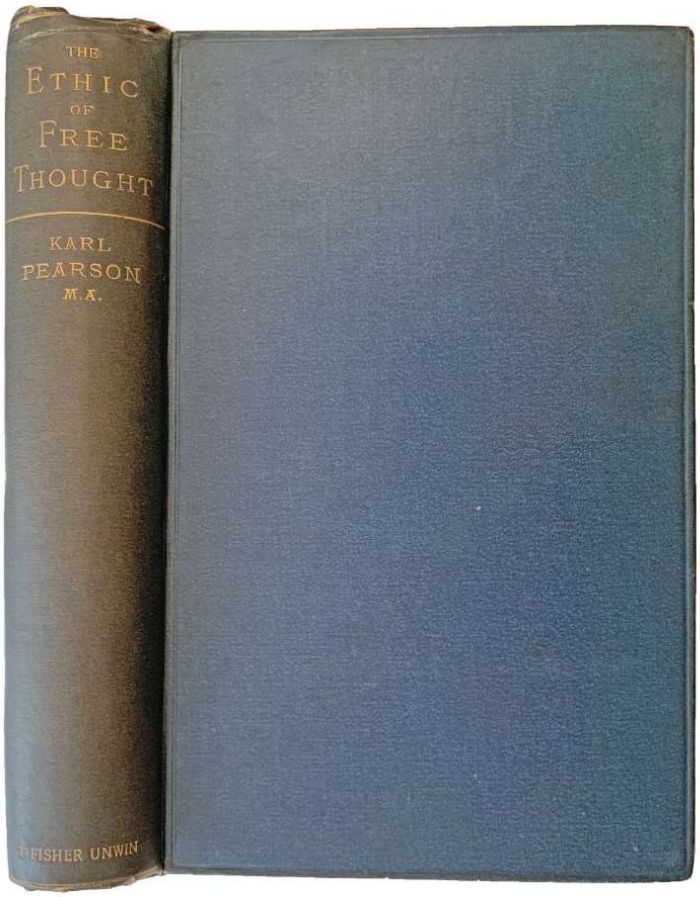


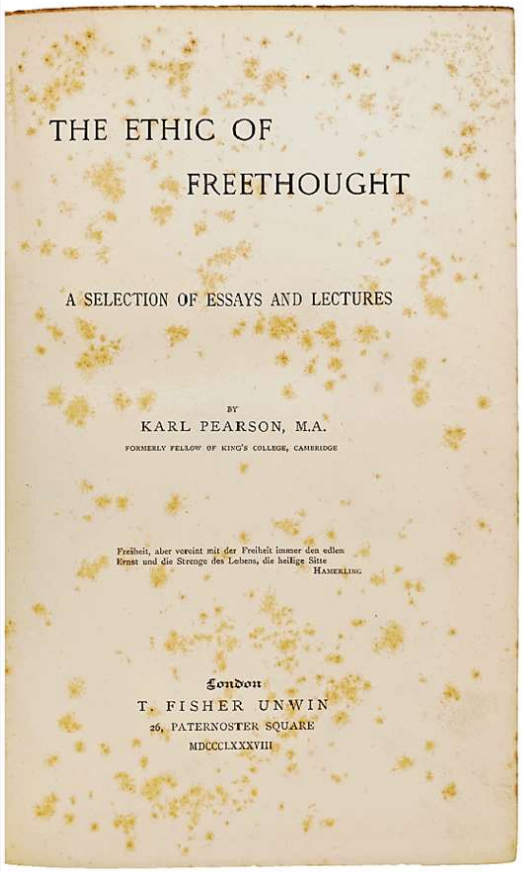


53. **OGILVY, C. Stanley** (1913-2000). *Tomorrow's Math; unsolved problems for the amateur. Second edition*. New York: Oxford University Press, 1972. ¶ Small 8vo. 198 pp. Figs., index. Black gilt-stamped cloth, dust-jacket; jacket torn at upper spine. Very good. [BH] SS11795

$ 8

CONTENTS: 1. The meaning of an unsolved problem – 2. Applied problems – 3. Problems Concerning Gaming – 4. Geometrical problems – 5. Arithmetical problems – 6. Topological problems – 7. Probability and combinatorial problems – 8. Problems of infinite sets – 9. Variational problems – 10. Problems of analysis.

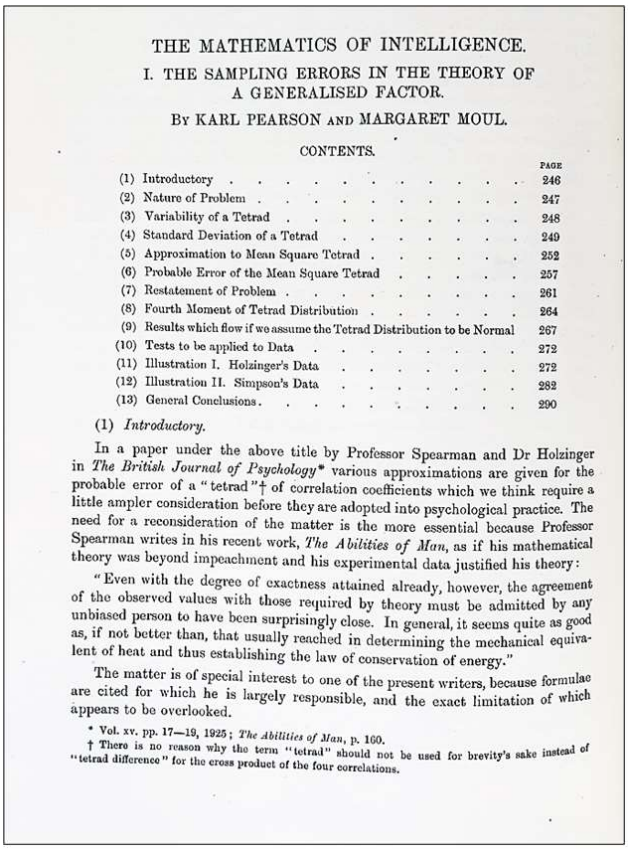




54. **PEARSON, Karl** (1857-1936). *The Ethic of Freethought; a selection of essays and lectures.* London: T. Fisher Unwin, 1888. ¶ 8vo. 446, [ads] 32 pp. Foxed. Blind-stamped blue cloth, gilt spine; rubbed. Very good. SS6376

$ 300

FIRST EDITION. "During 1880-1881 Pearson found diversion from his legal studies in lecturing on Martin Luther at Hampstead, and on socialism, Marx, and Lassalle at workingmen's clubs in Soho. In 1882-1884 he gave a number of courses of lectures around London on German social life and thought from the earliest times up to the sixteenth century, and on Luther's influence on the material and intellectual welfare of Germany. In addition he published in the Academy, Athenaeum, and elsewhere a substantial number of letters, articles, and reviews relating to Luther. Many of these were later republished, together with other lectures delivered between 1885-1887, in his *The Ethic of Freethought* (1888)." *DSB. DSB*, X, pp. 447-473.



THE MATHEMATICS OF INTELLIGENCE.

I. THE SAMPLING ERRORS IN THE THEORY OF A GENERALISED FACTOR.

By KARL PEARSON and MARGARET MOUL.

CONTENTS.

(1) *Introductory.*

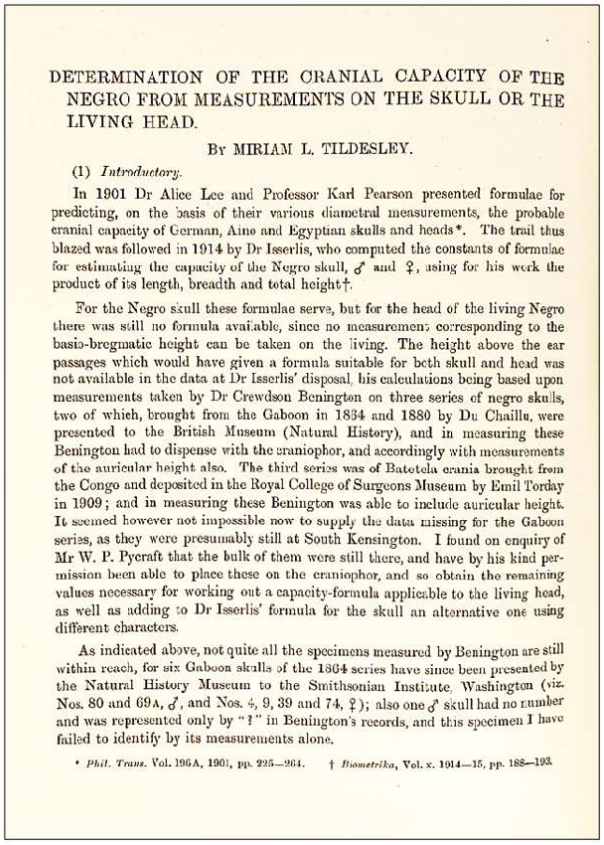
In a paper under the above title by Professor Spearman and Dr Holzinger in *The British Journal of Psychology** various approximations are given for the probable error of a "tetrad"† of correlation coefficients which we think require a little ampler consideration before they are adopted into psychological practice. The need for a reconsideration of the matter is the more essential because Professor Spearman writes in his recent work, *The Abilities of Man*, as if his mathematical theory was beyond impeachment and his experimental data justified his theory:

"Even with the degree of exactness attained already, however, the agreement of the observed values with those required by theory must be admitted by any unbiased person to have been surprisingly close. In general, it seems quite as good as, if not better than, that usually reached in determining the mechanical equivalent of heat and thus establishing the law of conservation of energy."

The matter is of special interest to one of the present writers, because formulae are cited for which he is largely responsible, and the exact limitation of which appears to be overlooked.

* Vol. xv. pp. 17—19, 1925; *The Abilities of Man*, p. 160.

† There is no reason why the term "tetrad" should not be used for brevity's sake instead of "tetrad difference" for the cross product of the four correlations.



DETERMINATION OF THE CRANIAL CAPACITY OF THE NEGRO FROM MEASUREMENTS ON THE SKULL OR THE LIVING HEAD.

By MIRIAM L. TILDESLEY.

(1) *Introductory.*

In 1901 Dr Alice Lee and Professor Karl Pearson presented formulae for predicting, on the basis of their various diametral measurements, the probable cranial capacity of German, Aino and Egyptian skulls and heads*. The trail thus blazed was followed in 1914 by Dr Isserlis, who computed the constants of formulae for estimating the capacity of the Negro skull, ♂ and ♀, using for his work the product of its length, breadth and total height†.

For the Negro skull these formulae serve, but for the head of the living Negro there was still no formula available, since no measurement corresponding to the basio-bregmatic height can be taken on the living. The height above the ear passages which would have given a formula suitable for both skull and head was not available in the data at Dr Isserlis' disposal, his calculations being based upon measurements taken by Dr Crewdson Benington on three series of negro skulls, two of which, brought from the Gaboon in 1854 and 1880 by Du Chaillu, were presented to the British Museum (Natural History), and in measuring these Benington had to dispense with the craniophor, and accordingly with measurements of the auricular height also. The third series was of Batetela crania brought from the Congo and deposited in the Royal College of Surgeons Museum by Emil Torday in 1909; and in measuring these Benington was able to include auricular height. It seemed however not impossible now to supply the data missing for the Gaboon series, as they were presumably still at South Kensington. I found on enquiry of Mr W. P. Pycraft that the bulk of them were still there, and have by his kind permission been able to place these on the craniophor, and so obtain the remaining values necessary for working out a capacity-formula applicable to the living head, as well as adding to Dr Isserlis' formula for the skull an alternative one using different characters.

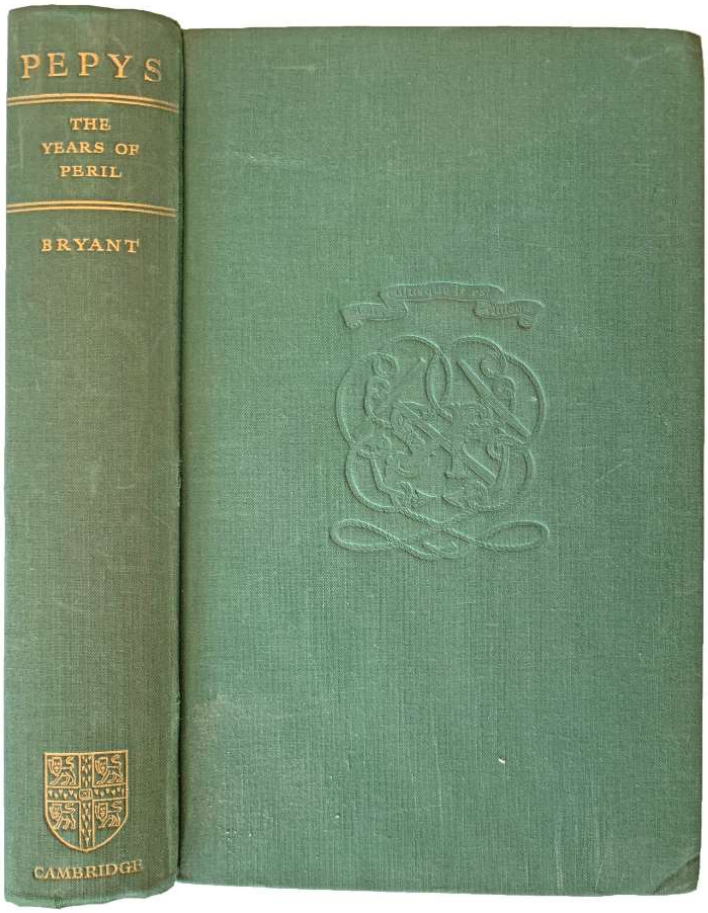
As indicated above, not quite all the specimens measured by Benington are still within reach, for six Gaboon skulls of the 1864 series have since been presented by the Natural History Museum to the Smithsonian Institute, Washington (viz. Nos. 80 and 69A, ♂, and Nos. 4, 9, 39 and 74, ♀); also one ♂ skull had no number and was represented only by "?" in Benington's records, and this specimen I have failed to identify by its measurements alone.

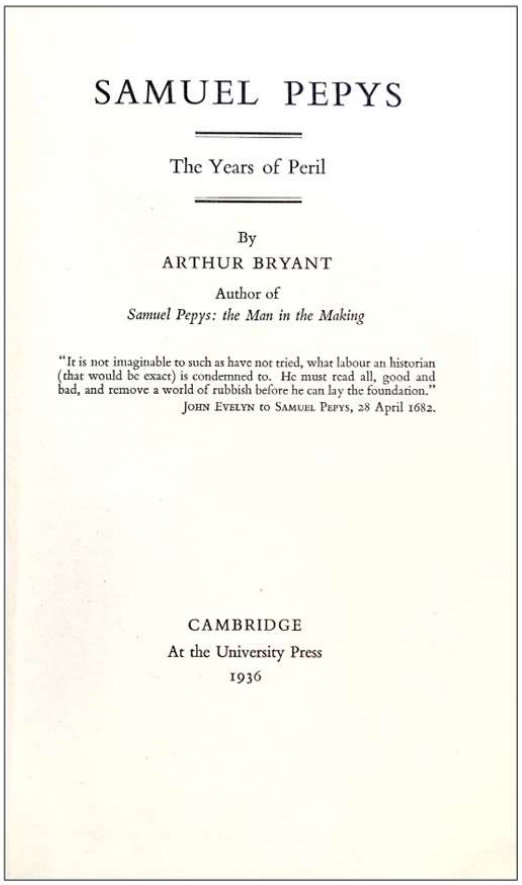
* *Phil. Trans.* Vol. 196A, 1901, pp. 225—264. † *Biometrika*, Vol. x. 1914—15, pp. 188—193.

55. **PEARSON, Karl** (1857-1936) & **Margaret MOUL**. *"The mathematics of intelligence. I. The sampling errors in the theory of a generalised factor."* In: *Biometrika*, Vol. XIX, Parts I and II, July, 1927. ¶ Large 8vo. Pages (246)-291. [Entire volume: v, 442 pp.] 2 diagrams, tables; a few pages (in contents pages) expertly repaired. Later black buckram, gilt spine. Ex library copy, paper spine label removed. Very good. SS6149

$ 200

FIRST EDITION. This volume includes a number of papers by Karl Pearson, most notably a piece on "The mathematics of intelligence," which is an attack on Charles Spearman. See: *DSB*, X, pp. 447-473; Stigler, *The History of statistics*.





SAMUEL PEPYS

The Years of Peril

By
ARTHUR BRYANT
Author of
Samuel Pepys: the Man in the Making

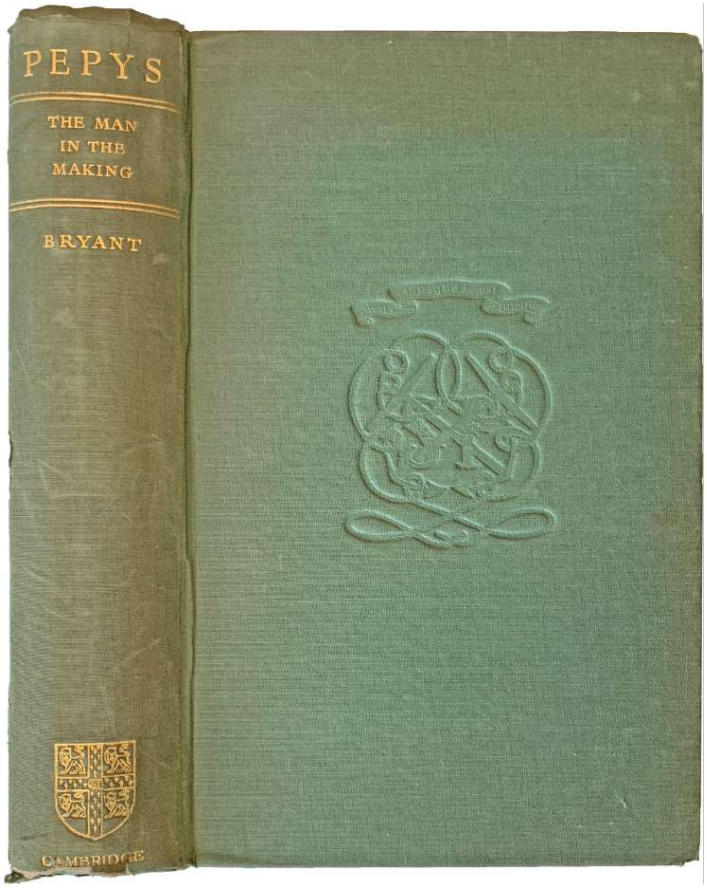
"It is not imaginable to such as have not tried, what labour an historian (that would be exact) is condemned to. He must read all, good and bad, and remove a world of rubbish before he can lay the foundation."
JOHN EVELYN to SAMUEL PEPYS, 28 April 1682.

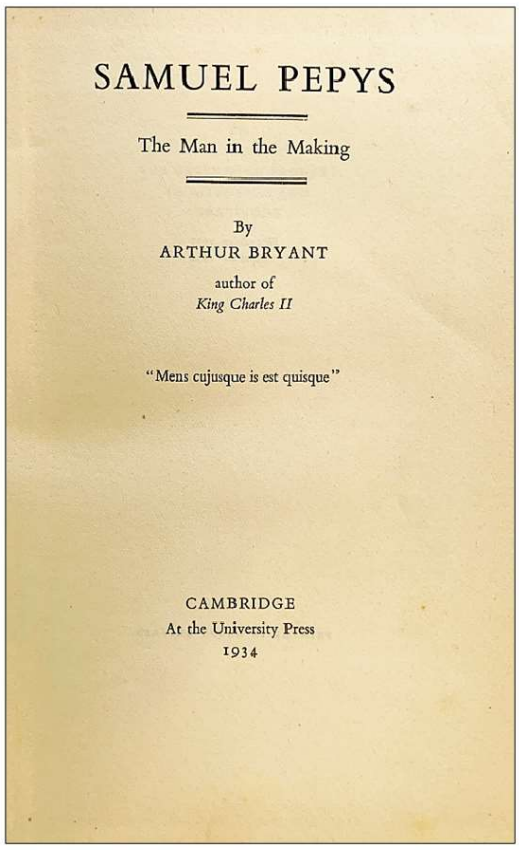
CAMBRIDGE
At the University Press
1936

56. [**PEPYS, Samuel** (1633-1703)**] Sir Arthur BRYANT** (1899-1985). *Samuel Pepys, the Years of Peril.* Cambridge: University Press, 1936. ¶ 8vo. xv, 466 pp. Plates, index. Green gilt-stamped cloth. Very good. SS12018

$ 3.95

First issued in 1935. Life of Samuel Pepys in three volumes: *The Man in the Making, The Years of Peril, The Saviour of the Navy* (1933).

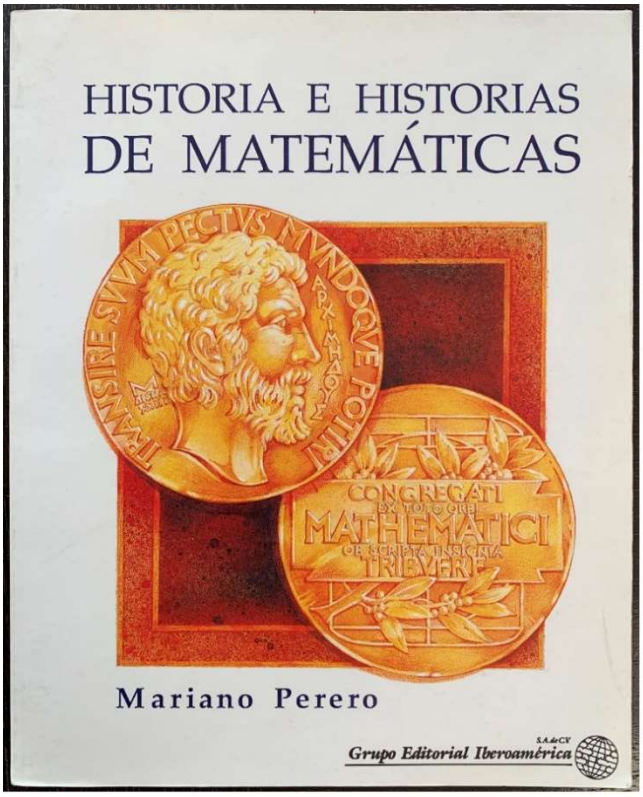


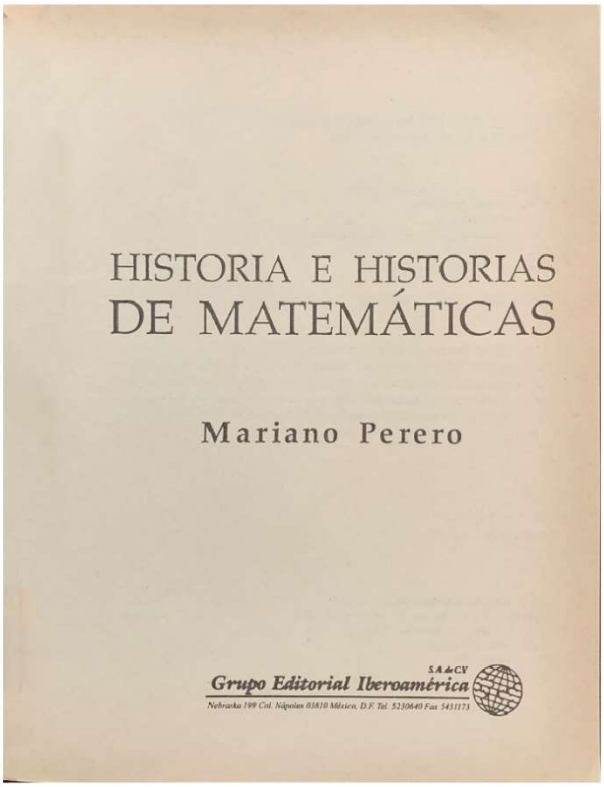


57. [**PEPYS, Samuel** (1633-1703)] **Sir Arthur BRYANT** (1899-1985). *Samuel Pepys, the Man in the Making*. Cambridge: University Press, 1934. ¶ 8vo. xiv, 436 pp. Plates, index. Green gilt-stamped cloth; spine end frayed. Bookplate. Good. SS12019

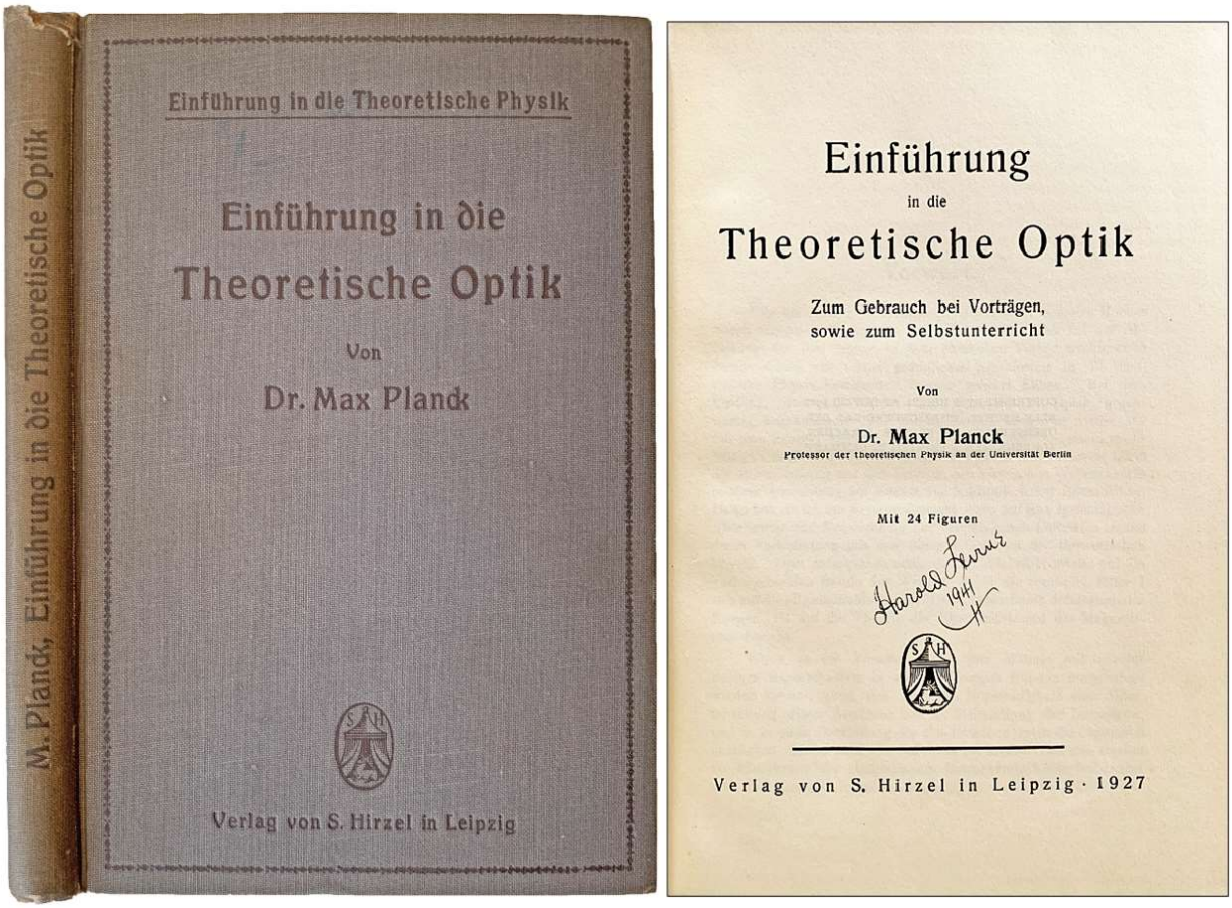
$ 4

First issued in 1933. Life of Samuel Pepys in three volumes: *The Man in the Making, The Years of Peril, The Saviour of the Navy* (1933).

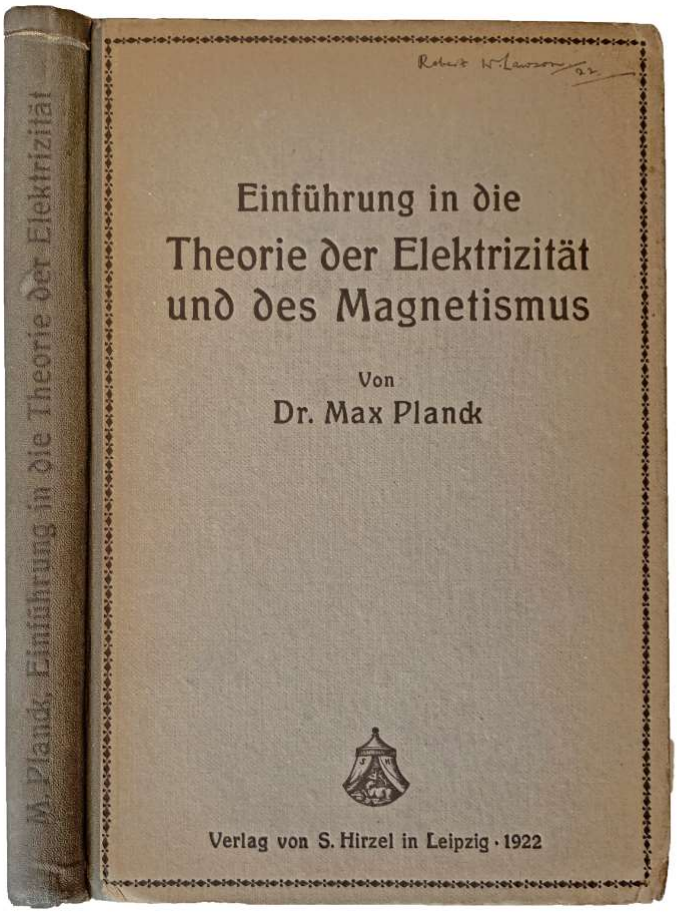


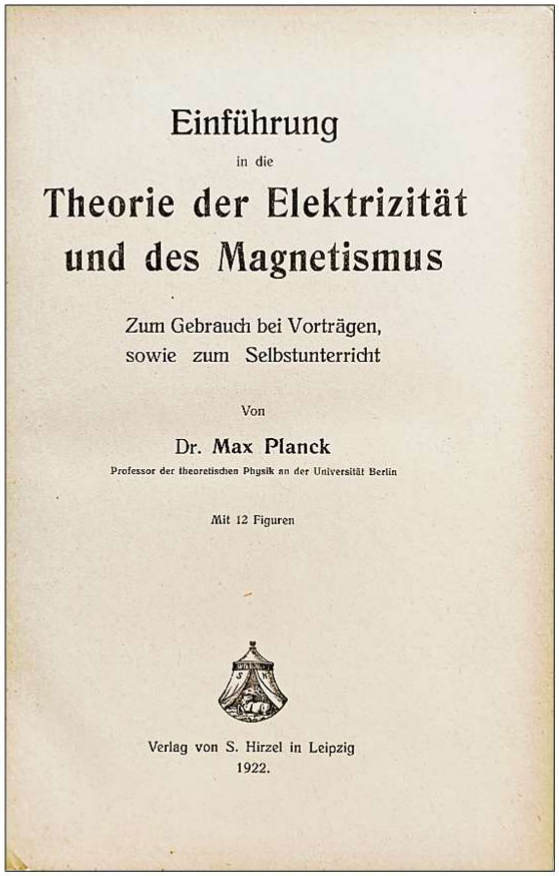


58. **PERERO, Mariano**. *Historia e Historias de Matematicas*. Mexico City: Grupo Editorial Iberoamerica, 1994. ¶ 8vo. [viii], 193 pp. Illus. figs., index. Printed wrappers. Ink inscription ffep. Very good +. Rare. ISBN: 970625522 [BH] SS11804 $ 15



59. **PLANCK, Max** (1858-1947). *Einfuhrung in die Theoretische Optik; Zum Gebrauch bei Vortragen, sowie zum Selbstunterricht*. Leipzig: S. Hirzel, 1927. ¶ Series: *Einfuhrung in die Theoretische Physik,* IV. 8vo. VI, 184 pp. Index. Original grey brown-stamped cloth; spine head heavily worn. Ink title-page ownership signature of Harold Levine (c.1922-2017), 1939. PROVENANCE: Levine was Professor Emeritus of Mathematics of Stanford University. Good (internally very good). [HL] SS11811 $ 20

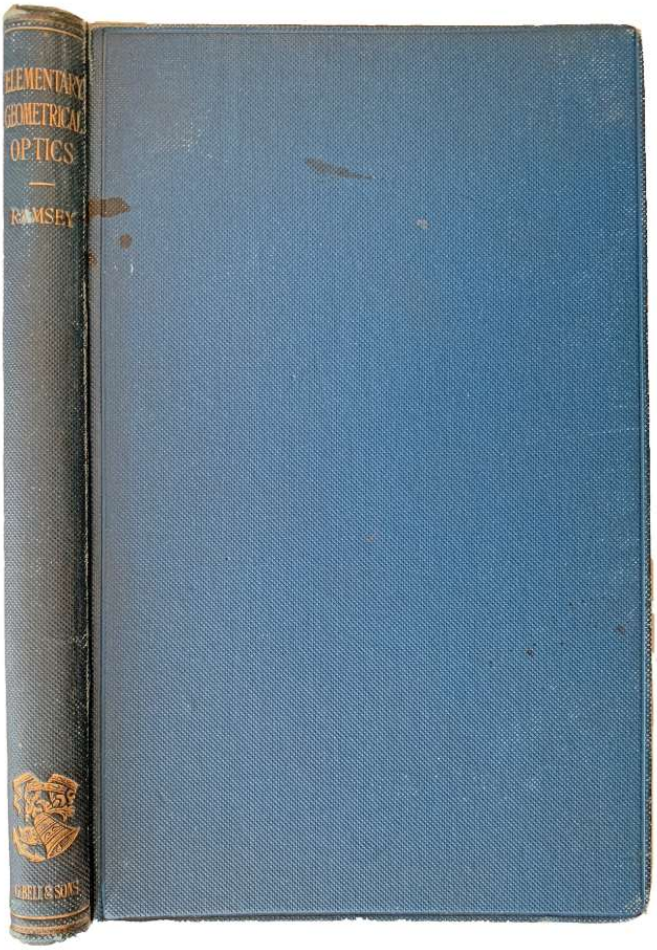


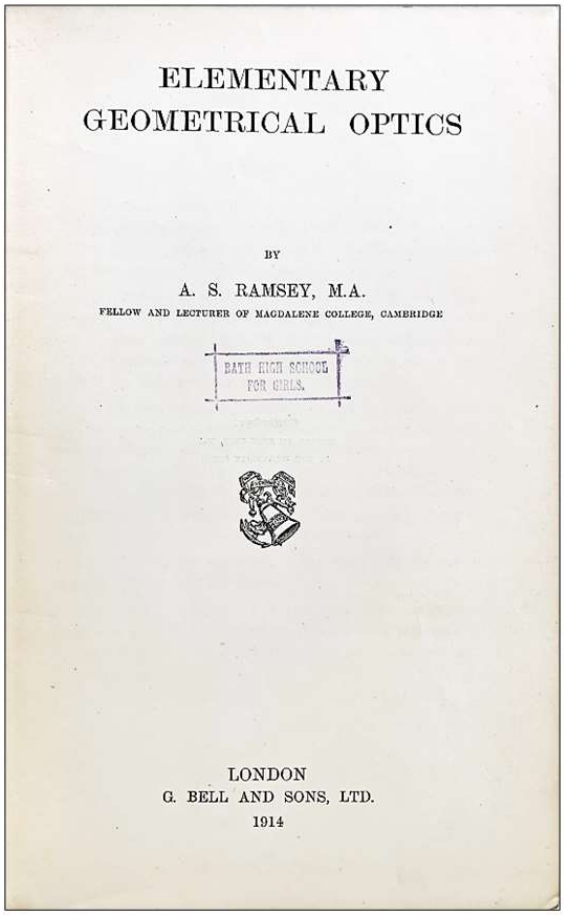


60. **PLANCK, Max** (1858-1947). *Einfuhrung in die Theorie der Elektrizitat und des Magnetismus; Zum Gebrauch bei Vortragen, sowie zum Selbstunterricht*. Leipzig: S. Hirzel, 1922. ¶ 8vo. IV, 208 pp. 12 figs., index; paper browned. Grey cloth-backed printed boards. Ownership signature of Robert W. Lawson (1922). Good. [HL] SS11812

$ 20

PROVENANCE: Lawson wrote about Einstein and relativity. He translated into English Einstein's, Relativity, the special and general theory, 1920. – Harold Levine (c.1922-2017), Professor Emeritus of Mathematics of Stanford University. [HL]




ELEMENTARY
GEOMETRICAL OPTICS

BY

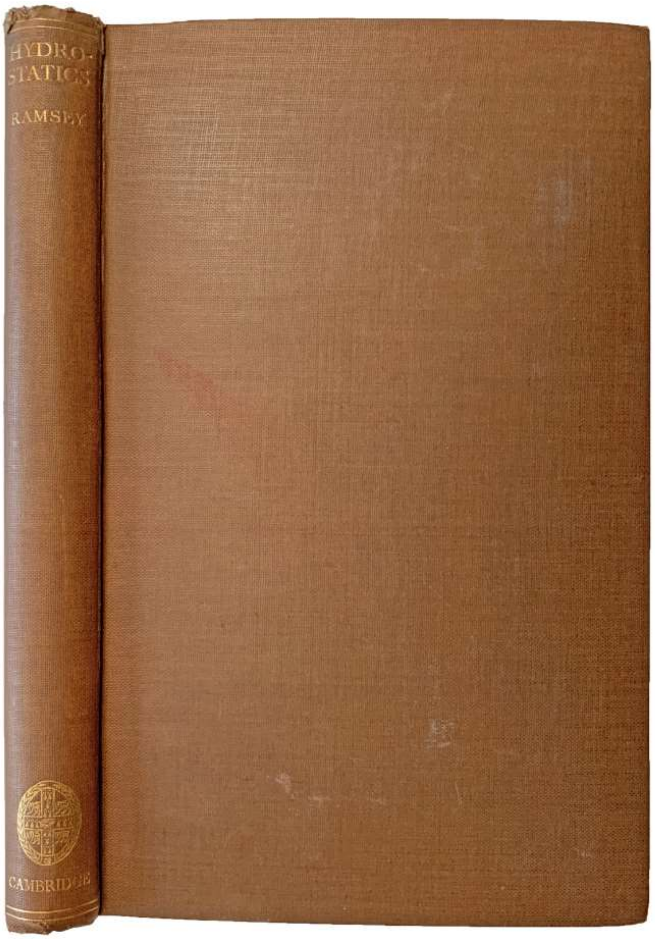
A. S. RAMSEY, M.A.
FELLOW AND LECTURER OF MAGDALENE COLLEGE, CAMBRIDGE

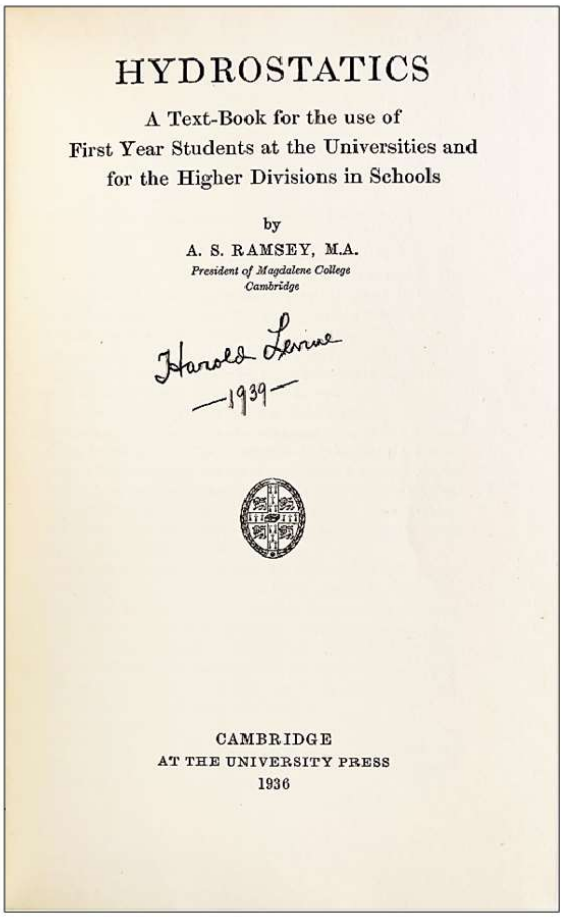
LONDON
G. BELL AND SONS, LTD.
1914

61. **RAMSEY, Arthur Stanley** (1867-1954). *Elementary Geometrical Optics*. London: G. Bell and Sons, 1914. ¶ 8vo. xi, 173, [ads 2] pp. 131 figs. Blue blind and gilt-stamped cloth; some black cover stains, rubbed. Ffep trimmed (severely – a fragment), heavy offsetting to half-title. Rubber stamps to half-title and title of the Bath High School for Girls. Ownership signature. Very good. [HL] SS11820

$ 15

PROVENANCE: Harold Levine (c.1922-2017), Professor Emeritus of Mathematics of Stanford University.




HYDROSTATICS

A Text-Book for the use of
First Year Students at the Universities and
for the Higher Divisions in Schools

by

A. S. RAMSEY, M.A.
President of Magdalene College
Cambridge

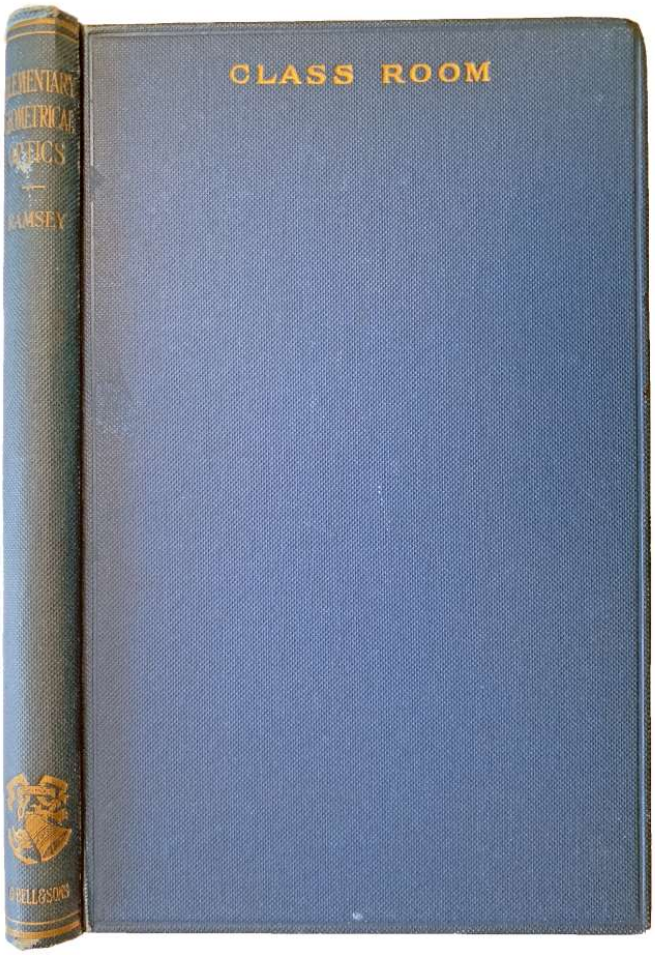
Harold Levine
—1939—

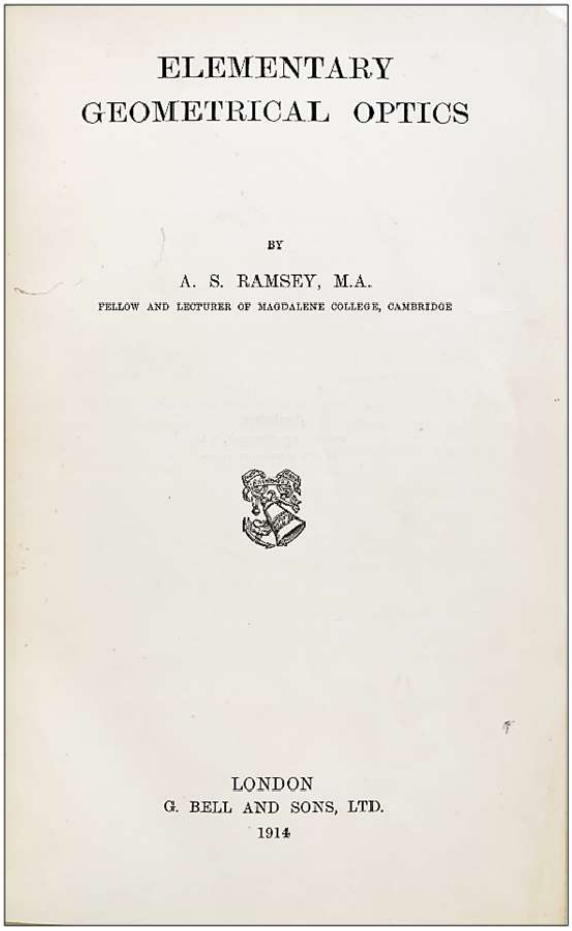
CAMBRIDGE
AT THE UNIVERSITY PRESS
1936

62. **RAMSEY, Arthur Stanley** (1867-1954). *Hydrostatics. A text-book for the use of First Year Students at the Universities and for Higher Divisions in Schools*. Cambridge: University Press, 1936. ¶ 8vo. viii, 169 pp. Figs. Original brown gilt-stamped cloth; spine head frayed. Ink title-page ownership signature of Harold Levine, 1939. Generally very good. [HL] SS11821

$ 10

PROVENANCE: Harold Levine (c.1922-2017), Professor Emeritus of Mathematics of Stanford University.




ELEMENTARY
GEOMETRICAL OPTICS

BY

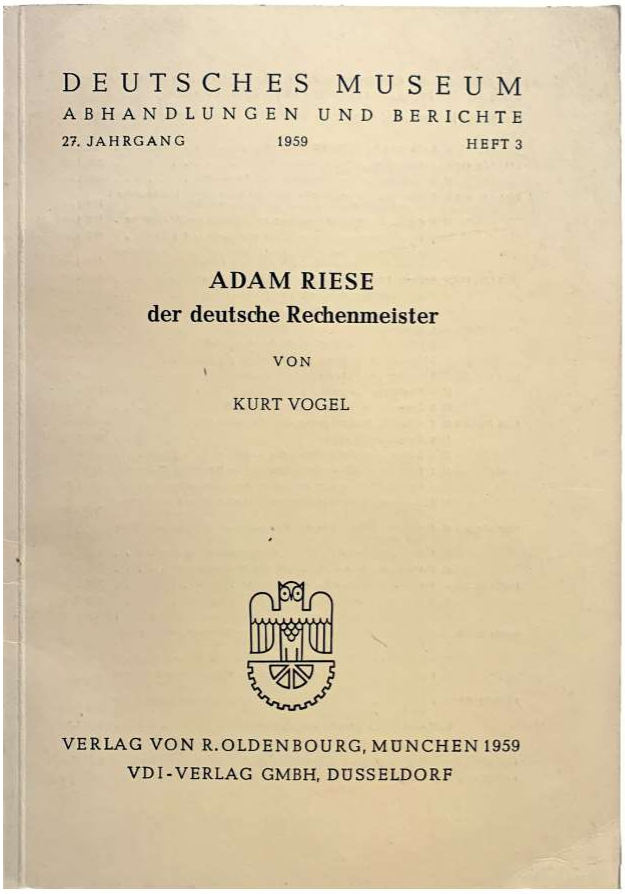
A. S. RAMSEY, M.A.
FELLOW AND LECTURER OF MAGDALENE COLLEGE, CAMBRIDGE

LONDON
G. BELL AND SONS, LTD.
1914

63. **RAMSEY, Arthur Stanley** (1867-1954). *Elementary Geometrical Optics*. London: G. Bell and Sons, 1914. ¶ 8vo. xi, 173, [ads 2] pp. 131 figs. Blue blind and gilt-stamped cloth (with "Class Room" stamped in gilt on upper cover). Very good. [HL] SS11825

$ 20

PROVENANCE: Harold Levine (c.1922-2017), Professor Emeritus of Mathematics of Stanford University.

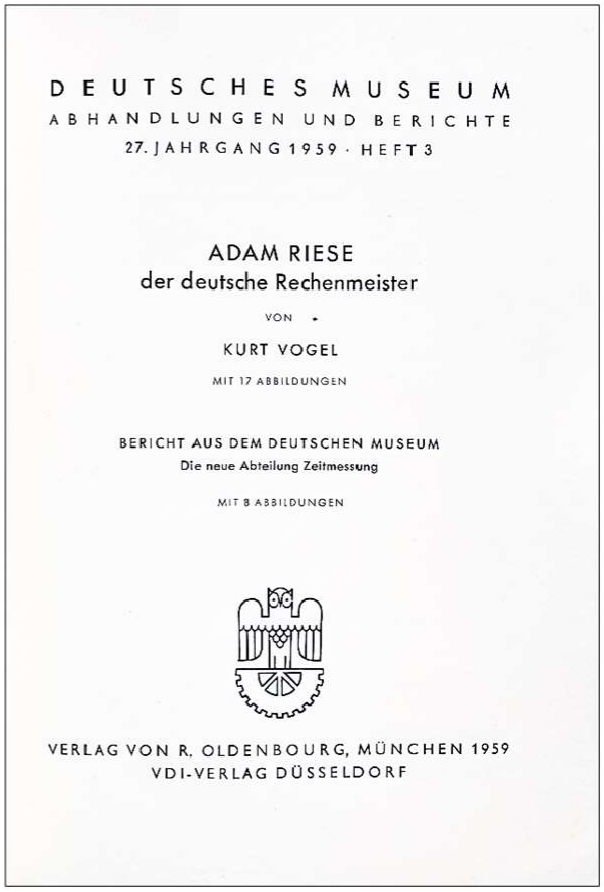

DEUTSCHES MUSEUM
ABHANDLUNGEN UND BERICHTE
27. JAHRGANG 1959 HEFT 3

ADAM RIESE
der deutsche Rechenmeister

VON

KURT VOGEL

VERLAG VON R. OLDENBOURG, MUNCHEN 1959
VDI-VERLAG GMBH, DUSSELDORF


DEUTSCHES MUSEUM
ABHANDLUNGEN UND BERICHTE
27. JAHRGANG 1959 · HEFT 3

ADAM RIESE
der deutsche Rechenmeister

VON

KURT VOGEL

MIT 17 ABBILDUNGEN

BERICHT AUS DEM DEUTSCHEN MUSEUM
Die neue Abteilung Zeitmessung

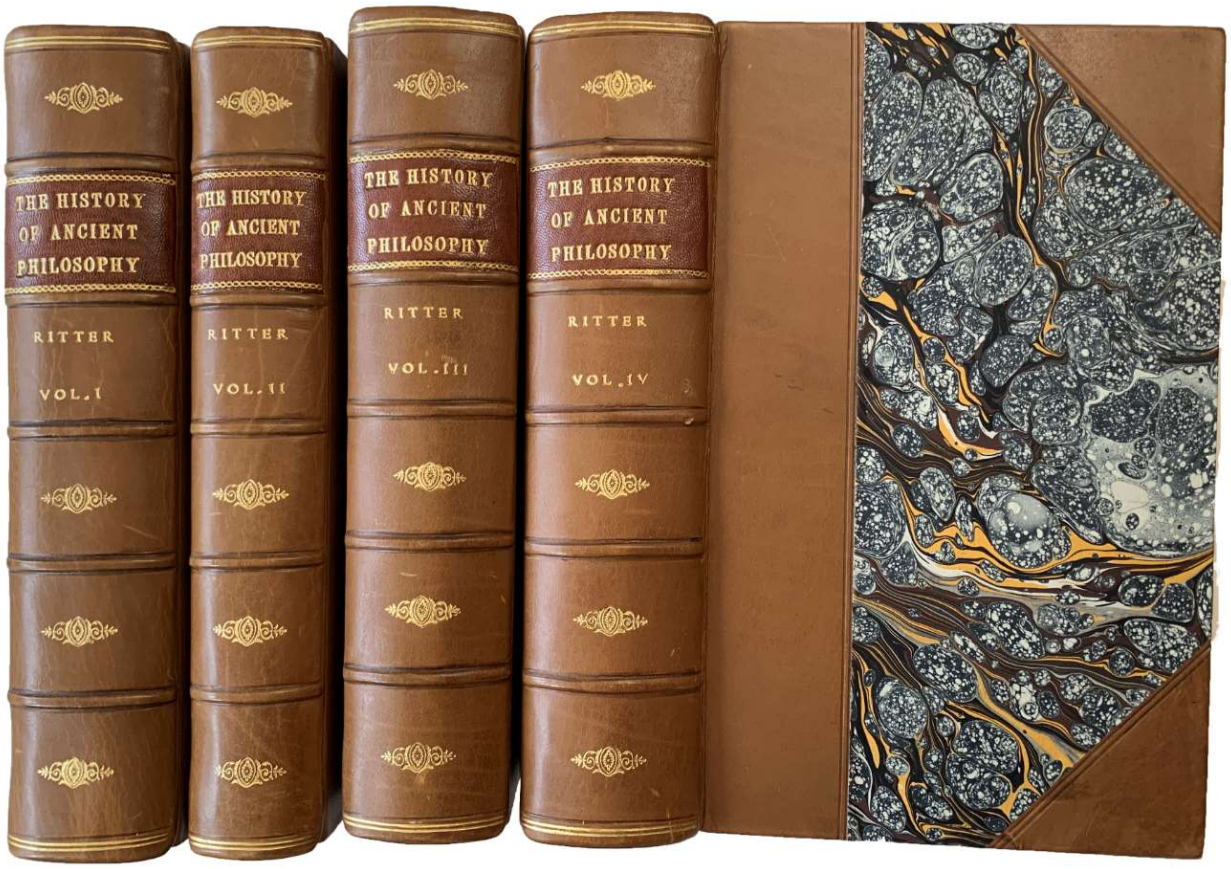
MIT 8 ABBILDUNGEN

VERLAG VON R. OLDENBOURG, MÜNCHEN 1959
VDI-VERLAG DÜSSELDORF

64. [**RIESE, Adam; or RIESS** (1492-1559)] **VOGEL, Kurt**. *Adam Riese der deutsche Rechenmeister*. Munich: R. Oldenbourg, 1959. ¶ Offprint: Deutsches Museum Abhandlungen und Berichte, heft 3, 1959. Sm. 8vo. 47 pp. Illus., figs. Printed wrappers. Bookplate of Barnabas Hughes (rear). Fine. [BH] SS11830

$ 5

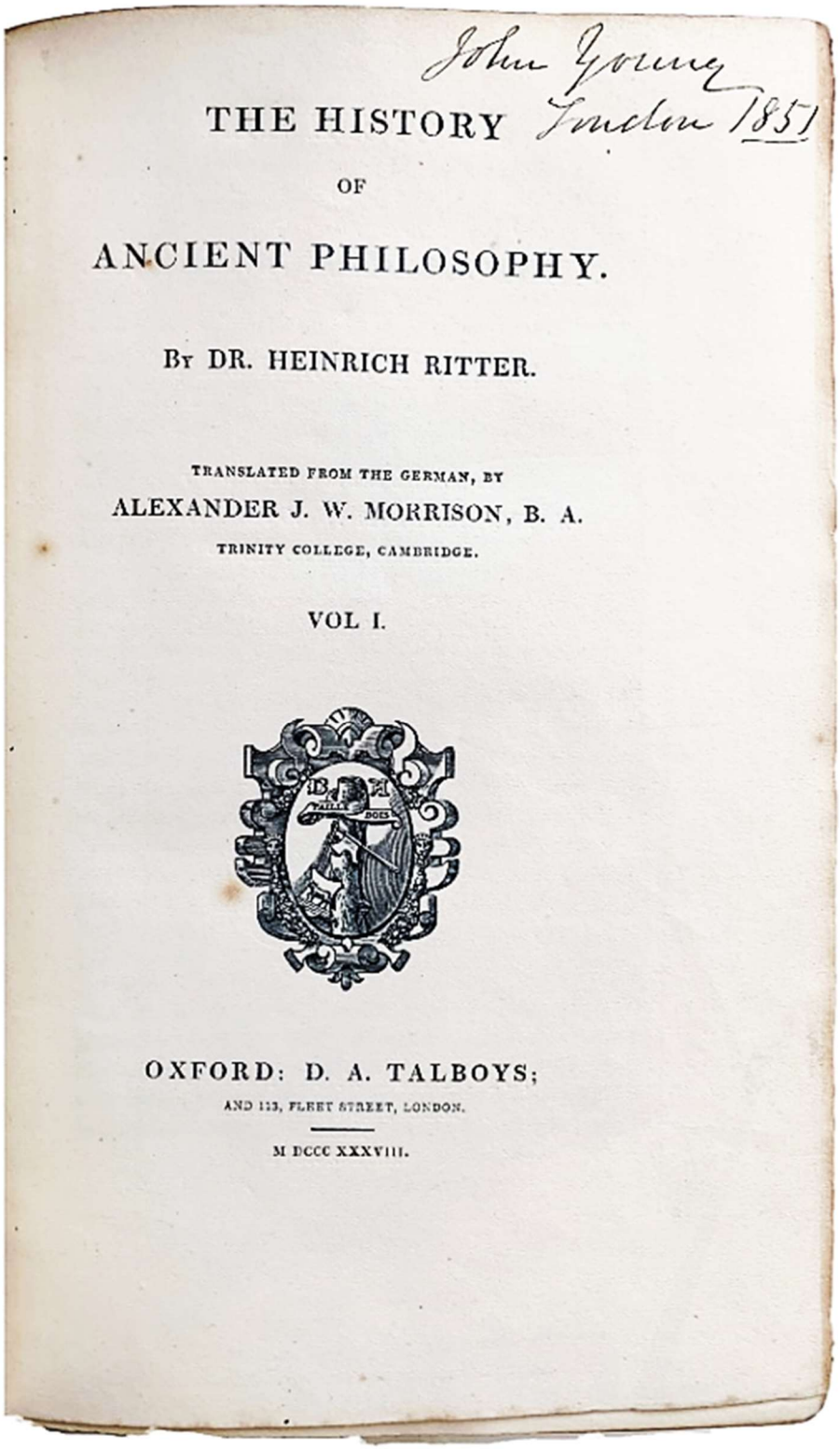
PROVENANCE: Brother Barnabas Hughes is professor emeritus of secondary education at California State University, Northridge. He is a mathematics historian and has written several books, including: Fibonacci's *De Practica Geometrie*, (2011), Regiomontanus *On Triangles* (1967), *The De numeris datis of Jordanus de Nemore*, (1981).



65. **RITTER, Heinrich** (1791-1869). *The History of Ancient Philosophy. Translated from the German, by Alexander J.W. Morrison*. [4 volumes]. Oxford: D.A. Talboys, 1838. ¶ 4 volumes. 8vo. Modern half blind and gilt-stamped calf, marbled boards, brown morocco spine label. Signature on title of John Young, London, 1851. Fine. SS12028

$ 425

Translated into English. *Geschichte der Philosophie* (1829–1853; 2nd edition, vols. i-iv, 1836–1838) — its 1st section, "*Geschichte der philosophie alter zeit*", was translated into English by Alexander J. W. Morrison and published as: The history of ancient philosophy (1838–46). Beautifully bound set. EXTRA POSTAGE WILL APPLY.


John Young
London 1851

THE HISTORY

OF

ANCIENT PHILOSOPHY.

By DR. HEINRICH RITTER.

TRANSLATED FROM THE GERMAN, BY

ALEXANDER J. W. MORRISON, B. A.

TRINITY COLLEGE, CAMBRIDGE.

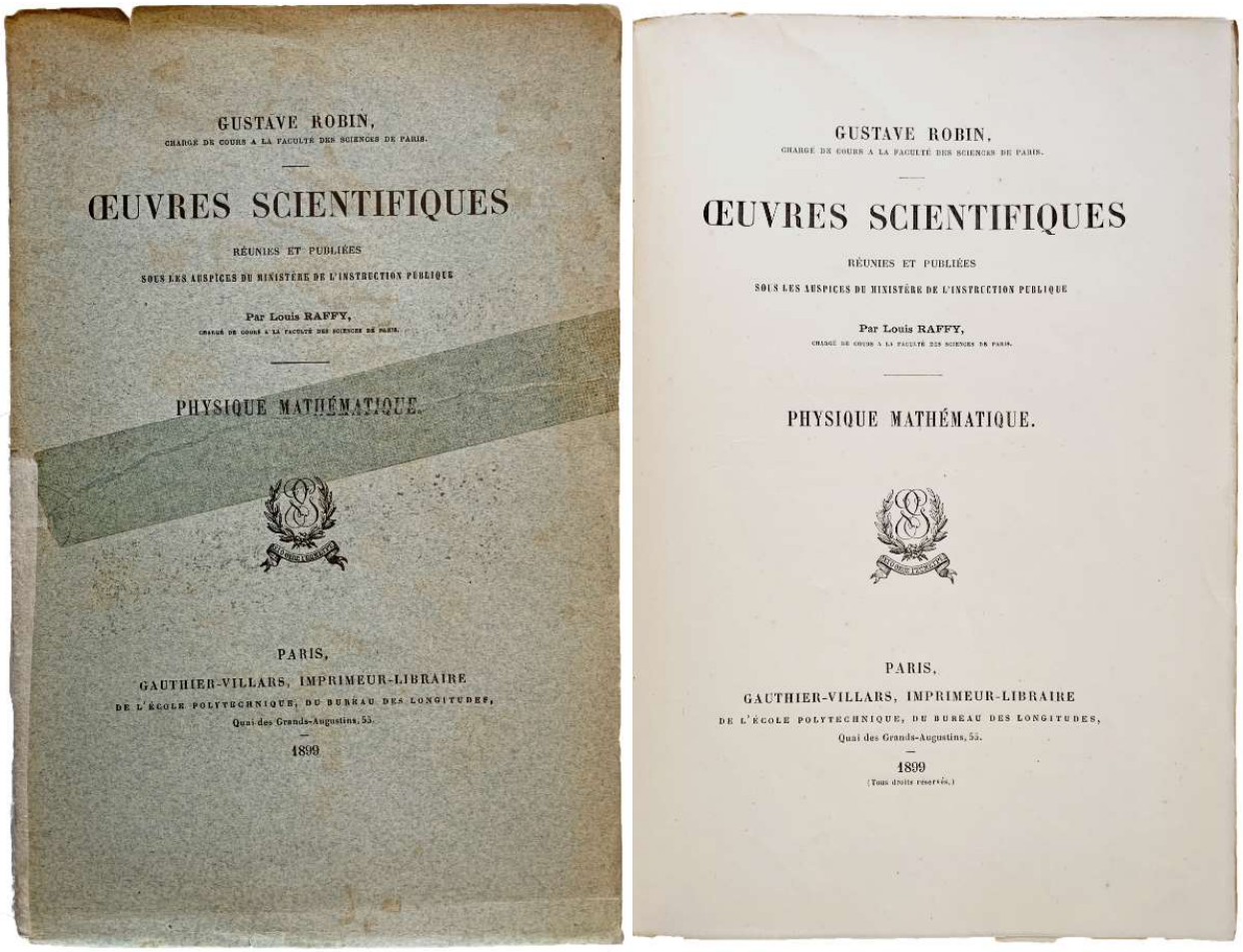
VOL I.

OXFORD: D. A. TALBOYS;

AND 113, FLEET STREET, LONDON.

M DCCC XXXVIII.

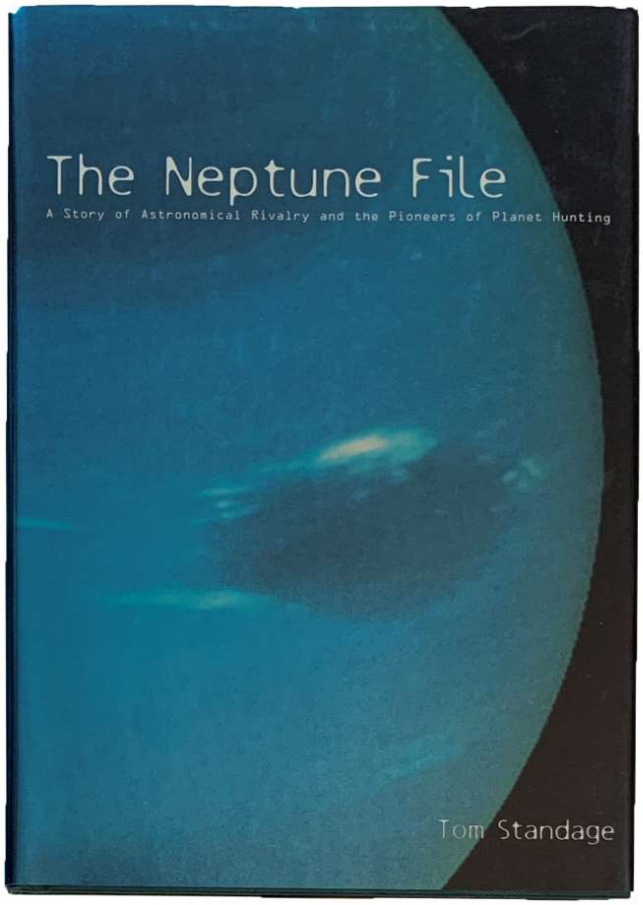
[65] RITTER

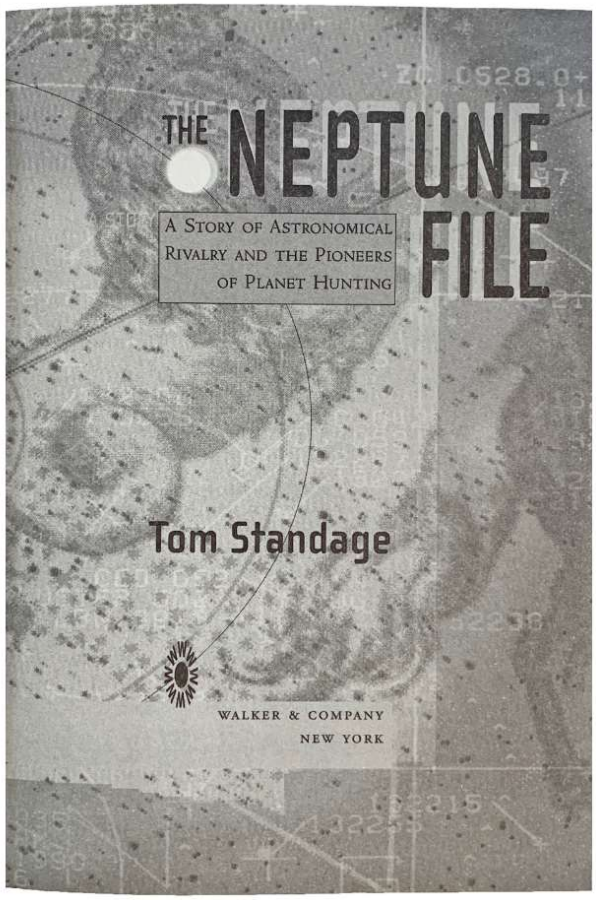


66. **ROBIN, Gustave** (1855-1897). *Œuvres Scientifiques; Réunies et publiées sous les auspices du ministère de l'instruction publique par Louis Raffy. Physique Mathématique*. Paris: Gauthier-Villars, 1899. ¶ 8vo. vi, 150 pp. Original printed wrappers; upper cover torn and partly mended with tape, spine mended with kozo. Good. [HL] SS11833

$ 30

Victor Gustave Robin (1855–1897), French mathematician, worked in the field of analysis and applied mathematics. He learned physical mathematics at the Sorbonne in Paris and worked in the area of thermodynamics. It is best known for Robin's border status. The French Academy of Sciences awarded it by the Prix Francour in 1893 and again in 1897. In 1895 Robin received the Prix Poncelet .



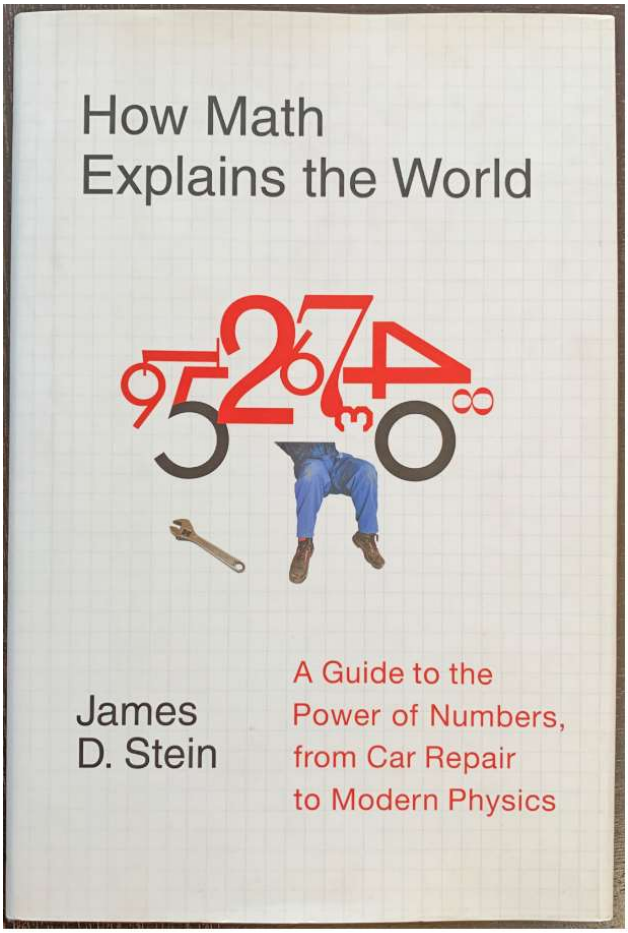


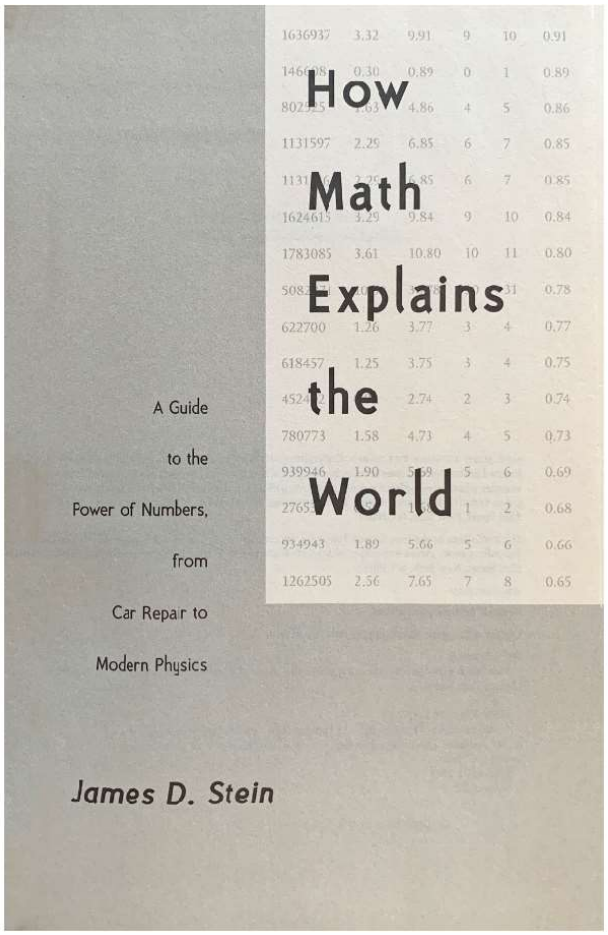
67. **STANDAGE, Tom**. *The Neptune File; A Story of Astronomical Rivalry and the Pioneers of Planet Hunting*. New York: Walker, 2000. ¶ Small 8vo. x, 240 pp. Illus., index. Green silver-stamped boards, dust-jacket. Near fine. ISBN: 0802713637 / 0-8027-1363-7 [SS12034]

$ 3.95

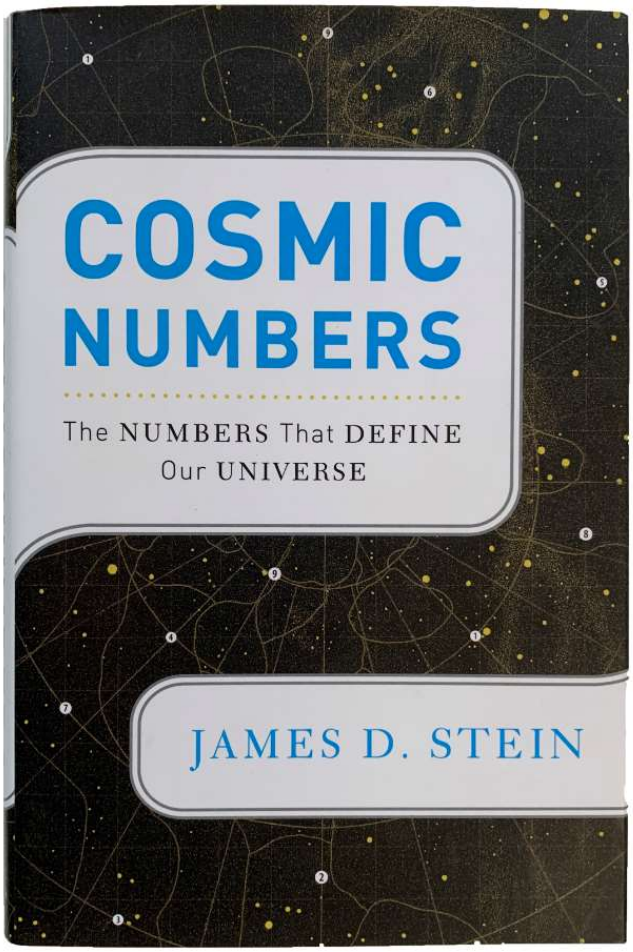
"The Neptune File is the first full account of the dramatic events surrounding the eighth planet's discovery, and the story of two remarkable men who were able to "see" on paper what astronomers looking through telescopes for more than 200 years had overlooked. On June 26, 1841, John Couch Adams, a brilliant young mathematician at Cambridge University, chanced upon a report by England's Astronomer Royal, George Airy, describing unsuccessful attempts to explain the mystifying orbital behavior of the planet Uranus, discovered 65 years earlier. Adams theorized that Uranus's orbit was being affected by the gravitational pull of

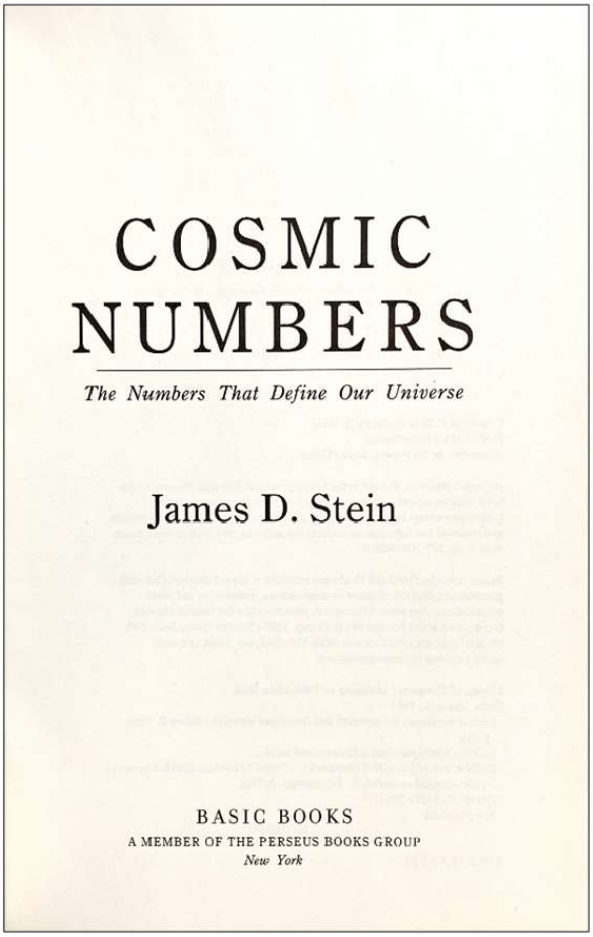
another, as-yet-unseen planet. Furthermore, he believed that he did not need to see the planet to know where it was. Four years later, his daring mathematical calculations pinpointed the planet's location, but Airy failed to act on them — a controversial lapse that would have international repercussions. Soon after Adams's "proof," a rival French astronomer, Urbain Le Verrier, also calculated the planet's position, and the race was on to actually view it. Found just where Adams and Le Verrier had predicted, the planet was named Neptune — and as the first celestial object located through calculation rather than observation, its discovery pioneered a new method for planet hunting. Drawing on long-lost documents in George Airy's Neptune scrapbook, which resurfaced mysteriously at an observatory in Chile in 1999, The Neptune File is a crackling good human drama and a fascinating exploration of the science that underpins planetary astronomy. And the tale continues to unfold, as Tom Standage relates: Since 1995, astronomers have discovered more than 40 planets outside our solar system, opening an intriguing window on the universe. Yet none of these planets have ever been seen." [pub.].



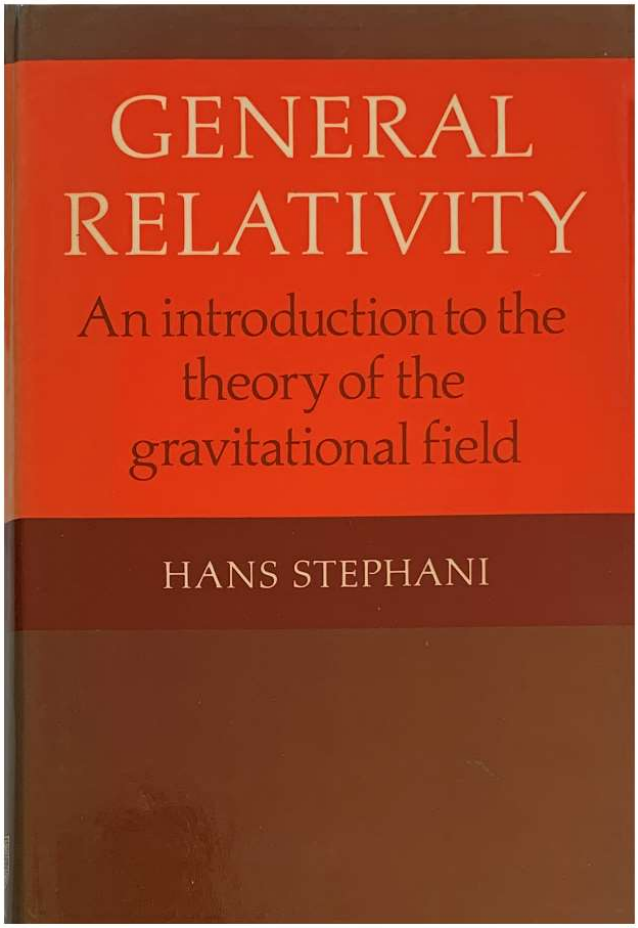


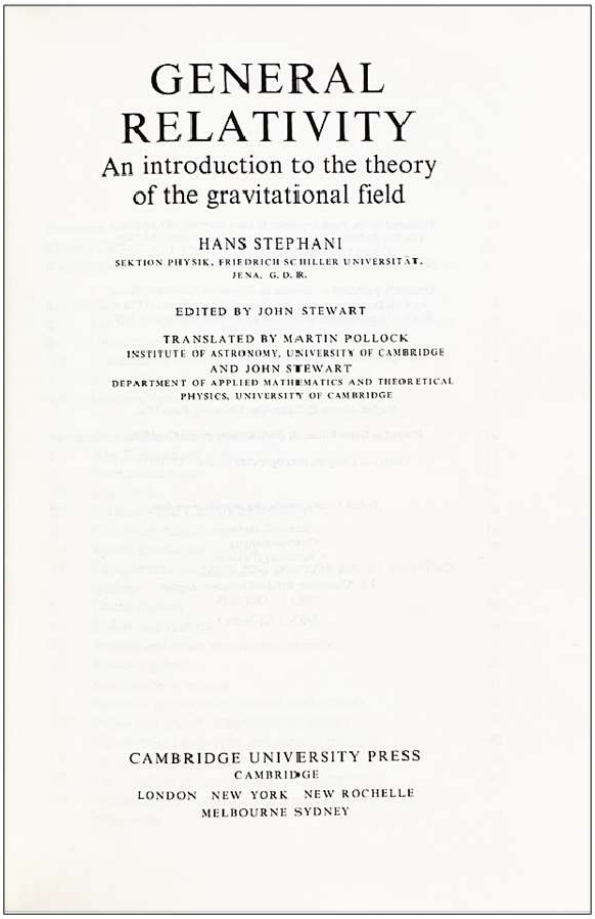
68. **STEIN, James D**. *How Math Explains the World. A Guide to the Power of Numbers, from Car Repair to Modern Physics*. Washington, D.C.: Smithsonian Books, 2008. ¶ 8vo. xxi, 264 pp. Figs., index. Dark gray metallic-stamped boards, dust-jacket. Fine. ISBN: 9780061241765 [SS12035] $ 5.95





69. **STEIN, James D**. *Cosmic Numbers; The Numbers That Define Our Universe*. New York: Basic Books, 2011. ¶ 8vo. xii, 228 pp. Index. Two-toned hardcover boards, dust-jacket. Near fine. ISBN: 9780465021987 [SS12036] $ 6




GENERAL
RELATIVITY
An introduction to the theory
of the gravitational field

HANS STEPHANI
SEKTION PHYSIK, FRIEDRICH SCHILLER UNIVERSITÄT,
JENA, G. D. R.

EDITED BY JOHN STEWART

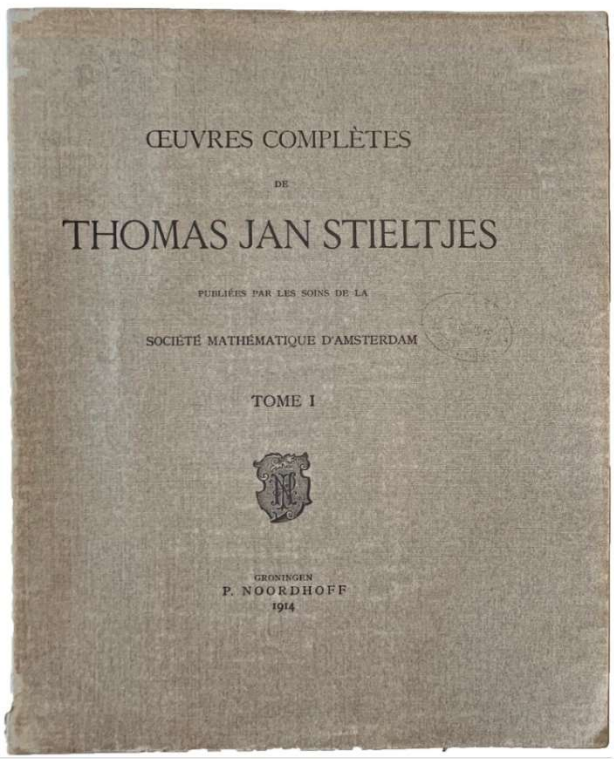
TRANSLATED BY MARTIN POLLOCK
INSTITUTE OF ASTRONOMY, UNIVERSITY OF CAMBRIDGE
AND JOHN STEWART
DEPARTMENT OF APPLIED MATHEMATICS AND THEORETICAL
PHYSICS, UNIVERSITY OF CAMBRIDGE

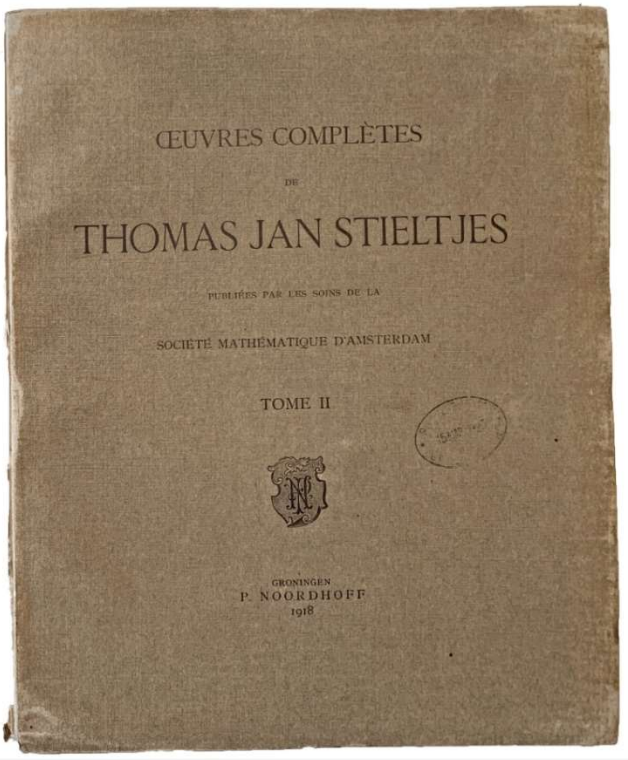
CAMBRIDGE UNIVERSITY PRESS
CAMBRIDGE
LONDON NEW YORK NEW ROCHELLE
MELBOURNE SYDNEY

70. **STEPHANI, Hans** (1935-2003). *General Relativity; an Introduction to the Theory of the Gravitational Field*. Cambridge: Cambridge University Press, 1982. ¶ 8vo. xvi, 298 pp. Index. Black gilt-stamped cloth, dust-jacket; jacket spine a bit faded. Very good. ISBN: 0521240085 / 0-521-24008-5 [SS12037]

$ 10

This book is an excellent introduction to the subjects of gravitation and space-time structure. It presumes a good background in special relativity, electrodynamics, and classical mechanics. The book discusses the foundations of Riemannian geometry; the derivation of the Einstein field equations; linearised theory, far fields and gravitational waves; the invariant characterization of exact solutions; gravitational collapse; cosmology; and a final chapter deals with alternative gravitation theories and the problem of quantum gravity. This revised and correct edition brings the experimental evidence up to date. In addition, the sections on quantum gravity have been rewritten and enlarged, and now form a coherent introduction to this subject.

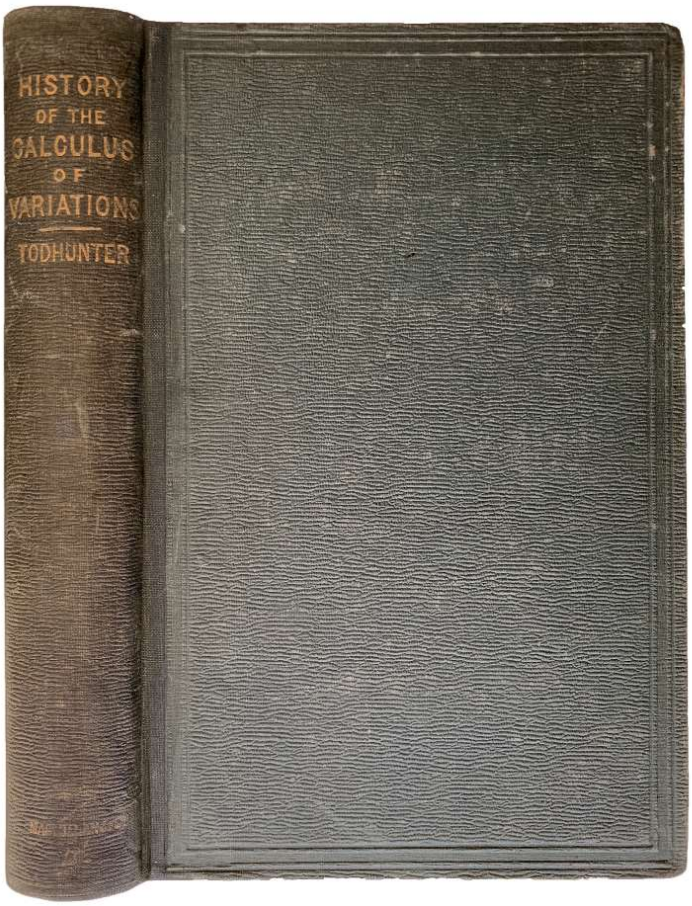


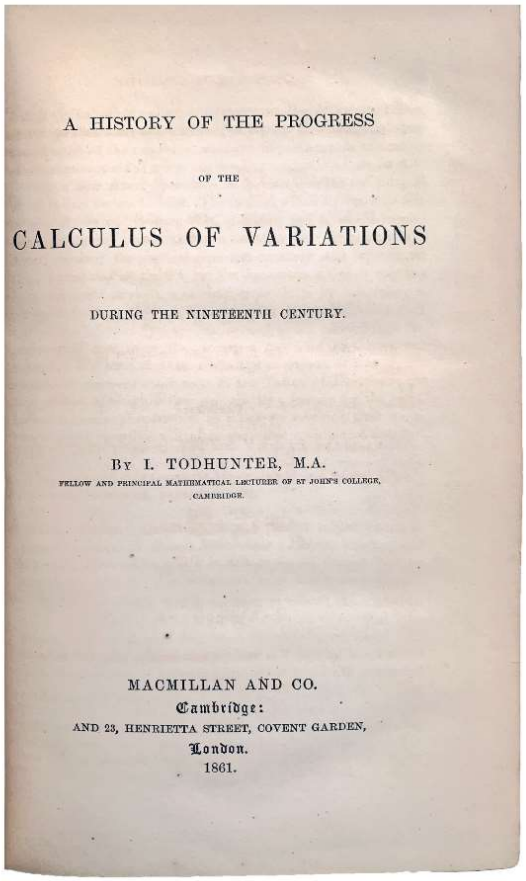


71. **STIELTJES. Thomas Jan** (1856-1894). *Oeuvres Completes de Thomas Jan Stieltjes. Publiees par les soins de la Société mathématique d'Amsterdam.* Groningen: P. Noordhoff, 1914-18. ¶ 2 volumes. 4to. VII, 471, [1]; [IV], IV, 603, [1] pp. Frontis. port., … Original printed wrappers; ownership rubber-stamps (Royal Society of Edinburgh), covers rubbed. Very good. RARE. S13846

$ 225

First collected edition. Ten of the articles are in Dutch, two in German and rest in French. The Dutch articles are followed by a French translation. cf. t. I, Préf. Contains 84 papers. Stieltjes worked on almost all branches of analysis, continued fractions and number theory, and for his work, he is sometimes called "the father of the analytic theory of continued fractions". "One cannot assert that Thomas Jan Stieltjes was one of the great men of the earth. In fact, he was not one of the greatest men in the narrower circle of his colleagues in mathematical investigation. But he was a man of fine talent who used the full strength of his powers in his researches; and in his short life (1856-1894) he did excellent work which deserves to be remembered. – Carmichael, R. D., Book Review: *Œuvres complètes de Thomas Jan Stieltjes*, Bulletin of the American Mathematical Society, 1921-01-01, Vol.27 (4), p.170-179.




A HISTORY OF THE PROGRESS

OF THE

CALCULUS OF VARIATIONS

DURING THE NINETEENTH CENTURY.

By I. TODHUNTER, M.A.
FELLOW AND PRINCIPAL MATHEMATICAL LECTURER OF ST JOHN'S COLLEGE, CAMBRIDGE.

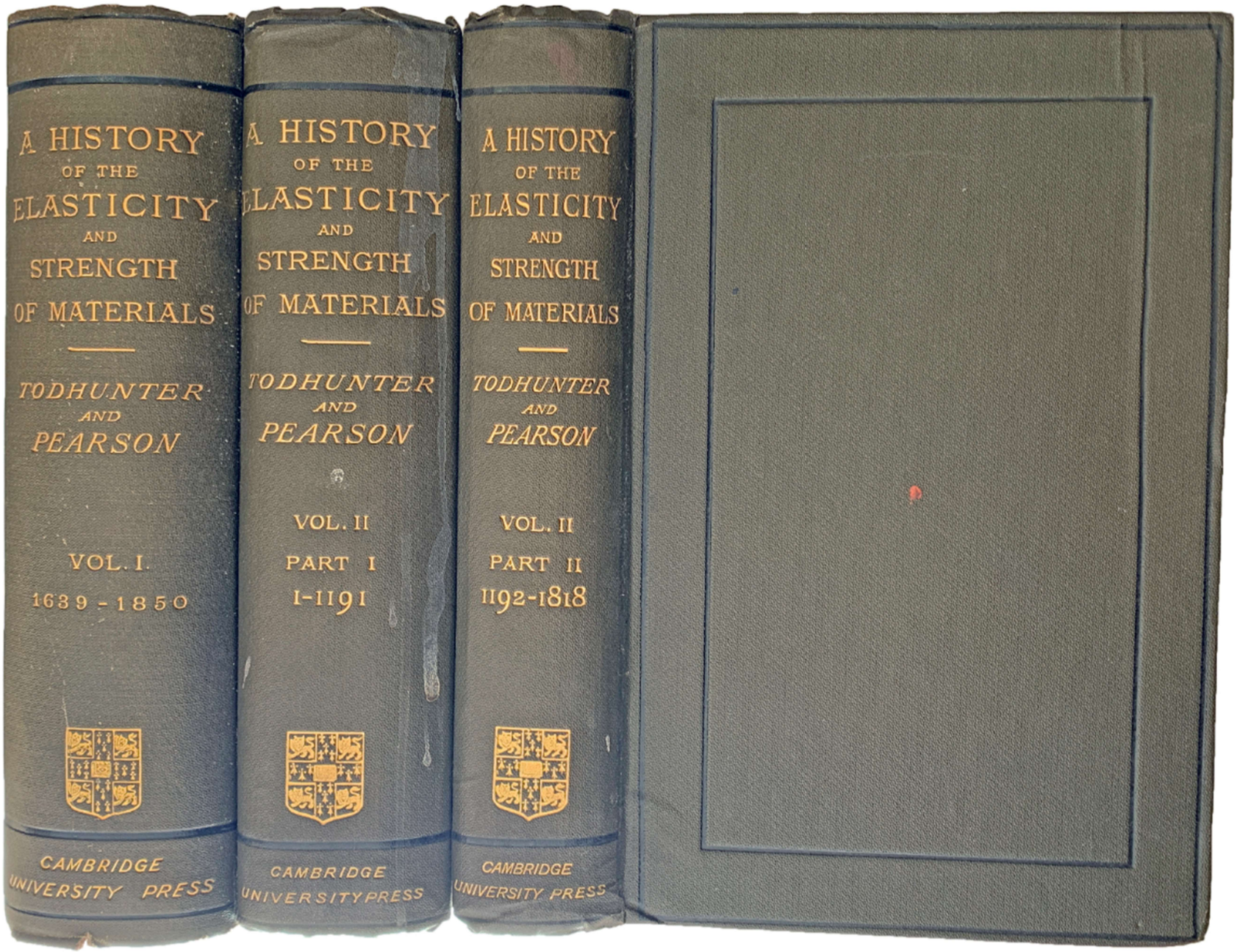
MACMILLAN AND CO.
Cambridge:
AND 23, HENRIETTA STREET, COVENT GARDEN,
London.
1861.

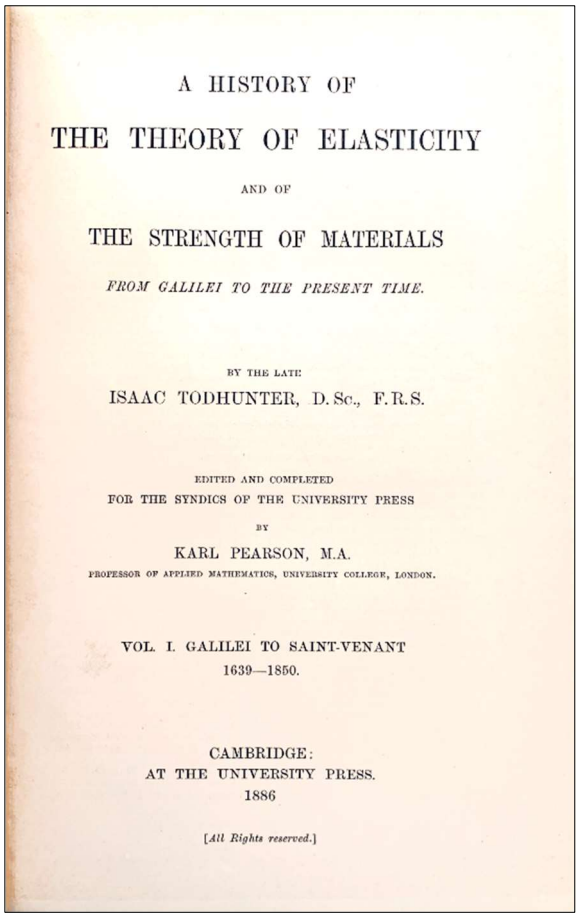
72. **TODHUNTER, Isaac** (1820-1884). *A history of the progress of the calculus of variations during the nineteenth century*. Cambridge and London: Macmillan, 1861. ¶ 8vo. xii, 532, ads. 28 pp. Folding plate containing 12 geometric diagrams, index. Original green blind-stamped cloth, gilt spine; beautifully rebacked preserving original spine. Choice copy. SS3608

$ 500

Scarce First edition of Todhunter's important historical work including his own research. Todhunter (1820-1884), English mathematician, was one of the most influential figures in mathematical education of the 19th century. - *DNB*.

Zeitlinger (Sotheran I, p. 249: "Very scarce"). Cajori, *History of mathematics*, p. 370.





A HISTORY OF

THE THEORY OF ELASTICITY

AND OF

THE STRENGTH OF MATERIALS

FROM GALILEI TO THE PRESENT TIME.

BY THE LATE

ISAAC TODHUNTER, D. Sc., F.R.S.

EDITED AND COMPLETED
FOR THE SYNDICS OF THE UNIVERSITY PRESS
BY

KARL PEARSON, M.A.
PROFESSOR OF APPLIED MATHEMATICS, UNIVERSITY COLLEGE, LONDON.

VOL. I. GALILEI TO SAINT-VENANT
1639—1850.

CAMBRIDGE:
AT THE UNIVERSITY PRESS.
1886

[*All Rights reserved.*]

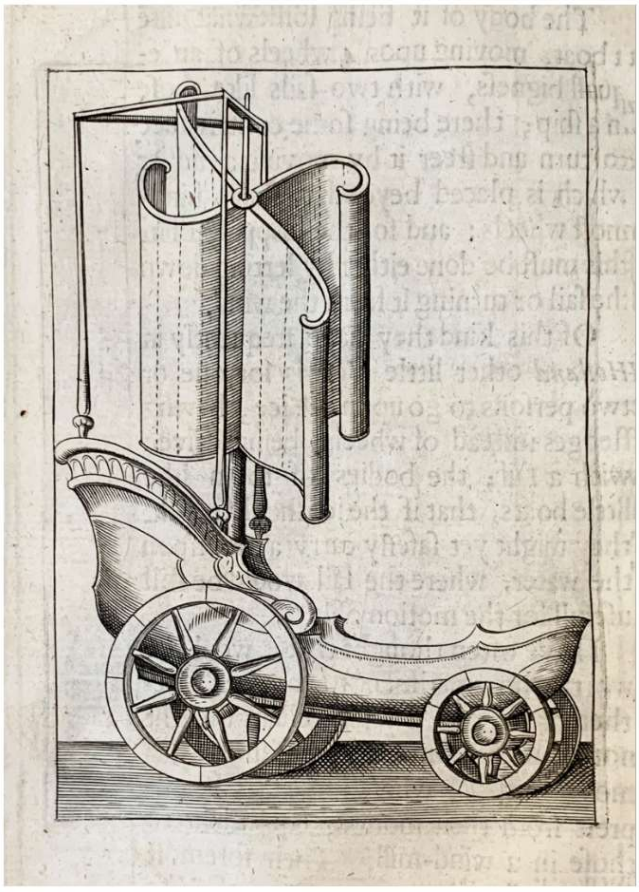
73. **TODHUNTER, Isaac** (1820-1884). *A History of the Theory of Elasticity and of the Strength of Materials from Galilei to the Present Time. . . Edited and Completed for the Syndics of the University Press by Karl Pearson*. Cambridge: Cambridge University Press, 1893. ¶ Three volumes. 8vo. xvi, 924; xiii, 762; 546, 12 pp. Frontis., plates, 2 folding diagrams, index; uncut. Original black-stamped green cloth, gilt-stamped spines; spine ends slightly rubbed, minor white stain spots, inner hinges cracking (Vol. III), a bit rubbed (Vol. III). Very good. SS8776

$ 750

FIRST EDITION. A thorough and authoritative study of elasticity published posthumously.

Mathematicall
MAGICK.
OR,
THE WONDERS
That may be performed by
Mechanicall Geometry.
In two Books.
CONCERNING
Mechanicall { POWERS. / MOTIONS.
BEING ONE OF
The most easie, pleasant, usefull,
(and yet most neglected) part of
MATHEMATICKS.
Not before treated of in this language
By *J. W. M. A.*
Τέχνη κρατεῖται ὧν φύσει νικᾶται.
LONDON,
Printed by *M. F.* for *Sa. Gellibrand* at the
brasen Serpent in *Pauls* Church-yard, 1648.

[74] WILKINS



74. **WILKINS, John** (1614-1672). *Mathematicall Magick or, the Wonders that may be performed by Mechanicall Geometry. In two books. Concerning Mechanicall Powers. / Motions. Being one of the most easie, pleasant, usefull, (and yet most neglected) part of mathematicks. Not before treated in this language*. London: Printed for M.F. for Sa. Gellibrand, 1648. ¶ Small 8vo. [iii-viii], 295 pp. Title and text within ruled borders, numerous woodcut illustrations and diagrams (some full page); drawing of wheeled gears (p. 38); lacks front blank. Original full bind-stamped calf. Nice copy. S13847

$ 5,000 [CHF 4,600]

First edition. Written at a time where experimental philosophy was just finding favor among membership of the Royal Society. Wilkins had just become Warden of Wadham College, Oxford, and surrounding him were Fellows, each a learned man of science, and members of the Oxford Philosophical Club (the precursor to the Royal Society): Christopher Wren, Walter Pope, Thomas Sprat, William Lloyd, William Neile, Samuel Parker. Others have held Wilkins in high esteem, included among these are his corresponding colleagues, Robert Boyle, Robert Hooke, Isaac Newton (his student), and Henry Oldenberg.

"... the first text on mechanics available in the English language . . . describing various machines, including strange devices and possibilities, such as a land vehicle powered by wind, submarines, flying automata, clocks, magnetic perpetuum mobile, etc."--*Bibliotheca Mechanica*, page 354.

"Wilkins dedicated his work to His Highness the Prince Elector Palatine (Charles I Louis) who was in London at the time. It is divided into two books, one headed Archimedes, because he was the chiefest in discovering of Mechanical powers, the other was called Daedalus because he was one of the first and most famous amongst the Ancients for his skill in making Automata.[3] Wilkins sets out and explains the principles of mechanics in the first book and gives an outlook in the second book on future technical developments like flying which he anticipates as certain if only sufficient exercise, research and development would be directed to these topics." [Wikip.]

"In the 20 chapters of the first book, traditional mechanical devices are discussed such as the balance, the lever, the wheel or pulley and the block and tackle, the wedge, and the screw. The powers acting on them are compared to those acting in the human body. The book deals with the phrase attributed to Archimedes saying that if he did but know where to stand and fasten his instrument, he could move the world and shows the effect of a series of gear transmissions one linked to the other. It shows the importance of various speeds and the theoretical possibility to increase speed beyond the speed of the earth at the equator. Finally, siege engines like catapults are compared with the cost and effect of then modern guns. / In the 15 chapters of the second book, various devices are examined which move independently of human interference like clocks and watches, water mills and wind mills. Wilkins explains devices being driven by the motion of air in a chimney or by pressurized air. A land yacht is proposed driven by two sails on two masts, and a wagon powered by a vertical axis wind turbine. A number of independently moving small artificial figures representing men and animals are described. The possibilities are considered to improve the type of submarine designed and built by Cornelis Drebbel. The tales about various flying devices are related and doubts as to their truth are dissipated. Wilkins explains that it should be possible for a man, too, to fly by himself if a frame were built where the person could sit and if this frame was sufficiently pushed in the air. In chapter VII, Wilkins discusses various methods how a man could fly, namely by the help of spirits and good or evil angels (as related on various occasions in the Bible), by the help of fowls, by wings fastened immediately to the body or by a flying chariot. The whole of

this chapter (and of the following one) concern the possibilities of flying. Wilkins continues by saying that sufficient practice should enable a man to fly. The most probable way, however, would be by a flying chariot, which may be so contrived as to carry a man within it... and be equipped with some sort of engine, or else be big enough to carry several persons each of them successively laboring to cause the chariot to fly. Wilkins uses the next chapter to dissipate any doubts there may be as to the possibility of such a flying chariot, but of course a number of particular items would have to be developed and tested. In Chapters IX to XV, extensive discussions and deliberations are set out why a perpetual motion should be feasible, why the stories about lamps burning for hundreds of years were true and how such lamps could be made and perpetual motions created." [Wikip.].

PROVENANCE: Inscribed in an unknown hand: "Bp. [Bishop John] Wilkins" (Bishop of Chester), "Boheis Cowad 2922" [??], Thomas Taylor, de Hawly, William Kemp de East Garston, 1702.

William Kemp, vicar of East Garston, Berks., through resignation of Gerrard Erington. Patron: the Dean and Chapter of Christchurch, Oxford.

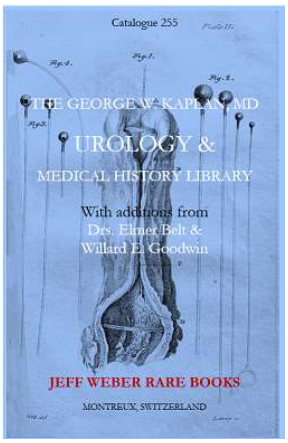
Two different issues of the title are recorded by ESTC & Wing: priority is not assigned. ESTC R227427 (title reads 'wonders', 'powers' and 'J.W.', and, ESTC 6164 (title reads 'vvonders', 'povvers' and 'I.W.'). Note: neither include a frontispiece, which first appears in the 1680 printing.

ꕤ DSB [Hans Aarsleff], XIV, pp. 361-381; Sotheby, Honeyman VII, 3120; Sotheby's *The Library of the Earls of Macclesfield*, Part 6, p. 362, no. 2126; Raymond Toole Stott, *A Bibliography of English Conjuring 1581-1876*, p. 280, no. 883; Tomash & Williams W74; ESTC R6164; Wing W2198.

RECENT CATALOGUES

60+ Catalogues are showing on: **WEBERRAREBOOKS.COM**. Here are the latest issues: [all PDF & downloadable].

255: UROLOGY LIBRARY OF GEORGE KAPLAN



254: EROTIC FORE-EDGE PAINTINGS

253: An American in Montreux [Part II].

252: An American in Montreux: Medical Books [I]

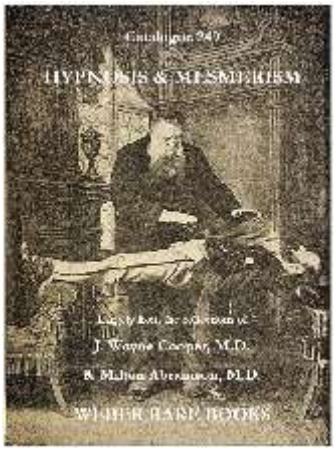
251: The Art of Disappearing Paintings on the Edges of Books: FORE-EDGE PAINTING: A Study of its History and Art by Evidence.

250: BOOK BOUND FOR GLORY: Featuring books from the libraries of Roger Hahn & Bern Dibner

249: HYPNOTISM & MESMERISM.

248: MEDICINE

247: From the Private Library of PHILIP K. WILSON, PH.D. Featuring LUCRETIUS CARUS & JOHN LOCKE, MEDICAL HISTORY, MEDIUMS, SPIRITUALISM & MEDICAL ODDITIES



246: From the Shelves of EDWIN VICTOR GLASER Bookseller, Medical Sciences.

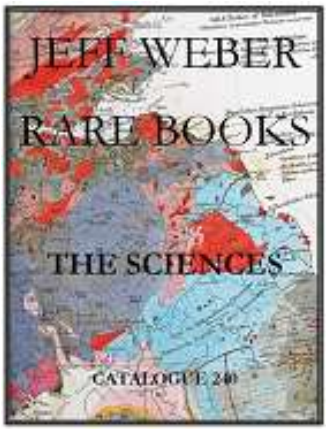
245: The Lion's Share of Books: History of Science

244: A PRACTICAL GUIDE TO FISHING FOR BOOKS: Selected Books from the Libraries of Three Scholars in the History of Science: Michael J. Crowe, Roger Hahn. Barbara Reeves

243: "What Really Happened in Grandpa's Library." *From the Library of Dr. PHILIP WILSON:* Medical history, Fringe medicine, Natural Philosophy, Apparitions, Quackery, Geography, Science & more.

242: CATALOGUE 242: HISTORY OF SCIENCE, being selections from the libraries formed by BARBARA REEVES, Professor, Virginia Tech [and] BERN DIBNER & THE BURNDY LIBRARY.

241: Books from the Medical Library of Michael T. Kennedy, MD. Supplemented by various aspects of Medicine: Ancient, Anesthesia, Discovery & Medical History.

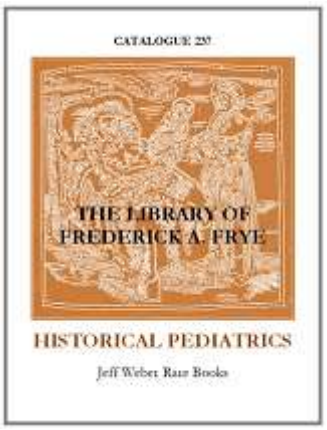


240: The Sciences

239: Notable and Unusual Books in the History of Medicine, featuring Anatomy, Childbirth, Medical history, Midwifery, Neurology, Pathology, Pediatrics.

238: Rare Books in the Medical Sciences; Anesthesia, Chinese & Mexican Medicine, Dentistry & Dental Instruments, George Dock Offprints, Medical Bibliography, Medical Education, Letters & Poems, Neurosurgery, Opium & Cocaine

237: The Library of Frederick A. Frye: Historical Pediatrics



236: Rare Books in Medical History, Animisme Spiritisme, & Medical Oddities: The Library of Philip K. Wilson. [H]

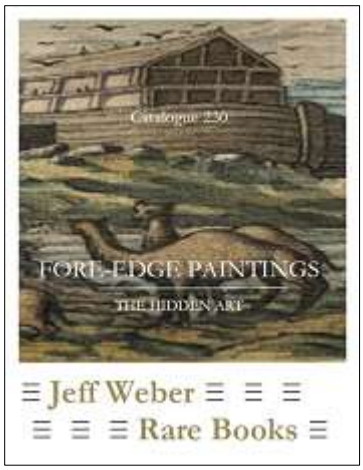
235: "35 Weiss Books": Weber's 'Newly Illustrated' Rare Books

234: OR HOW BOOKS GET THE GHOST – cover art adapted from that of John Leech, "The Ghost".

233: FORE-EDGE PAINTINGS: THE HIDDEN ART [B]

232: California Farrago

231: 36 Weiss Books (science).



230: FORE-EDGE PAINTINGS: THE HIDDEN ART [A]

229: Wonders: Rare Books in Medical History, Animisme et Spiritisme, Medical Oddities: The Library of Philip K. Wilson

228: Ulrich Hacker MD - Rare Books in Pediatrics & Medical History

227: The Library of Richard Weiss: Astronomy - Geography - Mathematics - Natural Science - Optics - Physics

226: Ulrich Hacker MD - Library of Rare Pediatrics & Medical History

225: Ulrich Hacker MD - Library of Rare Pediatrics & Medical History

224: The Middle East: Persia & More

¶ ORDERING: To order a book from this catalogue, please contact the firm by email, phone, or letter. Shipping, handling & insurance are extra. All items guaranteed as described. Inquiries welcome.

On the web: **WEBERRAREBOOKS.com**
Many items listed on-line with more photographs; additional photos on request.

TELEPHONE INQUIRIES: +41 (079) 630 23 73

Here is a first picture of the new bookshop:

NEW LOCATION & PHONE:

JEFF WEBER RARE BOOKS

Avenue des Alpes, 104
1820 MONTREUX, VAUD
SWITZERLAND

Phone: +41 (079) 630 23 73
weberrarebooks@gmail.com
weberbks@pacbell.net

MEMBER: ABAA ILAB