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CATALOGUE
OF
SCIENTIFIC PAPERS
1800—1900

SUBJECT INDEX

VOLUME II

MECHANICS

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ROYAL SOCIETY OF LONDON

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VOLUME II

MECHANICS

CAMBRIDGE :
AT THE UNIVERSITY PRESS
1909

ARRANGED FOR A COMMITTEE OF THE ROYAL SOCIETY
UNDER THE SUPERINTENDENCE OF

HERBERT M^CLEOD, LL.D., F.R.S.

DIRECTOR OF THE CATALOGUE

with the assistance of

R. J. DALLAS, M.A.

KING'S COLLEGE, CAMBRIDGE

PREFACE

IN the Preface to the volume forming the Subject Index to the papers on Pure Mathematics for the nineteenth century, published in 1908, an outline of the history of the Royal Society's Catalogue of Scientific Papers is given; it is not necessary to repeat that account.

The present volume deals with the papers on Mechanics as classified in the Schedules of the International Catalogue of Scientific Literature; it contains 21295 entries referring to the papers contained in 959 serial publications.

The Index titles for papers published in the latter part of the century, from 1884 to 1900 inclusive, have been made by Referees familiar with the subjects, who have consulted the original papers and have made the titles from the contents of the papers and not merely from their headings. It was intended that the Index entries for the papers from 1800 to 1883 should be made from the complete titles as printed in the Catalogue of Authors already published; but it was soon found that many of these titles were too indefinite for such minute classification, and reference has had to be made to the original papers in a large number of cases.

The subjects are arranged under the registration numbers adopted in the International Catalogue of Scientific Literature; a copy of Schedule B (Mechanics) of that Catalogue, is prefixed to the Index, with indication of the pages on which the titles for the different sections occur. It has occasionally been found convenient, in order to save repetition in printing, to group entries under a sub-heading which is not contained in the International Catalogue Schedule. Where this has been done the sub-heading is printed in italics. In some of these cases the words of the sub-heading are understood to exist before the entries following them, and consequently these entries commence with small letters. These minor classifications, being often made mechanically on the basis of the explicit mention of the sub-heading, are not to be taken as exhaustive; cognate entries may be found elsewhere under the same main heading. The unit of classification is thus the complete numbered heading.

Preface

The entries in the Index are arranged so that reference can be made, if necessary, to the complete titles in the Catalogue of Scientific Papers. Generally the author's name together with the date will indicate the volume in which the title of the paper may be found in full. But these clues are insufficient when the paper is anonymous, or occurs in Volume XII or in the additions to Volume VI. They are also at fault for titles marked with an asterisk showing that they belong to previous volumes; in these cases the number of the volume is given in the Index entry in small Roman numerals within brackets. The references have been made as short as possible: thus the number of only the initial page of each paper has been given; but the length of the paper may be found by reference to the Catalogue of Authors.

When an error has been found in an author's name in the Catalogue, it is corrected in the Index and a reference made to the error.

The Index contains references to some papers, of dates earlier than 1884, which were omitted in previous volumes of the Catalogue: these are indicated by an asterisk placed before the date; the full titles of these papers will be given in the continuation of the Catalogue of Authors.

When an author's personal name does not appear in the original heading of a paper, no attempt has been made to find the name for the Index; but this will be done for the Catalogue of Authors.

Entries on the same subject are arranged, so far as possible, in order of date irrespective of the authors' names, with the endeavour to present the subject in the historical form. This grouping of the entries, involving modifications of titles prepared by different Referees, or by the same Referee at different times, has been one of the most difficult problems in the preparation of the Index.

The abbreviations used in the Royal Society Catalogue for the names of the serials have been further shortened for the Index. As the abbreviations are not uniform in all the volumes, it will be found that the same journal may be indicated by several different abbreviations, but in each case the one selected is that which was used in the volume in which the title of the paper occurs.

In the case of serials commencing since 1883, the abbreviations adopted in the International Catalogue have been used as a guide.

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The list of serials will, as in the case of Pure Mathematics, be a valuable feature of the Index. It has been drawn up by the Director, and contains the names of 959 serials from which the entries in the Index have been taken. Each title is preceded by the abbreviation which represents the serial in the Index; the date of commencement of the serial is given, and if it is extinct the date of the last volume is added. There are appended symbols representing the names of twenty-eight British Libraries in some of which the serials may be found; where the set is incomplete the symbol is followed by *i*. The information from which this list has been compiled was obtained, in the first instance, from published catalogues; subsequently the list was submitted to the custodians of many of the libraries, who kindly marked many serials which had not been found in the catalogues used. The thanks of the Committee for this valuable assistance are due to Mr F. Jenkinson of the Cambridge University Library, Mr E. W. B. Nicholson of the Bodleian Library, the Librarian of the Radcliffe Library, the Librarian of the Cambridge Philosophical Society, Mr F. W. Clifford of the Chemical Society, to Mr R. Lloyd Praeger for obtaining information from the five libraries in Dublin, Mr J. Hardy of the Royal Society of Edinburgh, Mr C. V. Crook of the Geological Museum, Mr Rupert Jones of the Geological Society, Mr J. Knight of the Royal Philosophical Society, Glasgow, Mr J. L. Galbraith of the University, Glasgow, Dr J. H. T. Tudsbery of the Institution of Civil Engineers, Dr B. Daydon Jackson and Mr A. W. Kappel of the Linnean Society, the Librarian of the London Mathematical Society, Mr J. W. Knapman of the Pharmaceutical Society, Mr E. W. Hulme of the Patent Office Library, Mr W. H. Wesley of the Royal Astronomical Society, Mr F. Allen of the Royal Geographical Society, Mr R. W. Chambers of University College, London, and Mr L. W. Fulcher of the Science Library, Science Museum, South Kensington.

Although much care has been expended in making this list as accurate as possible, it is probable that some errors will still be found, and the Director will be thankful to any one who will send corrections: portions of the list will be required for the subsequent volumes of the Index.

The following Referees have assisted at various times in the preparation of the Subject Index in Mechanics: Miss Alice Everett, Miss W. M. Hudson, Miss E. Perrin, Mr R. J. Dallas, Mr A. T. Goodfellow, Mr R. Hargreaves, Mr H. Knapman, Dr R. A. Lehfeldt, Dr Max von May, Dr W. Marshall Watts,

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and Mr G. Harold Wilson. The Committee is indebted to them for much valuable help.

The arrangement of the contents of this volume for the press has been made by Mr R. J. Dallas, M.A., of King's College, Cambridge. To him, and to Miss Bremner and the other members of the Catalogue Staff of the Royal Society, thanks are due for careful and conscientious work. Mr G. B. Mathews, F.R.S., a member of the Committee in charge of the Catalogue, and the officers of the Royal Society, have given help from time to time about questions of arrangement.

The material for the Index volume for Physics is already in an advanced state of preparation; this is largely owing to the interest which Dr Ludwig Mond, F.R.S., has continued to take in the work, and the increased subsidy by which he has most generously made acceleration possible.

The Catalogue of Scientific Papers arranged under Authors, for the period 1884 to 1900, is in preparation; the material will not however be quite complete until the Subject Indexes for the various Sciences have been reduced to order.

The Syndics of the Cambridge University Press have undertaken the complete risk of printing and publishing, as regards both the Catalogue of Scientific Papers and the Subject Index. It will be the care of the Committee, and it is hoped of the Scientific world generally, to use their best endeavours that this public-spirited action shall not result in financial loss.

The thanks of the Committee are due to the officials of the Cambridge Press for their unflinching courtesy in the discharge of a complex task.

November, 1909.

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SUBJECT INDEX OF MECHANICS

LIST OF SERIAL PUBLICATIONS

WITH THE ABBREVIATIONS OF THEIR TITLES USED IN THE INDEX, AND
LIBRARIES WHERE THE SERIALS CAN BE CONSULTED.

The date following the title of a serial indicates the year of its commencement; if a second date is given it marks the termination of the serial.

The letters following the dates indicate libraries where the serials are to be found: if the serial is incomplete, the symbol of the library is followed by *i*.

B.M.	British Museum.	Glasg.U.	Glasgow University.
Camb.P.S.	Cambridge Philosophical Library.	I.CE.	Institution of Civil Engineers, London.
Camb.U.	Cambridge University Library.	Linn.S.	Linnean Society.
Chem.S.	Chemical Society.	Math.S.	Mathematical Society.
Dub.N.L.I.	National Library of Ireland, Dublin.	N.H.M.	Natural History Museum.
Dub.R.C.S.	Royal College of Science, Dublin.	Oxon.B.	Bodleian, Oxford.
Dub.R.D.S.	Royal Dublin Society.	Oxon.B.(R.)	Deposited in Radcliffe.
Dub.R.I.A.	Royal Irish Academy, Dublin.	Oxon.R.	Radcliffe, Oxford.
Dub.T.C.	Trinity College, Dublin.	Pharm.S.	Pharmaceutical Society, London.
Edinb.R.S.	Royal Society of Edinburgh.	P.O.	Patent Office, London.
Edinb.U.	Edinburgh University. (<i>Information incomplete.</i>)	R.A.S.	Royal Astronomical Society.
Geol.M.	Geological Survey Museum, Jer- myn St.	R.Geogr.S.	Royal Geographical Society.
Geol.S.	Geological Society.	R.S.	Royal Society.
Glasg.P.S.	Royal Philosophical Society of Glasgow.	S.K.	Science Museum Library, South Kensington.
		U.C.L.	University College, London.
A. Agn.	Annales Agronomiques....Paris. 1851; 1875— B.M.; Chem.S.i.; Linn.S.; Oxon.B.; P.O.i.; R.S.i.		
Aarau Arch. Md.	Archiv der Medizin, Chirurgie, und Pharmacie. Aarau. 1816—17. R.S.		
Aarau Mt.	Mittheilungen der Aargauschen Naturforschenden Gesellschaft. Aarau. 1878— N.H.M.; R.S.; S.K.		
A. C.	Annales de Chimie, ou Recueil de Mémoires concernant la Chimie et les Arts qui en dépendent. Paris. 1789— B.M.; Camb.U.; Chem.S.; Dub.R.D.S.i.; Dub.T.C.i.; Edinb.R.S.; Edinb.U.; Glasg.U.; I.CE.; N.H.M.; Oxon.B.i.(R.); Pharm.S.; P.O.; R.S.; S.K.; U.C.L.		
A. C. Anal.	Annales de Chimie Analytique appliquée à l'Industrie, à l'Agricul- ture, à la Pharmacie et à la Biologie. Paris. 1896— Chem.S.i.; P.O.		
Ac. Cæs. Leop. N. Acta ...	Nova Acta physico-medica Academia Cæs. Leopoldino-Carolinæ Naturæ Curiosorum. Erlangen, Bonn, Breslau. 1758— Camb.P.S.; Camb.U.; Chem.S.i.; Dub.T.C.; Edinb.R.S.i.; Edinb.U.; Geol.S.i.; Glasg.U.; Linn.S.i.; N.H.M.; Oxon.R.; Pharm.S.i.; R.A.S.i.; R.S.; S.K.i.; U.C.L.i. See Ac. Nt. C. N. Acta and Cæs. Leop. Ac. N. Acta.		
Acireale Ac. At.	Atti e Rendiconti dell' Accademia di Scienze, Lettere e Arti dei Zelanti e PP. dello Studio di Acireale. Acireale. 1890— Camb.P.S.i.; Geol.S.i.; N.H.M.i.; R.S.i.		

List of Serial Publications

- Ac. Nt. C. N. Acta** See **Ac. Cæs. Leop. N. Acta and Cæs. Leop. Ac. N. Acta.**
- A. Cond. Fon. Chauss.** ... Annales des Conducteurs des Ponts et Chaussées; recueil de mémoires, etc., concernant le Service de Conducteurs des Ponts et Chaussées. Paris.
1857— I.CE.i.; P.O.
- A. Cons. Arts et Mét.** ... Annales du Conservatoire des Arts et Métiers. Paris.
1861— B.M.; Camb.U.; Glasg.P.S.i.; I.CE.i.; Oxon.B.; P.O.; R.S.; S.K.i.
- A. C. Phm.** See **Par. A. Cons.**
Annales der Chemie und Pharmacie. Lemgo, Leipzig, Heidelberg.
1832— B.M.; Camb.U.; Chem.S.; Dub.N.L.I.i.; Dub.R.C.S.i.; Edinb.R.S.i.; Glasg.P.S.; Glasg.U.i.; N.H.M.; Oxon.R.; Pharm.S.i.; P.O.; R.S.; S.K.; U.C.L.i.
- Acta Mth.**..... See **Lieb. A.**
Acta Mathematica. Stockholm.
1882— B.M.; Camb.P.S.; Camb.U.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Glasg.U.; Math.S.; Oxon.R.; R.A.S.; R.S.; U.C.L.
- Act. S. Helv.** Actes de la Société Helvétique des Sciences Naturelles. Lausanne, etc.
1825— B.M.i.; Edinb.R.S.i.; Linn.S.i.; N.H.M.; S.K.
- A. das Sc.** See **At. S. Elvet, Sch. Gs. Vh. and Sch. Nf. Gs. Vh.**
Annaes das Sciencias, etc. por huma Sociedade de Portuguezes residentes em Paris. Paris.
1818—27. B.M.; Camb.U.i.
- Adelaide Ph. S. T.** See **Par. A. das Sc.**
Adelaide Philosophical Society. Annual Reports and Transactions. Adelaide.
1865—79. B.M.i.; Edinb.R.S.i.; I.CE.i.; Linn.S.; N.H.M.i.; R.A.S.i.; R.S.i.
- A. der Hydrog.** Annalen der Hydrographie und Maritimen Meteorologie. Herausgegeben von der Deutschen Seewarte in Hamburg. Berlin.
1875— *Continuation of:* Hydrographische Mittheilungen, 1873—74. B.M.; P.O.i.; R.Geogr.S.
- A. di C.** Annali di Chimica. Milano.
1845—97. *Continued as:* Annali di Farmacoterapia e Chimica, 1898— B.M.; Camb.U.i.; Chem.S.i.; P.O.i.
- A. d'Ocul.** Annales d'Oculistique. Charleroi, Bruxelles, Paris.
1838— B.M.; Camb.U.i.; Oxon.R.i.
- Aér.** L'Aéronaute. Bulletin Mensuel Illustré de la Navigation Aérienne. Paris.
1868— B.M.i.; P.O.; S.K.
- Aer. J.** The Aeronautical Journal. London.
1897— B.M.; Camb.U.i.; I.CE.i.; P.O.; R.S.; S.K.
- Aér. S. Rp.** Annual Reports of the Aeronautical Society of Great Britain. London.
1866—93. I.CE.i.; Oxon.B.; P.O.
- A. Gén. Civ.** Annales du Génie Civil; Recueil de Mémoires sur les Mathématiques pures et appliquées; l'Astronomie, la Chimie, la Physique, etc. Paris.
1862—80. B.M.; Camb.U.; Dub.R.C.S.i.; I.CE.i.; P.O.
- A. Gén. Sc. Fs.** Annales générales des Sciences Physiques. Bruxelles.
1819—21. Camb.U.; Glasg.U.; N.H.M.; R.S.
- Ag. S. J.** Journal of the Royal Agricultural Society of England. London.
1840— B.M.; Camb.U.; Chem.S.; Dub.T.C.; Geol.M.; Geol.S.; Glasg.U.i.; I.CE.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.Geogr.S.; R.S.; S.K.; U.C.L.i.
- A. Hydrog.** See **J. Ag. S.**
Annales Hydrographiques. Recueil d'avis, instructions, documents, et mémoires relatifs à l'Hydrographie et à la Navigation. Paris.
1849— B.M.; Edinb.R.S.i.; Oxon.B.; R.A.S.i.; R.Geogr.S.; R.S.i.
- Alb. I. T.** Transactions of the Albany Institute. Albany.
1830— B.M.; N.H.M.; R.S.; S.K.i.
- A. Lndw.** Annalen der Landwirthschaft in den K. Preuss. Staaten; herausg. vom Präsidium des K. Landes Oecon. Collegiums. Berlin.
1843—71. P.O.
- Am. Ac. Mm.** Memoirs of the American Academy of Arts and Sciences. Cambridge and Boston.

List of Serial Publications

1785— B.M.i.; Camb.P.S.; Camb.U.; Dub.R.D.S.i.; Dub.R.I.A.i.;
Dub.T.C.i.; Edinb.R.S.; Geol.S.i.; I.CE.i.; Linn.S.; N.H.M.;
Oxon.R.; P.O.i.; R.A.S.; R.Geogr.S.i.; R.S.; S.K.i.; U.C.L.i.

See **Bost. Am. Ac. Mm. and Bost. Mm. Am. Ac.**

- Am. Ac. P.** Proceedings of the American Academy of Arts and Sciences. Boston.
1846— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.D.S.;
Edinb.R.S.; Geol.S.; Glasg.P.S.; Glasg.U.i.; I.CE.i.; Linn.S.;
Math.S.i.; N.H.M.; Oxon.R.; P.O.; R.A.S.; R.Geogr.S.; R.S.;
S.K.; U.C.L.i.
- Am. As. P.** Proceedings of the American Association for the Advancement of
Science. Washington, Salem.
1848— B.M.i.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.;
Glasg.P.S.i.; Glasg.U.i.; I.CE.i.; Linn.S.i.; N.H.M.; Oxon.B.;
Oxon.R.i.; P.O.; R.A.S.i.; R.Geogr.S.i.; R.S.; S.K.
- Am. C.** The American Chemist, a monthly Journal of theoretical Chemistry.
New York.
1871—77. Chem.S.i.; N.H.M.; P.O.; Pharm.S.i.; S.K.i.
- Am. C. J.** American Chemical Journal. Baltimore.
1879— Camb.P.S.; Camb.U.; Chem.S.; Dub.R.I.A.; Edinb.R.S.;
Glasg.P.S.; N.H.M.; Oxon.R.; Pharm.S.i.; P.O.; R.S.; S.K.
- Am. C. S. J.** The Journal of the American Chemical Society. New York,
Easton, Pa.
1879— B.M.; Camb.P.S.; Chem.S.; Glasg.U.i.; N.H.M.;
Pharm.S.; P.O.; S.K.; U.C.L.i.
- Am. Eng. & Railroad J.** American Engineer and Railroad Journal. New York.
1893— *Continuation of*: The Railroad and Engineering Journal,
1887—92. B.M.; I.CE.; P.O.
- Amiens Ac. Mm.** (Mémoires de l'Académie des Sciences, Agriculture, Commerce,
Amiens Mm. Belles-lettres, et Arts du département de la Somme. Amiens.
Amiens Mm. Ac. 1835— B.M.; Camb.U.; Dub.T.C.i.; N.H.M.i.; Oxon.B.i.;
Amiens Mm. Ac. Sc. R.S.i.)
- Am. I. Mn. E. T.** Transactions of the American Institute of Mining Engineers.
Philadelphia, Easton, New York.
1871— Geol.S.; I.CE.; P.O.; S.K.
- A. Mines** Annales des Mines, ou Recueil des Mémoires sur l'exploitation des
Mines, et sur les Sciences et les Arts qui s'y rapportent. Paris.
1817— B.M.; Camb.U.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.;
Edinb.U.i.; Geol.S.; Glasg.P.S.i.; Glasg.U.i.; I.CE.; N.H.M.;
Oxon.B.(R.); P.O.; R.S.; S.K.
- Am. J. Mth.** American Journal of Mathematics. Baltimore.
1878— B.M.; Camb.P.S.; Camb.U.; Dub.N.L.I.; Dub.R.I.A.;
Dub.T.C.; Edinb.R.S.; Edinb.U.; Glasg.U.i.; I.CE.i.; Math.S.;
Oxon.B.; Oxon.R.; R.A.S.; R.S.; S.K.; U.C.L.
- Am. J. Phm.** American Journal of Pharmacy; published by the Philadelphia
College of Pharmacy. Philadelphia.
1836— Chem.S.i.; Pharm.S.; P.O.i.
- Am. J. Psychol.** The American Journal of Psychology. Baltimore, Worcester, Mass.
1888— B.M.; Oxon.B.; Oxon.R.; U.C.L.i.
- Am. J. Sc.** The American Journal of Science and Arts; Silliman. New Haven.
1818— B.M.; Camb.P.S.i.; Camb.U.; Chem.S.i.; Dub.N.L.I.i.;
Dub.R.C.S.i.; Dub.T.C.i.; Edinb.R.S.; Edinb.U.; Geol.M.;
Geol.S.; Glasg.P.S.; Glasg.U.i.; I.CE.i.; N.H.M.; Oxon.B.;
Oxon.R.; P.O.; R.A.S.i.; R.Geogr.S.i.; R.S.; S.K.
- See **Silliman J.**
- Am. Mcr. J.** The American Monthly Microscopical Journal. New York.
1880— Camb.U.; Dub.N.L.I.; N.H.M.; Oxon.R.; Pharm.S.i.; P.O.
- Am. Mcr. S. P.** Proceedings of the American Microscopical Society. Washington,
Ithaca, N.Y.
1892—94. *Continuation of*: Proceedings of the American Society
of Microscopists, 1878—91. *Continued as*: Transactions of the
American Microscopical Society, 1895—. N.H.M.
- Am. Mcr. S. T.** Transactions of the American Microscopical Society. Lincoln,
Buffalo.
1895— *Continuation of*: Proceedings, etc., 1892—94. Glasg.U.i.;
N.H.M.; Oxon.B.
- Am. Md. Ph. Reg.** The American Medical and Philosophical Register or Annals of
Medicine, Natural History, Agriculture and the Arts. New York.
1810—1814. B.M.; Geol.S.; R.S.; U.C.L.

List of Serial Publications

- Am. Met. J.** American Meteorological Journal. Detroit.
1884—96. B.M.i.
- Am. Ntlist.** The American Naturalist. An illustrated magazine of Natural History. Philadelphia, Boston.
1868— B.M.; Camb.P.S.i.; Camb.U.; Edinb.R.S.i.; Geol.M.i.; Linn.S.i.; N.H.M.; Oxon.R.; R.Geogr.S.i.; R.S.i.; S.K.
- Am. Phm. As. P.** Proceedings of the American Pharmaceutical Association. Philadelphia.
1853— Pharm.S.
- Am. Ph. S. P.** Proceedings of the American Philosophical Society. Philadelphia.
1840— Camb.P.S.; Camb.U.i.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.; Geol.S.; Glasg.P.S.i.; Glasg.U.i.; I.CE.i.; Linn.S.; Math.S.i.; N.H.M.i.; Oxon.B.; Oxon.R.i.; P.O.; R.A.S.; R.Geogr.S.; R.S.; S.K.; U.C.L.
- Am. Ph. S. T.** Transactions of the American Philosophical Society. Philadelphia.
1771— B.M.i.; Camb.P.S.; Camb.U.i.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.; Geol.S.i.; Glasg.U.i.; I.CE.i.; Linn.S.; N.H.M.i.; Oxon.B.; Oxon.R.i.; P.O.; R.A.S.i.; R.Geogr.S.i.; R.S.; S.K.i.; U.C.L.i.
- See **Philad. T.**
- Am. Pol. J.** The American Polytechnic Journal. Washington.
1853—54. B.M.; P.O.
- Am. S. CE. T.** Transactions of the American Society of Civil Engineers. New York.
1871— I.CE.; P.O.; S.K.i.
- Am. S. Mscr. P.** Proceedings of the American Society of Microscopists. Indianapolis, etc.
1878—91. *Continued as:* Proceedings of the American Microscopical Society, 1892—94. N.H.M.
- Amst. Ak. Jb.** Jaarboek van de Koninklijke Akademie van Wetenschappen gevestigd te Amsterdam. Amsterdam.
1857— B.M.; Camb.P.S.; Dub.R.D.S.; Dub.T.C.; Edinb.R.S.i.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.; N.H.M.; R.A.S.i.; R.Geogr.S.; R.S.; U.C.L.i.
- See **Amst. Jb. and Amst. Jb. Ak.**
- Amst. Ak. P.** Koninklijke Akademie van Wetenschappen te Amsterdam. Proceedings of the Section of Sciences. Amsterdam.
1899— Camb.P.S.; Camb.U.; Chem.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Glasg.P.S.; Glasg.U.; Oxon.B.; R.A.S.; R.Geogr.S.; R.S.; S.K.
- Amst. Ak. Vh.** Verhandelingen der Koninklijke Akademie van Wetenschappen. Amsterdam.
1854— Camb.P.S.; Camb.U.; Dub.N.L.I.; Dub.R.I.A.i.; Edinb.R.S.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.; R.A.S.; R.Geogr.S.; R.S.; S.K.i.; U.C.L.i.
- Amst. Ak. Vs.** Verslagen der Zittingen van de Wis- en Natuurkundige Afdeling der Koninklijke Akademie van Wetenschappen. 1893, 1894.
Verslagen van de Zittingen der Wis- en Natuurkundige Afdeling van de Koninklijke Akademie van Wetenschappen. 1895, 1896.
Koninklijke Akademie van Wetenschappen te Amsterdam. Verslagen van de Gewone Vergaderingen der Wis- en Natuurkundige Afdeling. Amsterdam.
1897— B.M.; Camb.P.S.; Camb.U.; Dub.T.C.; Edinb.R.S.; Glasg.P.S.; Glasg.U.; N.H.M.; R.A.S.; R.Geogr.S.; R.S.; S.K.i.
- Amst. Ak. Vs. M.** Verslagen en Mededeelingen der Koninklijke Akademie van Wetenschappen. Afdeling Natuurkunde. Amsterdam.
1853—92. B.M.; Camb.P.S.; Camb.U.; Dub.T.C.; Edinb.R.S.; Glasg.P.S.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.i.; R.A.S.i.; R.Geogr.S.; R.S.; S.K.; U.C.L.i.
- See **Amst. Vs. Ak.**
- Amst. Ak. Wet. P.** Processen-Verbaal van de Gewone Vergaderingen der Koninklijke Akademie van Wetenschappen. Afdeling Natuurkunde. Amsterdam.
1865—84. Dub.R.D.S.; Linn.S.i.; R.A.S.; R.S.
- Amst. Arch. Wisk. Gn.** Archief uitgegeven door het Wiskundig Genootschap. Amsterdam.
1856— B.M.; R.S.i.; U.C.L.i.
- See **Arch. Wisk. Gn.**
- Amst. I.** Het Instituut. Amsterdam.
1841—46. B.M.; Edinb.R.S.i.; S.K.

List of Serial Publications

- Amst. Jb.** } See **Amst. Ak. Jb.**
Amst. Jb. Ak. }
Amst. Mengelwerk } Mengelwerk van uitgelezene en andere Wis- en Natuurkundige Verhandelingen; door het Genootschap der Mathematische Wetenschappen, etc. Amsterdam. 1796—1816. R.S.
 See **Mengelwerk Wisk. Vh.**
Amst. N. Vh. Nieuwe Verhandelingen der eerste Klasse van het Koninklijk Nederlandsche Instituut van Wetenschappen, Letterkunde, en Schoone Kunsten te Amsterdam. Amsterdam. 1827—52. B.M.; Camb.U.; Dub.T.C.; Edinb.R.S.i.; Glasg.U.i.; Linn.S.; N.H.M.; R.S.; S.K.
Amst. N. Ws. Ntk. Vh.... Nieuwe Wis- en Natuurkundige Verhandelingen van het Genootschap te Amsterdam. Amsterdam. 1844—54. B.M.; R.S.
Amst. Ts. Nt. Wet. Tijdschrift voor Natuurkundige Wetenschappen en Kunsten. Amsterdam. 1810—11. Camb.P.S.; R.S.
Amst. Ts. Ws. Nt. Wet. Tijdschrift voor de Wis- en Natuurkundige Wetenschappen, Letterkunde, en Schoone Kunsten te Amsterdam. Amsterdam. 1847—52. B.M.; Camb.U.; Dub.T.C.; Edinb.R.S.i.; Linn.S.; Oxon.B.; R.S.
Amst. Vh...... } Verhandelingen der Eerste Klasse van het Koninklijk Nederlandsche Instituut van Wetenschappen, Letterkunde, en Schoone Kunsten te Amsterdam. Amsterdam.
Amst. Vh. Ak...... } 1812—25. B.M.; Camb.U.; Dub.T.C.; Edinb.R.S.; Glasg.U.i.; N.H.M.; Oxon.B.; R.S.; S.K.
Amst. Vs. Ak...... } See **Amst. Ak. Vs. M.**
A. Mt. Annali di Matematica pura ed applicata...; Tortolini. Roma, Milano. 1858— B.M.; Camb.U.i.; Dub.R.D.S.; Dub.T.C.; Edinb.U.; Glasg.U.i.; Oxon.B.(R.); R.S.; U.C.L.
 See **Tortolini A.**
A. Mth...... Annals of Mathematics. University of Virginia. Charlottesville, Va. 1884— Camb.P.S.; Camb.U.; Dub.R.I.A.i.; Edinb.R.S.; Math.S.i.; Oxon.B.; S.K.i.
Amt. Mch. S. J. The [Quarterly] Journal of the Amateur Mechanical Society. London. 1872—79. B.M.; P.O.; S.K.
Anal. The Analyst, including the Proceedings of the Society of Public Analysts. London. 1877— B.M.; Camb.U.i.; Chem.S.; Geol.S.i.; Glasg.P.S.; Glasg.U.i.; Pharm.S.; P.O.; R.S.i.; U.C.L.i.
Angers Mm. S. Ag. Mémoires de la Société d'Agriculture, Sciences, et Arts. Angers. 1831— B.M.; N.H.M.i.; Oxon.B.i.; R.S.i.
Angers S. Sc. Bll. Bulletin de la Société d'Études Scientifiques d'Angers. Angers. 1872— B.M.; N.H.M.
Anhalt Vh. Nt. Vr. Verhandlungen des naturhistorischen Vereins für Anhalt in Dessau. Dessau. 1840—70.
An. Mét. Fr. Annuaire Météorologique de la France. Paris. 1849—52. *Continued as:* Annuaire de la Société Météorologique de France, 1853— B.M.; Camb.U.; Dub.T.C.; Glasg.U.i.; R.S.
Anvers J. Phm. Journal de Pharmacie. Publié par la Société de Pharmacie d'Anvers. Anvers. 1845— B.M.; Oxon.R.; Pharm.S.i.
A. Pon. Chauss. Annales des Ponts et Chaussées. Mémoires et documents relatifs à l'Art des Constructions et au Service de l'Ingénieur. Paris. 1831— B.M.; Camb.U.; Edinb.U.i.; Glasg.P.S.i.; Glasg.U.i.; I.CE.; P.O.; R.S.i.
 See **Par. A. Pon. Chauss.**
A. Ps...... Annalen der Physik; Drude. Leipzig. 1900— *Continuation of:* Annalen der Physik und Chemie, 1824—99. B.M.; Camb.P.S.; Camb.U.; Chem.S.; Edinb.R.S.; Glasg.P.S.; Glasg.U.; I.CE.; N.H.M.; Pharm.S.; P.O.; R.S.; S.K.; U.C.L.
A. Ps. C. Annalen der Physik und Chemie; Poggenorff, Wiedemann. Leipzig. 1824—99. *Continued as:* Annalen der Physik; Drude. 1900— B.M.; Camb.P.S.i.; Camb.U.; Chem.S.; Dub.R.I.A.; Dub.T.C.;

List of Serial Publications

- Edinb.R.S.; Edinb.U.; Glasg.P.S.i.; Glasg.U.i.; I.CE.i.; N.H.M.; Oxon.B.(R.); Pharm.S.i.; P.O.; R.S.; S.K.; U.C.L.i.
See Pogg. A.
- Arch. An. Pl. (Pl. Ab.)** ... Archiv für Anatomie und Physiologie. Physiologische Abtheilung. Leipzig.
 1877— Camb.P.S.; Camb.U.; Glasg.U.; N.H.M.i.; R.S.; S.K.; U.C.L.
- Arch. de l'Électr.** ... Archives de l'Electricité; par A. de la Rive. Geneva.
 1841—45. B.M.; Camb.U.; P.O.; R.S.i.
- Arch. f. Oph.** ... Archiv für Ophthalmologie. Berlin, Leipzig.
 1854— B.M.; Camb.U.; Glasg.U.; R.S.i.
- Arch. Md. Phm. Mil.** ... Archives de Médecine et de Pharmacie Militaires. Paris.
 1883— *Continuation of*: Recueil de Mémoires de Médecine, de Chirurgie, et de Pharmacie Militaires, 1815—82. B.M.
- Arch. Mkr. An.** ... Archiv für mikroskopische Anatomie. Bonn.
 1865— B.M.; Camb.P.S.; Camb.U.; Dub.R.D.S.; Glasg.U.; Linn.S.; N.H.M.i.; Oxon.R.; R.S.; S.K.; U.C.L.
- Arch. Mth. Ntvd.** ... Archiv for Mathematik og Naturvidenskab. Kristiania.
 1876— B.M.; Camb.U.; Dub.R.I.A.i.; Edinb.R.S.; Glasg.U.i.; Math.S.i.; N.H.M.; Oxon.B.; Oxon.R.i.; R.S.
- Arch. Mth. Ps.** ... Archiv der Mathematik und Physik; Grunert. Greifswald, Leipzig.
 1841— B.M.; Camb.U.; Dub.N.L.I.; Dub.R.C.S.; Edinb.U.; Glasg.U.; Math.S.i.; Oxon.B.(R.); R.S.; U.C.L.i.
See Grunert Arch.
- Arch. Néerl.** ... Archives Néerlandaises des Sciences Exactes et Naturelles. La Haye, Harlem.
 1866— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Geol.M.i.; Geol.S.i.; Glasg.P.S.; Glasg.U.i.; Linn.S.; Math.S.; N.H.M.; Oxon.R.; P.O.; R.S.; S.K.; U.C.L.i.
- Arch. Oph.** ... Archives of Ophthalmology. New York.
 1879— *Continuation of*: Archives of Ophthalmology and Otolology, 1869—78. B.M.i.; Coll.Surg.; Glasg.U.i.; Oxon.R.
- Arch. Ot.** ... Archives of Otolology. New York.
 1879— *Continuation of*: Archives of Ophthalmology and Otolology, 1869—78. B.M.i.; Coll.Surg.; Glasg.U.i.; Oxon.R.
- Arch. Phm.** ... Archiv des Apothekervereins im nördlichen Teutschland. Archiv der Pharmacie. Schmalkalden, Lemgo, Hannover, etc.
 1822— Pharm.S.i.
- Arch. Sc. Ps. Nt.** ... Bibliothèque Universelle. Archives des Sciences Physiques et Naturelles. Genève.
 1846— B.M.; Camb.U.; Chem.S.i.; Dub.N.L.I.i.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.; Edinb.U.; Glasg.U.; I.CE.i.; N.H.M.; Oxon.B.; P.O.; R.Geogr.S.i.; R.S.; S.K.
See Bb. Un. Arch.
- Arch. Wisk. Gn.** ... **See Amst. Arch. Wisk. Gn.**
- Arg. S. Ci. A.** ... Anales de la Sociedad Científica Argentina. Buenos Aires.
 1876— B.M.i.; I.CE.i.; N.H.M.
- Arnhem Ntk.** ... Naturkundig Tijdschrift, inhoudende Phijsica, Chemie, Pharmacie, Natuurlijke Historie en Literatuur. Arnhem.
 1843—60. N.H.M.
- As.** ... L'Astronomie. Revue d'Astronomie populaire, de Météorologie et de Physique du Globe. Paris.
 1882—94. B.M.; Camb.U.i.; Edinb.R.S.; R.A.S.; R.S.i.; S.K.
- As. & Asps.** ... Astronomy and Astrophysics. Northfield, Minn.
 1892—94. *Continuation of*: The Sideral Messenger, 1883—91. *Continued as*: The Astrophysical Journal, 1895—. B.M.; Camb.P.S.i.; Dub.N.L.I.i.; R.A.S.; R.S.; S.K.
- A. Sc.** ... Annaes das Sciencias e Lettras, publicados debaixo dos auspicios da Academia Real das Sciencias; Sciencias mathematicas, physicas, historico-naturaes e medicas. Lisboa.
 1857— B.M.; Dub.R.I.A.; Edinb.R.S.i.; N.H.M.; R.A.S.i.; R.S.i.; S.K.i.
See Lisb. A.
- A. Sc. Lomb. Ven.** ... Annali delle Scienze del Regno Lombardo-Veneto. Padova e Venezia.
 1831—45. B.M.; Camb.U.; Dub.T.C.i.; Oxon.B.
- As. Fr. C. R.** ... Association Française pour l'Avancement des Sciences. Compte Rendu. Paris, etc.

List of Serial Publications

- 1872— B.M.; Camb.U.; Edinb.R.S.; Edinb.U.; Geol.M.; Geol.S.; Glasg.P.S.; Glasg.U.; I.CE.; N.H.M.; P.O.; R.A.S.i.; R.S.; S.K.
- Ashmol. S. P.** Abstracts of the Proceedings of the Ashmolean Society. Oxford.
- 1844—81. Camb.U.; Dub.R.D.S.; Edinb.R.S.i.; Geol.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.i.; R.S.; S.K.i.
- Ashmol. S. T.** Transactions of the Ashmolean Society. Oxford.
- 1834—76. Camb.U.; Dub.R.D.S.; Edinb.R.S.; N.H.M.i.; Oxon.B.i.; Oxon.R.; P.O.i.; R.S.i.; S.K.i.
- As. J.** The Astronomical Journal. Boston.
- 1851—61. 1888— B.M.; Camb.U.; Glasg.U.i.; Oxon.B.; Oxon.R.i.; R.A.S.; R.S.i.; S.K.
- See **Gould As. J.**
- As. Nr.** Astronomische Nachrichten; Schumacher. Altona.
- 1823— B.M.; Camb.U.; Dub.R.I.A.i.; Edinb.R.S.; Edinb.U.i.; Glasg.U.i.; I.CE.i.; Oxon.B.(R.); R.A.S.; R.S.; S.K.i.; U.C.L.i.
- Asps. J.** The Astrophysical Journal. Chicago.
- 1895— *Continuation of:* Astronomy and Astrophysics, 1892—94. B.M.; Camb.P.S.; Camb.U.; Dub.N.L.I.; Dub.R.D.S.; Glasg.U.; Oxon.R.i.; R.A.S.; R.S.; S.K.; U.C.L.
- As. Researches** Asiatick Researches; or Transactions of the [Bengal] Society instituted for inquiring into the History and Antiquities, Arts, Sciences, and Literature of Asia. Calcutta.
- 1788—1836. B.M.; Camb.U.; Edinb.R.S.i.; Edinb.U.; Geol.S.; Glasg.U.i.; I.CE.i.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; R.A.S.; R.Geogr.S.; R.S.; S.K.; U.C.L.i.
- As. S. J.** Journal of the Royal Asiatic Society. London.
- 1834— B.M.; Camb.U.; Dub.R.D.S.; Edinb.R.S.i.; Edinb.U.i.; Geol.S.; Glasg.U.i.; Linn.S.; Oxon.B.; Oxon.R.; P.O.i.; R.Geogr.S.; R.S.i.; S.K.; U.C.L.i.
- As. S. Mm.** Memoirs of the [Royal] Astronomical Society of London. London.
- 1822— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Geol.S.; Glasg.P.S.i.; Glasg.U.; I.CE.; Oxon.B.; Oxon.R.; P.O.i.; R.A.S.; R.Geogr.S.i.; R.S.; S.K.i.; U.C.L.
- As. S. M. Not.** Monthly Notices of the [Royal] Astronomical Society of London. London.
- 1827— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.; Geol.S.i.; Glasg.P.S.i.; Glasg.U.i.; I.CE.i.; Oxon.B.i.; Oxon.R.i.; P.O.i.; R.A.S.; R.Geogr.S.i.; R.S.; S.K.i.; U.C.L.
- As. S. Pac. Pb.** Publications of the Astronomical Society of the Pacific. San Francisco.
- 1889— B.M.; Camb.U.i.; Dub.R.D.S.i.; Glasg.U.i.; R.A.S.; R.S.i.
- Assur. Mg.** The Assurance Magazine and Journal of the Institute of Actuaries. London.
- 1830—67. *Continued as:* Journal of the Institute of Actuaries, 1869— B.M.; Camb.U.i.; Edinb.R.S.i.; Geol.S.i.; R.A.S.i.; R.S.i.; U.C.L.i.
- At. Ac. It.** Atti dell' Accademia Italiana di Scienze, etc. Livorno.
1810. B.M.; Camb.U.; Dub.T.C.; N.H.M.; Oxon.B.
- A. Tél.** Annales Télégraphiques, publiées sous le patronage du Directeur Général des Lignes Télégraphiques. Paris.
- 1855— B.M.i.; Camb.U.i.; I.CE.i.; P.O.
- At. Sc. It.** Riunione degli Scienziati Italiani. Atti. Pisa, etc.
- 1839— B.M.; Camb.U.; N.H.M.; R.S.
- At. S. Elvet.** Atti della Società Elvetica delle Scienze Naturali. Lugano.
- 1833, 1860. N.H.M.; S.K.
- See **Act. S. Helv., Sch. Gs. Vh. and Sch. Nf. Gs. Vh.**
- Aube Mm. S. Ac.** {Mémoires de la Société [Académique] d'Agriculture, des Sciences, et des Lettres du département de l'Aube. Troyes.
- Aube Mm. S. Ag.** {1823— B.M.; Camb.U.i.; Dub.T.C.i.; Oxon.B.; R.S.i.
- Auk** The Auk. A Quarterly Journal of Ornithology. Boston, New York.
- 1884— *Continuation of:* Bulletin of the Nuttall Ornithological Club, 1876—83. B.M.; Dub.N.L.L.; Linn.S.i.; N.H.M.
- A. Un. Blg.** Annales des Universités de Belgique. Bruxelles.
- 1842—63. Camb.U.; Oxon.B.; P.O.; R.S.i.
- See **Brux. A. Un.**

List of Serial Publications

- Ausl.** Das Ausland. München und Stuttgart.
1828—93. B.M.; Camb.U.i.; N.H.M.i.; Oxon.B.i.; R.Geogr.S.i.
- Aust. As. Rp.** Report of the.....Meeting of the Australasian Association for the
Advancement of Science. Sydney.
1888— Camb.P.S.; Camb.U.; Chem.S.; Dub.R.D.S.; Dub.R.I.A.i.;
Edinb.R.S.; Edinb.U.i.; Geol.M.; Geol.S.; Glasg.U.i.; I.CE.i.;
Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.i.; P.O.; R.A.S.; R.S.; S.K.
- Auvergne A. Sc.** Annales Scientifiques, Littéraires, et Industrielles de l'Auvergne,
publiées par l'Académie des Sciences, Belles-Lettres, et Arts de
Clermont-Ferrand. Clermont-Ferrand.
1828—58. B.M.; Camb.U.; Oxon.B.; R.S.
- Bamb. Nf. Gs. B.** Bericht des Naturforschenden Gesellschaft zu Bamberg. Bamberg.
1852— N.H.M.
- Barcel. Ac. Bl.** Boletín de la Real Academia de Ciencias y Artes de Barcelona.
Barcelona.
1892— N.H.M.
- Barcel. Ac. Mm.** Memorias de la Real Academia de Ciencias Naturales y Artes de
Barcelona. Barcelona.
[1st Series cannot be traced.] 1876— N.H.M.
- B. A. Rp.** Report of the.....Meeting of the British Association for the
Advancement of Science. London.
1831— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.D.S.;
Dub.R.I.A.i.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Geol.M.; Geol.S.;
Glasg.P.S.; Glasg.U.; I.CE.; Linn.S.; N.H.M.; Oxon.B.i.;
Oxon.R.; Pharm.S.i.; P.O.; R.A.S.; R.Geogr.S.; R.S.; S.K.;
U.C.L.
- Barrow FC. Rp.** Barrow Naturalists' Field Club and Literary and Scientific
Association. Annual Report and Proceedings. Barrow.
1877— B.M.; Camb.U.; Geol.S.; N.H.M.; Oxon.B.i.
- Basel Vh.** Verhandlungen der Naturforschenden Gesellschaft in Basel. Basel.
1857— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.D.S.i.;
Dub.R.I.A.i.; Dub.T.C.i.; Edinb.R.S.; Geol.S.; Linn.S.;
N.H.M.; Oxon.R.; R.A.S.i.; R.S.; S.K.; U.C.L.i.
- Batav. Ntk. Ts.** Natuurkundig Tijdschrift voor Nederlandsch-Indië. Batavia.
1850— Camb.P.S.; Camb.U.; Edinb.R.S.i.; Linn.S.; N.H.M.;
R.A.S.i.; R.S.i.; U.C.L.i.
- Bath S. J.** Journal of the Bath and West of England Society for the En-
couragement of Agriculture, Arts, Manufactures and Commerce.
Bath.
1853— B.M.; Camb.U.; Dub.T.C.; Geol.M.; Oxon.B.; P.O.; S.K.
Zeitschrift für Physik, Mathematik, und verwandte Wissenschaften;
Baumgartner und von Ettingshausen. Wien.
1826—42. B.M.; Camb.U.i.; Oxon.B.i.(R.); R.S.i.; U.C.L.i.
- Baumgartner Z.** Bibliothéque Britannique, ou Recueil extrait des Ouvrages Anglais
périodiques et autres: partie des Sciences et Arts. Genève.
1796—1815. B.M.; Edinb.U.; N.H.M.; Oxon.B.; P.O.; R.S.
- Bb. Brit.** Biblioteca Italiana, ossia Giornale di Letteratura, Scienze, etc.
Milano.
1816—56. B.M.; Edinb.R.S.i.; Oxon.B.
- Bb. It.** Bibliotheca Mathematica. Stockholm and Leipzig.
1887— B.M.; Camb.U.; Glasg.U.; Oxon.B.; Oxon.R.; R.S.;
S.K.i.; U.C.L.
- Bb. Mth.** Bibliothéque Universelle des Sciences, Belles-Lettres, et Arts, faisant
suite à la Bibliothéque Britannique rédigée à Genève. Partie des
Sciences. Genève.
1816—45. B.M.; Camb.U.; Dub.R.I.A.i.; Edinb.R.S.i.; Edinb.U.;
Glasg.U.; N.H.M.; Oxon.B.; P.O.; R.Geogr.S.i.; R.S.; S.K.
- Bb. Un.** Bibliothéque Universelle. Archives des Sciences Physiques et
Naturelles. Genève.
1846— B.M.; Camb.U.; Chem.S.i.; Dub.N.L.I.i.; Dub.R.D.S.i.;
Dub.R.I.A.i.; Edinb.R.S.; Edinb.U.; Glasg.U.; I.CE.i.; N.H.M.;
Oxon.B.; P.O.; R.Geogr.S.i.; R.S.; S.K.
- Bb. Un. Arch.** See **Arch. Sc. Ps. Nt.**
(Report and Proceedings of the Belfast Natural History and Philo-
sophical Society. Belfast.
1852— B.M.i.; Camb.P.S.; Dub.N.L.I.; Dub.R.D.S.; Dub.T.C.;
Edinb.R.S.i.; Geol.S.i.; Glasg.P.S.i.; N.H.M.; P.O.i.; R.A.S.
- Belfast NH. S. P.**
Belfast NH. S. Rp. & P. }

List of Serial Publications

- Beng. As. S. J.**..... Journal of the Asiatic Society of Bengal. Calcutta.
1832— B.M.; Camb.P.S.i.; Camb.U.; Dub.R.D.S.; Dub.R.I.A.;
Dub.T.C.; Edinb.R.S.i.; Geol.S.; Glasg.U.i.; I.CE.i.; Linn.S.;
N.H.M.; Oxon.B.; Oxon.R.i.; R.Geogr.S.; R.S.; S.K.; U.C.L.
See Beng. J. As. S.
- Beng. As. S. P.** Proceedings of the Asiatic Society of Bengal. Calcutta.
1865— B.M.; Camb.P.S.i.; Camb.U.; Dub.T.C.; Edinb.R.S.i.;
Edinb.U.i.; Geol.S.; Glasg.U.i.; I.CE.i.; Linn.S.; N.H.M.;
Oxon.B.; Oxon.R.; R.Geogr.S.i.; R.S.; S.K.; U.C.L.
- Beng. J. As. S.**..... *See Beng. As. S. J.*
- Berg-Hm. Jb.** Berg- und Hüttenmännisches Jahrbuch der k.k. Schemnitzer-
Bergakademie und der k.k. Montan-Lehranstalten zu Leoben
und Pöfgram. Wien.
1851— B.M.i.; Geol.S.i.; I.CE.i.; P.O.i.; S.K.
*See Jb. Berg-Hm., Leoben Berg-Hm. Jb. and Wien Berg-
Hm. Jb.*
- Berg-Hm. Ztg.** Berg- und Hüttenmännische Zeitung; mit besonderer Berücksich-
tigung der Mineralogie und Geologie; Hartmann. Nordhausen
und Leipzig.
1842— B.M.; I.CE.i.; N.H.M.; P.O.; S.K.
- Berl. Ab.** {
Berl. Ak. Ab. {
Abhandlungen der Königlichen Akademie der Wissenschaften zu
Berlin. Berlin.
1804— B.M.; Camb.P.S.; Camb.U.; Dub.R.D.S.; Edinb.R.S.;
Edinb.U.; Geol.M.i.; Geol.S.i.; Glasg.U.; Linn.S.i.; N.H.M.;
Oxon.B.; Oxon.R.; P.O.i.; R.A.S.i.; R.Geogr.S.i.; R.S.;
S.K.i.; U.C.L.i.
- Berl. Ak. Mb.** Monatsberichte der K. Preuss. Akademie der Wissenschaften zu
Berlin. Berlin.
1856—81. B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.D.S.i.;
Dub.R.I.A.i.; Dub.T.C.i.; Edinb.R.S.; Geol.S.; Glasg.P.S.i.;
Glasg.U.i.; I.CE.i.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.;
Oxon.R.; P.O.; R.A.S.i.; R.Geogr.S.; R.S.; S.K.; U.C.L.
- See Berl. Mb.*
- Berl. Ak. Sb.** Sitzungsberichte der K. Preussischen Akademie der Wissenschaften
zu Berlin. Berlin.
1882— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.D.S.;
Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Edinb.U.i.; Geol.S.;
Glasg.P.S.; Glasg.U.; I.CE.i.; Linn.S.; Math.S.; N.H.M.i.;
Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.Geogr.S.; R.S.; S.K.;
U.C.L.
- Berl. B.** Bericht über die zur Bekanntmachung geeigneten Verhand-
lungen der K. Preuss. Akademie der Wissenschaften zu Berlin.
Berlin.
1836—55. B.M.; Dub.R.I.A.i.; Edinb.R.S.; Geol.S.; Linn.S.;
N.H.M.; Oxon.B.; P.O.; R.A.S.; R.Geogr.S.i.; R.S.; S.K.
- Berl. B.** Berichte der Deutschen Chemischen Gesellschaft. Berlin.
1868— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.N.L.L.; Glasg.
P.S.; Glasg.U.; N.H.M.; Oxon.R.; Pharm.S.i.; P.O.; R.S.;
S.K.; U.C.L.i.
- See D. C. Gs. B.*
- Berl. Gs. Nt. Fr. N. Schr.** Neue Schriften der Gesellschaft Naturforschender Freunde zu
Berlin. Berlin.
1795—1803. B.M.; N.H.M.; S.K.
- Berl. Mb.** *See Berl. Ak. Mb.*
- Berl. Mm.** {
Berl. Mm. Ac. {
Mémoires de l'Académie Royale des Sciences de Berlin. Berlin.
1770—1804. B.M.i.; Camb.U.; Dub.R.D.S.i.; Dub.T.C.i.; Edinb.
R.S.; Edinb.U.; Glasg.U.i.; N.H.M.; Oxon.B.; P.O.; R.S.;
S.K.; U.C.L.
- Berl. Pol. Gs. Vh.** Verhandlungen der Polytechnischen Gesellschaft. Berlin.
1851— R.S.i.
- Berl. Ps. Gs. Vh.**..... Verhandlungen der Physikalischen Gesellschaft in Berlin. Berlin.
1882—98. *Continued as:* Verhandlungen der Deutschen Physik-
alischen Gesellschaft, 1899— Camb.P.S.i.; Camb.U.; Glasg.U.;
N.H.M.; Oxon.B.; P.O.; R.A.S.; R.S.; S.K.; U.C.L.i.
- Berl. Ps. Reichsanst. Ab.** Wissenschaftliche Abhandlungen der Physikalisch-Technischen
Reichsanstalt. Berlin.
1894— Camb.P.S.; Camb.U.i.; Chem.S.; Edinb.R.S.; Glasg.U.i.;
P.O.; S.K.; U.C.L.

List of Serial Publications

- Berl. Tel. Vr. Z.** { Zeitschrift des Deutsch-Oesterreichischen Telegraphen-Vereins.
Herausg. in dessen Auftrage von der K. Preuss. Telegraphen-
Direction. Berlin.
1854—69. P.O.
- Berl. Z. Tel.** {
- Bern Mt.** Mittheilungen der Naturforschenden Gesellschaft in Bern. Bern.
1843— B.M.; Camb.P.S.i.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.
R.S.i.; N.H.M.; R.S.; S.K.
- Besançon Sé. Pbl.** Séances publiques de l'Académie des Sciences, Arts et Belles-
Lettres de Besançon. Besançon.
1806— B.M.; R.S.i.
- Béziers S. Sc. Bll.** Bulletin de la Société d'Étude des Sciences Naturelles de Béziers.
Béziers.
1876— N.H.M.; R.S.i.
- Birm. Ph. S. P.** Proceedings of the Birmingham Philosophical Society. Birmingham.
1876— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.i.; Dub.T.C.i.;
Edinb.R.S.; Edinb.U.i.; Geol.M.; Glasg.P.S.; Glasg.U.; Linn.S.i.;
N.H.M.; Oxon.B.; Oxon.R.i.; P.O.; R.A.S.i.; R.Geogr.S.i.; R.S.;
U.C.L.i.
- Blg. A. Tr. Pbl.** Annales des Travaux Publics de Belgique. Bruxelles.
1843— B.M.; I.C.E.i.; P.O.; S.K.i.
See Brux. A. Tr. Pbl.
- Blg. S. Ag. J.** Journal de la Société Centrale d'Agriculture de Belgique. Bruxelles.
1854— B.M.i.; P.O.
- Bll. As.** Bulletin Astronomique publié sous les Auspices de l'Observatoire de
Paris. Paris.
1884— B.M.; Camb.U.; Edinb.R.S.; Oxon.R.; R.A.S.; S.K.
- Bll. Phm.** Bulletin de Pharmacie; Parmentier, etc. Paris.
1809—14. *Continued as:* Journal de Pharmacie, 1815—41. B.M.;
Camb.U.; Chem.S.; Oxon.B.; Pharm.S.; P.O.; R.S.
- Bll. Sc. Mth.** Bulletin des Sciences Mathématiques. Paris.
1885— Camb.U.; Dub.T.C.; Edinb.R.S.; Glasg.U.; Math.S.;
Oxon.B.; Oxon.R.; R.A.S.; R.S.; S.K.; U.C.L.
- Bll. Sc. Mth. As.** Bulletin des Sciences Mathématiques et Astronomiques. Paris.
1870—84. B.M.; Camb.U.; Edinb.R.S.; Glasg.U.; Math.S.;
Oxon.R.; R.A.S.i.; R.S.; S.K.; U.C.L.i.
- Blue Hill Obs. Bll.** Blue Hill Meteorological Observatory. Bulletin. Readville (?).
1898— Met. Office.
- Bode As. Jb.** { Astronomisches Jahrbuch, nebst einer Sammlung der neuesten in
Bode Jb. { die astronomischen Wissenschaften einschlagenden Abhandlungen,
Beobachtungen, und Nachrichten; Bode. Berlin.
1776—1829. Dub.T.C.i.; Glasg.U.; R.A.S.; R.S.i.
- Böhm. Gs. Ab.** { Abhandlungen der K. Böhmischen Gesellschaft der Wissenschaften.
Prag.
1804—92. B.M.i.; Camb.P.S.; Camb.U.i.; Dub.R.I.A.i.; Edinb.
R.S.i.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.; R.S.i.; S.K.i.
See Prag Ab.
- Böhm. Gs. Ws. Jbr.** Jahresbericht der Königl. Böhm. Gesellschaft der Wissenschaften.
Prag.
1876— B.M.i.; Edinb.R.S.i.; Linn.S.i.; N.H.M.; R.S.
- Böhm. Mschr. Gs. Ms.** Monatschrift des Gesellschaft des Vaterländischen Museums in
Böhmen. Prag.
1827—29. B.M.; Camb.U.; N.H.M.
- Bologna Ac. Mm.** { Memorie della Accademia delle Scienze dell' Istituto di Bologna.
Bologna Ac. Sc. Mm. { Bologna.
Bologna Mm. Ac. { 1850— B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.; N.H.M.;
Oxon.B.; R.A.S.; R.S.; S.K.i.; U.C.L.i.
- Bologna Mm. Ac. Sc.** {
- Bologna Mm. I. It.** Memorie dell' Istituto Nazionale Italiano: Classe di Fisica e di
Matematica. Bologna.
1806—13. B.M.; Camb.U.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.i.;
N.H.M.; Oxon.B.i.; R.S.i.
- Bologna N. A.** Nuovi Annali delle Scienze Naturali; Alessandrini, Bertolini,
Gherardi, e Ranzani. Bologna.
1838—54. Camb.U.; Geol.S.i.; N.H.M.; Oxon.B.i.; R.Geogr.S.i.;
R.S.; S.K.
See N. A. Sc. Nt.
- Bologna N. Cm.** Novi Commentarii Academiæ Scientiarum Institutii Bononiensis.
Bononiæ.
1834—49. Camb.U.; Edinb.R.S.; N.H.M.; Oxon.B.; R.S.

List of Serial Publications

- Bologna Opusc. Sc.** Opuscoli Scientifici. Bologna.
1817—23. B.M.; Camb.U.; Edinb.R.S.i.; N.H.M.; S.K.
- Bologna Opusc. Sc. N. Col.** Nuova collezione d' Opuscoli Scientifici. Bologna.
1824—25. Camb.U.
- Bologna Ed.**..... Rendiconto delle Sessioni dell' Accademia delle Scienze dell' Istituto di Bologna. Bologna.
1851— B.M.; Camb.U.i.; Dub.T.C.; Edinb.R.S.i.; Glasg.U.H.M.i.; N.H.M.i.; Oxon.B.i.; R.A.S.i.; R.S.i.; U.C.L.i.
- Bone Ac. Hip. Bil.** Bulletin de l'Académie d'Hippone. Bône.
1865— Camb.U.; N.H.M.i.
- Bonn NH. Vr. Vh.** Verhandlungen des Naturhistorischen Vereins der Preussischen Rheinlande, Westfalens und des Reg.-Bezirks Osnabrück. Bonn.
1844— B.M.; Camb.U.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Geol.S.i.; Linn.S.i.; N.H.M.; Oxon.R.; R.S.i.; S.K.
- Bonn Niedr. Gs. Sb.** Sitzungsberichte der Niederrheinischen Gesellschaft für Natur- und Heilkunde zu Bonn. Bonn.
1854— B.M.i.; Camb.U.i.; Edinb.R.S.i.; Geol.S.i.; Linn.S.i.; N.H.M.; Oxon.R.; R.S.i.; S.K.
- Bonn Sb. Niedr. Gs.**
- Bordeaux Ac. Act.**..... Recueil des Actes de l'Académie des Sciences, Belles-lettres, et Arts de Bordeaux. Bordeaux.
1839— B.M.i.; Dub.R.I.A.i.; Dub.T.C.i.; N.H.M.i.; Oxon.B.i.; R.S.i.
- See Bordeaux Act.*
- Bordeaux Ac. Sc. Sé. Pbl.** Séances publiques de l'Académie Royale des Sciences, Belles-lettres, et Arts de Bordeaux. Bordeaux.
Bordeaux Ac. Sé. Pbl.
1819—37. N.H.M.
- Bordeaux Act.**
Bordeaux Act. Ac. Sc.
Bordeaux J. Md...... *See Bordeaux Ac. Act.*
- Bordeaux Mm. S. Sc.** Mémoires de la Société des Sciences Physiques et Naturelles de Bordeaux. Bordeaux.
Bordeaux Mm. S. Sc. P.
Bordeaux S. Sc. Mm.
1855— Camb.P.S.; Dub.R.D.S.; Dub.T.C.; Edinb.R.S.; Geol.S.; Glasg.P.S.; Linn.S.; Math.S.; N.H.M.; Oxon.B.; R.A.S.; R.S.; S.K.
- Bordeaux S. Sc. FV.**..... Procès-Verbaux des Séances de la Société des Sciences Physiques et Naturelles de Bordeaux. Paris, Bordeaux.
1894— Camb.P.S.; Dub.R.D.S.i.; Edinb.R.S.; Math.S.; N.H.M.; R.A.S.; R.S.
- Bost. Am. Ac. Mm.** Memoirs of the American Academy of Arts and Sciences. Cambridge and Boston.
1785— B.M.i.; Camb.P.S.; Camb.U.; Dub.R.D.S.i.; Dub.R.I.A.i.; Dub.T.C.i.; Edinb.R.S.; Geol.S.i.; I.CE.i.; Linn.S.; N.H.M.; Oxon.R.; P.O.i.; R.A.S.; R.Geogr.S.i.; R.S.; S.K.i.; U.C.L.i.
- See Am. Ac. Mm. and Bost. Mm. Am. Ac.*
- Bost. J. Ph.** The Boston Journal of Philosophy and the Arts; Webster, etc. Boston.
1824—26. B.M.
- Bost. Mm. Am. Ac.** *See Am. Ac. Mm. and Bost. Am. Ac. Mm.*
- Bost. P. NH. S.** Proceedings of the Boston Society of Natural History. Boston.
1841— B.M.; Camb.P.S.i.; Camb.U.; Dub.R.I.A.; Edinb.R.S.; Geol.S.; Glasg.P.S.i.; Linn.S.i.; N.H.M.; Oxon.R.; R.Geogr.S.; R.S.; S.K.; U.C.L.i.
- Br. Archt. I. Pp.** Papers read at the Royal Institute of British Architects. London.
1854—78. B.M.; Camb.U.i.; Edinb.R.S.i.; P.O.; S.K.; U.C.L.i.
- See Br. Archt. Pp.*
- Br. Archt. I. T.** Transactions of the Institute of British Architects of London. London.
1836—42; 1879—92. B.M.i.; Camb.U.; Dub.T.C.; Edinb.R.S.i.; I.CE.; Oxon.B.; P.O.; R.S.; U.C.L.i.
- See Br. Archt. T.*
- Br. Archt. J.** Journal of the Royal Institute of British Architects. London.
1885— Camb.U.i.; Glasg.U.i.; I.CE.; Oxon.B.; P.O.; U.C.L.
- Br. Archt. Pp.**
Br. Archt. Pp. (& T.)..... *See Br. Archt. I. Pp.*
- Br. Archt. T.** *See Br. Archt. I. T.*
- Braunschw. Vr. Nt. Jbr.** Jahresbericht des Vereins für Naturwissenschaft zu Braunschweig. Braunschweig, Altenburg.
1879— Dub.R.I.A.i.; Edinb.R.S.; Linn.S.; N.H.M.; R.S.

List of Serial Publications

- Brem. Ab.** Abhandlungen herausgegeben vom Naturwissenschaftlichen Vereine zu Bremen. Bremen.
1868— B.M.; Camb.U.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Linn.S.; N.H.M.; R.S.; S.K.
- Brescia At. Cm.** { Commentarj della Accademia di Scienze, Lettere, ed Arti dell'
Brescia Cm. { Ateneo di Brescia. Brescia.
1808— B.M.; Camb.U.; N.H.M.i.; Oxon.B.i.; R.S.i.
- Bresl. Jbr. Sl. Gs.** { Jahresbericht der Schlesischen Gesellschaft für vaterländische
Bresl. Schl. Gs. Jbr. { Cultur. Breslau.
Bresl. Sl. Gs. Jbr. { 1850— Dub.R.D.S.i.; Dub.R.I.A.i.; Geol.S.i.; N.H.M.; R.S.; S.K.
Bresl. Sl. Gs. Übs. { Uebersicht der Arbeiten und Veränderungen der Schlesischen
Gesellschaft für vaterländische Cultur. Breslau.
1824—49. B.M.; Geol.S.i.; N.H.M.; R.S.; S.K.
- Bristol Nt. S. F.** Proceedings of the Bristol Naturalists' Society. Bristol.
1866— B.M.i.; Camb.U.i.; Geol.M.; Geol.S.i.; Linn.S.; N.H.M.; R.S.i.; U.C.L.i.
- Brugnatelli G.** Giornale di Fisica, Chimica, e Storia Naturale; Brugnatelli, etc.
Pavia.
1808—27. B.M.; Camb.U.; Dub.T.C.; N.H.M.i.; Oxon.B.; P.O.; R.S.
- Brünn Mt.** Mittheilungen der kaiserlich-königlichen Mährish-Schlesischen
Gesellschaft zur Beförderung des Ackerbaues der Natur- und
Landeskunde in Brünn. Brünn.
1821— B.M.; R.S.i.; S.K.i.
- Brünnow As. Not.** Astronomical Notices; Brünnow. Ann Arbor, Mich.
1858—62. R.A.S.; R.S.i.
- Brünn Vh.** Verhandlungen des Naturforschenden Vereins zu Brünn. Brünn.
1863— Camb.U.i.; Dub.R.I.A.; Linn.S.; N.H.M.; R.S.
- Brux. Ac. Bll.** Bulletins de l'Académie Royale des Sciences, etc., de Belgique.
Bruxelles.
1834— B.M.i.; Camb.U.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.;
Geol.S.i.; Glasg.P.S.i.; Glasg.U.i.; I.CE.i.; Linn.S.; Math.S.i.;
N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.Geogr.S.i.; R.S.;
S.K.i.
- See **Brux. Bll. Ac.**
Brux. Ac. Mm. Mémoires de l'Académie Royale des Sciences, des Lettres et des
Brux. Ac. Sc. Mm. { Beaux-Arts de Belgique. Bruxelles.
1820— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Dub.T.C.;
Edinb.R.S.i.; Edinb.U.; Glasg.U.i.; I.CE.i.; Linn.S.i.; N.H.M.;
Oxon.B.(R.); P.O.i.; R.A.S.i.; R.Geogr.S.i.; R.S.; S.K.i.
- See **Brux. Mm. Ac. Sc.**
Brux. A. Tr. Pbl. See **Big. A. Tr. Pbl.**
- Brux. A. Un.** Annales des Universités de Belgique. Bruxelles.
1842—63. Camb.U.; Oxon.B.; P.O.; R.S.i.
- See **A. Un. Blg.**
Brux. Bll. Ac. See **Brux. Ac. Bll.**
- Brux. Mm. Ac. Sc.** See **Brux. Ac. Mm.**
- Brux. Mm. Cour.** Mémoires Couronnés et Mémoires des Savants Étrangers, publ. par
Brux. Mm. Cour. 4^o { l'Acad. Roy. des Sciences, etc. de Belgique. 4to. Bruxelles.
1818— B.M.i.; Camb.P.S.; Camb.U.; Dub.T.C.; Edinb.R.S.i.;
Edinb.U.; Geol.S.; Glasg.U.i.; I.CE.i.; Linn.S.i.; N.H.M.;
Oxon.B.; P.O.i.; R.A.S.i.; R.Geogr.S.i.; R.S.; S.K.i.
- Brux. Mm. Cour. 8^o** Mémoires Couronnés et autres Mémoires, publ. par l'Acad. Roy. des
Sciences, etc. de Belgique. 8vo. Bruxelles.
1840— B.M.; Camb.P.S.; Camb.U.; Dub.T.C.; Edinb.R.S.;
Geol.S.; Glasg.U.i.; I.CE.i.; Linn.S.i.; N.H.M.; Oxon.B.;
P.O.; R.A.S.i.; R.Geogr.S.i.; R.S.; S.K.
- Brux. S. As. Bll.** Bulletin de la Société Belge d'Astronomie. Comptes Rendus des
Séances mensuelles de la Société et Revue des Sciences d'Observation.
Astronomie, Météorologie, Géodésie et Physique du Globe.
Bruxelles.
1896— R.A.S.
- Brux. S. Blg. Mcr. Bll.** Bulletin de la Société Belge de Microscopie. Bruxelles, Paris.
1875— Camb.P.S.i.; Glasg.P.S.i.; N.H.M.; P.O.i.
- Brux. S. Sc. A.** Annales de la Société Scientifique de Bruxelles. Bruxelles.
1877— B.M.; Dub.N.L.I.i.; Edinb.R.S.; I.CE.i.; N.H.M.
- Btr. Geops.** Beiträge zur Geophysik. Stuttgart, Leipzig.
1887— Camb.U.; Geol.M.; Geol.S.; Oxon.B.; R.Geogr.S.; R.S.; S.K.

List of Serial Publications

- Bucarest Ac. Rom. A. ...** Analele Academiei Romane. Bucuresci.
1880— B.M.; Camb.U.i.; N.H.M.i.
- Bucarest S. Sc. Bl.** Buletinul Societății de Științe Fizice (Fizica, Chimia și Mineralogia)
din Bucuresci-România.
[1892]—[1896].
Buletinul Societății de Științe din Bucuresci-România. Bucuresci.
(Bulletin de la Société des Sciences Bucarest-Roumanie.)
[1897]— Glasg.P.S.; Glasg.U.; N.H.M.; R.S.i.; U.C.L.i.
- Buffalo Bl.** Bulletin of the Buffalo Society of Natural Sciences. Buffalo, N.Y.
1873— B.M.; Camb.U.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Geol.S.;
Linn.S.i.; N.H.M.; R.S.
- Caen Ac. Mm.** Mémoires de l'Académie des Sciences, Arts et Belles-Lettres de
Caen. Caen.
1811— B.M.i.; Camb.U.i.; Dub.T.C.i.; N.H.M.i.; Oxon.B.i.; R.S.i.;
S.K.i.
- Caen Mm. S. L.** Mémoires de la Société Linnéenne [du Calvados] de Normandie. Caen.
1824— B.M.; Camb.U.; Geol.M.; Geol.S.i.; Linn.S.i.; N.H.M.;
R.S.i.; U.C.L.i.
- Caen Tr.** Précis des Travaux de la Société d'Agriculture etc. de Caen. Caen.
1811—58. B.M.; Camb.U.i.
- Cæs. Leop. Ac. N. Acta.** Nova Acta physico-medica Academiæ Cæs. Leopoldino-Carolinæ
naturæ Curiosorum. Erlangen, Bonn, Breslau.
1758— Camb.P.S.; Camb.U.; Chem.S.i.; Dub.T.C.; Edinb.R.S.i.;
Edinb.U.; Geol.S.i.; Glasg.U.; Linn.S.i.; N.H.M.; Oxon.R.;
Pharm.S.i.; R.A.S.i.; R.S.; S.K.i.; U.C.L.i.
See Ac. Cæs. Leop. N. Acta and Ac. Nt. C. N. Acta
- Calc. Eng. J.** The Engineers' Journal and Railway Chronicle of India and the
Colonies. Calcutta.
1858—69. I.CE.i.; P.O.
- Calc. J. NH.** The Calcutta Journal of Natural History. Calcutta.
1841—48. B.M.; Camb.U.; Dub.R.D.S.; Geol.S.i.; Linn.S.i.;
N.H.M.; P.O.; R.S.; S.K.
- Calif. Ac. P.** Proceedings of the California Academy of Natural Sciences. San
Francisco.
1854— B.M.i.; Camb.P.S.i.; Dub.R.I.A.; Edinb.R.S.i.; Geol.S.i.;
Glasg.P.S.; Linn.S.i.; N.H.M.; P.O.i.; R.Geogr.S.; R.S.i.;
S.K.i.
- Camb. and Dubl. Mth. J.** The Cambridge and Dublin Mathematical Journal; Thomson and
Ferrers. Cambridge.
1846—54. B.M.; Camb.P.S.i.; Camb.U.; Dub.T.C.i.; Edinb.R.S.;
Edinb.U.; Glasg.U.; N.H.M.; Oxon.B.; R.S.; U.C.L.
- Camb. (M.) Mth. M.** The Mathematical Monthly; Runkle. Cambridge (Massachusetts).
1859—61. B.M.; Camb.U.; Oxon.B.; P.O.; R.A.S.i.; R.S.; U.C.L.
See Camb. (U.S.) Mth. M.
- Camb. Mth. J.** The Cambridge Mathematical Journal. London.
1839—45. B.M.; Camb.P.S.; Camb.U.; Dub.T.C.; Edinb.U.;
Glasg.U.; Math.S.i.; Oxon.B.i.; R.S.; U.C.L.
- Camb. Ph. S. P.** Proceedings of the Cambridge Philosophical Society. Cambridge.
1866— B.M.i.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.D.S.;
Edinb.R.S.; Edinb.U.; Geol.S.; Glasg.P.S.i.; Glasg.U.i.;
I.CE.; Linn.S.i.; Math.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.i.;
P.O.; R.A.S.i.; R.S.; S.K.; U.C.L.
- Camb. Ph. S. T.** Transactions of the Cambridge Philosophical Society. Cambridge.
1822— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.T.C.i.;
Edinb.R.S.; Edinb.U.; Geol.S.; Glasg.P.S.i.; Glasg.U.; I.CE.i.;
Linn.S.; Math.S.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.;
R.S.; S.K.; U.C.L.
- Cambrai Mm.** Mémoires de la Société d'Émulation de Cambrai. Cambrai.
Cambrai Mm. S. Ém. ... 1808— B.M.i.; Camb.U.i.; Oxon.B.; R.S.i.
Cambrai S. Ém. Mm. ...
- Camb. (U.S.) Mth. M. ...** *See Camb. (M.) Mth. M.*
- Caradoc F.C. T.** Transactions of the Caradoc and Severn Valley Field Club.
Shrewsbury.
1893— N.H.M.
- Card. Nt. S. T.** Cardiff Naturalists' Society. Reports and Transactions. Cardiff.
1868— B.M.i.; Camb.U.i.; Dub.R.D.S.; Geol.M.i.; Geol.S.;
Glasg.P.S.i.; Linn.S.; N.H.M.; Oxon.B.i.; R.S.i.

List of Serial Publications

- Carl Rpm.**..... Repertorium für physikalische Technik, für mathematische und astronomische Instrumentenkunde; Carl. München. 1865—91. B.M.; Camb.U.i.; Dub.N.L.I.i.; I.CE.i.; Oxon.R.; P.O.; R.S.; S.K.
See Exner Rpm.
- Časopis** Časopis pro Pěstování Matematiky a Fysiky. Prag. 1872— B.M.
- Catania Ac. Gioen. At...** Atti dell' Accademia Gioenia di Scienze Naturali in Catania. Catania. 1825— B.M.; Camb.U.i.; Dub.R.I.A.; Edinb.R.S.i.; Geol.S.i.; Linn.S.i.; Math.S.i.; N.H.M.; Oxon.B.; R.S.; S.K.i.
See Catania At. Ac. Gioen.
- Catania Ac. Gioen. Bil...** Bulletino mensile della Accademia Gioenia di Scienze Naturali in Catania. Catania. 1888— Dub.R.I.A.; Edinb.R.S.; Math.S.i.; N.H.M.; R.S.
- Catania At. Ac. Gioen...** *See Catania Ac. Gioen. At.*
- Cattaneo Bb. Farm.** Biblioteca di Farmacia, Chimica, etc.; Cattaneo. Milan. 1834—45. B.M.
- Cattaneo G. Farm.**..... Giornale di Farmacia, etc.; Cattaneo. Milan. 1824—33. B.M.
- C. CB.** Chemisches Central-Blatt. Leipzig. 1856— Camb.U.i.; Chem.S.i.; N.H.M.; Oxon.R.; Pharm.S.i.; P.O.; R.S.; S.K.; U.C.L.i.
- CE. I. P.**..... Minutes of Proceedings of the Institution of Civil Engineers, containing Abstracts of the Papers and of the Discussions. London. 1837— B.M.; Camb.P.S.; Camb.U.; Dub.R.C.S.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; Edinb.U.; Geol.S.; Glasg.P.S.i.; Glasg.U.; I.CE.; Oxon.B.; Oxon.R.i.; P.O.; R.Geogr.S.; R.S.; S.K.; U.C.L.
- See I. CE. P.*
- CE. I. T.**..... Transactions of the Institution of Civil Engineers. London. 1836—42. B.M.; Camb.P.S.; Camb.U.; Dub.N.L.I.; Dub.R.C.S.; Dub.R.D.S.; Edinb.R.S.; Geol.S.; Glasg.U.; I.CE.; Oxon.B.; Oxon.R.; P.O.; R.Geogr.S.; R.S.; U.C.L.i.
- See I. CE. T.*
- Ceylon As. S. J.** Journal of the Ceylon Branch of the Royal Asiatic Society. Colombo. 1845— B.M.; N.H.M.i.; Oxon.B.; R.Geogr.S.i.
- Cg. Int. Chron.** Congrès International de Chronometrie. Comptes Rendus des Travaux, Procès-Verbaux, Rapports et Mémoires. Paris. 1889, 1900. Camb.U.; R.S.i.; S.K.
- C. Gz.** Chemical Gazette. London. 1842—59. B.M.; Camb.U.; Chem.S.; Dub.T.C.i.; I.CE.i.; N.H.M.; Oxon.B.; Oxon.R.; Pharm.S.; P.O.i.; S.K.; U.C.L.
- Chambéry Mm. Ac. Sav.** Mémoires de la Société Académique de Savoie. Chambéry. 1825— Camb.U.; Dub.R.I.A.; Dub.T.C.; N.H.M.; Oxon.B.; R.S.i.
See Sav. Ac. Mm. and Sav. Mm. Ac.
- Charente-Inf. S. Sc. A. ...** Académie de La Rochelle. Société des Sciences Naturelles de la Charente-Inférieure. Annales. La Rochelle. 1856— N.H.M.i.
- Chemist** The Chemist. London. 1840—58. B.M.; Camb.U.i.; Chem.S.; Dub.T.C.i.; I.CE.i.; Oxon.B.; Pharm.S.; P.O.; R.S.; S.K.i.
- Chemnitz B.**..... Bericht der Naturwiss. Gesellsch. zu Chemnitz. Chemnitz. 1859— Edinb.R.S.i.; N.H.M.; R.S.i.
- Cherb. Mm. S. Ac.** Mémoires de la Société Académique de Cherbourg. Cherbourg. 1833— B.M.; Camb.U.i.; Edinb.R.S.i.; N.H.M.i.; Oxon.B.i.
- Cherb. Mm. S. Sc.** Mémoires de la Société Impériale des Sciences Naturelles de Cherbourg. Cherbourg.
- Cherb. S. Sc. Mm.** } 1852— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; I.CE.; Linn.S.; N.H.M.; R.A.S.i.; R.S.; S.K.
- Cherb. S. Sc. Nt. Mm.** ... }
- Chile A. Un.**..... Anales de la Universidad de Chile. Santiago de Chile. 1843— B.M.i.; Dub.T.C.; Glasg.U.i.; N.H.M.i.; Oxon.B.i.; R.Geogr.S.i.
- See Santiago de Chile Un. A.*
- Chili S. Sc. Act.** Actes de la Société Scientifique du Chili (Sociedad científica de Chile). Santiago. 1892— B.M.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Geol.S.; Linn.S.i.; N.H.M.; R.S.i.

List of Serial Publications

- Christiania F.** Forhandlinger i Videnskabs-Selskabet i Christiania. Christiania.
1859— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.;
Geol.S.i.; Glasg.P.S.; N.H.M.; Oxon.B.; R.Geogr.S.i.; R.S.;
U.C.L.i.
- Christiania Skr. (Mth.-
Nt. Kl.)** Skrifter udgivne af Videnskabssekskabet i Christiania. Mathe-
matisk-Naturvidenskabelig Klasse. Christiania.
1894— B.M.; Camb.P.S.; Dub.R.I.A.i.; Edinb.R.S.; Glasg.P.S.;
N.H.M.; Oxon.B.; R.Geogr.S.; R.S.; U.C.L.i.
- Ciel et Terre** Ciel et Terre. Revue populaire d'Astronomie, de Météorologie et de
Physique du Globe. Bruxelles.
1881— B.M.; Edinb.R.S.i.; R.A.S.
- Cincin. S. NH. J.** The Journal of the Cincinnati Society of Natural History.
Cincinnati.
1878— B.M.; Camb.P.S.; Edinb.R.S.; Geol.S.i.; N.H.M.; R.S.
- Civing.** Der Civilingenieur: Zeitschrift für das Ingenieurwesen. Freiberg,
Leipzig.
1854—96. B.M.; Camb.U.i.; Dub.R.I.A.i.; I.CE.; P.O.
- C. N.** The Chemical News and Journal of Physical Science. London.
1860— Camb.P.S.; Camb.U.i.; Chem.S.; Dub.N.L.L.i.; Dub.R.D.S.i.;
Dub.R.C.S.i.; Edinb.U.; Geol.M.; Geol.S.i.; Glasg.P.S.; I.CE.;
N.H.M.; Oxon.B.i.; Oxon.R.; Pharm.S.; P.O.; R.S.; S.K.;
U.C.L.i.
- Cn. I. P.** Proceedings of the Canadian Institute, Toronto. Toronto.
1879—90; 1897— *Continuation of:* The Canadian Journal, 1853—
78. B.M.; Camb.P.S.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.i.;
Edinb.U.; Geol.S.; Glasg.P.S.; I.CE.i.; Linn.S.; Math.S.i.;
N.H.M.; Oxon.B.; P.O.; R.A.S.i.; R.Geogr.S.i.; R.S.; S.K.i.
- Cn. J.** The Canadian Journal of Industry, Science, and Art. Toronto.
1853—78. *Continued as:* Proceedings of the Canadian Institute,
1879— B.M.i.; Dub.R.I.A.; Edinb.R.S.; Geol.S.; I.CE.;
N.H.M.; P.O.; R.A.S.i.; R.Geogr.S.; R.S.
- Cn. Ntlist.** The Canadian Naturalist and Quarterly Journal of Science, with the
Proceedings of the Natural History Society of Montreal. Montreal.
1857—83. *Continued as:* The Canadian Record of Science, 1884—
B.M.; Camb.U.i.; Edinb.R.S.; Geol.S.; Glasg.U.i.; Linn.S.;
N.H.M.; Oxon.B.i.; Oxon.R.; P.O.; R.S.
- Cn. Rc. Sc.** The Canadian Record of Science, including the Proceedings of the
Natural History Society of Montreal, and replacing the Canadian
Naturalist. Montreal.
1884— *Continuation of:* The Canadian Naturalist, 1857—83.
B.M.; Camb.U.i.; Dub.R.D.S.; Edinb.R.S.; Geol.S.; Linn.S.;
N.H.M.; Oxon.B.i.; Oxon.R.; R.S.; S.K.i.
- Cn. R. S. P. & T.** Proceedings and Transactions of the Royal Society of Canada.
Montreal.
1883— Camb.P.S.; Camb.U.; Chem.S.; Dub.R.D.S.i.; Dub.R.I.A.i.;
Dub.T.C.i.; Edinb.R.S.; Geol.M.i.; Geol.S.; Glasg.P.S.; Glasg.U.;
Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.Geogr.
S.i.; R.S.; S.K.; U.C.L.
- Coimbra I.** O Instituto, jornal scientifico e litterario; Forjaz. Coimbra.
1853— B.M.; R.Geogr.S.i.
- Colmar S. H. Nt. Bl.** ... Bulletin de la Société d'Histoire Naturelle de Colmar. Colmar.
1860—85. N.H.M.
- Colo. Sc. S. P.** Proceedings of the Colorado Scientific Society. Denver.
1883— Camb.P.S.i.; Chem.S.i.; Edinb.R.S.; Geol.S.i.; Glasg.P.S.;
N.H.M.; P.O.
- Con. des Temps** Connaissance des Temps, à l'usage des Astronomes et des Navigateurs.
Paris.
1679— B.M.i.; Camb.U.; Dub.T.C.; Glasg.U.i.; I.CE.i.; Oxon.B.;
R.A.S.i.; R.Geogr.S.i.; R.S.; S.K.i.
- Conn. Ac. T.** Transactions of the Connecticut Academy of Arts and Sciences.
New Haven.
1866— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.;
Glasg.P.S.; Linn.S.; Math.S.i.; N.H.M.; Oxon.R.; P.O.; R.A.S.;
R.Geogr.S.i.; R.S.; S.K.
- Córd. Ac. Bl.** Boletín de la Academia Nacional de Ciencias Exactas existente en la
Universidad de Córdoba. Buenos Aires.
1874— Chem.S.i.; Dub.R.D.S.i.; Edinb.R.S.i.; N.H.M.;
R.S.

List of Serial Publications

- Cornwall Gl. S. T.** Transactions of the Royal Geological Society of Cornwall. Penzance. 1818— B.M.i.; Camb.U.; Dub.T.C.; Edinb.R.S.i.; Geol.M.; Geol.S.; Glasg.U.i.; I.CE.i.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.; R.S.; S.K.i.; U.C.L.i.
- Cornwall Pol. S. Rp.** Reports and Transactions of the Royal Polytechnic Society of Cornwall. Falmouth.
- Cornwall Pol. S. T.** { 1833— B.M.; Camb.U.i.; Dub.R.D.S.; Edinb.R.S.i.; Geol.S.i.; Glasg.P.S.i.; Glasg.U.i.; I.CE.i.; Linn.S.; N.H.M.; Oxon.B.i.; P.O.; R.Geogr.S.i.; R.S.; S.K.; U.C.L.i.
- Cornwall R. I. J.** Journal of the Royal Institution of Cornwall. Truro. 1864— B.M.; Camb.U.i.; Dub.R.D.S.; Edinb.R.S.; Geol.S.i.; Glasg.P.S.i.; I.CE.i.; N.H.M.; Oxon.B.i.; P.O.; R.A.S.i.; R.S.i.; S.K.; U.C.L.i.
- Cosmos** Cosmos. Revue Encyclopédique Hebdomadaire des Progrès des Sciences. Moigno. Paris. 1852—70. B.M.; Camb.U.; Dub.T.C.; Edinb.R.S.i.; I.CE.i.; N.H.M.; Oxon.B.; P.O.; R.A.S.i.; R.S.; S.K.i.
See **Moigno Cosmos.**
- Cotteswold Cl. F.** Proceedings of the Cotteswold Naturalists' Field Club. London, Gloucester. 1853— B.M.i.; Camb.U.i.; Geol.M.; Geol.S.; N.H.M.; R.S.; U.C.L.
- C. R.** Comptes Rendus hebdomadaires des Séances de l'Académie des Sciences. Paris. 1835— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.D.S.; Edinb.R.S.i.; Edinb.U.; Geol.M.i.; Geol.S.; Glasg.P.S.i.; Glasg.U.; I.CE.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.i.; Pharm.S.i.; P.O.; R.A.S.; R.Geogr.S.i.; R.S.; S.K.; U.C.L.
- Crc. Ac. Sc. Bll.** Bulletin International de l'Académie des Sciences de Cracovie. Cracovie. 1889— B.M.; Camb.U.; Chem.S.; Dub.R.I.A.i.; Edinb.R.S.; Geol.S.; Glasg.U.; N.H.M.; Oxon.B.; Oxon.R.i.; R.A.S.i.; R.S.; U.C.L.i.
- Crelle J.** Journal für die reine und angewandte Mathematik; Crelle. Berlin. 1826— B.M.; Camb.U.; Dub.N.L.I.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Glasg.U.; I.CE.i.; Math.S.i.; Oxon.B.(R.); R.S.; S.K.i.; U.C.L.
See **Crelle J. Mth.**
- Crelle J. Bauk.** Journal für die Baukunst; Crelle. Berlin. 1829—51. Camb.U.; Glasg.U.; P.O.
See **Crelle J.**
- Crelle J. Mth.** See **Crelle J.**
- C. S. J.** The Quarterly Journal of the Chemical Society of London. London. 1849— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.C.S.; Dub.R.D.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Geol.M.i.; Geol.S.; Glasg.P.S.; I.CE.; N.H.M.i.; Oxon.B.; Oxon.R.i.; Pharm.S.; P.O.; R.S.; S.K.; U.C.L.
- C. S. P.** Proceedings of the Chemical Society. London. 1885— B.M.; Camb.P.S.; Camb.U.i.; Chem.S.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; Geol.M.i.; Glasg.U.; N.H.M.i.; Oxon.R.; Pharm.S.; P.O.; S.K.; U.C.L.
- Cuyper Rv. Un.** Revue Universelle des Mines, de la Métallurgie, etc.; de Cuyper. Paris et Liège. 1857— B.M.; Camb.U.; Dub.R.I.A.i.; Glasg.P.S.i.; Glasg.U.i.; I.CE.i.; N.H.M.; P.O.; S.K.
See **Rv. Un. Mines.**
- C. Ztg.** Chemiker-Zeitung. Central-organ für Chemiker, Apotheker, Techniker, Ingenieure, Fabrikanten. Cöthen. 1877— Chem.S.i.; P.O.i.; S.K.i.
- Cztg. Opt.** Central-Zeitung für Optik und Mechanik. Leipzig. 1880— Edinb.U.i.; P.O.i.; R.S.i.
- Danzig N. Schr.** Neueste Schriften der Naturforschenden Gesellschaft in Danzig. Danzig. 1820—62. *Continued as:* Schriften, etc., 1863— B.M.i.; Camb.U.i.; Dub.R.I.A.; Edinb.R.S.i.; N.H.M.; Oxon.R.i.; R.S.; S.K.i.
- Danzig Schr.** Schriften der Naturforschenden Gesellschaft in Danzig. Danzig. 1863— *Continuation of:* Neueste Schriften, etc., 1820—62. Camb.P.S.; Camb.U.i.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Linn.S.i.; N.H.M.; Oxon.R.i.; R.S.; S.K.i.

List of Serial Publications

- Dax S. Borda Bll.** Bulletin de la Société de Borda à Dax. Dax.
1876— N.H.M.; U.C.L.i.
- D. C. Gs. B.** Berichte der Deutschen Chemischen Gesellschaft. Berlin.
1868— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.N.L.I.;
Glasg.P.S.; Glasg.U.; N.H.M.; Oxon.R.; Pharm.S.; P.O.;
R.S.; S.K.; U.C.L.i.
See Berl. B.
- Delft Éc. Pol. A.** Annales de l'École Polytechnique de Delft. Leide.
1885—97. Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.D.S.; Dub.
R.I.A.; Edinb.R.S.; Math.S.; R.A.S.; R.S.; S.K.
- Denison Un. Sc. Lb. Bll.** Bulletin of the Scientific Laboratories of Denison University.
Granville, Ohio.
1885— B.M.; Camb.P.S.; Dub.R.I.A.; Edinb.R.S.; N.H.M.;
P.O.; S.K.i.
- Des Moines Anal.** The Analyst: a monthly Journal of Pure and Applied Mathematics.
Des Moines, Iowa.
1874—83. Camb.U.; Edinb.R.S.; R.S.
- Devon. As. T.** Reports and Transactions of the Devonshire Association for the Advancement of Science, Literature, and Art. Plymouth and London.
1862— Camb.U.i.; Geol.M.; Geol.S.; Linn.S.; N.H.M.; Oxon.B.;
Oxon.R.i.; P.O.; R.S.; S.K.
- D. Gl. Gs. Z.** Zeitschrift der Deutschen Geologischen Gesellschaft. Berlin.
1849— B.M.; Camb.U.; Dub.T.C.; Edinb.R.S.; Geol.M.; Geol.S.;
Glasg.U.i.; N.H.M.; Oxon.R.; R.S.i.; S.K.i.
- Dijon Ac. Mm.** Mémoires de l'Académie des Sciences, Arts, et Belles-lettres de
Dijon. Dijon.
Dijon Ac. Sc. Mm. 1769— B.M.i.; Camb.U.; Dub.R.D.S.i.; Dub.R.I.A.i.; Dub.T.C.i.;
Edinb.R.S.i.; Geol.S.i.; N.H.M.; Oxon.B.i.; R.A.S.; R.Geogr.
S.i.; R.S.i.; S.K.i.
Dijon Mm. Ac. Séances publiques de l'Académie des Sciences, Arts, et Belles-lettres
de Dijon. Dijon.
1810—29. B.M.i.; N.H.M.
- Dijon Ac. Sé.**
Dijon Sé. Ac.
Dingler Polytechnisches Journal; Dingler. Stuttgart.
1820— B.M.; Camb.U.; Chem.S.i.; Dub.N.L.I.i.; Dub.R.C.S.i.;
Dub.R.D.S.i.; Edinb.R.S.; Glasg.P.S.i.; Glasg.U.i.; I.CE.i.;
P.O.; R.S.i.; S.K.
- D. Mth. Vr. Jbr.** Jahresbericht der deutschen Mathematiker-Vereinigung. Berlin,
Leipzig.
1890— Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; Math.S.i.; Oxon.B.;
R.S.
- D. Nf. B.** Bericht über die Versammlung der Deutschen Naturforscher und
Aerzte.
1822—83. Irregular, *see* Tageblatt. Camb.U.i.; Geol.S.i.; N.H.M.i.;
Oxon.R.i.; R.S.i.; S.K.i.
See D. Nf. Vsm. B.
- D. Nf. Tbl.** Tageblatt der...Versammlung Deutscher Naturforscher und Aerzte.
1836—89. Irregular, *see* B. and Vh. Camb.U.; Geol.S.i.; N.H.M.;
Oxon.R.i.
- D. Nf. Vh.** Verhandlungen der Gesellschaft Deutscher Naturforscher und Aerzte.
Leipzig.
1890— *Continuation of*: Bericht, Tagebl. etc., 1822—89. Camb.U.;
N.H.M.; Oxon.R.
- D. Nf. Vsm. B.** *See D. Nf. B.*
- Dn. Vd. Selsk. Skr.** Det Kongelige Danske Videnskabernes Selskabs Skrifter. Kiøbenhavn.
1801—18. B.M.; Camb.P.S.i.; Camb.U.; Edinb.R.S.; N.H.M.;
Oxon.B.; R.S.
See Kiøb. Dn. Vd. Selsk. Skr.
- Donders Arch.** Archiv für die Holländischen Beiträge zur Natur- und Heilkunde;
Donders. Utrecht.
1858—64. B.M.; Camb.U.; N.H.M.; R.S.
- Dorpat Sb.** Sitzungsberichte der Naturforscher-Gesellschaft zu Dorpat. Dorpat.
1861— Dub.R.I.A.i.; Edinb.R.S.i.; Geol.S.; N.H.M.; R.S.i.; S.K.i.
- Dorset FC. F.** Proceedings of the Dorset Natural History and Antiquarian Field
Club. Sherborne.
1877— B.M.; Camb.U.i.; Geol.S.i.; Linn.S.; N.H.M.; Oxon.B.i.
- Doubs S. Mm.** Mémoires et Comptes Rendus de la Société [Libre] d'Émulation
du Doubs. Besançon.
1841— B.M.; N.H.M.i.

List of Serial Publications

- D. Ps. Gs. Vh.** Verhandlungen der Deutschen Physikalischen Gesellschaft. Leipzig. 1899— *Continuation of*: Verhandlungen der Physikalischen Gesellschaft in Berlin, 1882—98. Camb.P.S.; Camb.U.; Edinb.R.S.; Glasg.U.; N.H.M.; Oxon.B.(R.); P.O.; R.A.S.; R.S.; S.K.; U.C.L.i.
- Dresden Isis Sb.** Sitzungsberichte der Naturwissenschaftlichen Gesellschaft Isis in Dresden. Dresden. 1861— Camb.U.i.; Dub.T.C.; Geol.S.; N.H.M.; S.K.
See **Dresden Sb. Isis.**
- Dresden Mt. Pol. Schule** Mittheilungen der K. Sächs. Polytechnischen Schule. Leipzig. 1864—73. B.M.
- Dresden Sb. Isis** See **Dresden Isis Sb.**
- Dubl. Gl. S. J.** Journal of the Geological Society of Dublin. Dublin. 1838—65. *Continued as*: Journal of the Royal Geological Society of Ireland, 1867—87. B.M.; Camb.U.i.; Dub.N.L.I.; Dub.R.C.S.; Dub.T.C.; Edinb.R.S.; Geol.M.; Geol.S.; Glasg.U.i.; I.CE.i.; Linn.S.; N.H.M.; Oxon.B.i.; R.Geogr.S.i.; R.S.
- Dubl. J. Md. C. Sc.** Dublin Journal of Medical and Chemical Science. Dublin. 1832—45. B.M.; Camb.U.i.; Dub.N.L.I.i.; Dub.R.D.S.i.; Dub.T.C.i.; Pharm.S.i.
- Dubl. Ph. J.** The Dublin Philosophical Journal and Scientific Review. Dublin. 1825—26. B.M.; Dub.R.D.S.; Dub.T.C.; Edinb.R.S.i.; N.H.M.; Oxon.B.; Oxon.R.; R.S.i.
- Dubl. R. S. J.** Journal of the Royal Dublin Society. Dublin. 1856—75. B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.N.L.I.; Dub.R.C.S.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; Geol.M.; Geol.S.; Glasg.U.i.; I.CE.i.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.i.; P.O.; R.A.S.; R.Geogr.S.; R.S.; S.K.
- Dubl. S. J.** Transactions and Journal of the Dublin Society. Dublin. 1799—1810. B.M.; Dub.N.L.I.; Dub.R.D.S.; Dub.T.C.; Geol.S.i.; N.H.M.; Oxon.B.i.; R.S.; S.K.
See **Dubl. S. T.**
- Dubl. S. Sc. P.** The Scientific Proceedings of the Royal Dublin Society. Dublin. 1877— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.N.L.I.; Dub.R.C.S.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; Geol.M.; Geol.S.; Glasg.P.S.; I.CE.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.; Oxon.R.; Pharm.S.; P.O.; R.A.S.; R.Geogr.S.; R.S.; S.K.; U.C.L.i.
- Dubl. S. Sc. T.** The Scientific Transactions of the Royal Dublin Society. Dublin. 1877— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.N.L.I.; Dub.R.C.S.; Dub.R.D.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Geol.M.; Geol.S.; Glasg.P.S.; I.CE.; Linn.S.; Math.S.; N.H.M.; Oxon.B.; Oxon.R.; Pharm.S.; P.O.; R.A.S.; R.Geogr.S.i.; R.S.; S.K.; U.C.L.i.
- Dubl. S. T.** See **Dubl. S. J.**
- Eastbourne NH. S. Pp. (& T.)** { Papers (Transactions) of the Eastbourne Natural History Society with Annual Report.
- Eastbourne NH. S. T.** ... { 1869— Geol.S.i.; N.H.M.i.; R.S.i.; S.K.i.
- Éclair. Élect.** L'Éclairage Électrique. Paris. 1894— B.M.; Glasg.U.i.; I.CE.; P.O.
- Edinb. Bt. S. T.** Transactions of the Botanical Society of Edinburgh. Edinburgh. 1844— B.M.; Camb.P.S.i.; Camb.U.; Dub.R.I.A.; Edinb.R.S.; Glasg.P.S.; Glasg.U.; Linn.S.; N.H.M.; Oxon.B.; Pharm.S.; R.S.
- Edinb. Gl. S. T.** Transactions of the Edinburgh Geological Society. Edinburgh. 1868— B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.; Geol.M.; Geol.S.; Glasg.P.S.; N.H.M.; P.O.; R.Geogr.S.; R.S.; U.C.L.
- Edinb. J. Nt. Gg. Sc.** The Edinburgh Journal of Natural and Geographical Science. Edinburgh. 1830—31. B.M.; Camb.U.; Edinb.R.S.; Linn.S.; N.H.M.; Oxon.B.i.; R.Geogr.S.; R.S.; S.K.
- Edinb. J. Sc.** The Edinburgh Journal of Science, exhibiting a view of the progress of discovery in Natural Philosophy, Chemistry, Mineralogy, Geology, Botany, etc.; David Brewster. Edinburgh. 1824—1832. B.M.; Camb.U.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Geol.S.; Glasg.P.S.i.; Glasg.U.; I.CE.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.; R.S.; S.K.

List of Serial Publications

- Edinb. Mm. Wern. S.** ... Memoirs of the Wernerian Natural History Society. Edinburgh. 1808—39. B.M.; Camb.U.i.; Dub.R.D.S.; Edinb.R.S.; Geol. S.i.; Linn.S.; N.H.M.; Oxon.B.i.; Oxon.R.; R.S.; S.K.; U.C.L.i.
See **Edinb. Wern. S. Mm.**
- Edinb. Mth. S. P.** Proceedings of the Edinburgh Mathematical Society. London and Edinburgh.
 1883— B.M.; Camb.P.S.; Camb.U.; Edinb.R.S.; Edinb.U.; Glasg.U.; Math.S.; R.S.i.
- Edinb. N. Ph. J.** The Edinburgh New Philosophical Journal, exhibiting a view of the progressive Improvements, etc. in the Sciences, etc.; Robert Jameson. Edinburgh.
 1826—64. *Continuation of:* The Edinburgh Philosophical Journal, 1819—26. B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.T.C.i.; Edinb.R.S.; Edinb.U.; Geol.S.; Glasg.P.S.; Glasg.U.; I.CE.; Linn.S.i. N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.i.; R.Geogr. S.i.; R.S.; S.K.
- Edinb. Ph. J.** The Edinburgh Philosophical Journal, exhibiting a view of the Progress of Discovery in Natural Philosophy, etc.; David Brewster and Robert Jameson. Edinburgh.
 1819—26. *Continued as:* The Edinburgh New Philosophical Journal, 1826—64. B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Geol.S.; Glasg.P.S.; Glasg.U.; I.CE.; Linn.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.; Pharm.S.; P.O.; R.A.S.; R.Geogr.S.; R.S.; S.K.; U.C.L.i.
- Edinb. P. R. S.** Proceedings of the Royal Society of Edinburgh. Edinburgh.
Edinb. R. S. P. 1845— B.M.i.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.N.L.I.; Edinb.R.S.; Edinb.U.; Geol.M.i.; Geol.S.; Glasg.P.S.; Glasg.U.; I.CE.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.; Pharm.S.i.; P.O.i.; R.A.S.; R.Geogr.S.; R.S.; S.K.; U.C.L.
- Edinb. R. S. T.** Transactions of the Royal Society of Edinburgh. Edinburgh.
 1788— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.N.L.I.; Dub. R.I.A.; Edinb.R.S.; Edinb.U.; Geol.M.i.; Geol.S.; Glasg.P.S.; Glasg.U.; I.CE.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.i.; Oxon. R.; P.O.i.; R.A.S.; R.Geogr.S.i.; R.S.; S.K.; U.C.L.
See **Edinb. T. R. S.**
- Edinb. Sc. S. Arts P.** Transactions of the Royal Scottish Society of Arts. Edinburgh.
Edinb. Sc. S. Arts T. 1841— B.M.i.; Camb.U.; Dub.R.D.S.; Edinb.R.S.; Edinb.U.; Glasg.P.S.; Glasg.U.; I.CE.; P.O.; R.S.; S.K.
- See* **Edinb. T. Sc. S. Arts and Sc. S. Arts T.**
- Edinb. T. R. S.** *See* **Edinb. R. S. T.**
- Edinb. T. Sc. S. Arts** *See* **Edinb. Sc. S. Arts P. and Sc. S. Arts T.**
- Edinb. Wern. S. Mm.** ... *See* **Edinb. Mm. Wern. S.**
- Educ. Times** The Educational Times, and Journal of the College of Preceptors. London.
 1847— B.M.; Camb.P.S.i.; Camb.U.i.; Dub.N.L.I.; Glasg.U.i.; Math.S.i.; Oxon.B.i.; Oxon.R.i.; R.S.i.; S.K.i.
- Elect.** The Electrician. London.
 1862— B.M.i.; Camb.P.S.i.; Camb.U.i.; Dub.N.L.I.i.; Dub. R.C.S.i.; Edinb.R.S.i.; Edinb.U.i.; Glasg.P.S.i.; Glasg.U.i.; I.CE.i.; Oxon.B.i.; Oxon.R.i.; P.O.; R.S.i.; S.K.; U.C.L.i.
- Elect. Rv.** The Electrical Review. London.
 1892— *Continuation of:* The Telegraphic Journal and Electrical Review, 1872—91. B.M.; Camb.U.; Dub.N.L.I.; Glasg.P.S.; Glasg.U.; I.CE.; P.O.; R.S.; S.K.
- Elekttech. Z.** Elektrotechnische Zeitschrift. Berlin, München.
 1880— B.M.; Glasg.U.; I.CE.; P.O.; S.K.i.
- Emden Nf. Gs. Jbr.** Jahresbericht.....der Naturforschenden Gesellschaft in Emden. Emden.
 1837— Dub.R.I.A.; R.S.
- Eng. S. T.** Transactions of the Society of Engineers. London.
 1860— B.M.; Camb.U.; Dub.N.L.I.; Dub.R.C.S.; Glasg.P.S.i.; Glasg.U.i.; I.CE.; Oxon.B.; P.O.; R.S.i.; U.C.L.
- Ens. Mth.** L'Enseignement Mathématique. Revue Internationale. Paris.
 1899— Math.S.; S.K.
- Erdél. Mz.** Erdélyi Múzeum. [The Transylvanian Museum.] Kolozsvár [Klausenburg].
 1874—82. Dub.R.I.A.; N.H.M.; R.S.

List of Serial Publications

- Erdm. J. Pr. C.** Journal für praktische Chemie; Erdman, etc. Leipzig.
1834— B.M.; Camb.U.; Chem.S.; Dub.N.L.I.i.; Dub.R.C.S.i.i.;
Dub.R.D.S.i.; Edinb.R.S.; Glasg.P.S.i.; Glasg.U.; N.H.M.;
Oxon.B.; Oxon.R.; Pharm.S.i.; P.O.; R.S.; S.K.; U.C.L.I.
See J. Pr. C.
- Erdm. J. Tech. C.** Journal für technische und ökonomische Chemie; Erdman. Leipzig.
1828—33. B.M.; Chem.S.; N.H.M.; P.O.; R.S.; S.K.
- Erfurt N. Acta** Nova Acta Academiæ Electoralis Moguntinæ Scientiarum utilium
quæ Erfurti est. Erfurti.
1799—1809. B.M.i.; N.H.M.; Oxon.B.i.; R.S.
- Erlang. Ps. Md. S. Sb.** ... Sitzungsberichte der Physikalisch-Medicinischen Societät zu Er-
langen. Erlangen.
Erlang. Sb. Ps. Md. S. ... }
1864— B.M.; Camb.P.S.; Dub.R.D.S.; Edinb.R.S.i.; Glasg.U.i.;
Linn.S.i.; Math.S.i.; N.H.M.; R.S.i.
- Erlenmeyer Z.** Zeitschrift für Chemie und Pharmacie etc.; Erlenmeyer. Erlangen,
Heidelberg.
1860—71. B.M.; Camb.U.; Chem.S.; N.H.M.; Oxon.R.i.; S.K.i.
- Erman Arch. Rs.** Archiv für wissenschaftliche Kunde von Russland; Erman. Berlin.
1841—67. B.M.; Camb.U.; N.H.M.; Oxon.B.; R.Geogr.S.; R.S.i.;
S.K.
- Essex I. P.** Proceedings of the Essex Institute. Salem (Mass.).
1856—71. B.M.i.; Camb.P.S.; Dub.R.I.A.; Edinb.R.S.i.; Linn.
S.i.; N.H.M.; Oxon.R.i.; R.S.; S.K.
- Eure Rec. S. Ag.**..... Recueil de la Société d'Agriculture, Sciences, Arts, et Belles-lettres
du département de l'Eure. Evreux.
1830—39. B.M.; Camb.U.; Oxon.B.; R.S.
See Eure S. Ag. Rec.
- Eure Rec. Tr.** Recueil des Travaux de la Société Libre d'Agriculture, des Sciences,
des Arts et des Belles-Lettres du département de l'Eure. Evreux.
1841— B.M.; Camb.U.; R.S.
- Eure S. Ag. Rec.**..... *See Eure Rec. S. Ag.*
- Évk.** A'Magyar Tudós Társaság' Évkönyvei. Pest. *Continued as:*
A'Magyar Tudományos Akademia Évkönyvei. Budá.
1833—89. B.M.; Edinb.R.S.i.; Geol.S.i.; N.H.M.; Oxon.B.;
R.A.S.i.; R.S.; S.K.i.; U.C.L.I.
- Exner Rpm.**..... Repertorium der Physik; Exner. München, Leipzig.
1865—91. B.M.; Camb.U.i.; Dub.N.L.I.i.; Edinb.U.; I.CE.i.;
Oxon.R.; P.O.; R.S.; S.K.
See Carl Rpm.
- Fed. I. Mn. E. T.** Transactions of the Federated Institution of Mining Engineers.
Newcastle-upon-Tyne.
1889—98. *Continued as:* Transactions of the Institution of Mining
Engineers, 1898— Camb.U.; Edinb.R.S.i.; Geol.M.; Geol.S.;
Glasg.P.S.; Glasg.U.; I.CE.; Oxon.B.; Oxon.R.i.; P.O.; S.K.
- Férussac Bil. Sc. Mth.** ... Bulletin des Sciences Mathématiques, Astronomiques, Physiques, et
Chimiques; Baron de Férussac. Paris.
1824—31. B.M.; Edinb.U.i.; Geol.S.; Glasg.U.i.; Oxon.R.; P.O.;
U.C.L.
- Finist. S. Sc. Bil.** Bulletin de la Société d'Études Scientifiques du Finistère. Morlaix.
1879— N.H.M.
- Firenze Ac. Georg. At.** ... Atti della R. Accademia economico-agraria dei Georgofili. Firenze.
1817— *Continuation of:* Atti della (Real) Società Economica di
Firenze ossia de' Georgofili, 1791—1812. B.M.; Camb.U.; Dub.
T.C.i.; Edinb.R.S.i.; Oxon.B.
See Firenze At. Ac. Georg.
- Firenze A. Ms. Imp.** ... Annali del Museo Imperiale di Fisica e Storia Naturale di Firenze.
Firenze.
1808—10. B.M.; Camb.U.i.; N.H.M.; Oxon.B.; R.A.S.; R.S.i.; S.K.
See Firenze Ac. Georg. At.
- Firenze At. Ac. Georg.**... *See Firenze Ac. Georg. At.*
- Firenze S. Georg. At.** ... Atti della (Real) Società Economica di Firenze ossia de' Georgofili.
Firenze.
1791—1812. *Continued as:* Atti della R. Accademia economico-
agraria dei Georgofili, 1817— B.M.; Camb.U.
- Föl. Közl.** Földtani Közlöny. Havi folyóirat kiadja a Magyarhoni Földtani
Társulat. (Geologische Mittheilungen.) Zeitschrift der Ungar-
ischen Geologischen Gesellschaft. Budapest.
1872— B.M.; Camb.U.i.; Geol.M.; Geol.S.; N.H.M.; R.S.i.; S.K.i.

List of Serial Publications

- Forsh. Ag.-Ps.**..... Forschungen auf dem Gebiete der Agrikultur-Physik. Heidelberg. 1878—98. Chem.S.; P.O.
- Förster Al. Bauztg.** Allgemeine Bauzeitung; Förster. Wien. 1836— B.M.; Camb.U.; I.CE.i.; P.O.
- Fr. An. I. Prv.**..... Annuaire de l'Institut des Provinces et des Congrès Scientifiques de France. Paris, Caen, etc. 1846— B.M.i.; Camb.U.i.; N.H.M.i.; Oxon.B.i.; R.S.i.
See **Fr. I. Prv. An.**
- Franklin I. J.** Journal of the Franklin Institute of the State of Pennsylvania. Philadelphia. 1828— B.M.; Camb.U.; Chem.S.i.; Dub.R.I.A.; Geol.S.i.; Glasg.P.S.i.; I.CE.; Oxon.B.; P.O.; R.A.S.i.; R.Geogr.S.; R.S.; U.C.L.i. 1835—79. B.M.; Camb.U.; N.H.M.
- Fr. Cg. Sc.** Sessions des Congrès Scientifiques de France. 1835—79. B.M.; Camb.U.; N.H.M.
- Freiburg B.** Berichte über die Verhandlungen der Naturforschenden Gesellschaft zu Freiburg i. B. Freiburg i. B. 1855— B.M.; Camb.U.i.; Dub.R.I.A.; Linn.S.i.; N.H.M.; Oxon.R.; R.S.; S.K.
- Fresenius Z.**..... Zeitschrift für Analytische Chemie; Fresenius. Wiesbaden. 1862— B.M.; Camb.U.; Chem.S.; Dub.N.L.I.; Glasg.P.S.; N.H.M.; Oxon.R.; Pharm.S.; P.O.; R.S.; S.K.
- Fr. I. Prv. An.** See **Fr. An. I. Prv.**
- Fr. I. Prv. Mm.** Mémoires de l'Institut des Provinces de France:—Sciences Physiques et Naturelles. Paris, Caen, etc. 1859. B.M.
See **Fr. Mm. I. Prv.**
- Frkf. a. M. Ps. Vr. Jbr.**... } Jahresbericht des Physikalischen Vereins zu Frankfurt am Main.
Frkf. Jbr. Ps. Vr. } Frankfurt am Main. 1838— B.M.i.; Glasg.U.i.; R.S.i.; S.K.i.
- Fr. Mm. I. Prv.** See **Fr. I. Prv. Mm.**
- Froriep Not.** Notizen aus dem Gebiete der Natur- und Heilkunde; Froriep. Erfurt, Weimar. 1821—62. B.M.i.; Camb.U.i.; Glasg.U.i.; N.H.M.; Oxon.R.i.; R.S.i.
- Fr. S. Ag. Bil.**..... Bulletin des Séances de la Société (Centrale) d'Agriculture de France. Paris. 1837— P.O.i.
- Fr. S. Ag. Mm.** Mémoires d'Agriculture, d'Économie rurale et domestique publiés par la Société d'Agriculture. Paris. 1801— B.M.; Edinb.R.S.i.; Oxon.B.
- Fr. S. Mn. Bil.** Bulletin de la Société Minéralogique de France. Meulan, Paris. 1878— B.M.; Dub.T.C.; Geol.M.; Geol.S.; N.H.M.; Oxon.R.; R.S.; S.K.
- Fschr. Mth.**..... Jahrbuch über die Fortschritte der Mathematik. Berlin. 1868— B.M.; Camb.U.; Dub.N.L.I.; Dub.R.C.S.; Edinb.U.; Glasg.P.S.i.; Glasg.U.; Math.S.; Oxon.R.; R.S.; U.C.L.
- Fschr. Ps.**..... Die Fortschritte der Physik. Berlin. 1845— Camb.P.S.; Camb.U.; Chem.S.; Dub.N.L.I.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Edinb.U.; Glasg.U.; I.CE.i.; Oxon.B.(R.); P.O.; R.A.S.i.; R.S.; S.K.; U.C.L.
- Gand. A. Ac.**..... Annales Academiæ Gandavensis. Gandavi. (Ghent.) 1819—31. B.M.; Camb.U.; N.H.M.; Oxon.B.; R.S.
- G. Arcad.** Giornale Arcadico di Scienze, etc. Roma. 1819— B.M.; N.H.M.i.; Oxon.B.
- Gard. Chron.** The Gardener's Chronicle. London. 1841— Camb.U.; Dub.N.L.I.i.; Dub.T.C.i.; Linn.S.; N.H.M.; Oxon.B.; P.O.; S.K.i.
- Gard Mm. Ac.**..... Mémoires de l'Académie du Gard. Nîmes. 1832— B.M.; Camb.U.; Oxon.B.; R.S.i.
- Gauss Resultate** Resultate aus den Beobachtungen des Magnetischen Vereins; Gauss und Weber. Göttingen, Leipzig. 1837—42. B.M.; Camb.U.; Chem.S.; R.S.
- Gehlen J.** Journal für die Chemie und Physik; Gehlen. Berlin. 1806—10. B.M.; Edinb.R.S.; Glasg.U.; N.H.M.; Oxon.R.; R.S.
- Gen. Bil. I. Nt.** Bulletin de l'Institut National Genevois. Genève. 1853— B.M.; Camb.U.; Dub.R.D.S.; N.H.M.; Oxon.B.i.; P.O.i.; R.S.
See **Gen. I. Nt. Bil.**

List of Serial Publications

- Gén. Civ.** Le Génie Civil. Revue Générale des Industries Françaises et Etrangères, etc. Paris.
1880— B.M.; I.CE.; P.O.; S.K.
See Gen. Bil. I. Nt.
- Gen. I. Nt. Bil.**
See Gen. Bil. I. Nt.
- Gen. Mm. S. Ps.** Mémoires de la Société de Physique et d'Histoire Naturelle de Genève. Genève.
1821— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Geol.S.; Glasg.U.i.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.i.; R.A.S.i.; R.Geogr.S.; R.S.; U.C.L.i.
See Gen. S. Ps. Mm.
- Genova Mm. I. Ligure** ... Memorie dell' Istituto Ligure. Genova.
1806. B.M.; Camb.U.; R.S.
- Genova Mm. S. Md.** Memorie della Società Medica di Emulazione di Genova. Genova.
1802—04.
- Gen. S. Ps. Mm.**
See Gen. Mm. S. Ps.
- Gergonne A. Mth.** Annales de Mathématiques, pures et appliquées; Gergonne. Nîmes et Paris.
1810—31. B.M.; Dub.T.C.; Edinb.U.i.; Glasg.U.i.; Oxon.B.(R.); R.A.S.i.; R.S.; U.C.L.
- Gg. J.** The Geographical Journal. Including the Proceedings of the Royal Geographical Society. London.
1893— *Continuation of:* Proceedings, etc., 1857—92. B.M.i.; Camb.P.S.; Camb.U.; Dub.R.D.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Geol.M.; Geol.S.; Glasg.U.; I.CE.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.Geogr.S.; R.S.; S.K.; U.C.L.i.
- Gg. S. J.** Journal of the Royal Geographical Society of London. London.
1832—80. B.M.; Camb.P.S.i.; Camb.U.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; Edinb.U.; Geol.M.; Geol.S.; Glasg.P.S.; Glasg.U.; I.CE.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.Geogr.S.; R.S.; S.K.
- Gg. S. P.** Proceedings of the Royal Geographical Society of London. London.
1857—92. *Continued as:* The Geographical Journal, 1893—Camb.P.S.i.; Camb.U.; Dub.T.C.; Edinb.R.S.; Geol.M.; Geol.S.; Glasg.P.S.i.; Glasg.U.; I.CE.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.i.; R.A.S.i.; R.Geogr.S.; R.S.; S.K.; U.C.L.i.
- Gilbert A.** Annalen der Physik; Gilbert. Halle und Leipzig.
1799—1824. Camb.U.; Chem.S.; Edinb.U.; Glasg.U.i.; N.H.M.; Oxon.B.(R.); P.O.; R.S.; S.K.
- Gill Tech. Rep.** The Technical Repository; Gill. London.
1822—27. B.M.; Camb.U.; Edinb.R.S.i.; Glasg.U.i.; I.CE.i.; Oxon.B.; P.O.; R.S.i.; S.K.
- Glasg. I. Eng. T.** Transactions of the Institution of Engineers [and Shipbuilders] in Scotland. Glasgow.
1857— Camb.U.i.; Glasg.U.; I.CE.; P.O.; U.C.L.i.
See Glasg. T. I. Eng.
- Glasg. Ph. S. P.** Proceedings of the [Royal] Philosophical Society of Glasgow. Glasgow.
Glasg. P. Ph. S. { 1841— B.M.; Camb.P.S.; Camb.U.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; Geol.M.i.; Geol.S.i.; Glasg.P.S.; Glasg.U.i.; I.CE.i.; N.H.M.; Oxon.B.; Pharm.S.i.; P.O.i.; R.A.S.; R.Geogr.S.i.; R.S.; S.K.; U.C.L.i.
- Glasg. T. I. Eng.** *See Glasg. I. Eng. T.*
- Gleanings Sc.** Gleanings in Science. Calcutta.
1829—31. B.M.; Edinb.R.S.i.; I.CE.i.; N.H.M.; S.K.; U.C.L.i.
- Gl. Mg.** The Geological Magazine or Monthly Journal of Geology. London.
1864— B.M.; Camb.U.; Dub.N.L.I.; Dub.R.C.S.; Geol.M.; Geol.S.; Glasg.P.S.; Glasg.U.; I.CE.; Linn.S.; N.H.M.; Oxon.B.; P.O.i.; R.Geogr.S.; S.K.; U.C.L.
- Gl. S. QJ.** The Quarterly Journal of the Geological Society of London. London.
1845— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.N.L.I.; Geol.M.; Geol.S.; Glasg.P.S.i.; Glasg.U.; I.CE.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.Geogr.S.; R.S.; S.K.; U.C.L.
- Gl. Sv. Mm.** Memoirs of the Geological Survey of Great Britain and of the Museum of Economic Geology in London. London.
1846— Camb.U.; Dub.R.C.S.; Dub.T.C.; Edinb.R.S.; Geol.M.; Geol.S.; Glasg.U.i.; I.CE.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.S.; S.K.; U.C.L.
See Mm. Gl. Sv.

List of Serial Publications

- G. Mt.**..... *Giornale di Matematiche ad uso degli Studenti delle Università Italiane; Battaglini. Napoli.*
1863— B.M.; Camb.U.; Dub.R.C.S.i.; Dub.R.I.A.i.; Math.S.i.; Oxon.B.; R.S.; U.C.L.i.
- Görl. Ab.** *Abhandlungen der Naturforschenden Gesellschaft zu Görlitz. Görlitz.*
1827— B.M.; Camb.U.i.; Dub.R.D.S.i.; Dub.R.I.A.i.; N.H.M.; R.S.; S.K.
- Göteb. Hndl.**..... *Göteborgs Kongl. Vetenskaps och Vitterhets Samhälles Handlingar. Göteborg.*
1850— B.M.; Camb.P.S.i.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.i.; N.H.M.; R.S.i.
- Gött. Ab.** *Abhandlungen der k. Gesellschaft der Wissenschaften. Göttingen.*
1843— B.M.; Camb.P.S.i.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; Glasg.U.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; R.S.; U.C.L.i.
- Gött. Cm.** *Commentationes Societatis Regiæ Scientiarum Göttingensis. Göttinge.*
1778—1808. B.M.i.; Camb.U.; Dub.R.I.A.i.; Edinb.R.S.; Glasg.U.i.; N.H.M.; Oxon.B.; R.S.; U.C.L.
Commentationes recentiores Societatis, etc. Göttinge.
1808—37. B.M.; Camb.U.; Edinb.R.S.i.; Glasg.U.i.; N.H.M.; Oxon.B.; Oxon.R.; R.A.S.i.; R.S.; U.C.L.
- Gött. Nr.** *Nachrichten von der k. Gesellschaft der Wissenschaften und der Georg-Augusts-Universität zu Göttingen. Göttingen.*
1845— B.M.; Camb.P.S.; Camb.U.i.; Dub.R.D.S.i.; Dub.R.I.A.i.; Dub.T.C.i.; Edinb.R.S.; Glasg.U.i.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.; Oxon.R.; R.A.S.i.; R.S.
- Gött. Stud. Vr.** *Studen des Göttingischen Vereins Bergmännischer Freunde; Haussmann. Göttingen.*
- Gött. Vr. Stud.** *1824—58. Geol.S.i.; R.S.; S.K.*
- Gould As. J.**..... *The Astronomical Journal; Gould. Cambridge, Mass.*
1851—61. B.M.; Camb.U.; Glasg.U.i.; Oxon.B.; Oxon.R.i.; R.A.S.; R.S.; S.K.
See As. J.
- 's Gravenh. I. Ing. Ts.** ... *Tijdschrift van het Koninklijk Instituut van Ingenieurs. 's Gravenhage.*
1869— B.M.; I.CE.i.
- 's Gravenh. I. Ing. Vh.** .. *Verhandelingen van het Koninklijk Instituut van Ingenieurs. 's Gravenhage.*
1848— B.M.; I.CE.i.
- Grenoble Ac. Delph. Bl.** .. *Bulletin de l'Académie Delphinale, ou Société des Sciences et Arts de Grenoble. Grenoble.*
1846— B.M.; Camb.U.i.; Oxon.B.; R.S.i.
- Gruithuisen N. Analekt.** .. *Neue Analekten für Erd- und Himmelskunde. Gruithuisen. München.*
1832—36. B.M.; R.A.S.; R.S.
- Grunert Arch.**..... *Archiv der Mathematik und Physik; Grunert. Greifswald, Leipzig.*
1841— B.M.; Camb.U.; Dub.N.L.L.; Dub.R.C.S.; Edinb.U.; Glasg.U.; Math.S.i.; Oxon.B.(R.); R.S.; U.C.L.i.
See Arch. Mth. Ps.
- G. Teix. J. Sc.**..... *Journal de Sciencias Mathematicas e Astronomicas, publicado pelo Dr Francisco Gomes Teixeira. Coimbra.*
1878— Math.S.; R.S.i.
- Gz. C. It.** *Gazzetta Chimica Italiana. Palermo.*
1871— B.M.; Camb.P.S.i.; Camb.U.; Chem.S.; P.O.; R.S.i.; S.K.
- Haarl. Ms. Teyl. Arch.**... *Archives du Musée Teyler. Haarlem.*
1866— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.i.; Edinb.R.S.; Glasg.P.S.; N.H.M.; Oxon.R.; R.A.S.; R.S.; S.K.
See Harl. Arch. Ms. Teyl.
- Haarl. Ntk. Vh.** *Natuurkundige Verhandelingen van de [Bataafsche] Hollandsche Maatschappij der Wetenschappen te Haarlem. Haarlem.*
- Haarl. Ntk. Vh. Mtsch.**... *1799— B.M.; Camb.U.i.; Dub.R.D.S.; Geol.S.i.; Glasg.U.i.; N.H.M.; R.S.; S.K.i.*
- Haidinger B.** *Berichte über die Mittheilungen von Freunden der Naturwissenschaften in Wien; Haidinger. Wien.*
1847—51. Camb.U.; Chem.S.i.; Edinb.R.S.; Geol.S.i.; Linn.S.; N.H.M.; R.A.S.; R.Geogr.S.; R.S.

List of Serial Publications

- Hain. Mm. S.** { Mémoires et Publications de la Société des Sciences, des Arts et des
Hain. S. Mm. { Lettres du Hainaut. Mons.
 1839— B.M.; Dub.T.C.i.; N.H.M.; Oxon.B.i.; R.S.i.; S.K.
- Hall Bij.** { Bijdragen tot de Natuurkundige Wetenschappen; Hall, etc.
 Amsterdam.
 1826—32. B.M.; Camb.U.; N.H.M.; R.S.; S.K.
- Halle Nf. Gs. B.** { Bericht über die Sitzungen der Naturforschenden Gesellschaft zu
Halle Sb. Nf. Gs. { Halle. Halle.
 1853—92. B.M.; Camb.U.i.; Edinb.R.S.i.; R.S.i.
- Halle Z.** { Zeitschrift für die gesammten Naturwissenschaften; herausgegeben
 von dem Naturwissenschaftlichen Vereine für Sachsen und
Halle Z. Nw. { Thüringen in Halle; Giebel. Berlin.
 1853— B.M.; Camb.U.i.; Dub.N.L.I.; Dub.R.D.S.i.; Dub.R.I.A.i.;
 Dub.T.C.i.; Edinb.R.S.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.;
 R.S.; S.K.
See Z. Nw.
- Hamb. Mth. Gs. Mt.** { Mitteilungen der Mathematischen Gesellschaft in Hamburg. Leipzig.
 1889— Math.S.
- Hamb. Nt. Vr. Ab.** { Abhandlungen aus dem Gebiete der Naturwissenschaften, herausg.
 vom Naturwissensch. Verein von Hamburg-Altona. Hamburg.
 1846— Camb.U.; Edinb.R.S.i.; Geol.S.i.; Linn.S.i.; N.H.M.;
 R.S.; S.K.
- Hamb. Nt. Vr. Vh.** { Verhandlungen des Naturwissenschaftlichen Vereins von Hamburg-
 Altona. Hamburg.
 1877—81; 1894— Dub.R.I.A.i.; Linn.S.i.; N.H.M.; R.S.
- Hamb. Ws. Anst. Jb.** { Jahrbuch der Hamburgischen Wissenschaftlichen Anstalten.
 Hamburg.
 1884— Camb.U.; Edinb.R.S.; Linn.S.; N.H.M.; S.K.
- Hann. Archt.-Vr. Z.** { Zeitschr. des Architekten- und Ingenieur-Vereins zu Hannover.
 Hannover.
 1855— Camb.U.i.; I.CE.; P.O.
See Hann. Z. Archt.-Vr.
- Hann. Jbr.** { Jahresbericht der Naturhistorischen Gesellschaft zu Hannover.
 Hannover.
 1851— Dub.R.I.A.; N.H.M.i.
- Hann. Z. Archt.-Vr.** *See Hann. Archt.-Vr. Z.*
- Haarl. Arch. Ms. Teyl.** ... *See Haarl. Ms. Teyl. Arch.*
- Heidl. Nt. Md. Vh.** { Verhandlungen des Naturhistorisch-Medicinischen Vereins zu Heidel-
Heidl. Vh. Nt. Md. { berg. Heidelberg.
 1857— Camb.U.i.; Chem.S.i.; Dub.R.I.A.; Geol.S.; Linn.S.i.;
 N.H.M.i.; R.S.i.
- Helsingf. Acta.** { Acta Societatis Scientiarum Fennicæ. Helsingfors.
 1842— B.M.; Camb.P.S.; Camb.U.i.; Dub.R.I.A.; Edinb.R.S.i.;
 Glasg.U.i.; N.H.M.; Oxon.B.; R.A.S.; R.Geogr.S.i.; R.S.; S.K.
- Helsingf. Öfv.** { Öfversigt af Finska Vetenskaps-Societetens Förhandlingar. Hel-
 singfors.
 1853— B.M.; Camb.P.S.i.; Camb.U.i.; Dub.R.D.S.; Dub.R.I.A.;
 Edinb.R.S.i.; Glasg.U.i.; N.H.M.; Oxon.B.; R.A.S.; R.Geogr.
 S.i.; R.S.
- Hermbstädt Bll.** { Bulletin des Neuesten und Wissenswürdigsten aus der Naturwissen-
 schaft, etc.; Hermbstädt. Berlin.
 1809—13. B.M.; Camb.U.; R.S.
- Hermbstädt Ms.** { Museum des Neuesten und Wissenswürdigsten aus dem Gebiete der
 Naturwissenschaft, der Künste, der Fabriken, der Manufakturen,
 der technischen Gewerbe, der Landwirthschaft, der Produk-
 tenwaaren und Handelskunde, und der bürgerlichen Haushaltung,
 etc.; Hermbstädt. Berlin.
 1814—18. B.M.; Camb.U.; R.S.
- Hermst. Vh.** { Verhandlungen und Mittheilungen des Siebenbürgischen Vereins
 für Naturwissenschaften. Hermannstadt.
 1850— B.M.; Camb.U.; Dub.R.I.A.i.; N.H.M.; R.S.; S.K.
- Hertha** { Hertha, Zeitschrift für Erd-, Völker-, und Staaten-Kunde; Berghaus
 und Hoffmann. Stuttgart und Tübingen.
 1825—29. B.M.; Camb.U.; Oxon.B.; R.Geogr.S.; R.S.; S.K.;
 U.C.L.i.
- Higl. S. T.** { Prize Essays and Transactions of the Highland Society of Scotland.
 1799—1843. *Continued as:* Transactions of the Highland and
 Agricultural Society of Scotland. Edinburgh. 1843— B.M.;

List of Serial Publications

- Camb.U.; Dub.R.D.S.; Edinb.R.S.; Geol.M.i.; Glasg.P.S.;
Glasg.U.i.; Oxon.B.; P.O.; S.K.
- Hoeven en Vriese Ts.** ... Tijdschrift voor Natuurlijke Geschiedenis en Physiologie; Hoeven
en Vriese. Amsterdam.
1834—45. B.M.; Camb.U.; N.H.M.
- I. Ag. S. J.** Journal of the Agricultural and Horticultural Society of India. Calcutta.
1842—93. *Continued as:* Proceedings and Journal, etc. 1894—
B.M.i.; Linn.S.i.; N.H.M.; P.O.i.; R.S.i.
See I. J. Ag. S. and J. Ag. S. I.
- I. CE. F.** Minutes of Proceedings of the Institution of Civil Engineers, con-
taining Abstracts of the Papers and of the Discussions. London.
1837— B.M.; Camb.P.S.; Camb.U.; Dub.R.C.S.; Dub.R.D.S.;
Dub.R.I.A.; Edinb.R.S.; Edinb.U.; Geol.S.i.; Glasg.P.S.i.;
Glasg.U.; I.CE.; Oxon.B.; Oxon.R.i.; P.O.; R.Geogr.S.; R.S.;
S.K.; U.C.L.
- See CE. I. F.*
Transactions of the Institution of Civil Engineers. London.
1836—42. B.M.; Camb.P.S.; Camb.U.; Dub.N.L.I.; Dub.R.C.S.;
Dub.R.D.S.; Edinb.R.S.; Geol.S.; Glasg.U.; I.CE.; Oxon.B.;
Oxon.R.; P.O.; R.Geogr.S.; R.S.; U.C.L.i.
- See CE. I. T.*
I. Égypt. Bil. Bulletin de l'Institut Egyptien. Caire.
1859— Camb.P.S.i.; Camb.U.i.; N.H.M.; R.Geogr.S.i.; U.C.L.i.
- Iékat. S. Our. Bil.** Bulletin de la Société Ouralienne d'Amateurs des Sciences Naturelles.
Ekaterinburg.
1874— Edinb.R.S.i.; Geol.S.i.; N.H.M.i.
- I. Elect. E. J.** Journal of the Institution of Electrical Engineers, late the Society
of Telegraph Engineers and Electricians. London.
1890— B.M.; Camb.P.S.i.; Camb.U.; Dub.T.C.i.; Edinb.R.S.i.;
Glasg.U.i.; I.CE.; Oxon.B.; Oxon.R.; P.O.; R.S.; S.K.; U.C.L.
- See Tel. E. J.*
I. Gl. Sv. Rc. Records of the Geological Survey of India. Calcutta.
1870—97. Camb.P.S.; Camb.U.i.; Dub.N.L.I.; Dub.R.C.S.;
Dub.R.I.A.; Edinb.R.S.; Geol.M.; Geol.S.; Glasg.P.S.; Glasg.U.;
I.CE.i.; N.H.M.; Oxon.B.; Oxon.R.; R.Geogr.S.; R.S.
- I. J. Ag. S.** *See I. Ag. S. J. and J. Ag. S. I.*
- Il Cim.** Il Cimento, rivista di Scienze, Lettere, ed Arti. Torino.
1852—55. B.M.
- Il Polit.** Il Politecnico; repertorio mensile di studj applicati alla prosperità
e coltura sociale.
Il Politecnico; repertorio di studj letterarj, scientifici e tecnici. Milano.
1839—44; 1860— B.M.; I.CE.i.; P.O.
- Il Progresso** Il Progresso delle Scienze, Lettere, ed Arti. Napoli.
First series undated; Second series 1832— Camb.U.; Oxon.B.
- I. ME. P.** Institution of Mechanical Engineers. Proceedings. Birmingham,
London.
1847— B.M.; Camb.P.S.i.; Camb.U.; Dub.R.D.S.; Glasg.P.S.;
Glasg.U.; I.CE.; P.O.; R.S.; S.K.i.; U.C.L.
- See ME. I. P.*
I. Mn. E. T. Transactions of the Institution of Mining Engineers. Newcastle-
upon-Tyne.
1898— *Continuation of:* Transactions of the Federated Institution
of Mining Engineers, 1889—98. Camb.U.; Edinb.R.S.; Geol.M.;
Geol.S.; Glasg.P.S.; Glasg.U.; I.CE.i.; Oxon.B.; P.O.; S.K.
- I. Mn. Mtl. T.** Transactions of the Institution of Mining and Metallurgy, London.
London.
1892— B.M.; Camb.U.i.; Geol.S.; Glasg.U.i.; I.CE.; N.H.M.;
P.O.; S.K.
- Ing.** Der Ingenieur; Zeitschrift für das gesammte Ingenieurwesen;
Bornemann. Freiberg.
1848—50. B.M.; I.CE.; P.O.
- Innsb. Ferd. Z.** Zeitschrift des Ferdinandeums für Tirol und Vorarlberg. Innsbruck.
1852— B.M.; N.H.M.; R.S.
- Innsb. Nt. Md. B.** Berichte des Naturwissenschaftlich-Medizinischen Vereins in Inns-
bruck. Innsbruck.
1870— B.M.; Camb.U.; Dub.R.D.S.i.; Dub.R.I.A.i.; Linn.S.i.;
N.H.M.; Oxon.R.; R.S.

List of Serial Publications

- Iowa Ac. Sc. P.** Proceedings of the Iowa Academy of Sciences. Des Moines.
1875— B.M.i.; Edinb.R.S.i.; N.H.M.; Oxon.B.i.; P.O.; R.S.i.;
U.C.L.i.
- Ir. Ac. Cunningham Mm.** Royal Irish Academy. "Cunningham Memoirs." Dublin.
1880— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.N.L.I.;
Dub.R.C.S.; Dub.R.D.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.i.;
Edinb.U.; Glasg.P.S.; Glasg.U.i.; I.CE.i.; Linn.S.; Math.S.i.;
N.H.M.i.; Oxon.B.; Oxon.R.; R.A.S.; R.Geogr.S.i.; R.S.i.;
U.C.L.
- Ir. Ac. P.** Proceedings of the Royal Irish Academy. (Science.) Dublin.
1841— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.N.L.I.;
Dub.R.C.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Edinb.U.;
Geol.S.i.; Glasg.P.S.i.; Glasg.U.i.; I.CE.i.; Linn.S.; Math.S.i.;
N.H.M.; Oxon.B.i.; Oxon.R.; P.O.i.; R.A.S.; R.Geogr.S.i.;
R.S.; S.K.; U.C.L.i.
- Ir. Ac. T.** Transactions of the Royal Irish Academy. Science. Dublin.
1787— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.N.L.I.;
Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; Edinb.U.; Geol.S.i.;
Glasg.P.S.; Glasg.U.i.; I.CE.; Linn.S.; Math.S.i.; N.H.M.;
Oxon.B.i.; Oxon.R.; P.O.i.; R.A.S.; R.Geogr.S.i.; R.S.;
S.K.; U.C.L.
- Ir. I. CE. T.** The Transactions of the Institute of Civil Engineers of Ireland.
Dublin.
1845— Camb.U.i.; Dub.R.I.A.; Dub.T.C.; Glasg.U.i.; I.CE.; P.O.
- Ir. Ntlist.** The Irish Naturalist: A Monthly Journal of General Irish Natural
History. Dublin, Belfast, London.
1892— B.M.; Camb.P.S.i.; Camb.U.; Dub.N.L.I.; Dub.R.C.S.;
Dub.T.C.; Geol.M.i.; Geol.S.; Linn.S.; N.H.M.; S.K.
- Isère S. Bll.** Bulletin de la Société de Statistique, des Sciences Naturelles, et des
Arts Industriels du département de l'Isère. Grenoble.
1838— B.M.i.; N.H.M.; Oxon.B.; R.S.i.
- I. & S. I. J.** The Journal of the Iron and Steel Institute. London.
1872— Camb.U.; Chem.S.i.; Dub.R.D.S.; Dub.R.I.A.; Dub.T.C.;
Edinb.U.; Geol.M.i.; Geol.S.; Glasg.P.S.i.; Glasg.U.i.;
I.CE.; Oxon.B.; P.O.; R.S.; S.K.; U.C.L.
- It. S. Met. An.** Annuario Meteorologico Italiano pubblicato per cura del Comitato
direttivo della Società Meteorologica Italiana. Torino, Roma,
Firenze.
1886— B.M.
- J. Ag. S.** Journal of the Royal Agricultural Society of England. London.
1840— B.M.; Camb.U.; Chem.S.; Dub.T.C.; Geol.M.; Geol.S.;
Glasg.U.i.; I.CE.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.;
R.Geogr.S.; R.S.; S.K.; U.C.L.i.
- J. Ag. S. I.** *See Ag. S. J.*
Journal of the Agricultural and Horticultural Society of India.
Calcutta.
1842—93. *Continued as:* Proceedings and Journal, etc., 1894—
B.M.i.; Linn.S.i.; N.H.M.; P.O.i.; R.S.i.
- Jam. I. J.** *See I. Ag. S. J. and I. J. Ag. S.*
Journal of the Institute of Jamaica. Kingston, Jamaica.
1891— B.M.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; N.H.M.;
R.Geogr.S.i.; R.S.; S.K.
- J. Anal. C.** The Journal of Analytical and Applied Chemistry. Easton, Pa.
1887—93. Chem.S.; P.O.i.
- Jap. As. S. T.** Transactions of the Asiatic Society of Japan. Yokohama.
1872— B.M.; Camb.U.; Edinb.R.S.; N.H.M.; Oxon.B.; Oxon.R.;
P.O.i.; R.Geogr.S.i.; R.S.
- Jap. Seism. S. T.** Transactions of the Seismological Society of Japan. Yokohama.
1880—92. *Continued as:* Seismological Journal of Japan, 1893—95.
Camb.U.; Dub.R.I.A.; Edinb.R.S.; Geol.M.; Glasg.U.i.; I.CE.i.;
N.H.M.i.; R.A.S.i.; R.Geogr.S.; R.S.i.; U.C.L.i.
- Jb. Berg-Hm.** Berg- und Hüttenmännisches Jahrbuch der k.k. Schemnitzer-
Bergakademie und der k.k. Montan-Lehranstalten zu Leoben und
Pibram. Wien.
1851— B.M.i.; Geol.S.i.; I.CE.i.; P.O.i.; S.K.
*See Berg-Hm. Jb., Leoben Berg-Hm. Jb., and Wien Berg-
Hm. Jb.*

List of Serial Publications

- Jb. Berg- Hw.** Jahrbuch für das Berg- und Hüttenwesen im Königreiche Sachsen. Freiberg.
1873— B.M.; Geol.S.; I.CE.; N.H.M.i.; P.O.; S.K.
- J. de Ps.**..... Journal de Physique, de Chimie, et de l'Histoire Naturelle; de Lamétherie etc. Paris.
1794—1823. B.M.; Camb.U.; Geol.S.; Glasg.U.i.; N.H.M.i.; Oxon.B.; Oxon.R.; R.S.; S.K.; U.C.L.i.
- J. de Ps.** Journal de Physique Théorique et Appliquée; D'Almeida. Paris.
1872— Camb.U.; Dub.R.C.S.; Glasg.U.i.; I.CE.i.; Oxon.R.; P.O.; R.S.; S.K.
- Jena. Z.**..... Jenaische Zeitschrift für Naturwissenschaft, herausg. von der Medicinisch-Naturwissenschaftlichen Gesellschaft zu Jena. Jena.
1864— B.M.; Camb.P.S.i.; Camb.U.; Chem.S.i.; Dub.N.L.I.i.; Dub.R.D.S.i.; Edinb.R.S.; Edinb.U.i.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; R.S.; S.K.; U.C.L.
- Jern-Kont. A.** Jern-Kontoret's Annaler. En Tidskrift för Svenska Bergshand- teringen. Stockholm.
1817— I.CE.i.; P.O.; R.S.i.; S.K.
- J. f. O.** Journal für Ornithologie. In Verbindung mit der Deutschen Ornithologischen Gesellschaft zu Berlin. Cassel, Leipzig.
1853— B.M.; Glasg.U.i.; N.H.M.; R.S.
- J. Gén. Civ.** Journal du Génie Civil des Sciences et des Arts. Paris.
1828—48. B.M.i.; Camb.U.; P.O.
- J. H. Un. Cir.** The Johns Hopkins University Circulars. Baltimore.
1879— Camb.P.S.; Camb.U.; Dub.N.L.I.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Edinb.U.; Glasg.P.S.; Glasg.U.i.; Math.S.i.; N.H.M.; Oxon.B.; Oxon.R.; R.A.S.i.; R.Geogr.S.i.; R.S.; S.K.; U.C.L.i.
- J. Lndw.** Journal für Landwirthschaft. Celle, Göttingen, Berlin.
1853— B.M.i.; P.O.i.
- J. Micr. Sc.** Quarterly Journal of Microscopical Science; Lankester and Busk. London.
1853— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.N.L.I.i.; Dub.R.C.S.; Edinb.R.S.; Edinb.U.; Geol.S.i.; Glasg.P.S.; Glasg.U.; Linn.S.; N.H.M.; Oxon.B.i.; Oxon.R.; Pharm.S.; P.O.; R.S.; S.K.; U.C.L.
- J. Méd. Chir. Phm.** Journal de Médecine, Chirurgie, Pharmacie, etc. Paris.
1801—17. R.S.
- J. Mines** Journal des Mines, ou Recueil de Mémoires sur l'exploitation des Mines, et sur les Sciences et les Arts qui s'y rapportent. Paris.
1794—1815. B.M.; Camb.U.; Dub.T.C.; Edinb.R.S.; Geol.S.; I.CE.; Linn.S.i.; N.H.M.; Oxon.B.(R.); R.S.i.; S.K.
- J. Phm.** Journal de Pharmacie et des Sciences accessoires. Paris.
1815—41. *Continuation of:* Bulletin de Pharmacie, 1809—14. *Continued as:* Journal de Pharmacie et de Chimie, 1842— Camb.U.; Chem.S.; Edinb.R.S.i.; Glasg.U.; Oxon.B.; Pharm.S.; P.O.; R.S.i.; U.C.L.i.
- J. Fr. C.**..... Journal für praktische Chemie; Erdman, etc. Leipzig.
1834— B.M.; Camb.U.; Chem.S.; Dub.N.L.I.i.; Dub.R.C.S.i.; Dub.R.D.S.i.; Edinb.R.S.; Glasg.P.S.i.; Glasg.U.; N.H.M.; Oxon.B.; Oxon.R.; Pharm.S.i.; P.O.; R.S.; S.K.; U.C.L.i.
See Erdm. J. Fr. C.
- J. Sav.** Journal des Savants. Paris.
1816— B.M.; Camb.U.; Dub.N.L.I.; Dub.T.C.; Edinb.R.S.i.; Glasg.U.; Oxon.B.; Oxon.R.; P.O.i.; R.S.
- J. Sc.** The Journal of Science and Annals of Astronomy, Biology, Geology, Industrial Arts, Manufactures and Technology. (Formerly the Quarterly Journal of Science.) London.
1864—85. B.M.; Camb.U.; Chem.S.; Dub.N.L.I.i.; Edinb.R.S.; Glasg.U.i.; I.CE.; Linn.S.i.; N.H.M.; Oxon.R.; Pharm.S.i.; P.O.; R.A.S.i.; R.S.; S.K.
- J. Tél.**..... Journal Télégraphique publié par le Bureau International des Administrations Télégraphiques. Berne.
1869— P.O.
- Kan. Ac. Sc. T.** Transactions of the Kansas Academy of Science. Topeka, Kansas.;
1872— Camb.P.S.i.; Dub.R.I.A.; Edinb.R.S.i.; Geol.S.i.; Glasg.P.S.i.; Linn.S.i.; N.H.M.; Oxon.B.i.; R.S.i.; U.C.L.i.

List of Serial Publications

- Kan. Un. Q.** The Kansas University Quarterly. Laurence, Kansas.
1893— B.M.i.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Geol.
S.i.; Glasg.P.S.i.; Math.S.i.; N.H.M.i.; R.S.
- Karlsruhe Nt. Vr. Vh.** ... Verhandlungen des Naturwissenschaftlichen Vereins in Karlsruhe.
Karlsruhe.
1864— B.M.i.; Dub.R.I.A.; N.H.M.
- Kärnten Berg- Vr. Z.** ... { Zeitschrift des berg- und hüttenmännischen Vereines für Kärnten.
Klagenfurt.
Kärnten Z. { 1869—81. P.O.; S.K.i.
- Karsten Arch.** Archiv für Mineralogie, Geognosie, Bergbau, und Hüttenkunde;
Karsten. Berlin.
1829—55. B.M.; Edinb.R.S.i.; Geol.M.; Geol.S.; N.H.M.; P.O.; R.S.
- Karsten Arch. Bergbau**... Archiv für Bergbau und Hüttenwesen; Karsten. Berlin, Breslau.
1818—31. N.H.M.; P.O.; R.S.; S.K.
- Kastner Arch. C.** Archiv für Chemie und Meteorologie; Kastner. Nürnberg.
1830—35. Edinb.R.S.; N.H.M.; P.O.; R.S.
- Kastner Arch. Ntl.** Archiv für die gesammte Naturlehre; Kastner. Nürnberg.
1824—35. B.M.; N.H.M.; P.O.; S.K.
- Kazan As. Obs. Pb.** Publications of the Astronomical Observatory of the Imperial
University of Kazan. Kazan.
1893— R.A.S.
- Kazan Mm. Un.** Scientific Memoirs published by the Imperial University of Kazan.
Kazan.
1834— B.M.i.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; Geol.S.i.;
Glasg.P.S.i.; Linn.S.i.; R.S.i.
See Kazan Un. Mm.
- Kazan S. Nt. (Ps.-Mth.) P.** Proceedings of the Physico-Mathematical Section of the Naturalists'
Society of the Imperial University of Kazan. Kazan.
1883—90. *Continued as:* Bulletin de la Société Physico-Mathé-
matique de Kasan, 1891— R.S.
- Kazan S. Ps.-Mth. Bil.** ... Bulletin de la Société Physico-Mathématique de Kasan. Kasan.
1891— *Continuation of:* Proceedings of the Physico-Mathematical
Section of the Naturalists' Society of the Imperial University of
Kazan, 1883—90. Dub.R.I.A.i.; Edinb.R.S.i.; R.S.i.
- Kazan Un. Mm.** *See Kazan Mm. Un.*
- Kharkov Mth. S. Com.**... Communications and Proceedings of the Mathematical Society of
the Imperial University of Kharkov. Kharkov.
1879?— R.S.i.
- Kiel Schr.** Schriften der Universität zu Kiel. Kiel.
1855—80. B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; N.H.M.i.;
Oxon.B.; R.Geogr.S.; R.S.; S.K.i.
- Kjöb. Dn. Vd. Selsk. Afh.** { Det Kongelige Danske Videnskabernes Selskabs naturvidenskabelige
Kjöb. Dn. Vd. Selsk. Afh. { og matematiske Afhandlinger. Kiöbenhavn.
1824—46. B.M.; Dub.T.C.i.; Edinb.R.S.; Geol.S.i.; Linn.S.i.;
N.H.M.; R.S.; S.K.
- Kjöb. Dn. Vd. Selsk. Skr.** { Det Kongelige Danske Videnskabernes Selskab Skriver. Kiöbenhavn.
Kjöb. Dn. Vd. Selsk. Skr. { 1801—18. B.M.; Camb.P.S.i.; Camb.U.; Edinb.R.S.; N.H.M.;
Oxon.B.; R.S.
- See Dn. Vd. Selsk. Skr.*
- Kjöb. Dn. Vd. Selsk. Skr.** { Det Kongelige Danske Videnskabernes Selskabs Skrifter. Natur-
Kjöb. Skr. { videnskabelig og Mathematisk Afdeling. Kjöbenhavn.
Kjöb. Skr. { 1849— B.M.; Camb.U.i.; Edinb.R.S.; Linn.S.; N.H.M.; R.A.S.;
R.Geogr.S.i.; R.S.; U.C.L.i.
- Kjöb. Ov.** { Oversigt over det Kongelige Danske Videnskabernes Selskabs For-
Kjöb. Ov. { handlinger. Kjöbenhavn.
Kjöb. Ov. { 1806— Camb.P.S.; Camb.U.i.; Chem.S.i.; Dub.R.D.S.i.; Dub.
R.I.A.i.; Dub.T.C.i.; Edinb.R.S.i.; Geol.S.i.; Glasg.U.i.; Linn.
S.i.; N.H.M.i.; Oxon.R.; P.O.i.; R.A.S.i.; R.Geogr.S.i.; R.S.;
S.K.i.; U.C.L.i.
- Kolozsvár Orv.-Term.** Értésítő a "Kolozsvari Orvos-Természettudományi Társulat" -nak
Társ. Éts. { az...orvosi, természettudományi szaküléseiről... [Proceedings
of the medical and natural history sections of the Klausenburg
Medical and Natural History Society.] Kolozsvartt [Klausenburg].
1876—79. N.H.M.
- Königsb. Schr.** Schriften der königlichen Physikalisch-Oekonomischen Gesellschaft
zu Königsberg. Königsberg.
1860— B.M.; Camb.P.S.; Dub.R.I.A.; Edinb.R.S.i.; Linn.S.;
N.H.M.; P.O.i.; R.Geogr.S.i.; R.S.; S.K.

List of Serial Publications

- Kosmos (Lw.)** Kosmos. Czasopismo polskiego Towarzystwa przyrodników imienia Kopernika. [Cosmos. The Journal of the Polish Society of Naturalists founded in honour of Copernicus.] Lwow. 1876— B.M.; N.H.M.
- Krk. Ak. (Mt.-Prz.) Pam.** Pamiętnik Akademii Umiejętności w Krakowie. Wydział Matematyczno-Przyrodniczy. [Memoirs of the Academy of Science in Cracow. Section of Mathematics and Natural Science.] Kraków. 1874— B.M.; Edinb.R.S.i.; Glasg.U.i.; N.H.M.
- Krk. Ak. (Mt.-Prz.) Rz...** { Rozprawy... Wydziału Matematyczno-Przyrodniczego Akademii
Krk. Ak. (Mt.-Prz.) Rz. & Sp. { Umiejętności. [Proceedings of the Section of Mathematics and Natural Science of the Academy of Science.] Kraków. 1874— B.M.; Camb.U.i.; Edinb.R.S.i.; Geol.S.i.; Glasg.U.i.; N.H.M.
- Krk. Roczn. Tow. Nauk.** { Rocznik Towarzystwa Naukowego z Uniwersytetem Krakowskim
Krk. Roczn. Uniwers. ... { Połączonogo. Krakowie. [Annals of the Scientific Society of the Polish University of Krakow. Krakow.] 1817—72. B.M.; Glasg.U.i.
- Lamont Jb. Sternw.** Jahrbuch der K. Sternwarte bei München; Lamont. München. 1838— B.M.; Camb.U.; R.A.S.i.; R.S.
- Lanc. Hist. S. T.** Proceedings and Papers of the Lancashire and Cheshire Historic Society. Liverpool.
- Lanc. T. Hist. S.** { 1849—54. Continued as: Transactions, etc., 1855— B.M.;
Camb.U.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Geol.S.i.; Glasg.P.S.i.;
Glasg.U.i.; Oxon.B.i.; R.Geogr.S.i.; R.S.
- Laus. Bil. S. Vd.** Bulletin des Séances de la Société Vaudoise des Sciences Naturelles. Lausanne. 1842— Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Geol.S.; Linn.S.; N.H.M.; Oxon.B.i.; R.S.; S.K.i.
- Lausitz. Mschr.** See **Laus. S. Vd. Bil.**
Lausitzische [und neue Lausitzische] Monatschrift. Organ der Oberlausitzischen Gesellschaft der Wissenschaften. Görlitz. 1800—08. B.M.
- Laus. S. Vd. Bil.** See **Laus. Bil. S. Vd.**
- Lb.** The Laboratory, a Weekly Record of Scientific Research. London. 1867. B.M.; Chem.S.; Oxon.R.; Pharm.S.; P.O.; R.S.
- Leic. S. T.** The Transactions of the Leicester Literary and Philosophical Society. Leicester. 1835— Camb.U.; Dub.R.D.S.; Geol.S.; Glasg.P.S.; Linn.S.i.; N.H.M.i.; Oxon.B.; P.O.; S.K.; U.C.L.
- Leijd. A. Ac.** Annales Academiæ Lugduno-Batavæ. Leijden. 1815—75. B.M.; Camb.U.; Dub.T.C.i.; N.H.M.; Oxon.B.; R.S.i.; U.C.L.i.
- Leip. Ab. Mth. Fs.** Abhandlungen der Mathematisch-Physischen Classe der Königlich Sächsischen Gesellschaft der Wissenschaften. Leipzig. 1852— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.; Glasg.U.; Math.S.i.; N.H.M.; Oxon.B.; P.O.; R.A.S.; R.S.; S.K.; U.C.L.i.
- Leip. As. Gs. Vjschr.** See **Leip. Mth. Fs. Ab.**
Vierteljahrsschrift der Astronomischen Gesellschaft. Leipzig. 1866— B.M.; Camb.P.S.i.; Camb.U.; Dub.R.I.A.; Edinb.R.S.; Oxon.R.; R.A.S.; R.S.; S.K.
- Leip. B.** Berichte über die Verhandlungen (Math.-Phys. Classe) der Königlich Sächsischen Gesellschaft der Wissenschaften zu Leipzig. Leipzig. 1846— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.; Glasg.U.; Math.S.i.; N.H.M.; Oxon.B.; Oxon.R.; R.A.S.; R.S.; S.K.i.; U.C.L.i.
- Leip. Jablon. Preisschr.** See **Leip. Mth. Fs. B.**
Preisschriften gekrönt und herausgegeben von der Fürstlich Jablonowski'schen Gesellschaft zu Leipzig. Leipzig. 1847— B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; N.H.M.; Oxon.B.; R.A.S.i.; R.S.i.; U.C.L.i.
- Leip. Mth. Fs. Ab.** See **Leip. Ab. Mth. Fs.**
- Leip. Mth. Fs. B.** See **Leip. B.**
- Leip. Nf. Gs. Sb.** Sitzungsberichte der Naturforschenden Gesellschaft zu Leipzig. Leipzig. 1875— B.M.; Camb.U.; Edinb.R.S.i.; N.H.M.; R.S.i.; S.K.

List of Serial Publications

- Le Mans S. R. Tr.** { Analyse des Travaux de la Société [Royale] des Arts du Mans.
Le Mans.
- Le Mans Tr. S.** { 1820. N.H.M.; R.S.
- Leoben Berg-Hm. Jb.** ... Berg- und Hüttenmännisches Jahrbuch der k.k. Schemnitzer-Bergakademie und der k. k. Montan-Lehranstalten zu Leoben und Pöbram. Wien.
1851— B.M.i.; Geol.S.i.; I.CE.i.; P.O.i.; S.K.
- Leonhard u. Bronn N. Jb.** See **Berg-Hm. Jb.**, **Jb. Berg-Hm.**, and **Wien Berg-Hm. Jb.**
Neues Jahrbuch für Mineralogie, Geognosie, Geologie und Petrofaktenkunde; Leonhard und Bronn. Stuttgart.
1833—62. *Continuation of:* Jahrbuch für Mineralogie, etc., 1830—32. *Continued as:* Neues Jahrbuch für Mineralogie, Geologie und Paläontologie, 1863— B.M.; Camb.U.; Dub.N.L.I.i.; Dub.R.D.S.i.; Geol.M.; Geol.S.; Glasg.U.; N.H.M.; Oxon.R.; R.S.; S.K.i.
- Le Puy A. S. Ag.** { Annales de la Société d'Agriculture, Sciences, etc. du Puy. Le Puy.
Le Puy S. Ag. A. { 1826— Geol.S.i.; N.H.M.
- Les Mondes** Les Mondes, Revue hebdomadaire des Sciences et de leurs Applications aux Arts, et à l'Industrie; l'Abbé F. Moigno. Paris.
1863—84 B.M.; Camb.U.i.; Dub.N.L.I.i.; Glasg.P.S.i.; I.CE.i.; Oxon.R.; P.O.; R.S.i.; S.K.i.
- L'I** L'Institut; Journal des Académies et Sociétés Scientifiques de la France et de l'Étranger. Paris.
1833— B.M.i.; Camb.U.; Dub.T.C.; Edinb.R.S.i.; Geol.S.i.; Glasg.P.S.i.; N.H.M.; Oxon.B.(R.); P.O.i.; R.S.i.; S.K.i.
- Lieb. A.** Annalen der Chemie und Pharmacie; Liebig etc. Lemgo, Leipzig, Heidelberg.
1832— B.M.; Camb.U.; Chem.S.; Dub.N.L.I.i.; Dub.R.C.S.i.; Edinb.R.S.i.; Glasg.P.S.; Glasg.U.i.; N.H.M.; Oxon.R.; Pharm.S.i.; P.O.; R.S.; S.K.; U.C.L.i.
- Liège Mm. S. Sc.** See **A. C. Phm.**
Mémoires de la Société [Royale] des Sciences, de l'Agriculture, et des Arts à Liège. Liège.
1843— B.M.; Camb.U.; Dub.T.C.; Edinb.R.S.i.; Geol.S.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.i.; N.H.M.; Oxon.B.; P.O.; R.S.; S.K.
- Liège S. Gl. Blg. A.** See **Liège S. Sc. Mm.**
Annales de la Société Géologique de Belgique. Liège.
1874— Camb.P.S.; Geol.M.; Geol.S.; N.H.M.; R.S.; S.K.i.
- Liège S. Sc. Mm.** See **Liège Mm. S. Sc.**
- Lille Mm.** { Mémoires de la Société [Royale] des Sciences, etc. à Lille. Lille.
Lille Mm. S. { 1827—96. B.M.; Camb.U.; Dub.T.C.; N.H.M.; Oxon.B.; Oxon.R.;
Lille S. Mm. { R.S.i.
- Lille Tr.** Recueil des Travaux de la Société d'Amateurs des Sciences, de l'Agriculture, et des Arts à Lille. Lille.
1819—27. B.M.; Camb.U.; Dub.T.C.; N.H.M.; Oxon.B.; Oxon.R.; R.S.
- Lindenau Z.** Zeitschrift für Astronomie und verwandte Wissenschaften; Lindenau. Tübingen.
1816—18. B.M.; Camb.U.; R.A.S.; R.S.
- Liouv. J.** { Journal de Mathématiques pures et appliquées, fondé par Joseph
Liouv. J. Mth. { Liouville. Paris.
1836— B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; Edinb.U.; Glasg.P.S.i.; Glasg.U.; I.CE.i.; Oxon.B.(R.); R.S.; S.K.; U.C.L.
- Lisb. A.** Annaes das Sciencias e Lettras, publicados de baixo dos auspicios da Academia Real das Sciencias: Sciencias mathematicas, physicas, historico-naturaes e medicas. Lisboa.
1857— B.M.; Dub.R.I.A.; Edinb.R.S.i.; N.H.M.; R.A.S.i.; R.S.i.; S.K.i.
- Lisb. Ac. Sc. Mm.** See **A. Sc.**
Historia e Memorias da Academia Real das Sciencias de Lisboa. Lisboa.
1797— B.M.; Camb.U.; Edinb.R.S.; Geol.S.i.; N.H.M.; Oxon.B.; R.A.S.; R.Geogr.S.i.; R.S.i.; S.K.i.
- Lisb. A. Mar.** See **Lisb. Mm.**, **Lisb. Mm. Ac. Sc.** and **Lisb. Mm. Sc.**
Annaes maritimos e coloniaes. Lisboa.
1840—45. N.H.M.; Oxon.B.i.; R.Geogr.S.i.

List of Serial Publications

- Lisb. J. Sc. Mth.** *Jornal de Sciencias mathematicas, physicas e naturaes.* Publicado sob os auspicios da Academia R. das Sciencias de Lisboa. Lisboa.
1868— B.M.; Camb.U.; Dub.R.D.S.i.; Edinb.R.S.i.; Geol.S.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.; R.A.S.; R.Geogr.S.; R.S.; U.C.L.i.
- Lisb. Mm.**
Lisb. Mm. Ac. Sc. } *See Lisb. Ac. Sc. Mm.*
Lisb. Mm. Sc. }
L. Md. Ps. J. *The Medical and Physical Journal.* London.
1799—1833. B.M.; Camb.U.i.; Chem.S.i.; Oxon.B.; Pharm.S.i.
- L. Mth. S. P.** *Proceedings of the London Mathematical Society.* London.
1865— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Glasg.U.; Math.S.; Oxon.B.i.; Oxon.R.; R.S.; S.K.; U.C.L.
- Lndw. Cb.** *Landwirthschaftliches Centralblatt für Deutschland.* Berlin.
1853—76. B.M.
- Lndw. V.-St.** *Die landwirthschaftlichen Versuchs-Stationen. Organ für wissenschaftliche Forschungen auf dem Gebiete der Landwirthschaft.* Dresden, Chemnitz.
1859— B.M.i.; Camb.U.; Chem.S.i.; Glasg.U.i.; Oxon.B.; P.O.i.; R.S.i.
- Lotos** *Lotos. Zeitschrift für Naturwissenschaften.* Prag.
1851—95. B.M.; Camb.U.; Dub.R.I.A.i.; N.H.M.
- Louvain A. Ac.** *Annales Academiæ Lovaniensis.* Bruxelles, Louvain.
1821—27. B.M.; Camb.U.; Dub.T.C.; Oxon.B.; R.S.
- Lpldina** *Leopoldina: amtliches Organ der Kaiserlichen Leopoldino-Carolinischen Deutschen Akademie der Naturforscher.* Dresden.
1859— B.M.; Camb.P.S.; Camb.U.i.; Edinb.R.S.i.; Linn.S.; N.H.M.; R.A.S.i.; R.S.
- L. Pol. Mg.** *Polytechnic Magazine and Journal of Science, Literature and the Fine Arts.* London.
1844. *Continued as:* *The London Polytechnic Review and Magazine,* 1845. B.M.; Camb.U.
- Lpool Lt. Ph. S. P.** *Proceedings of the Literary and Philosophical Society of Liverpool.* London, Liverpool.
1844— B.M.; Camb.U.i.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.i.; Geol.S.; Glasg.P.S.; I.CE.i.; Linn.S.; N.H.M.; Oxon.B.i.; P.O.i.; R.A.S.i.; R.Geogr.S.i.; R.S.; S.K.; U.C.L.i.
- L. P. Sc. S.** *Proceedings of the Scientific Society of London.* London.
1839—40. Geol.S.; I.CE.i.
- L. Ps. S. P.** *Proceedings of the Physical Society of London.* London.
1874— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.C.S.; Dub.R.D.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.i.; Geol.S.i.; Glasg.P.S.i.; Glasg.U.i.; I.CE.i.; Math.S.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.S.; S.K.; U.C.L.i.
- Lucca At. Ac.** *Atti della R. Accademia Lucchese di Scienze, Lettere, ed Arti.* Lucca.
1821— B.M.; Camb.U.; Dub.T.C.i.; Oxon.B.i.
- Lum. Élect.** *La Lumière Electrique. Journal universel d'Electricité.* Paris.
1879—94. B.M.; Glasg.U.i.; I.CE.; P.O.; S.K.i.
- Lund. Acta Un.** *Acta Universitatis Lundensis. Lunds Universitets Års-skrift. Afdelningen för Matematik och Naturvetenskap.* Lund.
1864— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; Geol.S.i.; Glasg.U.i.; Linn.S.i.; N.H.M.; Oxon.B.; R.S.; S.K.i.
See Lund. Un. Acta.
- Lund Phys. Sällsk. Årsb.** *Physiographiska Sällskapets Årsberattelse.* Lund.
1823—24. R.S.i.
- Lund Phys. Sällsk. Ts...** *Physiografiska Sällskapets Tidskrift.* Lund.
1837—38 Camb.U.; N.H.M.; R.S.
- Lund. Un. Acta** *See Lund. Acta Un.*
- Lüneb. Nt. Vr. Jh.** *Jahreshefte des Naturwissenschaftlichen Vereins für das Fürstentum Lüneberg.* Lüneberg.
1865— N.H.M.
- Lux. I. Pb.** *Publications de l'Institut Royal Grand-Ducal de Luxembourg. Section des Sciences Naturelles et Mathématiques: ci-devant "Société des Sciences Naturelles."* Luxembourg.
1870— Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.i.; N.H.M.; R.S.i.

List of Serial Publications

- Lux. S. Sc. Mm.** { Société des Sciences Naturelles du Grand-Duché de Luxembourg.
Luxembourg.
Lux. S. Sc. Nt. { 1853—69. Dub.R.I.A.; R.S.
- Lyon Ac. Mm. (Sc.)** { Mémoires de l'Académie des Sciences, Belles-Lettres et Arts de
Lyon. Classe des Sciences. Lyon, Paris.
Lyon Ac. Sc. Mm. { 1845— B.M.; Camb.U.; Edinb.R.S.i.; Linn.S.i.; N.H.M.; Oxon.B.;
R.S.i.; S.K.i.
See **Lyon Mm. Ac. and Lyon Mm. Ac. Sc.**
- Lyon A. S. Ag.** { Annales des Sciences physiques et naturelles, d'Agriculture, et
d'Industrie, publiées par la Société d'Agriculture, etc.
Annales de la Société d'Agriculture, Histoire Naturelle et Arts
Utiles de Lyon. Lyon.
1838— B.M.; Camb.U.; Dub.R.I.A.; Linn.S.; N.H.M.; Oxon.B.;
P.O.; R.S.; S.K.i.
See **Lyon S. A. Ag. and Lyon S. Ag. A.**
- Lyon A. S. L.** { Annales de la Société Linnéenne de Lyon. Lyon.
1836— B.M.; Camb.U.i.; Dub.R.I.A.; Edinb.R.S.i.; Linn.S.i.;
N.H.M.; Oxon.B.i.(R.); R.S.i.; S.K.i.
See **Lyon S. L. A.**
- Lyon Mm. Ac.** {
Lyon Mm. Ac. Sc. { See **Lyon Ac. Mm. (Sc.) and Lyon Ac. Sc. Mm.**
- Lyon S. A. Ag.** {
Lyon S. Ag. A. { See **Lyon A. S. Ag.**
- Lyon S. L. A.** {
Lyon Un. A. { See **Lyon A. S. L.**
Annales de l'Université de Lyon. Paris, Lyon.
1891— B.M.; Edinb.R.S.; N.H.M.i.; R.S.i.
- Mâcon Ac. A.** { Annales de l'Académie de Mâcon, Société des Arts, Sciences, Belles-
Lettres et d'Agriculture. Mâcon.
1851— B.M.; R.S.i.
- Mâcon S. Ag. C. R.** { Compte Rendu des Travaux de la Société (d'Agriculture,) des
Sciences, Arts et Belles-Lettres, de Mâcon. Mâcon.
1807—52. B.M.i.; R.S.i.
- Madras Eng. Rp.** { Reports, etc. on various professional subjects connected with the
duties of the Corps of Engineers of the Madras Presidency;
Capt. J. T. Smith, F.R.S. Madras.
1839—46. I.CE.; P.O.; R.S.
- Madras J.** { The Madras Journal of Literature and Science. Madras.
1833— B.M.i.; Camb.U.; Dub.N.L.I.i.; Geol.S.i.; Linn.S.i.;
N.H.M.; Oxon.B.i.; P.O.; R.A.S.i.; R.Geogr.S.i.; R.S.i.;
S.K.i.; U.C.L.i.
- Madrid Ac. Ci. Mm.** { Memorias de la Real Academia de Ciencias. Madrid.
1850— B.M.; Camb.U.i.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.;
Geol.S.; Linn.S.i.; N.H.M.; Oxon.B.; R.A.S.i.; R.Geogr.S.i.;
R.S.i.; S.K.i.; U.C.L.i.
See **Madrid Mm.**
- Madrid A. H. Nt.** { Anales de Historia Natural. Madrid.
1799—1804. B.M.; N.H.M.; R.S.
- Madrid A. Minas** { Anales de Minas. Madrid.
1838—46. Geol.S.; P.O.; S.K.†
- Madrid Bl.** { Boletín Oficial del Ministerio de Comercio, etc. Madrid.
1848—51. P.O.
- Madrid Mm.** { See **Madrid Ac. Ci. Mm.**
- Madrid Rv.** { Revista de los Progresos de las Ciencias exactas, físicas, y naturales.
Madrid.
1850—86. B.M.; Dub.R.D.S.i.; Edinb.R.S.i.; Geol.S.i.; N.H.M.;
Oxon.R.i.; R.A.S.i.; R.S.i.
- Mag. Ak. Éts. (Mth. Term.)** { Magyar akadémiai Értesítő. A matematikai és természettudo-
mányi osztályok közlönye. [Report of the Hungarian Academy.
Communications of the Mathematical and Natural Science
sections.] Pest.
1860—65. B.M.; Camb.P.S.i.; Geol.S.i.; R.S.; S.K.i.
- Magdeb. Nt. Vr. Jbr. u.** { Jahresbericht und Abhandlungen des Naturwissenschaftlichen
Ab. { Vereins zu Magdeburg. Magdeburg.
1869— B.M.; R.S.i.
- Mag. Tud. Ak. Étk. (Mth.)** { Értekezések a Matematikai Osztály köréből. Kiadja a Magyar
Tudományos Akadémia. [Memoirs on Mathematical subjects.
Published by the Hungarian Academy of Science.] Pest.
1867—94. B.M.; Edinb.R.S.i.; Geol.S.i.; R.S.; S.K.i.

List of Serial Publications

- Mag. Tud. Ak. Éts.** A Magyar Tudományos Akadémia Ertesítője. [Report of the Hungarian Academy of Science.] Pest.
1867— B.M.; R.Geogr.S.i.; S.K.i.
- Majocchi A. Fis. C.** Annali di Fisica, Chimica, e Matematiche, col *Bulletino dell'Industria meccanica e chimica*; Majocchi. Milano.
1841—50. B.M.; R.S.
- Manch. Gl. S. T.** Transactions of the Manchester Geological Society. London.
1841— B.M.; Camb.U.i.; Dub.T.C.; Edinb.R.S.i.; Geol.M.; Geol.S.; I.CE.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.i.; R.S.; U.C.L.
- Manch. Lt. Ph. S. Mm.** Memoirs of the Literary and Philosophical Society of Manchester. London and Manchester.
1785—1887. *Continued as:* Memoirs and Proceedings, etc., 1888— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.D.S.; Dub.R.I.A.; Geol.S.; Glasg.P.S.i.; Glasg.U.; I.CE.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.; Oxon.R.; Pharm.S.i.; P.O.; R.A.S.i.; R.Geogr.S.i.; R.S.; S.K.; U.C.L.i.
See **Manch. Mm. Ph. S.**, **Manch. Ph. S. Mm.** and **Manch. S. Mm.**
- Manch. Lt. Ph. S. Mm. & P.** Memoirs and Proceedings of the Manchester Literary and Philosophical Society. Manchester.
1888— *Continuation of:* Memoirs, etc., 1785—1887, and Proceedings, etc., 1857—87. B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.I.A.i.; Edinb.R.S.; Glasg.P.S.; Glasg.U.; I.CE.; Linn.S.; Math.S.; N.H.M.; Oxon.B.; Oxon.R.; Pharm.S.; P.O.; R.A.S.; R.Geogr.S.; R.S.; S.K.; U.C.L.i.
- Manch. Lt. Ph. S. P.** Proceedings of the Literary and Philosophical Society of Manchester. Manchester.
1857—87. *Continued as:* Memoirs and Proceedings, etc., 1888— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.D.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Geol.S.; Glasg.P.S.; Glasg.U.i.; I.CE.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.; Pharm.S.; P.O.; R.A.S.; R.Geogr.S.; R.S.; S.K.; U.C.L.i.
See **Manch. Ph. S. P.** and **Manch. S. P.**
- Manch. Mcr. S. T.** Manchester Microscopical Society. Transactions and Annual Report. Manchester.
1884— *Continuation of:* Reports, 1880—84. B.M.i.; Camb.U.i.; Edinb.R.S.i.; Linn.S.i.; N.H.M.; P.O.; S.K.i.
- Manch. Mm. Ph. S.** } *See* **Manch. Lt. Ph. S. Mm.**
- Manch. Ph. S. Mm.** }
- Manch. Ph. S. P.** } *See* **Manch. Lt. Ph. S. P.**
- Manch. S. Mm.** } *See* **Manch. Lt. Ph. S. Mm.**
- Manch. S. P.** } *See* **Manch. Lt. Ph. S. P.**
- Marb. Schr.** Schriften der Gesellschaft zur Beförderung der gesammten Naturwissenschaften zu Marburg. Marburg.
1823— B.M.i.; Camb.U.; N.H.M.; Oxon.R.; R.S.; S.K.i.
- Marseille Ac. Mm.** } Mémoires publiés par l'Académie de Marseille. Marseille.
Marseille Mm. Ac. } 1803—14; 1848— B.M.; Camb.U.i.; R.S.i.; S.K.i.
- Mars. Fac. Sc. A.** Annales de la Faculté des Sciences de Marseille. Marseille, Paris.
1891— B.M.; Camb.P.S.; Dub.R.I.A.; Edinb.R.S.; Glasg.P.S.; Linn.S.; Math.S.i.; N.H.M.; R.A.S.; R.S.
- Maryland Gl. Sv.** Maryland Geological Survey. Baltimore.
1897— Camb.P.S.; Edinb.R.S.; Geol.M.; Geol.S.; Glasg.P.S.i.; N.H.M.; P.O.; R.Geogr.S.; R.S.; U.C.L.
- Mathematician** The Mathematician; Davies, etc. London.
1845—50. B.M.; Camb.U.; Dub.T.C.; Oxon.B.; R.S.
- Mathesis** Mathesis. Recueil Mathématique... Gand, Paris.
1881— B.M.; Camb.U.
- Maurice PV. S. H. Nt.** ... } Procès-Verbaux de la Société d'Histoire Naturelle de l'Île Maurice.
Maurice S. H. Nt. PV. ... } Maurice.
1831; 1842—46. Linn.S.; N.H.M.; R.Geogr.S.; S.K.
- Mbl. Nt.** Maanblad voor Natuurwetenschappen, uitgegeven door de Sectie voor Natuurwetenschappen van het Genootschap ter Bevordering van Natuur-, Genees- en Heelkunde. Amsterdam.
1871— N.H.M.
- Mcr. S. J.** Journal of the Royal Microscopical Society. London.
1878— *Continuation of:* The Monthly Microscopical Journal, 1869—77. B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.N.L.I.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Geol.S.; Glasg.P.S.; Glasg.U.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.S.i.; S.K.; U.C.L.

List of Serial Publications

- Micr. S. T.** Transactions of the Microscopical Society of London. London. 1844—68. *Continued as:* The Monthly Microscopical Journal, 1869—77. B.M.; Camb.U.i.; Edinb.R.S.i.; Geol.S.; Glasg.U.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.i.; Pharm.S.i.; P.O.; R.S.; S.K.; U.C.L.
- Meckl. Vr. Nt. Arch.** ... Archiv des Vereins der Freunde der Naturgeschichte in Mecklenburg. Neubrandenburg. 1847— Camb.U.; Linn.S.i.; N.H.M.; R.S.i.
- Medley I. Eng.** Professional Papers on Indian Engineering; Major J. G. Medley. Roorkee.
- Medley Prof. Pp. I. Eng.** { 1864—86. I.CE.; P.O.i.; R.S.i.
- ME. I. P.** Institution of Mechanical Engineers. Proceedings. Birmingham, London. 1847— B.M.; Camb.P.S.i.; Camb.U.; Dub.R.D.S.; Glasg.U.; I.CE.; P.O.; R.S.; S.K.i.; U.C.L.
- See I. ME. P.*
- Meisner A.** Annalen der allgemeinen Schweizerischen Gesellschaft für die gesammten Naturwissenschaften; Meisner. Bern. 1824—25. B.M.; Linn.S.; N.H.M.; R.S.
- Mende S. Ag. Mm.** Mémoires et Analyses de Travaux de la Société d'Agriculture, Commerce, Sciences, et Arts de la ville de Mende, Département de la Lozère. Mende. 1827—50. R.S.
- Mengelwerk Wisk. Vh.** Mengelwerk van uitgeleezene en andere Wis- en Natuurkundige Verhandelingen; door het Genootschap der Mathematische Wetenschappen, etc. Amsterdam. 1796—1816. R.S.
- See Amst. Mengelwerk.*
- Mess. Mth.** The Messenger of Mathematics. Cambridge, London. 1862— B.M.; Camb.P.S.; Camb.U.; Dub.N.L.I.i.; Dub.R.C.S.i.; Dub.R.D.S.i.; Edinb.R.S.i.; Edinb.U.; Glasg.U.; Math.S.i.; Oxon.B.; Oxon.R.; R.S.; S.K.; U.C.L.
- Met. S. QJ.** Quarterly Journal of the Royal Meteorological Society. London. 1873— Camb.U.; Dub.R.I.A.i.; Dub.T.C.i.; Edinb.R.S.; Geol.S.; Glasg.U.; I.CE.; Linn.S.i.; Oxon.R.; P.O.; R.A.S.; R.Geogr.S.i.; R.S.
- Met. Z.** Meteorologische Zeitschrift. Berlin. 1884— Camb.U.; Edinb.R.S.; P.O.; R.Geogr.S.; R.S.; S.K.
- Metz Ac. Mm.** Mémoires de l'Académie (Royale, Impériale) de Metz. Metz.
- Metz Mm. Ac.** { 1821— B.M.; Camb.U.; Dub.T.C.; N.H.M.; Oxon.B.; R.S.i.; S.K.
- Méx. Bl. Gg.** Boletín del Instituto Nacional [afterwards de la Sociedad Mexicana] de Geografía y Estadística de la Republica Mexicana. México. 1850—66. B.M.; Oxon.B.i.; R.Geogr.S.i.
- Méx. Gg. Bl.** Boletín de la Sociedad de Geografía y Estadística de la Republica Mexicana. México. 1869— B.M.; Edinb.R.S.i.; R.Geogr.S.i.
- Méx. S. "Alzate" Mm.** Memorias de la Sociedad Científica "Antonio Alzate." México. 1887— B.M.i.; Camb.P.S.; Dub.R.I.A.; Edinb.R.S.; Glasg.U.i.; Linn.S.i.; Math.S.i.; N.H.M.i.; R.A.S.; R.Geogr.S.i.; R.S.; S.K.i.; U.C.L.i.
- Mg. Ntvd.** Magazin for Naturvidenskaberne; Lundh, etc. Christiania. 1823—36. B.M.; N.H.M.i.; R.S.
- Mh. Mth. Ps.** Monatshefte für Mathematik und Physik. Wien. 1890— B.M.; Camb.U.; Edinb.U.; Math.S.i.; N.H.M.
- Midl. Ntlist.** The Midland Naturalist. London, Birmingham. 1878—93. Camb.U.; Geol.M.; Geol.S.i.; Linn.S.; N.H.M.; P.O.; S.K.
- Mil. At. I. Lomb.** Atti dell' I. R. Istituto Lombardo di Scienze, Lettere, ed Arti. Milano. 1858—64. B.M.; Camb.U.; Edinb.R.S.; I.CE.i.; N.H.M.; Oxon.B.; R.Geogr.S.; R.S.
- Mil. At. S. It.** Atti della Società Italiana di Scienze Naturali. Milano. 1855— B.M.; Camb.U.; Edinb.R.S.i.; N.H.M.; P.O.i.; R.S.; S.K.i.
- See Mil. S. It. At.*
- Mil. Effem.** Effemeridi Astronomiche di Milano. Con Appendice di Osservazioni e Memorie Astronomiche. Milano.
- Mil. Effem. Aa.** { 1806— Camb.U.; Oxon.B.; R.A.S.i.

List of Serial Publications

- Mil. G. I. Lomb.** Giornale dell' I. R. Istituto Lombardo di Scienze, Lettere, ed Arti, e Biblioteca Italiana; compilata da varj dotti nazionali e stranieri. Milano. 1841—56. B.M.; Geol.S.i.; I.CE.; N.H.M.; Oxon.B.; R.Geogr.S.; R.S. See **Mil. I. Lomb. G.**
- Mil. G. S. Inc.** Giornale della Società d' Incoraggiamento delle Scienze, etc. stabilità in Milano. Milano. 1808—65. B.M.; Camb.U. See **Mil. G. I. Lomb.**
- Mil. I. Lomb. G.** Memorie dell' I. R. Istituto Lombardo di Scienze, etc. Milano. 1843— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.i.; Geol.S.; I.CE.i.; Math.S.i.; N.H.M.; Oxon.B.; R.A.S.i.; R.Geogr.S.; R.S.; S.K.; U.C.L.i. See **Mil. Mm. I. Lomb.**
- Mil. I. Lomb. Rd.** Reale Istituto Lombardo di Scienze e Lettere. Rendiconti. Milano. 1864— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; Geol.S.; Glasg.P.S.; Glasg.U.i.; I.CE.i.; Math.S.i.; N.H.M.; Oxon.B.i.; R.A.S.i.; R.Geogr.S.; R.S.; S.K.i.; U.C.L.i. See **Mil. I. Lomb. Mm.**
- Mil. Mm. I. Lomb.** Memorie dell' I. R. Istituto del regno Lombardo-Veneto. Milano. 1819—38. B.M.; Camb.U.; N.H.M.; Oxon.B.i.; R.Geogr.S.; R.S.; S.K. See **Mil. At. S. It.**
- Mil. S. It. At.** Bulletin of the Minnesota Academy of Natural Sciences. Minneapolis, Minn. 1874— B.M.; Geol.S.i.; N.H.M.; S.K.i.
- Minn. Ac. Sc. Bll.** Geological and Natural History Survey of Minnesota. Annual Reports. Minneapolis. 1872— B.M.; Camb.U.; Edinb.R.S.i.; Geol.M.; Geol.S.; Glasg.P.S.i.; Glasg.U.i.; N.H.M.; Oxon.B.; Oxon.R.i.; P.O.i.; R.Geogr.S.i.; S.K.i.; U.C.L.i.
- Minn. Gl. NH. Sm. Rp.** Die Quatember; Zeitschrift für naturwissenschaftl., geschichtl., philolog. und gemischte Gegenstände; von Trautvetter. Mitau. 1829—30. B.M.
- Mitau Quatember.** The Monthly Microscopical Journal. London. 1869—77. *Continuation of:* Transactions of the Microscopical Society of London, 1844—68. *Continued as:* Journal of the Royal Microscopical Society, 1878—. B.M.; Camb.U.; Edinb.R.S.; Geol.S.i.; Glasg.U.; N.H.M.; Oxon.R.; P.O.; R.S.; U.C.L.
- Mm. Gl. Sv.** Memoirs of the Geological Survey of Great Britain and of the Museum of Economic Geology in London. London. 1846— Camb.U.; Dub.R.C.S.; Dub.T.C.; Edinb.R.S.; Geol.M.; Geol.S.; Glasg.U.i.; I.CE.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.S.; S.K.; U.C.L. See **Gl. Sv. Mm.**
- Mm. Md. Mil.** Recueil de Mémoires de Médecine, de Chirurgie, et de Pharmacie Militaires, rédigé sous la surveillance du Conseil de Santé. Paris. 1815—82. *Continued as:* Archives de Médecine et de Pharmacie Militaires, 1883—. B.M.; Glasg.U.i.
- Mn. Mg.** The Mineralogical Magazine and Journal of the Mineralogical Society of Great Britain and Ireland. Truro, London. 1876— B.M.; Camb.U.; Chem.S.i.; Dub.N.L.L.i.; Geol.M.; Geol.S.; Glasg.U.; N.H.M.; Oxon.B.(R.); P.O.; R.S.; S.K.
- Mntp. Ac. Mm.** Académie des Sciences et Lettres de Montpellier. Mémoires de la Section des Sciences. Montpellier. 1847— B.M.; Camb.U.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; Linn.S.i.; N.H.M.; Oxon.B.; R.A.S.; R.S.; U.C.L.i.
- Mntp. Ac. Sc. Mm.** Recueil des Bulletins publiés par la Société Libre des Sciences, etc., de Montpellier. Montpellier. 1803—14. B.M.; Camb.U.; Oxon.B.i.
- Mntp. Mm. Ac.** Memorie della Regia Accademia di Scienze, Lettere ed Arti di Modena. Modena. 1833— B.M.; Dub.R.I.A.i.; Dub.T.C.i.; Edinb.R.S.; Math.S.i.; N.H.M.; Oxon.B.i.; S.K.i.; U.C.L.i.
- Mntp. Mm. Ac. Sect. Sc.** Memorie di Matematica e di Fisica della Società Italiana delle Scienze. Modena. 1782— B.M.i.; Camb.P.S.; Camb.U.i.; Dub.R.I.A.; Edinb.R.S.i.; Glasg.U.i.; Linn.S.i.; Oxon.B.i.; R.A.S.i.; R.S.; S.K.i.; U.C.L.i. See **Rm. S. It. Mm., Verona Mm. S. It. and Verona S. It. Mm.**
- Mntp. Rec. Bll.** See **Rm. S. It. Mm., Verona Mm. S. It. and Verona S. It. Mm.**
- Mod. Ac. Sc. Mm.** See **Rm. S. It. Mm., Verona Mm. S. It. and Verona S. It. Mm.**
- Mod. Mm. Ac. Sc.** See **Rm. S. It. Mm., Verona Mm. S. It. and Verona S. It. Mm.**
- Mod. Mm. S.** See **Rm. S. It. Mm., Verona Mm. S. It. and Verona S. It. Mm.**
- Mod. Mm. S. It.** See **Rm. S. It. Mm., Verona Mm. S. It. and Verona S. It. Mm.**
- Mod. S. It. Mm.** See **Rm. S. It. Mm., Verona Mm. S. It. and Verona S. It. Mm.**

List of Serial Publications

- Moigno Cosmos** Cosmos. Revue Encyclopédique Hebdomadaire des Progrès des Sciences; Moigno. Paris.
1852—70. B.M.; Camb.U.; Dub.T.C.; Edinb.R.S.i.; I.CE.i.; N.H.M.; Oxon.B.; P.O.; R.A.S.i.; R.S.; S.K.i.
See Cosmos.
- Moll Efem.** Efemeriden der Berg- und Hüttenkünde; Moll. München.
1805—09. N.H.M.i.; S.K.
- Mondes (les)** *See Les Mondes.*
- Mon. Sc.** Le Moniteur Scientifique; Quesneville. Paris.
1857— B.M.; Chem.S.i.; Dub.R.C.S.i.; Oxon.B.; Pharm.S.i.; P.O.; R.A.S.i.
- Mosc. Bil. S. Nt.** Bulletin de la Société Impériale des Naturalistes. Moscou.
1829— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.i.; Geol.S.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.i.; R.A.S.i.; R.S.; S.K.
- See Mosc. S. Nt. Bil.*
- Mosc. N. Mm.** Nouveaux Mémoires de la Société Impériale des Naturalistes de Moscou. Moscou.
1829— B.M.; Camb.U.; Edinb.R.S.i.; Geol.S.i.; Linn.S.i.; N.H.M.; R.S.i.; S.K.i.
- Mosc. Obs. A.** Annales de l'Observatoire de Moscou; Bredichin. Moscou.
1874— B.M.i.; Camb.U.; R.A.S.; R.S.
- Mosc. S. Nt. Bil.** *See Mosc. Bil. S. Nt.*
- Mosc. S. Sc. Bil.** Bulletin of the Imperial Society of Lovers of Natural Science, Anthropology and Ethnography, in connection with the Imperial University of Moscow. [In Russian.] Moscow.
1865— B.M.i.; Edinb.R.S.i.; N.H.M.i.
- Mosc. Un. Mm.** Scientific Memoirs of the Imperial University of Moscow. [In Russian.] Moscow.
— B.M.i.; Chem.S.i.; N.H.M.i.
- Mosc. Un. Mm. (Ps.-Mth.)** Scientific Memoirs of the Imperial University of Moscow. Section Phys.-Math. Moscou.
1880—96. Chem.S.
- Mth. A.** Mathematische Annalen; Clebsch. Leipzig.
1869— B.M.; Camb.P.S.; Camb.U.; Dub.N.L.I.i.; Dub.R.C.S.i.; Dub.R.D.S.i.; Dub.T.C.i.; Edinb.U.; Glasg.U.; Math.S.; Oxon.R.; R.S.; S.K.; U.C.L.
- Mth. Gz.** The Mathematical Gazette. London.
1894— B.M.; Camb.U.; Math.S.; S.K.; U.C.L.i.
- Mth. Misc.** The Mathematical Miscellany; Gill. New York.
1836—39. U.C.L.
- Mth. Nt. B. Ung.** Mathematische und naturwissenschaftliche Berichte aus Ungarn. Berlin.
1882— Camb.P.S.; Chem.S.; Edinb.R.S.; Glasg.U.i.; R.A.S.i.; R.Geogr.S.i.; R.S.; S.K.
- Mth. Term. Éts.** Matematikai és természettudományi Értesítő. Kiadja a Magyar Tudományos Akadémia. [Mathematical and Natural Science Report, published by the Hungarian Academy of Science.] Budapest.
1883— B.M.i.; Edinb.R.S.; N.H.M.; R.S.
- Mth. Termt. Éts.** Matematisk Tidsskrift. Kjøbenhavn.
1859— B.M.; Camb.U.; Math.S.i.; Oxon.B.; R.S.i.
- Mth. Ts.** Mittheilungen aus dem Osterlande. Altenburg.
1837— Camb.U.i.; N.H.M.
- Mt. Ostld.** Bulletin de la Société Industrielle de Mulhouse. Mulhouse.
1828— B.M.i.; Camb.U.i.; Chem.S.i.; Dub.R.C.S.i.; Dub.T.C.i.; Glasg.P.S.i.; Glasg.U.i.; I.CE.; Oxon.B.i.; P.O.
- Mulhouse Bil.** *See above.*
- Mulhouse Bil. S. In.** *See above.*
- Mulhouse S. In. Bil.** *See above.*
- Münch. Ab.** Abhandlungen der mathematisch-physikalischen Classe der Königl. Bayerischen Akademie der Wissenschaften. München.
1832— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Geol.S.; Glasg.U.; I.CE.i.; Linn.S.; Oxon.B.; Oxon.R.; P.O.; R.A.S.i.; R.Geogr.S.; R.S.; S.K.
- Münch. Ak. Ab.** Sitzungsberichte der Mathematisch-Physikalischen Classe der K. B. Akademie der Wissenschaften zu München. München.
1871— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.T.C.; Edinb.R.S.; Glasg.U.i.; I.CE.i.; Linn.S.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.Geogr.S.; R.S.; S.K.; U.C.L.i.
- Münch. Ak. Sb.** *See above.*
- Münch. Bil. Ak.** Bulletin der k. Akademie der Wissenschaften. München.

List of Serial Publications

- 1843—53. B.M.i.; Edinb.R.S.i.; I.CE.i.; Oxon.B.i.; R.A.S.; R.Geogr.S.i.; R.S.
- Müncb. D.**..... Denkschriften der Königl. Bayerischen Akademie der Wissenschaften zu München. München u. Salzburg.
- 1808—24. B.M.; Camb.P.S.; Camb.U.; Geol.S.i.; Glasg.U.; N.H.M.; Oxon.R.; P.O.; R.S.; S.K.
- Müncb. Gelehrte Az.** ... Gelehrte Anzeigen; herausgegeben von Mitgliedern der Königl. Bayerischen Akademie der Wissenschaften. München.
- 1835—60. B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; Linn.S.i.; N.H.M.; Oxon.B.; P.O.; R.S.; S.K.
- Müncb. Nt. Tech. Com. Ab.** Abhandlungen der naturwissenschaftlich-technischen Commission bei der Königl. Bayerischen Akademie. München.
- 1857—58. Camb.U.; R.S.
- Müncb. Sb.** Sitzungsberichte der Königl. Bayerischen Akademie der Wissenschaften zu München. München.
- 1860—70. B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.D.S.i.; Dub.R.L.A.i.; Dub.T.C.i.; Edinb.R.S.; Geol.S.; I.CE.; Linn.S.; N.H.M.; Oxon.B.; P.O.i.; R.A.S.; R.Geogr.S.; R.S.; S.K.
- Müncb. Strnw. N. A.** ... Neue Annalen der k. Sternwarte in Bogenhausen bei München. München.
- 1890— B.M.; Edinb.R.S.; R.A.S.; R.S.
- Müncb. Z. Archt.** Zeitschrift des Bayerischen Architecten- und Ingenieur-Vereins. München.
- 1869—77. P.O.
- N. A. Mth.** Nouvelles Annales de Mathématiques. Paris.
- 1842— B.M.; Camb.U.; Dub.T.C.; Edinb.U.; Glasg.U.; Math.S.i.; Oxon.B.(R.); R.S.; S.K.; U.C.L.i.
- Nancy Mm. Ac. Stanislas** Académie de Stanislas. Mémoires de la Société [Royale] des Sciences, etc. Nancy.
- 1852— *Continuation of:* Mémoires de la Société, etc., 1833—51. B.M.; Camb.U.; Geol.S.i.; Oxon.B.; R.S.i.; S.K.
- Nancy Mm. S. Sc.** Mémoires de la Société [Royale] des Sciences, Lettres, et Arts de Nancy. Nancy.
- 1833—51. *Continuation of:* Précis analytique des Travaux de la Société, etc., 1802—32. *Continued as:* Académie de Stanislas. Mémoires, etc., 1852— B.M.; Camb.U.i.; N.H.M.i.; Oxon.B.; R.S.i.; S.K.
- Nancy S. Sc. Bll.** Bulletin de la Société des Sciences de Nancy. Nancy, Paris.
- 1873— B.M.; Geol.S.i.; N.H.M.; R.Geogr.S.i.; R.S.
- Nancy Tr. S. Sc.**..... Précis analytique des Travaux de la Société [Royale] des Sciences, Arts, et Agriculture de Nancy. Nancy.
- 1802—32. *Continued as:* Mémoires de la Société, etc., 1833—51. B.M.; Camb.U.i.; Oxon.B.; R.S.i.
- N. Antol. Sc.** Nuova Antologia di Scienze, Lettere ed Arti. Firenze e Roma.
- 1866— B.M.; Dub.N.L.I.i.; N.H.M.
- Nap. Ac. Asp. A.** Annali dell' Accademia degli Aspiranti Naturalisti. Napoli.
- 1843—47; 1861—69; 1887. Camb.U.i.; N.H.M.; R.S.i.
- Nap. Ac. At.**..... Atti della Reale Accademia delle Scienze e Belle Lettere; Sezione della Società R. Barbonica. Napoli.
- 1819—51. B.M.; Camb.U.; Dub.R.D.S.; Geol.S.i.; N.H.M.; Oxon.B.; R.A.S.i.; R.S.
- Atti della R. Accademia delle Scienze Fisiche e Matematiche. Napoli.
- 1863—82; 1888— B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.; Geol.S.i.; Glasg.U.i.; Linn.S.i.; Math.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.; R.A.S.i.; R.S.; S.K.i.
- See **Nap. At. Ac. and Nap. At. Ac. Sc.**
- Nap. Ac. Pont. At.**..... Atti dell' Accademia Pontaniana di Napoli. Napoli.
- 1832— B.M.; Camb.U.; Dub.R.D.S.i.; Glasg.U.i.; N.H.M.; R.S.i.; U.C.L.i.
- Nap. At. Ac.**)
- Nap. At. Ac. Sc.**) See **Nap. Ac. At.**
- Nap. At. I. Inc.**) Atti del Real Istituto d' Incoraggiamento alle Scienze Naturali di Napoli. Napoli.
- 1811— B.M.; Camb.U.; Edinb.R.S.i.; I.CE.i.; N.H.M.; Oxon.B.; P.O.; R.S.i.; S.K.i.
- See **Nap. I. Inc. At.**

List of Serial Publications

- Nap. Bil. Ac. Asp.** *Bulletino dell' Accademia degli Aspiranti Naturalisti.* Napoli. 1861— Camb.U.i.; N.H.M.
- Nap. I. Inc. At.** *See Nap. At. I. Inc.*
- Nap. Ms.** Museo di Letteratura e Filosofia; Gatti. Napoli. 1842—62. B.M.; Oxon.B.
- Nap. Rd.** Rendiconto delle adunanze e de' lavori della Reale Accademia delle Scienze [Fis. e Mat.] di Napoli. Napoli. 1842—57. B.M.; Camb.U.; Edinb.R.S.i.; Linn.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.; R.A.S.i.; R.S.i.
- Nap. Rd.** Rendiconto dell' Accademia delle Scienze Fisiche e Matematiche. Napoli. 1862— Camb.U.; Dub.R.I.A.; Edinb.R.S.; Glasg.U.i.; Linn.S.i.; Math.S.; N.H.M.; Oxon.R.i.; P.O.; R.A.S.; R.S.; U.C.L.i.
- Nap. S. Nt. Bil.** Bolletino della Società di Naturalisti in Napoli. Napoli. 1867— B.M.; Camb.P.S.; N.H.M.; R.S.
- N. Arch. Miss. Sc.** *Nouvelles Archives des Missions Scientifiques et Littéraires.* Paris. 1891— *Continuation of:* Archives, etc., 1850—89. B.M.; N.H.M.; Oxon.B.; R.Geogr.S.
- N. Arch. Wisk.** *Nieuw Archief voor Wiskunde.* Amsterdam. 1875— Camb.P.S.i.; Edinb.R.S.i.; Math.S.
- N. A. Sc. Nt.** *Nuovi Annali delle Scienze naturali; Alessandrini, Bertoloni, Gherardi, e Ranzani.* Bologna. 1838—54. Camb.U.; Geol.S.i.; N.H.M.; Oxon.B.i.; R.Geogr.S.i.; R.S.; S.K.
- Nass. Jb.** *See Bologna N. A.*
- Nass. Vr. Jb.** { *Jahrbücher des Vereins für Naturkunde im Herzogthum Nassau.* Wiesbaden. 1844— B.M.; Camb.P.S.i.; Camb.U.; Linn.S.; N.H.M.; R.S.i.; S.K.
- N. Bergm. J.** { *Neues bergmännisches Journal; Kohlen und Hoffmann.* Freiberg. 1795—1816. B.M.i.; Geol.S.i.; N.H.M.; R.S.; S.K.i.
- N. Brabant Hindl. Prv. Gn.** *Handelingen van het provinciaal Genootschap van Kunsten en Wetenschappen in Noord Brabant. 's Hertogenbosch.* 1837—57. B.M.; Oxon.B.
- N. Cim.** *Il Nuovo Cimento, Giornale di Fisica, Chimica e Storia Naturale.* Pisa. 1855— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Edinb.R.S.i.; I.CE.i.; N.H.M.; Oxon.R.i.; P.O.i.; R.S.
- Ndösterr. Gewerb-Vr. Vh.** *Verhandlungen des Niederösterreichischen Gewerb-Vereins.* Wien. 1840— B.M.i.; P.O.; S.K.i.
- N. Eng. I. Mn. E. T.** *Transactions of the North of England Institute of Mining Engineers.* Newcastle-upon-Tyne. 1852— B.M.; Camb.U.; Edinb.R.S.i.; Geol.S.; Glasg.U.i.; I.CE.; Oxon.B.i.; P.O.i.; R.S.; S.K.; U.C.L.i.
- Neuch. Bil.** { *Bulletin de la Société des Sciences Naturelles de Neuchâtel.* Neuchâtel. 1844— B.M.i.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; Geol.S.i.; N.H.M.; Oxon.B.i.; R.A.S.i.; R.S.i.; S.K.i.
- Neuch. S. Sc. Bil.** {
- Newcastle C. S. T.** *Newcastle-upon-Tyne Chemical Society. Transactions.* Newcastle-upon-Tyne. 1868—83. B.M.; Chem.S.; Oxon.B.; Pharm.S.i.; P.O.; R.S.
- Nhampton. NH. S. J.** ... *Journal of the Northamptonshire Natural History Society and Field Club.* Northampton. 1880— B.M.; Dub.N.L.L.i.; Geol.S.; N.H.M.
- NH. Rv.** *The Natural History Review and Quarterly Journal of Science.* London and Dublin. 1854—60. B.M.; Camb.U.; Dub.R.D.S.; Dub.T.C.; Glasg.P.S.; Linn.S.; N.H.M.; Oxon.R.; P.O.; S.K.; U.C.L.i.
- Nicholson J.** *The Natural History Review; a Quarterly Journal of Biological Science.* London. 1861—65. B.M.; Camb.P.S.; Camb.U.; Dub.R.D.S.; Dub.T.C.; Edinb.R.S.; Geol.S.; Glasg.P.S.; Glasg.U.; Linn.S.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.; R.S.; S.K.
- Nicholson J.** *Journal of Natural Philosophy, Chemistry, and the Arts; Nicholson.* London. 1797—1813. B.M.; Camb.U.; Chem.S.i.; Dub.R.I.A.i.; Dub.T.C.i.; Edinb.R.S.; Edinb.U.; Geol.S.i.; Glasg.P.S.i.; Glasg.U.i.; I.CE.i.; N.H.M.; Oxon.B.; Oxon.R.; Pharm.S.i.; P.O.; R.A.S.i.; R.S.; S.K.; U.C.L.

List of Serial Publications

- Nim. S. Sc. Bil.** Bulletin de la Société d'Etude des Sciences Naturelles de Nîmes. Nîmes. 1873— N.H.M.i.
- N. Jb. Mn.**..... Neues Jahrbuch für Mineralogie, Geologie und Paläontologie. Stuttgart. 1863— *Continuation of*: Neues Jahrbuch für Mineralogie, Geologie und Petrefaktenkunde, 1833—62. B.M.; Camb.U.; Chem.S.i.; Dub.N.L.I.i.; Dub.R.D.S.i.; Geol.M.; Geol.S.; Glasg.U.; I.CE.i.; N.H.M.; Oxon.R.; R.S.; S.K.i.
- N. Mg. Ntvd.** Nyt Magazin for Naturvidenskaberne. Christiania. 1838— Camb.U.i.; Edinb.R.S.i.; Geol.S.i.; Linn.S.i.; N.H.M.; R.S.; S.K.
- N. Nord. Arch.** Neues nordisches Archiv für Natur und Arzneykunde, verfasst von einer Gesellschaft nordischer Gelehrten. Frankfurt an der Oder. 1807.
- Nord Mm. S. Ag.** { Mémoires de la Société Centrale d'Agriculture, etc. du Nord, séant à Douai. Douai.
- Nord S. Ag. Mm.** { 1826— B.M.; Camb.U.; Dub.T.C.i.; Oxon.B.i.; R.S.i.
- Northumb. NH. T.** { Transactions of the Natural History Society of Northumberland, Durham, and Newcastle-upon-Tyne. Newcastle. 1831—38. B.M.; Camb.P.S.; Camb.U.; Geol.S.; Glasg.P.S.i.; Glasg.U.; N.H.M.; Oxon.B.i.; Oxon.R.; R.S.i.; U.C.L.i.
- { Natural History Transactions of Northumberland and Durham. London, Newcastle. 1865— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Geol.S.; Glasg.U.; Linn.S.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.i.; S.K.; U.C.L.i.
- N. Rs. S. Nt. Mm.** Mémoires de la Société des Naturalistes de la Nouvelle-Russie. [In Russian.] Odessa. 1872— B.M.; Camb.P.S.i.; Edinb.R.S.i.; Geol.S.; Linn.S.i.; N.H.M.; R.S.i.
- N. Rs. S. Nt. Mm. (Mth.)** Memoirs of the Mathematical Section of the New Russian Society of Naturalists. [In Russian.] Odessa. 1878— Dub.R.I.A.; Math.S.i.; R.S.i.
- N. Scotia I. Sc. P. & T...** Proceedings and Transactions of the Nova Scotian Institute of Natural Science. Halifax, Nova Scotia. 1863— Camb.P.S.i.; Chem.S.i.; Edinb.R.S.i.; Geol.S.i.; Glasg.U.i.; I.CE.i.; Linn.S.i.; N.H.M.; Pharm.S.i.; P.O.i.; R.S.i.; U.C.L.i.
- N. S. W. L. S. P.** The Proceedings of the Linnean Society of New South Wales. Sydney. 1876— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.; Geol.S.; Linn.S.; N.H.M.; Oxon.R.i.; R.S.; S.K.i.
- N. S. W. R. S. J.**..... Journal and Proceedings of the Royal Society of New South Wales. Sydney. 1876— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.T.C.; Edinb.R.S.i.; Geol.M.i.; Geol.S.; Glasg.P.S.i.; Glasg.U.i.; I.CE.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.i.; Pharm.S.i.; P.O.i.; R.A.S.; R.Geogr.S.; R.S.; S.K.
- N. S. W. R. S. T.** Transactions of the Royal Society of New South Wales. Sydney. 1867—75. B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.D.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.i.; Geol.M.i.; Geol.S.i.; Glasg.P.S.i.; Glasg.U.i.; I.CE.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.i.; P.O.; R.A.S.; R.Geogr.S.i.; R.S.; S.K.i.
- Nt.** Nature: a weekly illustrated Journal of Science. London. 1870— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.N.L.I.; Dub.R.C.S.; Dub.R.D.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Geol.M.; Geol.S.; Glasg.P.S.; Glasg.U.i.; I.CE.; Linn.S.; Oxon.B.; Oxon.R.; Pharm.S.; P.O.; R.A.S.; R.Geogr.S.; R.S.; S.K.; U.C.L.
- Ntleza.** La Naturaleza. Periódico científico de la Sociedad Mexicana de Historia Natural. México. 1870— B.M.i.; Edinb.R.S.i.; Geol.S.i.; N.H.M.i.
- N. Ts. Mth.** Nyt Tidsskrift for Mathematik. Kjøbenhavn. 1890— *Continuation of*: Tidsskrift for Mathematik, 1859—89. B.M.; Math.S.i.
- Nv. Archt. T.** Transactions of the Institution of Naval Architects. London. 1860— B.M.; Camb.U.; Dub.R.I.A.; Edinb.U.; Glasg.U.; I.CE.; P.O.; R.S.; S.K.i.; U.C.L.i.

List of Serial Publications

- N.-Vorp. Mt.** Mittheilungen aus dem Naturwissenschaftlichen Vereine von Neu-Vorpommern und Rügen. Berlin.
1869— B.M.; Camb.U.; Dub.R.D.S.; Dub.R.I.A.; N.H.M.; S.K.
- Nv. Sc.** Naval Science: a Quarterly Magazine for promoting the improvement of Naval Architecture, Marine Engineering, Steam Navigation and Seamanship. London.
1872—76. B.M.i.; Camb.U.i.; Glasg.U.i.; I.CE.i.; Oxon.B.i.; P.O.; S.K.
- N. Y. Ac. A.** Annals of the New York Academy of Sciences, late Lyceum of Natural History. New York.
1879— B.M.; Camb.P.S.; Camb.U.; Dub.R.D.S.; Geol.S.; Linn.S.i.; N.H.M.; Oxon.R.i.; P.O.; R.S.; S.K.; U.C.L.i.
- N. Y. Ac. T.** Transactions of the New York Academy of Sciences, late Lyceum of Natural History. New York.
1881—98. B.M.; Glasg.U.i.; Linn.S.i.; N.H.M.; Oxon.R.i.; P.O.i.; R.S.; S.K.; U.C.L.i.
- N. Y. Ag. S. T.** Transactions of the New York State Agricultural Society. Albany.
1842— B.M.; I.CE.i.; P.O.i.; R.Geogr.S.i.; R.S.i.
- N. Y. A. Lyceum** Annals of the Lyceum of Natural History of New York. New York.
1824—77. *Continued as:* Annals of the New York Academy of Sciences, 1879— B.M.; Camb.U.; Dub.R.D.S.; Edinb.R.S.i.; Geol.S.i.; Linn.S.; N.H.M.; Oxon.R.i.; P.O.; R.S.; S.K.
- N. Y. Am. Mth. S. Bil.**... See **N. Y. Lyceum A.**
Bulletin of the American Mathematical Society. New York.
1895— *Continuation of:* Bulletin of the New York Mathematical Society, 1892—94. B.M.; Camb.P.S.; Camb.U.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Glasg.P.S.; Glasg.U.; Math.S.; Oxon.B.; Oxon.R.; R.S.i.
- N. Y. Am. Mth. S. T.** ... Transactions of the American Mathematical Society. Lancaster, Pa. and New York.
1900— Camb.P.S.; Camb.U.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Glasg.U.; Math.S.; Oxon.B.; Oxon.R.; R.S.; S.K.
- N. Y. Lyceum A.** See **N. Y. A. Lyceum.**
- N. Y. Mth. S. Bil.** Bulletin of the New York Mathematical Society. New York.
1892—94. *Continued as:* Bulletin of the American Mathematical Society, 1895— B.M.; Camb.P.S.; Camb.U.; Edinb.R.S.; Glasg.P.S.; Glasg.U.; Math.S.; Oxon.B.; Oxon.R.; R.A.S.
- N. Z. I. T.** Transactions and Proceedings of the New Zealand Institute. Wellington.
1868— B.M.; Camb.P.S.i.; Camb.U.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; Edinb.U.; Geol.M.i.; Geol.S.; Glasg.P.S.i.; Glasg.U.i.; I.CE.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.Geogr.S.; R.S.; S.K.i.; U.C.L.i.
- Obs.** The Observatory. A monthly Review of Astronomy. London.
1878— Camb.P.S.; Camb.U.; Dub.T.C.i.; Edinb.R.S.; Oxon.R.; P.O.; R.A.S.; S.K.
- Oestr. Z. Brgw.** Oesterreichische Zeitschrift für Berg- und Hüttenwesen; von Otto Freiherrn von Hingenu. Wien.
1853— B.M.; I.CE.; P.O.; S.K.
- Offenb. Vr. Nt. B.** Bericht über die Thätigkeit des Offenbacher Vereins für Naturkunde. Offenbach a. M.
1860— Edinb.R.S.i.; Geol.S.i.; Linn.S.i.; N.H.M.; R.S.i.; S.K.i.
- Oise Mm. S. Ac.** Mémoires de la Société Académique d'Archéologie, Sciences, et Arts du département de l'Oise. Beauvais.
1847— B.M.; N.H.M.i.; Oxon.B.; R.S.i.
- Oken Isis** Isis, oder Encyclopädische Zeitung; Oken. Jena.
1817—48. B.M.i.; Camb.U.; Edinb.U.; Glasg.U.; Linn.S.i.; N.H.M.; Oxon.B.(R.); R.S.; S.K.i.
- Opusc. Mt. Fis.** Opuscoli matematici e fisici di diversi Autori. Milano.
1832—34. R.S.
- Orléans A.** Annales de la Société Royale des Sciences, Belles-Lettres, et Arts d'Orléans. Orléans.
1818—37. B.M.; Oxon.B.; R.S.
- Orléans Bil.** Bulletin des Sciences Physiques, Médicales, et d'Agriculture d'Orléans. Orléans.
1810—13. B.M.; Oxon.B.

List of Serial Publications

- Örsted Ts.**..... Tidsskrift for Naturvidenskaberne; Ørsted. Kjöbenhavn. 1822—28. B.M.; Camb.U.; N.H.M.; R.S.
- Orv.-Termt. Éts. (Termt. Szak)** Orvos-Természettudományi Értesítő a Kolozsvári Orvos-Természettudományi Társulat és az Erdélyi Múzeum-Egylet Természettudományi Szakosztályának..... [Medical and Natural History Proceedings of the Sections of the Klausenburg Medical and Natural History Society and of the Natural History Section of the Museum Association of Transylvania.] Kolozsvár [Klausenburg]. 1879— N.H.M.; R.S.i.
- Padova Ac. At. e Mm.** ... Atti e Memorie della R. Accademia di Scienze, Lettere ed Arti in Padova. Nuova serie. Padova. 1885— *Continuation of*: Nuovi Saggi dell' Accademia, etc. 1817—83. Edinb.R.S.; Geol.S.i.; N.H.M.
- Padova Mm. Ac.** Memorie dell' Accademia di Scienze, Lettere, ed Arti di Padova. Padova. 1809. B.M.; Camb.U.; N.H.M.; Oxon.B.; R.S.; S.K.
- Padova N. Sag.** Nuovi Saggi dell' Accademia di Scienze, Lettere, ed Arti di Padova. Padova. 1817—83. *Continued as*: Atti e Memorie della R. Accademia, etc., 1885— B.M.i.; Camb.U.i.; Dub.R.I.A.i.; Dub.T.C.i.; Edinb.R.S.; N.H.M.; Oxon.B.i.; R.S.i.; S.K.i.
- Padova S. Sc. Bil.** Bullettino della Società Veneto-Trentina di Scienze Naturali. Padova. 1879— B.M.; N.H.M.
- Palermo Ac. At.** (Atti dell' Accademia di Scienze, Lettere ed Arti di Palermo. Palermo. 1845— B.M.; Camb.U.i.; Dub.R.I.A.; Dub.T.C.; Glasg.U.i.; N.H.M.; Oxon.B.i.; R.A.S.i.; R.S.
- Palermo At.** (
- Palermo Cir. Mt. Rd.** ... Rendiconti del Circolo Matematico di Palermo. Palermo. 1887— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Dub.T.C.; Math.S.; R.S.
- Palermo G. Sc. Nt.**..... Giornale di Scienze naturali ed economiche, pubblicato per cura del Consiglio di Perfezionamento annesso al R. Istituto Tecnico di Palermo. Palermo. 1865— B.M.; Camb.U.; Dub.R.D.S.i.; Geol.S.i.; R.S.
- Palomba Rac.** Raccolta di Lettere, etc. intorno alla Fisica ed alle Mathematiche; Palomba. Roma. 1845—48. B.M.i.
- Par. A. Cons.** Annales du Conservatoire des Arts et Métiers. Paris. 1861— B.M.; Camb.U.; Glasg.P.S.i.; I.CE.i.; Oxon.B.; P.O.; B.S.; S.K.i.
- See A. Cons. Arts et Mét.*
- Par. Ac. Sc. Mm.** Mémoires de l'Académie des Sciences de l'Institut de France. Paris. 1816— B.M.; Camb.U.; Dub.N.L.I.i.; Dub.R.D.S.i.; Dub.T.C.i.; Edinb.R.S.i.; Edinb.U.; Geol.S.i.; Glasg.U.; I.CE.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.i.; R.A.S.i.; R.S.; S.K.; U.C.L.
- See Par. Mm. Ac. Sc.*
- Par. A. das Sc.** Annaes das Sciencias, etc. por huma Sociedade de Portuguezes residentes em Paris. Paris. 1818—27. B.M.; Camb.U.i.
- See A. das Sc.*
- Par. A. Éc. Norm.** Annales scientifiques de l'École Normale Supérieure. Paris. 1864— B.M.; Camb.P.S.i.; Camb.U.; Dub.N.L.I.i.; Dub.R.C.S.i.; Dub.R.D.S.i.; Edinb.R.S.i.; Edinb.U.i.; Glasg.U.i.; Oxon.B.; B.S.; S.K.
- See Par. Éc. Norm. A.*
- Par. An. Mét.** (Annuaire de la Société Météorologique de France. Paris. 1853— *Continuation of*: Annuaire Météorologique de la France, 1849—52. B.M.; Camb.U.i.; Dub.T.C.i.; Edinb.R.S.i.; R.S.i.; S.K.i.
- Par. An. S. Mét.** (
- Par. A. Obs.** Annales de l'Observatoire de Paris; mémoires publiées par U. J. Le Verrier. Paris. 1855— B.M.; Camb.U.; Dub.N.L.I.; Dub.T.C.; Edinb.R.S.; Glasg.U.i.; Oxon.B.; R.A.S.; R.S.
- See Par. Obs. A. and Par. Obs. A. (Mm.)*
- Par. A. Pon. Chauss.** Annales des Ponts et Chaussées. Mémoires et documents relatifs à l'Art des Constructions et au Service de l'Ingénieur. Paris.

List of Serial Publications

- 1831— B.M.; Camb.U.; Edinb.U.i.; Glasg.P.S.i.; Glasg.U.i.; I.CE.; P.O.; R.S.i.
See A. Fon. Chauss.
- Par. Bil. S. Aérost.** Bulletin de la Société Aérostatique et Météorologique de France. Paris.
 1852—53. B.M.
- Par. Bil. S. Encour.** Bulletin de la Société d'Encouragement pour l'Industrie Nationale. Paris.
 1802— Camb.U.; Dub.R.C.S.i.; Dub.T.C.i.; Edinb.R.S.i.; Glasg.P.S.i.; Glasg.U.i.; I.CE.i.; Oxon.B.; P.O.; R.S.; S.K.i.
- Par. Bil. S. Gg.** Bulletin de la Société de Géographie. Paris.
 1822— B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; N.H.M.; Oxon.B.; R.Geogr.S.; R.S.; U.C.L.i.
See Par. Gg. S. Bil. and Par. S. Gg. Bil.
- Par. Bil. S. Phlm.** Bulletin des Sciences de la Société Philomathique de Paris. Paris.
 1791—1805; 1814—24; 1864— B.M.i.; Camb.U.; Dub.T.C.i.; Edinb.R.S.i.; Glasg.U.i.; Math.S.i.; N.H.M.; Oxon.R.i.; P.O.i.; R.A.S.i.; R.S.; U.C.L.
- See Par. S. Phlm. Bil.*
- Par. Bur. Long. A.** Annales du Bureau des Longitudes. Paris.
 1877— B.M.; R.A.S.i.; R.S.
- Par. Bur. Long. An.** Annuaire pour l'an...publié par le Bureau des Longitudes. Paris.
 1799— B.M.; Camb.U.i.; Glasg.U.i.; R.A.S.i.; R.Geogr.S.i.; R.S.; S.K.
- Par. Éc. Norm. A.** *See Par. A. Éc. Norm.*
- Par. Éc. Pol. Cor.** Correspondance sur l'École Polytechnique, à l'usage des Élèves de cette École; Hachette. Paris.
 1808—16. B.M.i.; Oxon.B.; R.S.; U.C.L.
- Par. Éc. Pol. J.** Journal de l'École Polytechnique. Paris.
 1795— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Glasg.P.S.i.; Glasg.U.; I.CE.i.; Linn.S.i.; Math.S.i.; Oxon.B.(R.); P.O.; R.A.S.i.; R.S.; S.K.; U.C.L.i.
See Par. J. Éc. Pol.
- Par. Gg. S. Bil.** *See Par. Bil. S. Gg. and Par. S. Gg. Bil.*
- Par. Ing. Civ. Mm.** Mémoires et Comptes Rendus des Travaux de la Société des Ingénieurs Civils. Paris.
 1848— B.M.; Glasg.U.i.; I.CE.; P.O.
See Par. Mm. Ing. Civ.
- Par. J. Éc. Pol.** *See Par. Éc. Pol. J.*
- Par. Mm. Ac. Sc.** *See Par. Ac. Sc. Mm.*
- Par. Mm. de l'I.** Mémoires de la Classe des Sciences mathématiques et physiques de l'Institut. Paris.
 1798—1815. B.M.; Edinb.R.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.i.; S.K.; U.C.L.
- Par. Mm. Ing. Civ.** *See Par. Ing. Civ. Mm.*
- Par. Mm. Sav. Étr.** Mémoires présentés à l'Institut des Sciences, Lettres et Arts par divers Savans, et lus dans ses Assemblées: Sciences Mathématiques et Physiques. Paris.
 1806—11. B.M.; Camb.U.; Dub.R.D.S.; Dub.T.C.; Edinb.R.S.; Glasg.U.; I.CE.i.; N.H.M.; Oxon.R.; P.O.; R.A.S.i.; R.S.; S.K.; U.C.L.
- Mémoires présentés par divers Savans à l'Académie des Sciences de l'Institut de France. Paris.
 1827— B.M.; Camb.U.; Dub.T.C.; Edinb.R.S.i.; Geol.S.i.; Glasg.U.i.; I.CE.i.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.i.; R.A.S.i.; R.S.; S.K.
- Par. Mm. S. Sav.** Mémoires des Sociétés Savantes et Littéraires de la République Française. Recueillis et rédigés par les Citoyens Prony, etc. Paris.
 1801—02. B.M.; Oxon.B.; R.S.
- Par. Obs. A.** } *See Par. A. Obs.*
Par. Obs. A. (Mm.) }
Par. Obs. Monts. An. } Annuaire (Météorologique et Agricole) de l'Observatoire de Montsouris. Paris.
 1872— B.M.; Chem.S.i.; Glasg.P.S.i.; R.S.i.
- Par. Poids et Mes. PV.** Comité International des Poids et Mesures. Procès-Verbaux des Séances. Paris.

List of Serial Publications

- 1875— Camb.P.S.; Camb.U.i.; Dub.R.D.S.; Glasg.U.i.; Oxon.R.; P.O.; R.A.S.; R.S.; S.K.i.
- Par. Poids et Mes. Tr. Mm.** Travaux et Mémoires du Bureau International des Poids et Mesures. Paris.
- 1881— Camb.P.S.; Camb.U.; Chem.S.; Glasg.U.i.; I.CE.i.; Oxon.B.; Oxon.R.; R.S.; S.K.; U.C.L.
- Par. S. Accl. Bil.** Bulletin de la Société Zoologique d'Acclimatation. Paris.
- 1854— B.M.; Pharm.S.i.
- Par. S. Bi. Mm.** Comptes Rendus des Séances et Mémoires de la Société de Biologie. Paris.
- 1849— B.M.i.; Camb.P.S.i.; Camb.U.; Chem.S.i.; Dub.R.D.S.; Dub.R.I.A.; Dub.T.C.; Glasg.U.i.; N.H.M.; Oxon.R.; R.S.i.; S.K.i.
- Par. S. C. Bil.** Bulletin de la Société Chimique de Paris. Paris.
- 1858— B.M.; Camb.U.i.; Chem.S.; Dub.N.L.I.i.; Dub.R.C.S.i.; Dub.R.D.S.i.; Glasg.U.i.; N.H.M.; Oxon.R.; Pharm.S.i.; P.O.; R.S.; S.K.
- Par. S. Gg. Bil.** See **Par. Bil. S. Gg. and Par. Gg. S. Bil.**
- Par. S. Gl. Bil.** Bulletin de la Société Géologique de France. Paris.
- 1830— B.M.; Camb.U.i.; Edinb.R.S.; Geol.M.; Geol.S.; Glasg.P.S.; Glasg.U.; N.H.M.; Oxon.B.; Oxon.R.; R.S.; S.K.i.; U.C.L.i.
- Par. S. Mth. Bil.** Bulletin de la Société Mathématique de France. Paris.
- 1873— B.M.; Camb.P.S.; Camb.U.; Edinb.R.S.; Math.S.; Oxon.R.; R.A.S.; R.S.
- Par. S. Phlm. Bil.** See **Par. Bil. S. Phlm.**
- Par. S. Phlm. Mm. Cent.** Mémoires publiés par la Société Philomathique à l'occasion du Centenaire de sa Fondation. Paris.
1888. B.M.; Edinb.R.S.; N.H.M.; R.A.S.; R.S.
- Par. S. Phlm. N. Bil.** Nouveau Bulletin des Sciences de la Société Philomathique de Paris. Paris.
- 1807—1813; 1825—26; 1832—33. B.M.i.; Camb.U.; Dub.T.C.; N.H.M.; P.O.i.; R.S.; U.C.L.
- Par. S. Phlm. FV.** Extraits des Procès-Verbaux des Séances de la Société Philomathique. Paris.
- 1836—63. N.H.M.; R.S.
- Par. S. Ps. Sé.** Séances de la Société Française de Physique. Paris.
- 1873— B.M.i.; Camb.P.S.i.; Glasg.U.i.; P.O.; R.S.; S.K.
- Par. T. Nauk Śc. Pam.** Pamiętnik Towarzystwa Nauk Ścisłych w Paryżu. Paris.
- 1871—82. B.M.; N.H.M.
- Peterm. Mt.** Mittheilungen aus Justus Perthes' Geographischer Anstalt über wichtige neue Erforschungen auf dem Gesamtgebiete der Geographie; Petermann. Gotha.
- 1855— B.M.; Camb.U.; Dub.R.C.S.; Geol.M.i.; Geol.S.; Glasg.P.S.i.; Glasg.U.; N.H.M.i.; Oxon.B.; Oxon.R.; R.Geogr.S.; R.S.; S.K.; U.C.L.i.
- Pffüg. Arch. Pl.** Archiv für die gesammte Physiologie des Menschen und der Thiere; Pfüger. Bonn.
- 1868— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Glasg.U.i.; N.H.M.i.; Oxon.R.; R.S.; S.K.; U.C.L.
- Philad. Ac. Nt. Sc. J.** Journal of the Academy of Natural Sciences of Philadelphia. Philadelphia.
- 1817— B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; Geol.S.i.; Glasg.P.S.i.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.i.; R.S.i.; S.K.i.
- Philad. Ac. Nt. Sc. P.** Proceedings of the Academy of Natural Sciences of Philadelphia. Philadelphia.
- 1841— B.M.i.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.I.A.i.; Edinb.R.S.; Geol.S.; Glasg.P.S.; Linn.S.i.; N.H.M.; Oxon.R.; P.O.i.; R.A.S.i.; R.Geogr.S.i.; R.S.; S.K.i.; U.C.L.i.
- Philad. Coll. Phm. J.** Journal of the Philadelphia College of Pharmacy. Philadelphia.
- Philad. J. Coll. Phm.** 1830—35. Glasg.P.S.; Pharm.S.
- Philad. T.** Transactions of the American Philosophical Society. Philadelphia.
- 1771— B.M.i.; Camb.P.S.; Camb.U.i.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.; Geol.S.i.; Glasg.U.i.; I.CE.i.; Linn.S.; N.H.M.i.; Oxon.B.; Oxon.R.i.; P.O.; R.A.S.i.; R.Geogr.S.i.; R.S.; S.K.i.; U.C.L.i.
- See **Am. Ph. S. T.**

List of Serial Publications

- Phil. Trans.**..... Philosophical Transactions of the Royal Society of London. London.
1665— B.M.; Camb.P.S.i.; Camb.U.; Chem.S.i.; Dub.R.C.S.i.;
Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Geol.M.; Geol.
S.i.; Glasg.P.S.; Glasg.U.i.; I.CE.; Linn.S.i.; Math.S.i.;
N.H.M.; Oxon.B.; Oxon.R.; Pharm.S.i.; P.O.; R.A.S.i.;
R.Geogr.S.i.; R.S.; S.K.; U.C.L.i.
- Ph. Mg.**..... The London, Edinburgh, and Dublin Philosophical Magazine and
Journal of Science. London.
1827— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.D.S.; Dub.
R.I.A.; Edinb.R.S.; Edinb.U.; Geol.M.i.; Geol.S.; Glasg.P.S.i.;
Glasg.U.; I.CE.; Linn.S.i.; Math.S.i.; N.H.M.; Oxon.B.;
Oxon.R.; Pharm.S.i.; P.O.; R.A.S.; R.S.; S.K.; U.C.L.
- Phm. J.**..... The Pharmaceutical Journal and Transactions. London.
1841— B.M.; Camb.U.; Chem.S.; Dub.N.L.I.i.; Dub.T.C.i.;
Glasg.P.S.; Glasg.U.i.; I.CE.i.; N.H.M.; Oxon.B.; Oxon.B.(R.);
Pharm.S.; R.S.i.; S.K.i.; U.C.L.
- Phm. Z. Russl.**..... Pharmaceutische Zeitschrift für Russland. St Petersburg.
1862— B.M.; P.O.
- Phot. J.**..... The Photographic Journal, including the Transactions of the
Photographic Society of Great Britain. London.
1877— *Continuation of:* The Journal of the Photographic Society
of London, 1854—76. B.M.; Camb.U.i.; Chem.S.; Dub.T.C.i.;
Edinb.R.S.i.; Geol.S.; Glasg.P.S.; I.CE.i.; Oxon.B.; Pharm.S.i.;
P.O.; R.A.S.i.; R.S.; S.K.; U.C.L.i.
- Ph. Stud.**..... Philosophische Studien herausgegeben von Wilhelm Wundt.
Leipzig.
1883—Camb.U.; Dub.T.C.; Edinb.U.; Glasg.U.; Oxon.B.; R.S.;
U.C.L.
- Pisa A. Scuola Norm.**... Annali della R. Scuola Normale Superiore di Pisa. Scienze Fisiche
e Matematiche. Pisa.
1871. Math.S.i.; Oxon.B.; Oxon.R.; R.S.
- Pisa N. G.**..... Nuovo Giornale de' Letterati. Pisa.
1822—39. B.M.; Camb.U.; Oxon.B.
- Plym. I. T.**..... Annual Reports and Transactions of the Plymouth Institution and
Devon and Cornwall Natural History Society. Plymouth.
1855— Camb.U.i.; Dub.N.L.I.i.; Edinb.R.S.i.; Linn.S.i.; N.H.M.;
Oxon.B.i.; R.S.; S.K.; U.C.L.i.
- Pogg. A.**..... Annalen der Physik und Chemie; Poggendorff, Wiedemann.
Leipzig.
1824—99. *Continued as:* Annalen der Physik; Drude. 1900—
B.M.; Camb.P.S.i.; Camb.U.; Chem.S.; Dub.R.I.A.; Dub.T.C.;
Edinb.R.S.; Edinb.U.; Glasg.P.S.i.; Glasg.U.i.; I.CE.i.; N.H.M.;
Oxon.B.(R.); Pharm.S.i.; P.O.; R.S.; S.K.; U.C.L.i.
See A. Ps. C.
- Poligrafo**..... Il Poligrafo: Giornale di Scienze, Lettere, ed Arti; Orti. Verona.
1830—45. B.M.; Oxon.B.
- Pollich.**..... Jahresbericht der Pollichia eines Naturwissenschaftlichen Vereins
der Rheinpalz. Dürkheim a. d. Haardt.
1843— Camb.U.; Linn.S.; N.H.M.; R.S.i.
- Pol. Mt.**..... Polytechnische Mittheilungen, unter Mitwirkung von Professoren
höherer technischer Lehranstalten. Tübingen.
1844—46. B.M.; R.S.
- Pop. As.**..... Popular Astronomy. Northfield, Minnesota.
1894— B.M.; Glasg.U.; R.A.S.; S.K.
- Pop. Sc. Rv.**..... The Popular Science Review: a Quarterly Miscellany of enter-
taining and instructive articles on Scientific Subjects; Samuelson.
London.
1861—81. B.M.; Camb.U.; Dub.R.D.S.; Dub.T.C.; Geol.M.;
Geol.S.i.; Glasg.U.i.; I.CE.; Linn.S.; N.H.M.; Oxon.B.;
Oxon.R.i.; Pharm.S.i.; P.O.; R.S.i.; S.K.
- Pp. Nv. Archt.**..... Papers on Naval Architecture and other subjects connected with
Naval Science; Morgan and Creuze. London.
1827—32. B.M.; P.O.; R.S.
- Prace Mt.-Fiz.**..... Prace Matematyczno-Fizyczne. Warsaw.
1888— Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.I.A.i.; Math.S.;
R.S.i.
- Practit.**..... The Practitioner. London, Paris, New York, Melbourne.
1868— B.M.; Camb.U.; Glasg.U.i.; Oxon.B.; Pharm.S.i.

List of Serial Publications

- Frag Ab.** Abhandlungen der k. Böhmisches Gesellschaft der Wissenschaften, Prag.
1804—92. B.M.i.; Camb.P.S.; Camb.U.i.; Dub.R.I.A.i.; Edinb. R.S.i.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.; R.S.i.; S.K.i.
See Böh. Gs. Ab.
- Frag České Ak. Fr. Jos. Pam.** Památník na oslavu padesátiletého panovníckého jubilea jeho veličenstva císaře a krále Františka Josefa I. Vydala Česká Akademie Císaře Františka Josefa pro Vědy, Slovesnost a Umění. [Memoirs in honour of the jubilee of his Imperial and Royal Majesty Franz Joseph I. Edited by the Imperial Bohemian Franz-Joseph Academy of Sciences, Literature and Art.] Praze. (Prag.)
1898. Camb.P.S.; N.H.M.
- Frag České Ak. Fr. Jos. Rz.** Rozprawy České Akademie Císaře Františka Josefa Pro Vědy, Slovesnost a Umění. [Memoirs of the Imperial Bohemian Franz-Joseph Academy of Sciences, Literature and Art.] Prag.
1891— B.M.; Edinb.R.S.; N.H.M.i.; U.C.L.i.
- Frag Jb. Böh. Ms.** Jahrbücher des Böhmisches Museums für Natur- und Länderkunde, etc. Prag.
1830—31. B.M.; N.H.M.
- Frag Sb.** Sitzungsberichte der k. Böhmisches Gesellschaft der Wissenschaften in Prag. Prag.
1859— Camb.P.S.; Camb.U.i.; Dub.R.D.S.; Dub.R.I.A.; Edinb. R.S.i.; Linn.S.i.; N.H.M.; R.S.; S.K.; U.C.L.i.
- Presse Sc.** Presse Scientifique des Deux Mondes. Paris.
1860—66. B.M.; R.S.i.
- Fr. Geod. I. Vöf.** Veröffentlichung des Königl. Preussischen Geodätischen Instituts. Berlin.
1886— Camb.U.i.; R.A.S.; R.Geogr.S.; R.S.i.
- Prth. S. Sc. P.** Proceedings of the Perthshire Society of Natural Science. Perth.
1869—70; 1881— B.M.i.; Camb.U.i.; Edinb.R.S.i.; Geol.S.i.; Glasg.U.i.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.i.
- Ps. Mdd.** Fysikalske Meddelelser: Arndtsen. Christiania.
1858.
- Ps. Rv.** The Physical Review. New York, London, Berlin.
1894— B.M.; Camb.P.S.; Camb.U.; Dub.R.C.S.; Edinb.R.S.; Edinb.U.i.; Glasg.U.; Oxon.R.; P.O.; R.S.; S.K.
- Ps. Z.** Fysikalische Zeitschrift. Leipzig.
1899— Camb.P.S.; Edinb.U.; Glasg.U.; Oxon.R.; R.S.; S.K.; U.C.L.i.
- Ptsd. Asps. Obs. Fb.** Publicationen des Astrophysikalischen Observatoriums zu Potsdam. Potsdam.
1878— B.M.; Camb.U.; Dub.R.D.S.; Oxon.R.; R.A.S.; R.S.
- QJ. Mth.** The Quarterly Journal of Pure and Applied Mathematics. London.
1855— B.M.; Camb.P.S.; Camb.U.; Dub.N.L.I.; Dub.T.C.; Edinb.R.S.i.; Edinb.U.; Glasg.P.S.i.; Glasg.U.; I.CE.i.; Math. S.i.; Oxon.B.; Oxon.R.; P.O.; R.A.S.i.; R.S.; S.K.; U.C.L.
- QJ. Sc.** The Journal of Science and the Arts; edited at the Royal Institution of Great Britain. London. *Continued as: Quarterly Journal of Science, Literature and Arts.* London.
1816—30. B.M.; Camb.U.; Chem.S.; Dub.T.C.; Edinb.R.S.; Glasg.U.i.; I.CE.; Oxon.B.; Oxon.R.; Pharm.S.; R.S.; S.K.; U.C.L.
- Quek. Mcr. Cl. J.** Journal of the Quekett Microscopical Club. London.
1868— B.M.; Camb.U.; Dub.R.D.S.; Geol.S.i.; Linn.S.i.; N.H.M.; Oxon.B.(R.); P.O.; R.S.; S.K.; U.C.L.
- Quetelet Cor. Mth.** Correspondance Mathématique et Physique; publiée par MM. Garnier et Quetelet. Gand et Bruxelles.
1825—39. B.M.; Camb.U.; R.A.S.i.; R.S.; U.C.L.
- Railroad & Eng. J.** The Railroad and Engineering Journal. New York.
1887—92. *Continuation of: Van Nostrand's Engineering Magazine, 1869—85. Continued as: American Engineer and Railroad Journal, 1893—* B.M.; I.CE.; P.O.
- Ranuzzi An. Gg.** Annuario geografico Italiano; Ranuzzi. Bologna.
1844—45. B.M.; Camb.U.; R.Geogr.S.

List of Serial Publications

- Rech. Chron.** Recherches Chronométriques; publiées sous la direction du Ministre de la Marine. Paris. 1854—62.
- Rec. Mth. (Moscou)** Recueil mathématique. Publié par la Société Mathématique de Moscou. [In Russian.] Moscou. 1866— R.S.
- Rec. Tr. C. P.-Bas** Recueil des Travaux Chimiques des Pays-Bas [et de la Belgique]. Leide. 1882— Chem.S.; Oxon.R.; P.O.; S.K.
Séances et Travaux de l'Académie de Reims. Reims. 1844— B.M.i.; N.H.M.i.; Oxon.B.
- Reims Sé. Ac.** Papers on subjects connected with the duties of the Corps of Royal Engineers. London. 1843— Camb.U.; Geol.M.i.; I.CE.; P.O.i.; S.K.i.
- Rheinl. Westphal. Sb.** ... Sitzungsbericht des Naturhistorischen Vereins der Preussischen Rheinlande und Westphalens. Bonn. 1844— Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.; Geol.S.i.; Linn.S.i.; N.H.M.; Oxon.R.; R.S.i.; S.K.i.
- Riga Cor.-Bl.** Correspondenzblatt des Naturforscher-Vereins zu Riga. Riga. 1846— B.M.; Dub.R.I.A.i.; N.H.M.; R.S.i.
- R. I. J.** Journal of the Royal Institution of Great Britain. London. 1802—03; 1830—31. Camb.U.i.; Chem.S.i.; Dub.R.D.S.; Edinb.R.S.i.; Geol.S.i.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.i.; N.H.M.i.; Oxon.R.; Pharm.S.i.; P.O.i.; R.A.S.i.; R.S.; U.C.L.i.
- Rio Obs. Rv.** Revista do Observatorio Publicação Mensal do Imperial Observatorio do Rio de Janeiro. Rio de Janeiro. 1886— Dub.R.D.S.i.; Edinb.R.S.i.; R.A.S.; R.S.
- Rio Rv.** Revista trimestral de Historia e Geografia: Jornal do Instituto Historico e Geographico Brasileiro. Rio de Janeiro. 1839— B.M.; R.Geogr.S.i.
- R. I. P.** Notice of the Proceedings at the meetings of the members of the Royal Institution, with Abstracts of the Discourses delivered at the Evening Meetings. London. 1851— B.M.; Camb.U.; Chem.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Geol.M.; Geol.S.; Glasg.P.S.; Glasg.U.i.; I.CE.i.; Linn.S.; N.H.M.; Oxon.R.; Pharm.S.; P.O.; R.A.S.; R.Geogr.S.; R.S.; S.K.; U.C.L.
- Rm. At.** Atti dell' Accademia Pontificia dei Nuovi Lincei. Roma. 1847— B.M.; Dub.R.I.A.; Edinb.R.S.; Glasg.U.i.; I.CE.i.; N.H.M.; Oxon.B.i.; R.A.S.i.; R.Geogr.S.i.; R.S.
See **Rm. N. Linc. At.**
- Rm. At. N. Linc.** Atti della Reale Accademia dei Lincei. Roma. 1870—83. B.M.; Camb.P.S.; Camb.U.i.; Chem.S.i.; Dub.R.D.S.; Dub.R.I.A.; Glasg.U.i.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.; Oxon.R.i.; R.A.S.i.; R.Geogr.S.; R.S.; S.K.i.; U.C.L.i.
See **Rm. R. Ac. Linc. At.**
- Rm. At. R. Ac.** Corrispondenza Scientifica in Roma per le avanzamento delle Scienze, etc. Roma. 1848—
See **Rm. Sc. Cor.**
- Rm. Cor. Sc.** See **Rm. At. and Rm. At. N. Linc.**
- Rm. N. Linc. At.** Memorie della Pontificia Accademia dei Nuovi Lincei. Roma. 1887— Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; N.H.M.; R.S.
- Rm. N. Linc. Mm.** See **Rm. At. R. Ac.**
- Rm. R. Ac. Linc. At.** Atti della R. Accademia dei Lincei. Memorie della Classe di Scienze fisiche, matematiche e naturali. Roma. 1877— B.M.i.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.I.A.i.; Edinb.R.S.; Geol.S.; Glasg.P.S.i.; Glasg.U.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.; Oxon.R.; R.A.S.; R.Geogr.S.; R.S.; S.K.; U.C.L.
- Rm. R. Ac. Linc. Mm.** Atti della R. Accademia dei Lincei. Rendiconti. Roma. 1885— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.T.C.; Edinb.R.S.; Geol.S.; Glasg.U.; Linn.S.; Math.S.; N.H.M.; Oxon.B.; Oxon.R.; R.A.S.; R.Geogr.S.; R.S.; S.K.; U.C.L.
- Rm. R. Ac. Linc. Rd.** Atti della R. Accademia dei Lincei. Transunti. Roma. 1877—84. B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.I.A.; Edinb.R.S.; Geol.S.; Glasg.P.S.i.; Glasg.U.; Linn.S.; Math.S.; N.H.M.; Oxon.B.; Oxon.R.; R.A.S.; R.Geogr.S.; R.S.; S.K.i.; U.C.L.
- Rm. R. Ac. Linc. T.** liv

List of Serial Publications

- Rm. Sc. Cor.** See **Rm. Cor. Sc.**
- Rm. S. It. Mm.** Memorie di Matematica e di Fisica, della Società Italiana delle Scienze. Napoli e Roma.
1782— B.M.i.; Camb.P.S.; Camb.U.i.; Dub.R.I.A.; Edinb.R.S.i.; Glasg.U.i.; Linn.S.i.; Oxon.B.i.; R.A.S.i.; R.S.; S.K.i.; U.C.L.i.
- Rochester (N. Y.) Ac. Sc. P.** See **Mod. Mm. S., Verona Mm. S. It. and Verona S. It. Mm.**
Proceedings of the Rochester Academy of Sciences. Rochester, N.Y.
1890— B.M.; Camb.P.S.; Edinb.R.S.i.; Linn.S.; N.H.M.; R.S.; U.C.L.i.
- Rot. N. Vh.** Nieuwe Verhandelingen van het Bataafsche Genootschap der Proefondervindelijke Wijsbegeerte te Rotterdam. Rotterdam.
1800— B.M.i.; Camb.U.i.; Chem.S.i.; Dub.R.D.S.; Edinb.R.S.i.; Glasg.U.i.; Oxon.B.; R.S.
- Rouen Ac. Tr.** Précis analytique des Travaux de l'Académie des Sciences, Belles-Lettres, et Arts de Rouen. Rouen.
1804— B.M.; Camb.U.; Dub.R.I.A.; Dub.T.C.; N.H.M.i.; Oxon.B.; R.S.i.
- Rouen Bil. S. Ém.** See **Rouen Tr. Ac.**
Bulletins [des travaux] de la Société Libre d'Émulation de Rouen. Rouen.
1837— B.M.; Oxon.B.
- Rouen Tr. Ac.** See **Rouen Ac. Tr.**
- Roum. I. Mét. A.** Annales de l'Institut Météorologique de Roumanie. Bucarest, Paris.
1886— B.M.; Edinb.R.S.; R.Geogr.S.i.
- Rpm. Anal. C.** Repertorium der Analytischen Chemie für Handel, Gewerbe und Öffentliche Gesundheitspflege. Hamburg, Leipzig.
1881—87. *Continued as:* Zeitschrift für die Chemische Industrie, 1887. Chem.S.; P.O.
- Rpm. Mth.** Repertorium der literarischen Arbeiten aus dem Gebiete der reinen und angewandten Mathematik. Leipzig.
1877—79. Camb.U.; R.S.
- Rpm. Phm.** Repertorium für die Pharmacie; Gehlen. Nürnberg.
1815—51. B.M.; Camb.U.; Pharm.S.; R.S.
- Rpm. Ps.** Repertorium der Physik. Enthaltend einer vollständige Zusammenstellung der neuern Fortschritte dieser Wissenschaft. Berlin.
1837—49. Chem.S.; Glasg.P.S.i.; P.O.; R.S.; S.K.; U.C.L.
- Rs. An. Mines** Annuaire du Journal des Mines de Russie. St. Pétersbourg.
1835—42. B.M.; Geol.S.; Glasg.U.i.; I.CE.; N.H.M.i.; Oxon.B.; P.O.; R.S.i.; S.K.; U.C.L.i.
- R. School Nv. Archt. An.** The Annual of the Royal School of Naval Architecture and Marine Engineering. London.
1871—74. Camb.U.i.; I.CE.i.; Oxon.B.i.; P.O.; R.S.; S.K.i.
- Rs. C. Ps. S. J.** Journal of the Russian Chemical Society and of the Physical Society of the Imperial University of St. Petersburg. [In Russian.] St. Petersburg.
1873—78. *Continuation of:* Journal of the Russian Chemical Society, 1869—72. *Continued as:* Journal of the Russian Physico-Chemical Society, etc., 1879— Camb.P.S.i.; Chem.S.; Edinb.R.S.i.; N.H.M.
- R. S. P.** Proceedings of the Royal Society of London. London.
1832— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.N.L.I.i.; Dub.R.C.S.; Dub.R.D.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Geol.M.; Geol.S.; Glasg.P.S.; Glasg.U.i.; I.CE.; Linn.S.i.; Math.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.; Pharm.S.i.; P.O.; R.A.S.; R.Geogr.S.; R.S.; S.K.; U.C.L.
- Rs. Ps.-C. S. J.** Journal of the Russian Physico-Chemical Society of the Imperial University of St Petersburg. [In Russian.] St Petersburg.
1879— *Continuation of:* Journal of the Russian Chemical Society, etc., 1869—78. Camb.P.S.i.; Chem.S.; Edinb.R.S.i.; N.H.M.
- R. S. Yearbook** Yearbook of the Royal Society of London. (Biography 1900.)
- Rugby NH. S. Ep.** Reports of the Rugby School Natural History Society. Rugby.
1867— Geol.S.; N.H.M.; S.K.i.
- Rv. Artl.** Revue d'Artillerie. Paris, Nancy.
1872— B.M.; I.CE.; P.O.
- Rv. Brazil.** Revista Brasileira, Jornal de Sciencias, Letras, e Artes; Oliveira. Rio de Janeiro.
1857—61. B.M.; N.H.M.; R.S.i.

List of Serial Publications

- Rv. Cours. Sc.** Revue des Cours Scientifiques de la France et de l'Étranger; Eug. Yung et Em. Alglave. Paris.
1863—70. B.M.; Edinb.R.S.i.; Edinb.U.; N.H.M.; Oxon.R.; P.O.; R.S.; S.K.
- Rv. Mar.** {Revue maritime et coloniale. Paris.
Rv. Mar. et Col. {1861— B.M.; I.CE.i.; Oxon.B.; Oxon.R.; P.O.; R.Geogr.S.i.
- Rv. Minera** Revista Minera, periódico científico é industrial; red. por una Sociedad de Ingenieros. Madrid.
1850— B.M.; I.CE.i.; P.O.
- Rv. Mn. Cr.** Rivista di Mineralogia e Cristallografia Italiana. Padova.
1887— B.M.; Camb.U.; Geol.M.; Geol.S.; N.H.M.; S.K.
- Rv. Mt.** Rivista di Matematica. Torino.
1891—95. *Continued as:* Revue de Mathématiques, 1896—
Camb.U.; Oxon.B.; R.S.
- Rv. Mth.** Revue de Mathématiques. Turin.
1896— *Continuation of:* Rivista di Matematica, 1891—95.
Camb.U.; Oxon.B.; Oxon.R.; R.S.
- Rv. Quest. Sc.** Revue des Questions Scientifiques, publiée par la Société Scientifique de Bruxelles. Louvain, Paris.
1877— B.M.; N.H.M.; S.K.i.
- Rv. Sc.** Revue scientifique et industrielle; Quesneville. Paris.
1840—52. B.M.; Camb.U.; Chem.S.i.; Oxop.B.i.; S.K.
- Rv. Sc.** La Revue Scientifique de la France et de l'Étranger. Paris.
1871— B.M.; Camb.U.; Edinb.R.S.; Edinb.U.; Geol.S.; N.H.M.; Oxon.R.; P.O.; R.A.S.i.; R.S.; S.K.
- Rv. Sc.-Ind.** Rivista Scientifico-Industriale delle principali scoperte ed invenzioni fatte nelle scienze e nelle industrie. Firenze.
1869— P.O.
- Rv. Sper. Freniatr.** Rivista Sperimentale di Freniatria e di Medicina legale. Reggio-Emilia.
1875— Coll.Surg.
- Rv. Un. Mines** Revue Universelle des Mines, de la Métallurgie, etc.; de Cuyper. Paris, Liège.
1857— B.M.; Camb.U.; Dub.R.I.A.i.; Glasg.P.S.i.; Glasg.U.i.; I.CE.i.; N.H.M.; P.O.; S.K.
See Cuyper Rv. Un.
- Sächs. Ing. Vr. Mt.** Mittheilungen des Sächsischen Ingenieur-Vereins. Dresden.
1858—60. I.CE.; P.O.
- S. Afr. Ph. S. T.** The Transactions of the South African Philosophical Society. Cape Town.
1878— B.M.; Camb.P.S.; Camb.U.i.; Chem.S.; Edinb.R.S.; Edinb.U.; Glasg.P.S.; I.CE.i.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.Geogr.S.i.; R.S.; S.K.
- Santiago de Chile Un. A.** Anales de la Universidad de Chile. Santiago de Chile.
1843— B.M.i.; Dub.T.C.; Glasg.U.i.; N.H.M.i.; Oxon.B.i.; R.Geogr.S.i.
See Chile A. Un.
- S. Aust. R. S. T.** Transactions and Proceedings and Report of the Royal Society of South Australia. Adelaide.
1879— Camb.P.S.i.; Camb.U.i.; Chem.S.i.; Dub.R.I.A.i.; Edinb.R.S.; Geol.S.; I.CE.i.; Linn.S.i.; N.H.M.; P.O.; R.A.S.; R.Geogr.S.i.; R.S.i.
- Sav. Ac. Mm.** {Mémoires de la Société Académique de Savoie. Chambéry.
Sav. Mm. Ac. {1825— Camb.U.; Dub.R.I.A.; Dub.T.C.; N.H.M.; Oxon.B.; R.S.i.
See Chambéry Mm. Ac. Sav.
- Sav. S. H. Nt. Bil.** Bulletin de la Société d'Histoire Naturelle de Savoie. Chambéry.
1850—53; 1887— Geol.S.i.; N.H.M.
- Sav. S. H. Nt. C.R.** Comptes-Rendus des Séances de la Société d'Histoire Naturelle de Savoie à Chambéry. Annecy.
1883—86. *Continued as:* Bulletin de la Société, etc. 1887—
Geol.S.i.; N.H.M.
- Sc. Abs.** Science Abstracts. Physics and Electrical Engineering. London.
1898— Camb.P.S.; Camb.U.; Chem.S.; Edinb.R.S.i.; Edinb.U.; Glasg.P.S.; I.CE.; Oxon.R.; P.O.; R.A.S.i.; R.S.; S.K.; U.C.L.
- Schelling Z. Spec. Ps.** ... Zeitschr. für speculative Physik; Schelling. Jena, Leipzig.
1800—01. B.M.; Camb.U.; Oxon.B.; R.S.

List of Serial Publications

- Sch. Gs. N. D.** Neue Denkschriften der allgemeinen Schweizerischen Gesellschaft für die gesammten Naturwissenschaften. Neuchâtel, Zürich, etc. 1837— B.M.; Camb.P.S.; Camb.U.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.; Geol.S.i.; Linn.S.i.; N.H.M.; Oxon.B.; R.S.; S.K.
See Zür. N. D. Sch. Gs.
- Sch. Gs. Vh.** Verhandlungen der Schweizerischen Gesellschaft für die gesammten Naturwissenschaften. Aarau, etc. 1823— B.M.i.; Edinb.R.S.i.; Geol.S.i.; Glasg.U.i.; Linn.S.i.; N.H.M.; R.S.; S.K.
See Act. S. Helv., At. S. Elvet. and Sch. Nf. Gs. Vh.
- Schl.-Holst. Nt. Vr. Schr.** Schriften des Naturwissenschaftlichen Vereins für Schleswig-Holstein. Kiel. 1873— B.M.; Camb.U.; Edinb.R.S.i.; Linn.S.; N.H.M.; R.S.i.
- Schlömilch Z.** Zeitschrift für Mathematik und Physik; Schlömilch. Leipzig. 1856— B.M.; Camb.U.; Dub.N.L.I.i.; Dub.R.D.S.i.; Dub.R.I.A.i.; Dub.T.C.i.; Edinb.U.; Glasg.U.i.; Math.S.i.; Oxon.B.(R.); R.S.; S.K.; U.C.L.i.
See Z. Mth. Ps.
- Sch. Mines Q. N. Y.** The School of Mines Quarterly. New York. 1879— B.M.i.; Glasg.P.S.; I.CE.i.; N.H.M.; P.O.; S.K.i.
- Sch. Nf. Gs. Vh.** *See Act. S. Helv., At. S. Elvet. and Sch. Gs. Vh.*
- Sch. Pol. Z.** Schweizerische polytechnische Zeitschrift; Bolley. Winterthur. 1856—70. B.M.; I.CE.; P.O.; R.Geogr.S.i.
- Schumacher Jb.** Jahrbuch (astronomisches); Schumacher. Stuttgart, Tübingen. 1836—44. Camb.U.; Edinb.R.S.i.; Oxon.R.i.; R.A.S.; R.S.i.; U.C.L.
- Schwäb. Gs. D.** Denkschriften der Schwäbischen Gesellschaft der Aerzte und Naturforscher. Tübingen. 1805. N.H.M.; R.S.; S.K.
- Schweigger J.** Journal für Chemie und Physik; Schweigger. Nürnberg. 1811—29. Edinb.R.S.; N.H.M.; Oxon.R.; P.O.; S.K. *Continued as:* Neues Jahrbuch der Chemie und Physik; Schweigger-Seidel. Berlin. 1831—33. B.M.; Chem.S.; Edinb.R.S.; N.H.M.; Oxon.R.; P.O.; R.S.; S.K.
- Science** Science. Cambridge, Mass., and New York. 1883— B.M.; Dub.N.L.I.i.; Dub.R.C.S.i.; Edinb.R.S.; Edinb.U.i.; Geol.S.i.; Glasg.P.S.i.; I.CE.i.; N.H.M.; Oxon.R.i.; P.O.; R.A.S.i.; R.Geogr.S.; S.K.
- S. C. In. J.** The Journal of the Society of Chemical Industry. Manchester, London. 1882— Camb.U.; Chem.S.; Dub.N.L.I.; Dub.R.C.S.; Dub.R.D.S.; Edinb.R.S.i.; Geol.M.i.; Glasg.U.i.; I.CE.; Oxon.R.i.; Pharm.S.; P.O.; R.S.; S.K.; U.C.L.
- Sc. S. Arts T.** Transactions of the Royal Scottish Society of Arts. Edinburgh. 1841— B.M.i.; Camb.U.; Dub.R.D.S.; Edinb.R.S.; Edinb.U.; Glasg.P.S.; Glasg.U.; I.CE.; P.O.; R.S.; S.K.
See Edinb. Sc. S. Arts P. and Edinb. T. Sc. S. Arts.
- Seine-et-Oise Mm.** Mémoires de la Société des Sciences Naturelles de Seine et Oise. Versailles. 1835— B.M.; Camb.U.i.; N.H.M.; S.K.
- Seism. J. Jap.** Seismological Journal of Japan. Yokohama. 1893—95. *Continuation of:* Transactions of the Seismological Society of Japan, 1880—92. B.M.; Camb.U.i.; Dub.R.I.A.; Geol.M.; Geol.S.; I.CE.; R.A.S.i.; R.Geogr.S.; R.S.
- Senckb. Nf. Gs. B.** Bericht ueber die Senckenbergische Naturforschende Gesellschaft in Frankfurt am Main. Frankfurt a. M. 1868— B.M.; Camb.U.i.; Geol.S.i.; Linn.S.; N.H.M.; R.S.
- Sid. Mess.** The Sidereal Messenger. Northfield, Minn. 1883—91. *Continued as:* Astronomy and Astrophysics, 1892—94. B.M.; R.A.S.; S.K.i.
- Siena At. Ac.** Atti dell' Accademia delle Scienze di Siena detta de' Fisiso-critici. Siena. 1761— B.M.; Camb.U.i.; Dub.R.I.A.i.; Dub.T.C.i.; N.H.M.i.; Oxon.B.; R.S.i.
- Silliman J.** The American Journal of Science and Arts; Silliman. New Haven. 1818— B.M.; Camb.P.S.i.; Camb.U.; Chem.S.i.; Dub.N.L.I.i.; Dub.R.C.S.i.; Dub.T.C.i.; Edinb.R.S.; Edinb.U.; Geol.M.;

List of Serial Publications

- Geol.S.; Glasg.P.S.; Glasg.U.i.; I.CE.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.i.; R.Geogr.S.i.; R.S.; S.K.
- See **Am. J. Sc.**
- Sk. Nf. F.** Förhandlingar vid det af Skandinaviska Naturforskare och Läkare hällna Møte..... Göteborg, etc.
- Sk. Nt. Mød. F.** 1839— Oxon.B.i.; R.S.i.
- Sk. Nt. Möt. F.** Förhandlingerne ved de Skandinaviske Naturforskeres...Møde.... Göteborg, etc.
1839— B.M.; N.H.M.; R.S.i.
- Smiths. Ct.** Smithsonian Contributions to Knowledge. Washington.
1848— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.T.C.; Edinb. R.S.; Edinb.U.; Geol.M.i.; Geol.S.i.; Glasg.P.S.; Glasg.U.i.; I.CE.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.i.; P.O.i.; R.A.S.; R.Geogr.S.i.; R.S.; S.K.; U.C.L.i.
- Smiths. Misc. Col.** Smithsonian Miscellaneous Collections. Washington.
1862— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.T.C.; Edinb. R.S.; Edinb.U.; Geol.M.; Geol.S.; Glasg.P.S.; Glasg.U.; I.CE.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.i.; P.O.i.; R.A.S.; R.Geogr.S.; R.S.; S.K.; U.C.L.i.
- Smiths. Rp.** Annual Report of the Board of Regents of the Smithsonian Institution. Washington.
1846— B.M.i.; Camb.P.S.; Camb.U.; Dub.T.C.; Edinb.R.S.i.; Geol.M.; Glasg.P.S.i.; Glasg.U.i.; I.CE.i.; Linn.S.i.; Math.S.i.; N.H.M.i.; Oxon.B.; Oxon.R.i.; Pharm.S.i.; P.O.i.; R.A.S.i.; R.Geogr.S.i.; R.S.i.; S.K.i.; U.C.L.i.
- Sperim.** Lo Sperimentale. Giornale critico di Medicina e Chirurgia. Firenze.
1858—79.
Lo Sperimentale. Giornale Italiano di Scienze Mediche. Firenze.
1879— Coll.Surg.; R.S.i.
- Spet. It. Mm.** Memorie della Società degli Spettroscopisti Italiani, raccolte e pubblicate per cura del Prof. P. Tacchini. Palermo.
1872— B.M.i.; Camb.U.; Edinb.R.S.i.; P.O.; R.A.S.; R.S.
- Steierm. Mt.** Mittheilungen des Naturwissenschaftlichen Vereins für Steiermark. Graz.
1863— B.M.; Camb.U.i.; Dub.R.I.A.; Edinb.R.S.i.; Geol.S.; Linn.S.i.; N.H.M.; R.S.; U.C.L.i.
- St. Ét. Bll. S. In. Mn.** ... (Bulletin de la Société de l'Industrie minérale. St. Étienne.
- St. Ét. S. In. Mn. Bll.** ... 1855— I.CE.; P.O.i.; S.K.i.
- Stett. E. Ztg.** Entomologische Zeitung; herausg. v. d. Entomologischen Vereine zu Stettin. Stettin.
1840— B.M.; Camb.U.; Linn.S.; N.H.M.
- St. Gal. B.** Bericht über die Thätigkeit der St. Gallischen Naturwissenschaftlichen Gesellschaft. St. Gallen.
1860— N.H.M.; R.S.i.
- St. Louis Ac. T.** The Transactions of the Academy of Science of St. Louis. St. Louis.
1856— B.M.; Dub.R.I.A.; Edinb.R.S.; Geol.S.; Glasg.P.S.; Linn.S.i.; N.H.M.; Oxon.B.; P.O.i.; R.Geogr.S.; R.S.; S.K.
- Stockh. Ac. Hndl.** Kongliga Svenska Vetenskaps-Akademiens Handlingar. Stockholm.
- Stockh. Ak. Hndl.** 1739— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.i.; Geol.S.i.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.i.; N.H.M.; R.A.S.; R.Geogr.S.i.; R.S.; S.K.
- Stockh. Ak. Hndl. Bh.** ... Bihang till Kongl. Svenska Vetenskaps-Akademiens Handlingar. Stockholm.
- Stockh. Bh. Ak. Hndl.** ... 1872— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.I.A.; Edinb.R.S.; Geol.S.; Glasg.P.S.; Linn.S.; N.H.M.; R.A.S.; R.Geogr.S.; R.S.; S.K.; U.C.L.i.
- Stockh. Gl. För. F.** Geologiska Föreningens i Stockholm Förhandlingar. Stockholm.
1872— B.M.; Geol.M.; Geol.S.; U.C.L.i.
- Stockh. Öfv.** Öfversigt af Kongl. Vetenskaps-Akademiens Förhandlingar. Stockholm.
1844— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.i.; Geol.S.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.i.; N.H.M.; Oxon.R.; R.A.S.; R.Geogr.S.; R.S.; U.C.L.i.
- Stockh. Vt. Ak. Lefn.** ... Lefnadsteckningar öfver Kongl. Svenska Vetenskaps Akademien... Jedamöter. Stockholm.
1869— Chem.S.i.; Dub.R.I.A.; Edinb.R.S.; Geol.S.; Glasg.P.S.; Linn.S.i.; R.A.S.; R.Geogr.S.; R.S.

List of Serial Publications

- St. Pét. Ac. Mm.** Mémoires de l'Académie Impériale des Sciences de St. Pétersbourg. St. Pétersbourg.
1803— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.D.S.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Geol.M.i.; Geol.S.i.; Glasg.U.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.i.; R.Geogr.S.i.; R.S.; S.K.i.; U.C.L.i.
See St. Pét. Ac. Sc. Mm., St. Pét. Mm. and St. Pét. Mm. Ac. Sc.
- St. Pét. Ac. Sc. Bil.**..... Bulletin Scientifique publié par l'Académie Impériale des Sciences de St. Pétersbourg. St. Pétersbourg.
1836—42.
Bulletin de la Classe Physico-mathématique de l'Académie Impériale des Sciences de St. Pétersbourg. St. Pétersbourg and Leipzig.
1843—59.
Bulletin de l'Académie des Sciences de St. Pétersbourg. St. Pétersbourg.
1860— B.M.i.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.; Geol.S.i.; Glasg.P.S.i.; Glasg.U.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.i.; P.O.i.; R.A.S.i.; R.Geogr.S.i.; R.S.; S.K.
See St. Pét. Bil. Ac. Sc. and St. Pét. Bil. Sc.
- St. Pét. Ac. Sc. Mm.**
St. Pét. Ac. Sc. Mm. (Rs.)
See St. Pét. Ac. Mm. and St. Pét. Mm.
Memoirs of the Imperial Academy of Science. [In Russian.] St. Petersburg. *Not the same as St. Pét. Ac. Mm.*
1862—95. B.M.; Dub.R.I.A.
- St. Pét. Ac. Sc. N. Acta...** Nova Acta Academiæ Scientiarum Imperialis Petropolitanae. Petropoli.
1783—1802. B.M.; Camb.U.; Edinb.R.S.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.i.; R.S.; U.C.L.
- St. Pét. Bil. Ac. Sc.**
St. Pét. Bil. Sc.
St. Pét. Mm.
St. Pét. Mm. Ac. Sc.
St. Pét. Mm. Sav. Etr.
See St. Pét. Ac. Sc. Bil.
See St. Pét. Ac. Mm. and St. Pét. Ac. Sc. Mm.
- St. Quent. A.** Mémoires présentés à l'Académie Impériale des Sciences de St. Pétersbourg par divers Savans. St. Pétersbourg.
1831—59. B.M.; Camb.U.; Edinb.R.S.; Glasg.U.; Linn.S.; N.H.M.; R.A.S.; R.Geogr.S.i.; R.S.; S.K.i.; U.C.L.i.
Annales Agricoles du département de l'Aisne, publiées par la Société des Sciences, Arts, Belles-Lettres et Agriculture de St. Quentin. St. Quentin.
1831—42.
Annales Scientifiques, Agricoles et Industrielles du département de l'Aisne (Société Académique de Saint Quentin). St. Quentin.
1844—55? B.M.; Oxon.B.i.; R.S.i.
- St. Quent. Mm.** Mémoires de la Société des Sciences, Arts, Belles-Lettres, et Agricoles de la ville de St. Quentin. St. Quentin.
1831— B.M.; R.S.i.
- Strasb. J. S. Sc.** Journal de la Société des Sciences, Agriculture, et Arts, du département du Bas-Rhin. Strasbourg.
1824—28. B.M.; Camb.U.; N.H.M.; Oxon.B.; R.S.
See Strasb. S. Sc. J.
- Strasb. Mm. S. H. Nt.** ...
Strasb. Mm. S. Sc.
Strasb. S. H. Nt. Mm. ...
See Strasb. S. Sc. J.
Mémoires de la Société des Sciences Naturelles de Strasbourg. Strasbourg.
1830—70. B.M.; Camb.U.; Dub.R.I.A.i.; Dub.T.C.i.; Geol.S.i.; N.H.M.; S.K.i.
- Strasb. S. Sc. Bil.** Bulletin de la Société des Sciences Naturelles de Strasbourg. Strasbourg.
1868—70. B.M.; Geol.S.; N.H.M.i.
See Strasb. J. S. Sc.
- Strasb. S. Sc. J.**
Strasb. S. Sc. Mm...... Mémoires de la Société des Sciences, Agriculture, et Arts de Strasbourg. Strasbourg.
1811—23. Camb.U.; N.H.M.; Oxon.B.
- St. Sp. Ag. It.** Le Stazioni Sperimentali Agrarie Italiane. Torino, Roma, Firenze, Asti, Modena.
1872— B.M.i.; Chem.S.i.; R.S.i.
- Sturgeon A. Electr.** Annals of Electricity, Magnetism, and Chemistry, and Guardian of Experimental Science; Sturgeon. London.
1836—43. B.M.; Camb.U.; Chem.S.; Glasg.U.i.; Oxon.B.i.; Pharm.S.; P.O.; R.S.; S.K.
- Swart Vh.** Verhandelingen en Berigten betreffende het Zeewezen en de Zeewarkunde; Swart. Amsterdam.

List of Serial Publications

- 1852—70. B.M.; P.O.; R.Geogr.S.i.; R.S.i.
See Tindal Vh. Zeewezen.
- S. W. I. E. P.** Proceedings and Transactions of the South Wales Institute of Engineers. Merthyr Tydfil, Swansea, Cardiff.
 1857— B.M.i.; Camb.U.i.; Geol.S.; Glasg.U.i.; I.CE.; P.O.; S.K.; U.C.L.i.
- S. W. R. I. Rp.** The Annual Report of the Council of the Royal Institution of South Wales, with Appendix of Original Papers on Scientific Subjects. Swansea.
 1839— B.M.i.; Dub.R.D.S.; R.S.i.
- Sym. Met. Mg.** Symons's Monthly Meteorological Magazine. London.
 1866— Camb.U.; I.CE.; P.O.; R.Geogr.S.i.; R.S.
- Tasm. R. S. P.** Monthly Notices of Papers and Proceedings of the Royal Society of Tasmania. Hobart.
 1863— B.M.i.; Camb.P.S.i.; Dub.R.D.S.; Edinb.R.S.i.; Geol.S.; Linn.S.i.; N.H.M.; R.A.S.; R.Geogr.S.i.; R.S.; S.K.i.
- Taylor Sc. Mm.** Scientific Memoirs, selected from the Transactions of Foreign Academies and Learned Societies and from Foreign Journals; Taylor. London.
 1837—52. B.M.; Camb.U.; Chem.S.i.; Edinb.R.S.; Geol.S.; Glasg.U.; I.CE.; Linn.S.i.; N.H.M.; Oxon.B.(R.); P.O.; R.A.S.i.; R.S.; S.K.; U.C.L.
- Tel. E. J.** Journal of the Society of Telegraph Engineers. London.
 1872—89. *Continued as:* Journal of the Institution of Electrical Engineers, 1890— B.M.; Camb.P.S.; Camb.U.i.; Dub.T.C.i.; I.CE.; Oxon.B.; Oxon.R.; P.O.; R.S.; S.K.; U.C.L.
- Tel. J.** The Telegraphic Journal and Electrical Review. London.
 1872—91. *Continued as:* The Electrical Review, 1892— B.M.; Glasg.P.S.; I.CE.; Oxon.B.; P.O.; R.A.S.i.; R.S.; S.K.
- Termt. Közl.** Természettudományi Közlöny. Folyóirat közérdekű ismeretek terjesztésére. Kiadja A. K. M. Természettudományi Társulat. Budapest.
 1869— B.M.; Camb.P.S.i.; N.H.M.
- Texas Ac. Sc. T.** Transactions of the Texas Academy of Science. Austin.
 1892— Camb.P.S.; Edinb.R.S.; Glasg.P.S.; Math.S.i.; N.H.M.; R.Geogr.S.; R.S.
- Thomson A. Ph.** Annals of Philosophy, or Magazine of Chemistry, Mineralogy, Mechanics, and the Arts; Thomson. London.
 1813—26. B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Edinb.R.S.i.; Geol.S.; Glasg.U.; I.CE.i.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; Pharm.S.; P.O.; R.A.S.; R.S.; S.K.; U.C.L.i.
- Tilloch Ph. Mg.** The Philosophical Magazine, comprehending the various branches of Science, the Liberal and Fine Arts, Geology, Agriculture, Manufactures, and Commerce. London.
 1798—1826. B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Edinb.R.S.i.; Edinb.U.; Geol.S.; Glasg.P.S.; Glasg.U.i.; I.CE.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.; Pharm.S.i.; P.O.; R.A.S.; R.S.; S.K.; U.C.L.
- Tim.** Timehri: the Journal of the Royal Agricultural and Commercial Society of British Guiana. Demarara.
 1882— B.M.; Camb.U.i.; Geol.S.i.; I.CE.i.; Linn.S.; N.H.M.; Oxon.B.i.; Pharm.S.i.; R.Geogr.S.; R.S.i.
- Tindal Vh. Zeewezen** ... Verhandelingen en Berigten betrekkelijk het Zeewezen en de Zeewartkunde; Tindal en Swart. Amsterdam.
 1852—70. B.M.; P.O.; R.Geogr.S.i.; R.S.i.
See Swart Vh.
- Tök. Coll. Sc. J.** The Journal of the College of Science, Imperial University, Japan. Tōkio, Japan.
 1837— *Continuation of:* Memoirs of the Science Department, University of Tokio, Japan, 1879—85. B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.T.C.; Edinb.R.S.; Edinb.U.i.; Geol.M.i.; Geol.S.; Glasg.P.S.i.; Glasg.U.i.; I.CE.i.; Linn.S.; Math.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.Geogr.S.; R.S.; S.K.; U.C.L.
- Tok. Un. Mm.** Memoirs of the Science Department, University of Tokio, Japan.
 1879—85. *Continued as:* The Journal of the College of Science,

List of Serial Publications

Imperial University, Japan, 1887— Camb.U.; Chem.S.i.;
Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.i.; Geol.S.; Glasg.P.S.;
Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.; R.A.S.i.;
R.Geogr.S.i.; R.S.; S.K.i.; U.C.L.i.

- Tor. Ac. Mm.** Memorie della R. Accademia delle Scienze di Torino. Torino.
1818— B.M.i.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.;
Geol.S.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.; P.O.;
R.A.S.; R.S.; S.K.; U.C.L.i.
*See Tor. Ac. Sc. Mm., Tor. Mm. Ac., Turin Ac. Mm. and Turin
Mm. Ac.*
- Tor. Ac. Sc. At.** Atti della R. Accademia delle Scienze di Torino. Torino.
1865— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.I.A.;
Edinb.R.S.; Geol.S.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.;
P.O.i.; R.A.S.; R.S.; S.K.; U.C.L.i.
See Tor. At. Ac. Sc.
[In the references to this serial two sets of paging are sometimes
given; the first refers to the volumes containing the Classe di
Scienze Fisiche, Matematiche e Naturali only, the second to the
volumes containing all the sections. When only one paging is
given, it refers to the fuller series.]
- Tor. Ac. Sc. Mm.** *See Tor. Ac. Mm., Tor. Mm. Ac., and Turin Ac. Mm.*
- Tor. At. Ac. Sc.** *See Tor. Ac. Sc. At.*
- Tor. Mm. Ac.** *See Tor. Ac. Mm., Tor. Ac. Sc. Mm., and Turin Ac.
Mm.*
- Tortolini A.** Annali di Scienze, Matematiche, e Fisiche; Tortolini. Roma.
1850—57. B.M.; Camb.U.i.; Dub.R.D.S.; Dub.T.C.; Edinb.U.;
Glasg.U.i.; Oxon.B.(R.); R.S.; U.C.L.
See A. Mt.
- Toul. Ac. Sc. Mm.** Mémoires de l'Académie des Sciences, Inscriptions et Belles-Lettres
de Toulouse. Toulouse.
1782— B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; N.H.M.;
Oxon.B.i.; R.A.S.i.; R.S.; S.K.i.
See Toul. Mm. Ac. and Toul. Mm. Ac. Sc.
- Toul. Fac. Sc. A.** Annales de la Faculté des Sciences de Toulouse pour les Sciences
Mathématiques et les Sciences Physiques. Paris.
1887— Camb.P.S.; Camb.U.; Edinb.R.S.; Math.S.; Oxon.R.; R.S.
- Toul. Mm. Ac.** } *See Toul. Ac. Sc. Mm.*
- Toul. Mm. Ac. Sc.** }
- Treviso Mm. Aten.** Memorie Scientifiche e Letterarie dell' Ateneo di Treviso. Venezia,
Treviso.
1817—47. B.M.i.; Camb.U.i.; Oxon.B.i.
- Trieste Bll.** Bollettino della Società Adriatica di Scienze Naturali in Trieste.
Trieste.
1875— N.H.M.; R.S.
- Trommsdorff J. Phm.** ... Journal der Pharmacie für Aerzte und Apotheker. Leipzig.
1794—1816. *Continued as:* Neues Journal, etc., 1817—33. B.M.;
Dub.T.C.i.; R.S.
- Trommsdorff N. J. Phm.** Neues Journal der Pharmacie für Aerzte, Apotheker, und Chemiker;
Trommsdorff. Leipzig.
1817—33. *Continuation of:* Journal, etc., 1794—1816. R.S.
- Ts. Mt. Fys.** Tidsskrift för Matematik och Fysik, tillägnad den Svenska Elementar-
Undervisningen. Upsala.
1868—74. B.M.; R.S.i.
- Ts. Mth.** Tidsskrift for Mathematik. Kjøbenhavn.
1859—89. *Continued as:* Nyt Tidsskrift for Mathematik, 1890—
B.M.; Camb.U.; Math.S.i.; Oxon.B.; S.K.i.
- Ts. Ps. C.** Tidsskrift for Physik og Chemi samt disse Videnskabers Avendelse.
Kjøbenhavn.
1862—94. *Continued as:* Nyt Tidsskrift for Fysik og Kemi,
1896—98. B.M.; N.H.M.
- Turin Ac. Mm.** Mémoires de l'Académie Royale des Sciences de Turin. Turin.
- Turin Mm. Ac.** } 1784—1816. B.M.; Dub.R.I.A.i.; Edinb.R.S.; Glasg.U.i.; Linn.S.;
Oxon.B.; P.O.; R.A.S.; R.S.; S.K.; U.C.L.
See Tor. Ac. Mm., Tor. Ac. Sc. Mm. and Tor. Mm. Ac.
- Un. Serv. I. J.** { Journal of the Royal United Service Institution. London.
- Un. Serv. J.** { 1858— B.M.; Camb.U.; Dub.N.L.I.i.; Edinb.U.; I.CE.;
Oxon.B.i.; P.O.; R.Geogr.S.; R.S.; S.K.i.; U.C.L.i.

List of Serial Publications

- Ups. Årsk.** Upsala Universitetets Årsskrift. Upsala.
1861— B.M.; Camb.U.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.;
Linn.S.i.; Math.S.i.; N.H.M.; Oxon.B.; R.A.S.i.; R.S.
- Ups. Läk. F.** Upsala Läkareförenings Förhandlingar. Upsala.
1865— B.M.; Pharm.S.i.
- Ups. N. Acta S. Sc.** Nova Acta Regiæ Societatis Scientiarum Upsaliensis. Upsalia.
Ups. S. Sc. N. Acta 1773— B.M.; Camb.U.; Dub.R.I.A.i.; Edinb.R.S.i.; Glasg.U.i.;
Linn.S.i.; Math.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.; R.A.S.i.;
R.S.i.; S.K.; U.C.L.i.
- Ups. Vet. S. Årsk.** Årsskrift utgifven af Kongl. Vetenskaps-Societeten i Upsala. Upsala.
1860—61. B.M.; Camb.U.; Edinb.R.S.; Math.S.; N.H.M.; R.S.
- U. S. Coast Geod. Sv. Bil.** United States Coast and Geodetic Survey. Bulletin. Washington.
1888— B.M.i.; Dub.R.I.A.i.; Edinb.R.S.; Glasg.P.S.i.; Glasg.U.i.;
I.CE.i.; R.A.S.; R.Geogr.S.i.; R.S.
- U. S. Coast Sv. Rp.** Reports of the Superintendent of the Coast Survey, showing the
Progress of the Survey from year to year. Washington.
1851— Camb.U.; Dub.R.I.A.i.; Edinb.R.S.; Glasg.U.i.; I.CE.;
N.H.M.; R.A.S.; R.Geogr.S.i.; R.S.; S.K.i.; U.C.L.i.
- U. S. Gl. Sv. Bil.** Bulletin of the United States Geological Survey. Washington.
1883— Camb.P.S.; Chem.S.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.;
Geol.M.; Geol.S.; Glasg.U.i.; I.CE.i.; N.H.M.; Oxon.B.;
Oxon.R.i.; R.Geogr.S.i.; R.S.; S.K.; U.C.L.
- U. S. Gl. Sv. Rp.** Annual Report of the United States Geological Survey to the
Secretary of the Interior. Washington.
1880— Camb.P.S.; Camb.U.; Chem.S.i.; Edinb.R.S.; Geol.M.;
Geol.S.; Glasg.P.S.; Glasg.U.; I.CE.i.; Linn.S.i.; N.H.M.;
Oxon.B.; Oxon.R.; P.O.i.; R.Geogr.S.; R.S.; S.K.; U.C.L.
- U. S. Mly. Weath. Rv. ...** United States of America: Department of Agriculture. Monthly
Weather Review and Annual Summary. Washington, D.C.
1873— B.M.i.; Edinb.R.S.i.; Oxon.B.; Oxon.R.i.; R.Geogr.S.i.;
R.S.i.; S.K.i.
- U. S. Ms. P.** Department of the Interior...Proceedings of the United States
National Museum. Washington.
1879— Camb.P.S.; Camb.U.; Edinb.R.S.; Geol.S.; Glasg.P.S.;
Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; R.Geogr.S.;
R.S.i.; S.K.i.; U.C.L.i.
- U. S. Sec. Ag. Rp.** Report of the Secretary of Agriculture. Washington.
1889—93. *Continuation of:* Report of the Commissioner of
Agriculture, 1862—88. *Continued as:* Yearbook of the United
States Department of Agriculture, 1894— B.M.; Camb.P.S.i.;
Camb.U.i.; Dub.N.L.I.; Dub.R.I.A.; Glasg.P.S.i.; Glasg.U.i.;
I.CE.i.; N.H.M.; P.O.; R.Geogr.S.i.; R.S.i.; S.K.i.; U.C.L.i.
- Utr. A. Ac.** Annales Academiæ Rheno-Trajectinæ. Trajecti ad Rhenum.
(Utrecht.)
1815—37. B.M.; Camb.U.i.; Glasg.U.i.; N.H.M.; Oxon.B.;
Oxon.R.i.; R.S.i.; S.K.i.
- Utr. Aant. Prv. Gn.** Aanteekeningen van het Verhandelde in de Sectie-Vergaderingen
van het Provinciaal Utrechtsch Genootschap van Kunsten en
Wetenschappen. Utrecht.
1846— Dub.R.D.S.; Edinb.R.S.; R.S.
See Utr. Prv. Gn. Aant.
- Utr. N. Vh.** Nieuwe Verhandelingen van het Provinciaal Utrechtsche Genootschap
van Kunsten en Wetenschappen. Utrecht.
1822—69. *Continuation of:* Verhandelingen, etc., 1781—1821.
B.M.; Camb.U.i.; Dub.R.D.S.; Oxon.B.; R.S.i.
- Utr. Prv. Gn. Aant.** *See Utr. Aant. Prv. Gn.*
- Utr. Vh. Prv. Gn.** Verhandelingen van het Provinciaal Utrechtsch Genootschap van
Kunsten en Wetenschappen. Utrecht.
1781—1821. *Continued as:* Nieuwe Verhandelingen, etc., 1822—69.
B.M.; Camb.U.; Dub.R.D.S.; Edinb.R.S.i.; Oxon.B.; R.S.i.
- Valenciennes Mm.** Mémoires de la Société d'Agriculture, des Sciences, et des Arts de
Valenciennes Mm. S. Ag. { l'arrondissement de Valenciennes. Valenciennes.
1833—53. B.M.; Oxon.B.i.; R.S.i.
- Vars. S. Nt. Tr. (C. R.,** Travaux de la Société des Naturalistes de Varsovie. Comptes
Ps. C.) Rendus de la Section de physique et de chimie. Varsovie. [In
Russian.]
1889— Math.S.; N.H.M.

List of Serial Publications

- V. Diem. R. S. Pp.** Papers and Proceedings of the Royal Society of Van Diemen's Land. Hobart Town.
1851—59. B.M.i.; Camb.P.S.i.; Dub.R.D.S.i.; Edinb.R.S.i.; Geol.S.; I.CE.i.; N.H.M.i.; R.A.S.i.; R.Geogr.S.i.; R.S.; S.K.
- Ven. At.** Atti delle Adunanze dell' I. R. Istituto Veneto di Scienze, Lettere, ed Arti. Venezia.
1841— B.M.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Linn.S.i.; R.S.i.
- Ven. Aten.** L'Ateneo Veneto: Rivistamensile di Scienze, Lettere ed Arti. Venezia.
1881?— Dub.R.D.S.i.; R.S.i.
- Ven. Aten. At.** Atti dell' Ateneo Veneto. Venezia.
1864— Dub.R.D.S.; R.S.i.
- Ven. Aten. Esercit.** Esercitazioni Scientifiche e Letterarie dell' Ateneo di Venezia. Venezia.
1837—60. B.M.i.; Dub.T.C.i.; Oxon. B.i.; R.S.i.
See Ven. Esercit. Aten.
- Ven. At. I.** Atti del Reale Istituto Veneto di Scienze, Lettere ed Arti. Venezia.
1841— B.M.; Edinb.R.S.i.; I.CE.i.; Linn.S.i.; Math.S.i.; N.H.M.; R.S.i.
See Ven. I. At.
- Ven. Esercit. Aten.** *See Ven. Aten. Esercit.*
- Ven. I. At.** *See Ven. At. I.*
- Ven. I. Mm.** Memorie del Reale Istituto Veneto di Scienze, Lettere, ed Arti. Venezia.
- Ven. Mm. I.** 1843— B.M.; Camb.U.; Dub.R.I.A.i.; Linn.S.i.; N.H.M.; Oxon.B.i.; R.S.; S.K.
- Verona Mm. S. It.** Memorie di Matematica e di Fisica della Società Italiana delle Scienze. Modena e Verona.
- Verona S. It. Mm.** 1782— B.M.i.; Camb.P.S.; Camb.U.i.; Dub.R.I.A.; Edinb.R.S.i.; Glasg.U.i.; Linn.S.i.; Oxon.B.i.; R.A.S.i.; R.S.; S.K.i.; U.C.L.i.
See Mod. Mm. S. and Rm. S. It. Mm.
- Vict. I. J.** Journal of the Transactions of the Victoria Institute, or Philosophical Society of Great Britain. London.
1867— B.M.; Camb.U.; Dub.R.D.S.; Dub.T.C.; Geol.M.i.; Geol.S.; N.H.M.; Oxon.B.; P.O.; R.Geogr.S.i.; R.S.i.; S.K.
- Vict. Ph. S. T.** Transactions of the Philosophical Society of Victoria. Melbourne.
1855. *Continued as:* Transactions of the Philosophical Institute, etc., 1855—60. B.M.; Edinb.R.S.; Geol.S.; Linn.S.; N.H.M.; R.A.S.; R.Geogr.S.; R.S.; S.K.
- Vict. R. S. P.** Proceedings of the Royal Society of Victoria. Melbourne.
1889— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Geol.S.; Glasg.P.S.; Glasg.U.; I.CE.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.Geogr.S.; R.S.; S.K.; U.C.L.i.
- Vict. R. S. T.** Transactions and Proceedings of the Royal Society of Victoria. Melbourne.
1861— B.M.; Camb.P.S.; Camb.U.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; Edinb.U.; Geol.S.; Glasg.P.S.i.; Glasg.U.i.; I.CE.i.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.i.; P.O.; R.A.S.; R.Geogr.S.; R.S.; S.K.
See Vict. T. R. S.
- Vict. T. Ph. I.** Transactions of the Philosophical Institute (afterwards Royal Society) of Victoria. Melbourne.
1855—60. *Continuation of:* Transactions of the Philosophical Society, 1855. B.M.; Camb.U.i.; Dub.R.I.A.; Edinb.R.S.; Geol.S.; Glasg.P.S.i.; Glasg.U.i.; I.CE.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.i.; P.O.; R.A.S.; R.Geogr.S.; R.S.; S.K.
- Vict. T. Ph. S.** *See Vict. Ph. S. T.*
- Vict. T. R. S.** *See Vict. R. S. T.*
- V. Nost. Eng. Mg.** Van Nostrand's Engineering Magazine. New York.
1869—85. *Continued as:* The Railroad and Engineering Journal, 1887—92. B.M.; I.CE.i.; P.O.; R.S.i.
- Voigt Mg.** Magazin für den neuesten Zustand der Naturkunde, mit Rücksicht auf die dazu gehörigen Hülfswissenschaften; Voigt. Jena und Weimar.
1797—1806. B.M.; Camb.U.; N.H.M.; R.S.
- Vosg. S. Ém. A.** Annales de la Société d'Émulation du Département des Vosges. Epinal, Paris.
1831— B.M.; R.S.i.

List of Serial Publications

- Walker Electr. Mg.** The Electrical Magazine; Walker. London, Paris.
1845—46. B.M.; Camb.U.; Glasg.P.S.i.; I.CE.; Oxon.B.; P.O.; R.S.
- Wash. Mm. Nat. Ac.** ... {Memoirs of the National Academy of Sciences. Washington.
1866— B.M.i.; Camb.P.S.; Camb.U.i.; Dub.R.I.A.; Edinb.R.S.;
Wash. Nat. Ac. Mm...... {Glasg.U.i.; Math.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.; R.S.;
S.K.; U.C.L.i.
- Wash. Ph. S. Bll.** Bulletin of the Philosophical Society of Washington. Washington.
1874— B.M.; Camb.P.S.; Edinb.R.S.; Geol.S.; Glasg.U.i.; Linn.S.;
N.H.M.; Oxon.B.; P.O.; R.A.S.; R.S.; S.K.i.
- Weale Q. Pp.** Quarterly Papers on Engineering; Weale. London.
1843—49. B.M.; I.CE.; Oxon.B.; P.O.
- Westf. Vr. Jbr.** Jahres-Bericht des Westfälischen Provinzialvereins für Wissenschaft und Kunst. Münster.
1873— N.H.M.
- Wet. Gs. Nt. B.** Bericht der Wetterauischen Gesellschaft für die gesammte Naturkunde zu Hanau. Hanau.
1843— Dub.R.I.A.i.; Geol.S.i.; R.S.i.
- Wetter** Das Wetter. Meteorologische Monatsschrift für Gebildete aller Stände. Magdeburg, Braunschweig, Berlin.
1885— B.M.
- Wiad. Mt.**..... Wiadomości Matematyczne. Warsaw.
1897— Camb.P.S.; Math.S.
- Wien Ak. D.**..... Denkschriften der Kaiserlichen Akademie der Wissenschaften. Mathematisch-Naturwissenschaftliche Classe. Wien.
1850— B.M.; Camb.P.S.i.; Camb.U.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.; Edinb.U.; Geol.M.i.; Geol.S.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.(R); P.O.i.; R.A.S.; R.S.; S.K.; U.C.L.i.
See Wien D.
- Wien Ak. Sb.** Sitzungsberichte der Mathematisch-Naturwissenschaftlichen Classe der Kaiserlichen Akademie der Wissenschaften. Wien.
1848— B.M.; Camb.P.S.i.; Camb.U.; Chem.S.i.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.i.; Geol.S.; Glasg.U.; I.CE.i.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; Pharm.S.i.; P.O.i.; R.A.S.i.; R.Geogr.S.i.; R.S.; S.K.; U.C.L.i.
See Wien SB. and Wien Sb.
- Wien Alm.** Almanach der Kaiserlichen Akademie der Wissenschaften. Wien.
1851— B.M.; Camb.P.S.i.; Camb.U.; Dub.R.I.A.i.; Edinb.R.S.i.; Glasg.U.i.; Oxon.B.; P.O.i.; R.A.S.i.; R.S.i.; S.K.i.; U.C.L.i.
- Wien Az.** Anzeiger der Kaiserlichen Akademie der Wissenschaften; Math.-Naturwiss. Classe. Wien.
1864— Camb.U.; Geol.S.i.; Linn.S.; N.H.M.; Oxon.B.; Pharm.S.i.; R.S.i.
- Wien Berg-Hm. Jb.** Berg- und Hüttenmännisches Jahrbuch der k. k. Schemnitzer-Bergakademie und der k. k. Montan-Lehranstalten zu Leoben und Příbram. Wien.
1851— B.M.i.; Geol.S.i.; I.CE.i.; P.O.i.; S.K.
See Berg-Hm. Jb., Jb. Berg-Hm., and Leoben Berg-Hm. Jb.
- Wien D.**..... *See Wien Ak. D.*
- Wien Gg. Gs. Mt.** Mittheilungen der k. k. Geographischen Gesellschaft. Wien.
1857— B.M.; Dub.R.I.A.i.; Dub.T.C.i.; N.H.M.; Oxon.B.; R.Geogr.S.; R.S.; S.K.i.
See Wien Mt. Gg. Gs.
- Wien Gl. Jb.**..... Jahrbuch der k.k. Geologischen Reichsanstalt. Wien.
Wien Jb. Gl. {1850— Camb.P.S.; Camb.U.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.;
Geol.M.; Geol.S.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.;
R.Geogr.S.i.; R.S.; U.C.L.i.
- Wien Jb. Pol. I.** Jahrbuch des k. k. Polytechnischen Instituts in Wien; Prechtl. Wien.
1819—39. B.M.; Camb.U.; Oxon.B.; P.O.
- Wien Jbr. Ober-Realsch. Inn. Stadt** Jahresbericht der öffentlichen Ober-Realschule in der innern Stadt. Wien.
1859—63.
- Wien Met. Z.** Zeitschrift der Oesterreichischen Gesellschaft für Meteorologie. Wien.
1866—85. *Continued in:* Meteorologische Zeitschrift, 1886—
Camb.U.; Dub.R.D.S.; Edinb.R.S.; P.O.; R.Geogr.S.; R.S.
- Wien Mt. Gg. Gs.** *See Wien Gg. Gs. Mt.*

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- Wien Pht. Cor.** Photographische Correspondenz. Organ der Photograph. Gesellsch. in Wien. Wien. 1865— P.O.
- Wien SB.**)
Wien Sb.) See **Wien Ak. Sb.**
Wien Vr. Nw. Kennt. Schr. Schriften des Vereins zur Verbreitung Naturwissenschaftlicher Kenntnisse in Wien. 1860— B.M.i.; Camb.U.i.; N.H.M.i.; P.O.; R.S.i.
- Wisc. Ac. T.** Transactions of the Wisconsin Academy of Sciences, Arts and Letters. Madison. 1872— B.M.; Camb.P.S.; Dub.R.I.A.; Edinb.R.S.; Geol.S.i.; N.H.M.; Oxon.R.i.; P.O.i.; R.S.; S.K.i.; U.C.L.i.
- Woolh. FC. T.** Transactions of the Woolhope Naturalists' Field Club. Hereford. 1866— B.M.; Camb.U.i.; Dub.T.C.i.; Geol.M.i.; Geol.S.; Linn.S.i.; N.H.M.i.; Oxon.B.; U.C.L.i.
- Woolw. P.** Minutes of Proceedings of the Royal Artillery Institution. Woolwich. 1858— B.M.; Camb.U.i.; I.CE.; P.O.; R.Geogr.S.i.
- Würtb. Ab.** Naturwissenschaftliche Abhandlungen, herausgegeben von einer Gesellschaft in Württemberg. Tübingen. 1826—28. B.M.; N.H.M.; R.S.
- Würtb. Jh.** Jahreshefte des Vereins für vaterländische Naturkunde in Württemberg. Stuttgart. 1845— B.M.; Camb.U.; Dub.R.D.S.i.; Dub.T.C.i.; Geol.S.; Linn.S.; N.H.M.; R.S.; S.K.
- Würzb. Jb. Ph. Md. Gs.** Jahrbücher der Philosophisch-Medicinischen Gesellschaft zu Würzburg. Würzburg. 1828. Dub.R.I.A.; R.S.; U.C.L.
- Würzb. Nw. Z.** Würzburger Naturwissenschaftliche Zeitschrift; herausgegeben von der Physikalisch-Medicinischen Gesellschaft. Würzburg. 1860—67. Camb.U.; Geol.S.i.; Linn.S.; N.H.M.; S.K.
- Würzb. Vh.** Verhandlungen der Physikalisch-Medicinischen Gesellschaft. Würzburg. 1850—60. 1868— *Continued as:* Würzburger Naturwissenschaftliche Zeitschrift, 1860—67. B.M.i.; Camb.P.S.i.; Camb.U.i.; Chem.S.i.; Dub.R.I.A.; Linn.S.; N.H.M.; Oxon.R.; R.S.; S.K.i.; U.C.L.i.
- W. Yorks. Gl. S. P.**)
W. Yorks. P. Gl. S.) Proceedings of the Geological and Polytechnic Society of the West Riding of Yorkshire. Leeds.
Yorks. Gl. S. P.) 1839— B.M.i.; Camb.U.i.; Dub.R.D.S.; Edinb.R.S.i.; Geol.M.; Geol.S.i.; N.H.M.i.; Oxon.R.; P.O.i.; R.S.i.; U.C.L.i.
- Zach Cor.** Correspondance Astronomique, Géographique, Hydrographique, et Statistique; von Zach. Gènes. 1818—26. B.M.; R.A.S.; R.S.
- Zach M. Cor.** Monatliche Correspondenz zur Beförderung der Erd- und Himmelskunde; von Zach. Gotha. 1800—13. Oxon.B.; R.A.S.; R.S.; U.C.L.
- Z. Angew. C.** Zeitschrift für Angewandte Chemie. Berlin. 1888— *Continuation of:* Zeitschrift für die Chemische Industrie, 1887. B.M.; Chem.S.; Glasg.P.S.; Glasg.U.; Oxon.R.i.; P.O.
- Z. Anorg. C.** Zeitschrift für Anorganische Chemie. Hamburg, Leipzig. 1892— Camb.P.S.; Camb.U.; Chem.S.; Dub.R.C.S.; Glasg.U.; N.H.M.; Oxon.R.i.; Pharm.S.; P.O.; S.K.; U.C.L.
- Z. Bauw.** Zeitschrift für Bauwesen; herausg. unter Mitwirkung der königl. technischen Bau-Deputation und des Architekten-Vereins zu Berlin. Berlin. 1851— B.M.; Camb.U.i.; I.CE.; P.O.; S.K.i.
- Z. Bl.** Zeitschrift für Biologie. München. 1865— B.M.; Camb.U.i.; Chem.S.i.; Glasg.U.i.; Oxon.R.; R.S.; U.C.L.
- Z. Berg- H.-Salw.** Zeitschrift für das Berg-, Hutten-, und Salinenwesen in dem Preussischen Staate. Berlin. 1854— B.M.; I.CE.; P.O.; S.K.
- Zeev. Gn. N. Vh.** Nieuwe Verhandelingen van het Zeeuwsch Genootschap der Wetenschappen. Middelburg. 1807—35. B.M.; Camb.U.i.; N.H.M.; Oxon.B.; R.S.

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- Z. Instk.** Zeitschrift für Instrumentenkunde. Organ für Mittheilungen aus dem gesammten Gebiete der wissenschaftlichen Technik. Berlin. 1881— B.M.; Camb.U.; Chem.S.; Edinb.U.; Oxon.R.; P.O.; R.A.S.; R.S.; S.K.; U.C.L.i.
- Živa** Živa: Časopis přírodnicky. Praz. 1853—68. B.M.; Linn.S.i.; N.H.M.
- Z. Kr.** Zeitschrift für Krystallographie und Mineralogie. Leipzig. 1877— B.M.; Camb.U.; Chem.S.; Dub.N.L.I.i.; Edinb.R.S.; Geol.M.; Geol.S.; N.H.M.; Oxon.R.; P.O.; R.S.; S.K.
- Z. Mth. Ps.** Zeitschrift für Mathematik und Physik; Schlömilch. Leipzig. 1856— B.M.; Camb.U.; Dub.N.L.I.i.; Dub.R.D.S.i.; Dub.R.I.A.i.; Dub.T.C.i.; Edinb.U.; Glasg.U.i.; Math.S.i.; Oxon.B.(R.); R.S.; S.K.; U.C.L.i.
See Schlömilch Z.
- Z. Nw.** Zeitschrift für die gesammten Naturwissenschaften; herausgegeben von dem Naturwissenschaftlichen Vereine für Sachsen und Thüringen in Halle; Giebel. Berlin. 1853— B.M.; Camb.U.i.; Dub.N.L.I.i.; Dub.R.D.S.i.; Dub.R.I.A.i.; Dub.T.C.i.; Edinb.R.S.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; R.S.; S.K.
See Halle Z. and Halle Z. Nw.
- Z. Ohrh.** Zeitschrift für Ohrenheilkunde. Wiesbaden. 1879— *Continuation of:* Archiv für Augen- und Ohrenheilkunde, 1869—78. B.M.; Camb.U.
- Z. Pl. C.** Zeitschrift für Physiologische Chemie. Strassburg. 1877— Camb.U.; Chem.S.; Dub.N.L.I.i.; Glasg.U.; Oxon.R.; Pharm.S.; P.O.i.; S.K.; U.C.L.
- Z. Ps. C.** Zeitschrift für Physikalische Chemie, Stöchiometrie und Verwandtschaftlehre. Leipzig. 1887— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.N.L.I.i.; Dub.R.C.S.i.; Glasg.U.; N.H.M.; Oxon.R.i.; P.O.i.; R.S.; S.K.; U.C.L.
- Z. Psychol.** Zeitschrift für Psychologie und Physiologie der Sinnesorgane. Hamburg, Leipzig. 1890— B.M.; Camb.U.; Edinb.U.; Glasg.U.; Oxon.B.; Oxon.R.; R.S.; U.C.L.
- Zür. Mt.** Mittheilungen der Naturforschenden Gesellschaft in Zürich. Zürich. 1847—56. Chem.S.i.; Dub.R.I.A.; Edinb.R.S.i.; Linn.S.; N.H.M.; R.A.S.; R.Geogr.S.i.; R.S.; S.K.
- Zür. N. D. Sch. Gs.** Neue Denkschriften der allgemeinen Schweizerischen Gesellschaft für die gesammten Naturwissenschaften. Neuchâtel, Zürich, etc. 1837— B.M.; Camb.P.S.; Camb.U.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.; Geol.S.i.; Linn.S.; N.H.M.; Oxon.B.; R.S.; S.K.
See Sch. Gs. N. D.
- Zür. Nf. Gs. Njbl.** An die Zürcherische Jugend... von der Naturforschenden Gesellschaft. Zürich. 1799—1870. *Continued as:* Neujahrsblatt herausgegeben von der Naturforschenden Gesellschaft in Zürich, 1871— Camb.P.S.; Camb.U.i.; N.H.M.; R.S.
- Zür. Ps. Gs. Jbr.** Jahresbericht der Physikalischen Gesellschaft in Zürich. Uster-Zürich. 1888— R.S.
- Zür. Vjschr.** Vierteljahrsschrift der Naturforschenden Gesellschaft in Zürich. Zürich. 1856— B.M.; Camb.P.S.; Camb.U.i.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.; Linn.S.i.; Math.S.i.; N.H.M.; R.A.S.; R.Geogr.S.i.; R.S.; S.K.
- Zwick. Vr. Nt. Jbr.** Jahresbericht des Vereins für Naturkunde zu Zwickau. Zwickau. 1874— N.H.M.; R.S.i.
- Z. Zuckin. Böhm.** Zeitschrift für Zuckerindustrie in Böhmen. Prag. 1876— Chem.S.; P.O.i.

MECHANICS

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- , —. *Maitre, J.* Gén. Civ. 28 (1895-96) 380-.
- , —, nomographic method. *Pesci, G.* Gén. Civ. 35 (1899) 41-.
- Calibrating-instrument, description. *Parrot, G. F. Gilbert A.* 41 (1812) 62-.
- Calibration, errors. *Handl, A.* Carl Rpm. 17 (1881) 295-.
- Cask, gauging. *Winter, F. de.* Brux. A. Tr. Pbl. 5 (1900) 938-.
- Cylinder. *Rasch, J. W. N.* Arch. Wisk. 7 (*1881) 117-.
- Cylinders, approximate, instrument for volumes. *Neuhöfer, C.* Czbg. Opt. 21 (1900) 1.
- , scale for gauging capacity. *Airy, G. B.* Ph. Mg. 8 (1879) 246-.
- Cylindrical vessel, calibration. *Kurz, A.* Exner Rpm. 20 (1884) 529-.
- Gas volumes, formulæ for correction. *Zenneck, L. H.* Würzb. Jb. Ph. Md. Gs. 1 (1828) 159-.
- Graduated glass vessels, verification. *Casamajor, P. C. N.* 38 (1878) 157-, 171-.
- Interstitial space in mass of particles, crushed stone, etc. *Paret, T. D.* Franklin I. J. 140 (1895) 117-.
- Metallic spheres, volume and density. *Goyder, G. (jun.)* [1886] S. Aust. R. S. T. 9 (1887) 15-.
- Metric system, application to cooperage. (Report by E. Mathieu.) *Fournerie, —.* C. R. 35 (1852) 201-.
- Pipes, formula for volume. *Uhr, G. af.* Jern-Kont. A. 10 (1826) 14-.
- Ponds, cubic content. *Lempe, —.* N. Bergm. J. 2 (1799) 382-.
- , —. *Röding, G. E.* Ing. 1 (1848) 74-.
- Reliability of measuring vessels. *Weinstein, —.* D. Nf. Vh. (1893) (Th. 2, Hälfte 1) 26-.
- Sections of tubes of small bore, calibration. *Pensky, B. D.* Nf. Vh. (1891) (Th. 2) 563-.
- Ships, tonnage. *Kramp, C.* Strasb. S. Sc. Mm. 1 (1811) 301-.
- , —. *Henderson, A.* (vi Adds.) CE. I. P. 13 (1853-54) 1-; (iii) B. A. Rp. (1857) 62-.
- , —. *Avout, — d'.* C. R. 77 (1873) 872-.
- , —, English rules. *Dekke, A.* Nv. Archt. T. 9 (1868) 34-.
- , —, investigations with reference to laws for measurement. *Read, S.* Nv. Archt. T. 1 (1860) 121-.
- , —, law as established in Merchant Shipping Act of 1854. *Moorsom, G.* Nv. Archt. T. 1 (1860) 128-.

- Solids, apparatus for. *Guglielmo, G.* Rm. R. Ac. Linc. Rd. 3 (1894) (Sem. 2) 299-; Rv. Sc.-Ind. 27 (1895) 7-.
- , instrument for. *Smith, P.* Birm. Ph. S. P. 2 (1881) 350-.
- Stereometer, description. *Ventress, J. A.* Edinb. J. Sc. 7 (1827) 143-.
- , —. *Jelinek, V.* Časopis 15 (1886) 119-; Fschr. Ps. (1885) (Ab. 1) 52.
- Stereometers, new forms. *Gee, W. W. H., & Harden, A.* Manch. Lt. Ph. S. Mm. & P. 4 (1891) 301-.
- Stones, heap, ratio of empty space to apparent volume, calculation. *Vinot, G.* Gén. Civ. 9 (1886) 133-.
- , (road metal), measurement of heaps. *Delsaux, C. A.* Cond. Pon. Chauss. 23 (1884) (Pt. 1) 134-.
- Thermometer and other tubes, calibration. *Broch, O. J.* Par. Poids et Mes. Tr. Mm. 5 (1886) 82 pp.
- Timber, measurement. *Farey, J.* Tilloch Ph. Mg. 19 (1804) 213-.
- , —. *Gutteridge, W.* Tilloch Ph. Mg. 60 (1822) 418-.
- , —. *Wiseman, W.* Tilloch Ph. Mg. 61 (1823) 204-.

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- Rochon, A. J.* de Ps. 74 (1812) 321-.
- Angular deviations, generalisation of Poggen-dorff's method for. *Piltshikoff, N. J.* de Ps. 8 (1889) 330-.
- Circle division, history. *Gelcich, E.* Z. Instk. 6 (1886) 158-.
- — with 2 and 4 microscopes. *Schreiber, O.* Z. Instk. 6 (1896) 1-, 47-, 93-.
- Decimal division of quadrant. *Abbadie, A. d'.* C. R. 71 (1870) 335-; Nt. 29 (1884) 28-.
- system for angles. *Mialovich, K.* Wien Berg-Hm. Jb. 39 (1891) 323-.
- — —. *Ducrué, —.* D. Nf. Vh. (1899) (Th. 2, Hälfte 1) 283-.
- — — and time. *Rey-Pailhade, J. de.* Rv. Sc. 4 (1895) 83-, 315-; 6 (1896) 559-; 7 (1897) 15-; 12 (1899) 691-.
- — —. *Sarrauton, H. de.* Rv. Sc. 4 (1895) 205-; 6 (1896) 170-.
- — —. *Moch, G.* Rv. Sc. 5 (1896) 521-.
- — —. *E., A.* Rv. Sc. 6 (1896) 380.
- — —. *Rocca, J.* Rv. Sc. 7 (1897) 602-.
- — —. *Cornu, A.* Éclair. Élect. 11 (1897) 385-.
- — —. *Poincaré, H.* Éclair. Élect. 11 (1897) 529-.
- — —. *Dufour, C.* Laus. S. Vd. Bll. 34 (1898) 367-.
- — —. *Mehmke, R.* [1899] D. Mth. Vr. Jbr. 8 (1900) (Heft 1) 139-.
- — —. *Bauschinger, J.* [1899] D. Mth. Vr. Jbr. 8 (1900) (Heft 1) 159-.
- — —. *Schülke, A.* [1899] D. Mth. Vr. Jbr. 8 (1900) (Heft 1) 164-; D. Nf. Vh. (1899) (Th. 2, Hälfte 1) 282-.

0120 Measurements of Angles

- Decimal system for angles and time. *Mendizabal Tamborrel, J. de.* Méx. S. "Alzate" Mm. 13 (1900) (*Mth. Suppl.*) 12 pp.
 —, —, —, —, with tables for reduction. *Goedsels, —.* Brux. S. Sc. A. 23 (1899) (Pt. 2) 263-.
- Differences, small angular, 'measurement. *Langner, H.* Z. Instk. 6 (1886) 299-.
- Dividing engine (von Reichenbach's). *Liebherr, J. Gilbert A.* 67 (1821) 109-; 69 (1821) 320-.
 —, —, *Reichenbach, G. R. von.* Gilbert A. 68 (1821) 33-.
- , —, *Wegener, T.* (xii) Z. Instk. 3 (1883) 117-.
- , —, automatic. *Saegmüller, G. N.* Z. Instk. 14 (1894) 84-.
- , —, *Girgensohn's, Lenz, E.* [1844] St. Pét. Ac. Sc. Bil. 3 (1845) 52-.
- , —, *Ramsden's, Wollaston, W. H.* QJ. Sc. 12 (1822) 381-.
- , —, engines. *Kuntz, —.* A. Gén. Civ. 7 (1868) 816-.
- , —, *Ramsden and early. Watkins, J. E.* Smiths. Rp. (1890) 721-.
- Glass circle for angles. *Rutherford, L. M.* Am. J. Sc. 12 (1876) 112-.
- Goniograph, double reflecting. *Gelcich, E.* Z. Instk. 7 (1887) 93-.
- Goniometer, crystal, new. *Czapski, S.* Z. Instk. 13 (1893) 1-, 242-.
- , —, —, adjustment for. *Schneider, E.* Z. Instk. 4 (1884) 242-.
- , —, new form. *O'Reilly, J. P.* [1872] Ir. Ac. P. 1 (1873-74) 294-.
- Instrument, new. (Pantogon.) *Domke, J.* Z. Instk. 20 (1900) 360-.
- Instruments for graduation. *Troughton, E.* Phil. Trans. (1809) 105-.
- , —, (Troughton). *Cavendish, H.* Phil. Trans. (1809) 221-.
- Interferometer applied to small angles. *Wadsworth, F. L. O.* Ps. Rv. 4 (1897) 480-.
- Mirror method, magnification of measurement by. *Lermantoff, W. J. de* Ps. 10 (1891) 34-.
- and scale, measurement by. *Kohlrausch, F. A.* Ps. C. 31 (1887) 95-.
- Reflecting measuring instruments. *Amici, G. B.* [1836] Mod. Mm. S. It. 21 (1837) 142-.
- , —, —, *Čubr, E.* Časopis 2 (*1873) 233-; Fschr. Mth. (*1873) 553.
- Reflection methods for angles of altitude. *Koristka, K.* Grunert Arch. 27 (1856) 275-.
- Repetition, measurement of angles by. *Fourcade, H. G.* S. Afr. Ph. S. T. 8 (1896) 63-.
- Right angles, accuracy of instruments for production. *Lorber, F.* Z. Instk. 8 (1888) 381-, 412-.
- Rotating divisions, method of reading. *Brodhun, E.* Z. Instk. 17 (1897) 10-.
- Rotations, small, optical measurement. *Rayleigh, J. W. Strutt (Lord).* Ph. Mg. 20 (1885) 360-.
- Solid angles, instrument for. *Weber, L.* Z. Instk. 4 (1884) 343-, 417-.
- Tachymeter, Charnot's. *Anon.* A. Cond. Pon. Chauss. 33 (1889) 521-.
- , *Maury's.* *Anon.* A. Cond. Pon. Chauss. 42 (1898) 854-.

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- Tachymeter, Sanguet's. *Anon.* A. Cond. Pon. Chauss. 42 (1898) 769-.
- Theodolite, eccentric. *Vinton, F. L.* [1871] Am. I. Mn. E. T. 1 (*1871-73) 63-.
- , —, mining, new. *Fríž, Jos., & Fríž, Jan.* Z. Instk. 6 (1886) 221-, 305-.
- , —, with new micrometer. *Heyde, G.* Z. Instk. 8 (1888) 171-.
- Theodolites, illumination. *Fennel, A.* Z. Instk. 8 (1888) 236-.

0130 Measurements of mass and density; balance.

MASS.

- Francke, A.* Hann. Archt.-Vr. Z. 20 (1874) 539-.
- Air, weight of litre. *Broch, O. J.* Par. Poids et Mes. Tr. Mm. 1 (*1881) A. 49-.
- , —, —, —, and density of gases. *Leduc, A.* C. R. 117 (1893) 1072-.
- , —, —, (Regnault); water, density at 4° C. and at 0° C. *Kohlrausch, R.* Pogg. A. 98 (1856) 178-.
- , —, —, millilitre. *Marek, W. J.* Par. Poids et Mes. Tr. Mm. 1 (*1881) D. 26-.
- Carbon dioxide in air of weighing room. *Dobrochotov, A.* Rs. Ps.-C. S. J. 29 (Ps.) (1897) (App.) 85-.
- Coins, system of adjusting to standard in weight. *Smith, J. T.* Madras Eng. Rp. 2 (1846) 205-.
- Electricity, application to weighing. *Decharme, C.* Lum. Elect. 19 (1886) 15-.
- , —, —, influence on exact weighing. *Ekman, F. L.* Stockh. Öfv. 17 (1860) 279-.
- Gas weighed by Aristotle. *Erman, P.* Gilbert A. 16 (1804) 385-.
- Gases, weights, new method of determining. *Potter, J.* [1827] Manch. Ph. S. Mm. 5 (1831) 195-.
- Kilogramme, comparison of types, weighing observations. *Broch, O. J.* Par. Poids et Mes. Tr. Mm. 4 (1885) 1-.
- , —, —, standard III, volume. *Broch, O. J.* Par. Poids et Mes. Tr. Mm. 4 (1885) 23-.
- , —, —, weighings. *Dumas, J. B., and others.* Par. Poids et Mes. Tr. Mm. 4 (1885) 1-.
- Metallic globules, minute, method of finding weight without balance. *Byrne, O.* (vi Add.) Chemist 5 (1844) 241-.
- Pendulum, weighing by means of. *Fuchs, K.* Exner Rpm. 26 (1890) 634-.
- Water, cubic decimetre, mass. *Fabry, C., Macé de Lépinay, J., & Pérot, A.* C. R. 129 (1899) 709-.
- , —, —, —, weight. *Wild, H.* A. Cons. Arts et Mét. 10 (*1873) 106-.
- , —, —, —, —, *Mendeléeff, D.* R. S. P. 59 (1896) 143-.
- , —, —, —, —, *Chappuis, —.* Par. Poids et Mes. PV. (1897) 125-.
- , —, —, —, —, *Guillaume, C. E.* Par. Poids et Mes. PV. (1899) 143-.
- , —, —, —, —, foot, weight. *Häüy, R. J.* Par. S. Phlm. Bil. 1 (1791) 39-.

Water, cubic inch, weight. *Kupffer, A. T.*
Erdm. J. Pr. C. 22 (1841) 62-.

—, distilled, cubic decimetre, mass at maximum density. *Macé de Lépinay, J.* C. R. 120 (1895) 770-; 122 (1896) 595-; Par. S. Ps. Sé. (1896) 191-; A. C. 11 (1897) 102-.

—, —, —, weight at maximum density. *Wild, H.* [1870] St. Pét. Ac. Sc. Bil. 15 (1871) 58-.

—, —, —, inch, weight. *Chaney, H. J.* [1892] Phil. Trans. (A) 183 (1893) 331-.

—, —, —, —; and specific gravity of air. *Rice, E. W. M.* Thomson A. Ph. 13 (1819) 339-; 14 (1819) 73-.

—, true weight. *Studer, J. G.* Gilbert A. 13 (1803) 122-.

—, weight, experiment. *Svanberg, J.* Stockh. Ak. Hndl. (1825) 1-; QJ. Sc. 22 (1827) 152-.

Weighing, accurate. *Schuster, A.* Manch. Lt. Ph. S. Mm. & P. 7 (1893) 74-.

—, —, *Mendelëev, D.* Rs. Ps.-C. S. J. 29 (Ps.) (1897) (App.) 1-; J. de Ps. 6 (1897) 613-.

— in air, correction. *Fontana, A.* N. Cim. 3 (1896) 324-.

—, art of. *Hansteen, C. N.* Mg. Ntdv. 6 (1851) 1-.

—, correction for buoyancy of air when volume is unknown. *Cooke, J. P.* Am. Ac. P. 18 (1883) 55-.

—, corrections. *Rühlmann, R.* Carl Rpm. 4 (1868) 177-.

—, —, *Bauer, K. L.* Carl Rpm. 4 (1868) 323-; 5 (1869) 332-.

—, — (Bauer). *Rühlmann, R.* Carl Rpm. 5 (1869) 320-.

—, direct determination of weight of displaced air. *Richarz, F.* Berl. Ps. Gs. Vh. (1886) 83 bis-.

—, limits of accuracy in ordinary. *Folkard, C. W.* C. N. 29 (1874) 20.

—, theory, formulæ, constants and tables. *Marek, W. J.* Par. Poids et Mes. Tr. Mm. 3 (1884) D. 53-.

— in water, methods and results. *Marek, W. J.* Par. Poids et Mes. Tr. Mm. 1 (*1881) D. 43-; 2 (*1883) D. 58-; 3 (1884) D. 75-.

Weighings, reduction. *Seidel, L., & Steinheil,*
—, Münch. Gelehrte Az. 26 (1848) 301-.

—, — to vacuum. *Schottländer, P.* Z. Ps. C. 16 (1895) 458-.

—, —, —. *Salomon, F.* Z. Angew. C. (1896) 529-.

Weights, accuracy. *Dibbits, H. C.* (xii) Mbl. Nt. 9 (1879) 120-.

—, best series. *Krönig, A. A.* Ps. C. 122 (1864) 593-.

—, correction-. *Verbeek, A. T. H.* Arch. Mth. Ps. 62 (1878) 333-.

—, new, description. *Prieur, C. A.* A. C. 20 (1797) 274-.

—, proposed new form. *Séguier, A., & Delanorinière,* —, C. R. 44 (1857) 531-.

—, small, estimation. *McMayer, A.* Silliman J. 25 (1858) 39-.

—, variation by minute amounts. *Brown, J. A.* [1867] Edinb. R. S. P. 6 (1869) 167-.

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Littleton, N. L. Md. Ps. J. 40 (1818) 269-.

Schiff, H. Lieb. A. 107 (1858) 59-.

Tilden, W. A. C. N. 38 (1878) 300-.

Krebs, G. Carl Rpm. 17 (1881) 661-.

Lermantov, V. V. Rs. Ps.-C. S. J. 17 (Ps.) (1885) 56-; J. de Ps. 5 (1886) 91.

Sollas, W. J. Nt. 43 (1891) 404-.

Neufville, R. de. Frkf. a. M. Ps. Vr. Jbr. (1891-92) 41.

Hallock, W. [1900] N. Y. Ac. A. 13 (1900-01) 476.

Absolute density. *Sluginov, N. P.* Rs. Ps.-C. S. J. 19 (Ps.) (1887) 36-.

Air, influence on density determinations and accuracy of weighings. *Demichel, A. A.* C. Anal. 3 (1898) 300-.

Densities should be compared with that of water at maximum density. *Coxe, J. R.* Thomson A. Ph. 7 (1816) 234.

Density and specific gravity. *Lamy, A.* Lille Mm. S. (1853) 9-.

Errors in determination. *Rose, G.* Pogg. A. 73 (1848) 1-.

Practical rules for exact determination. *Kohlrausch, R.* Marb. Schr. 8 (1857) 1-.

DENSITY OF GASES.

Thomson, T. Thomson A. Ph. 1 (1813) 177-.

Gay-Lussac, L. J. A. C. 1 (1816) 218-.

Berzelius, J. J., & Dulong, P. L. A. C. 15 (1820) 386-.

Thomson, T. Thomson A. Ph. 15 (1820) 232-; 16 (1820) 161-, 241-.

Hare, R. Silliman J. 16 (1829) 293-.

Regnault, V. C. R. 20 (1845) 975-.

Wagner, A. (Chem.). Carl Rpm. 12 (1876) 60-.

Chancel, G. C. R. 94 (1882) 626-.

Goldschmidt, H., & Meyer, V. Berl. B. 15 (1882) 137-.

Agamennone, G. Rm. R. Ac. Linc. Rd. 1 (1885) 105-.

Lux, F. Fresenius Z. 25 (1886) 3-.

Joly, J. Dubl. S. Sc. P. 6 (1888-90) 534-.

Rayleigh, (Lord). R. S. P. 43 (1888) 356-; 50 (1892) 448-; 53 (1893) 134-.

Cooke, J. P. Am. Ac. P. 24 (1889) 202-.

Geronzi, B.-T. Rv. Sc.-Ind. 23 (1891) 228-.

Moissan, H., & Gautier, H. C. R. 115 (1892) 82-; A. C. 5 (1895) 568-.

Mestlans, M. C. R. 117 (1893) 386-.

Schlesing, J. (fils). C. R. 126 (1898) 220-, 476-.

Fresenius, W. [1900] Nass. Vr. Jb. 54 (1901) XLII-.

Air. *Agamennone, G.* Rm. R. Ac. Linc. Rd. 1 (1885) 111-.

—, densimeter for. *Filopanti, Q.* Bologna Rd. (1867) 83-.

Apparatus. *Schlesing, T.* (fils). C. R. 126 (1898) 220-, 476-.

Barothermometer. *Salomon, F.* Z. Angew. C. (1892) 45-.

Bunsen's method, improvement. *Mendenhall, T. C.* Am. As. P. (1875) (Pt. 1) 112-.

- Correction for moisture. *Apjohn, Jas. B. A. Rp.* (1831-32) 570-.
- Gas and vapour densities. *Regnault, V. A. C.* 63 (1861) 45-.
- — — — — *Bunsen, R. W. A. C. Phm.* 141 (1867) 273-.
- — — — — *Mohr, C. F. Bonn Sb. Niedr. Gs.* (1869) 73-.
- — — — —, manometric estimation. *Müller, F. C. G. Z. Angew. C.* (1890) 513-.
- Gas-baroscope. *Bodländer, G. Berl. B.* 27 (1894) 2263-; *Z. Angew. C.* (1894) 425-.
- Gases at high temperatures. *Crafts, J. M. C. R.* 90 (1880) 309-.
- Immersed solids, measurement by. *Fitzgerald, G. F. Publ. S. Sc. P.* 4 (1885) 481-.
- Influence of deformation of bulb. *Agamennone, G. Rm. R. Ac. Linc. Rd.* 5 (1889) (Sem. 1) 30-.
- Manometric method. *Recknagel, G. A. Ps. C.* 2 (1877) 291-.
- Permanent gases. *Meyer, V. Berl. B.* 13 (1880) 2019-.
- Pitch of pipes, measurements by. *Jahoda, R. Wien Ak. Sb.* 108 (1899) (*Ab. 2a*) 803-.
- Pressure of column of gas, apparatus for density of gases by measurement of. *Edelmann, M. T. Carl Rpm.* 17 (1881) 261-.
- Simple gases. *Zenneck, L. H. Baumgartner Z.* 3 (1835) 145-.
- Areometric glasses, Wackenroder's, experiments with. *Schrön, H. L. F. (xii) Arch. Phm.* 79 (1842) 269-; 81 (1842) 124-.
- standard, necessity of common. *Rubrom, M. Baumgartner Z.* 7 (1840) 21-.
- Blood, new method for. *Haycraft, J. B. [1891] Edinb. R. S. P.* 18 (1892) 251-.
- Closed space, liquid in. *Stamkart, F. J. Amst. Vs. Ak.* 5 (1871) (*Ntk.*) 175-; *Arch. Néerl.* 6 (1871) 217-.
- Densimeter, form. *Chistoni, C. Mil. I. Lomb. Rd.* 12 (1879) 318-.
- , Geissler's. *Lefebvre, M. Czgt. Opt.* 18 (1897) 174-.
- of liquid columns. *Bertin, A. Erlenmeyer Z.* 5 (1862) 33-; *Strasb. S. H. Nt. Mm.* 5 (1862) 22-.
- — — — — *Thury, —. [1892] Arch. Sc. Ps. Nt.* 29 (1893) 102-.
- , pneumatic. *Michaelis, H. (xii) Z. Instk.* 3 (1883) 268-.
- Densiscope, differential. *Zantedeschi, F. Wien SB.* 19 (1856) 237-.
- Density bottle. *Campanile, F. N. Cim.* 5 (1897) 183-.
- — for liquids spontaneously inflammable in contact with air. *Tribe, A. Ph. Mg.* 46 (1873) 308-.
- — — tropical climates. *Warden, C. J. H. C. N.* 60 (1889) 236-.
- Determination of densities to 4 and 5 figures. *Wackenroder, H. W. F. (xii) Arch. Phm.* 124 (1853) 129-, 257-.
- Differential method of determination. *Dittmar, W. C. N.* 44 (1881) 51.
- Dilute aqueous solutions. *Kohlrausch, F., & Hallwachs, W. Gött. Nr.* (1893) 350-; *A. Ps. C.* 53 (1894) 14-, 1092.
- solutions. *Kohlrausch, F. A. Ps. C.* 56 (1895) 185-, 788.
- Efflux, density determined by rate of. *Mohr, C. F. Pogg. A.* 113 (1861) 156-.
- Glass beads, graduation, for densities of fluids. *Ferguson, W. Publ. J. Md. C. Sc.* 2 (1833) 11-.
- Height of fluid columns, measurement by. *Bohm, C. Exner Rpm.* 22 (1886) 402-.

DENSITY OF LIQUIDS.

- Ramsden, J. A. C.* 13 (1792) 243-.
- Strecker, Alex. (viii) Rpm. Phm.* 25 (1827) 422-.
- Fournes, G. Phm. J.* 2 (1843) 652-.
- Reischauer, C. [G.], & Vogel, A. Münch. Gelehrte Az.* 44 (1857) 436-.
- Tate, T. Ph. Mg.* 17 (1859) 254-.
- Sigl, J. Rpm. Phm.* 6 (1869) 234-.
- Sprengel, H. A. Ps. C.* 150 (1873) 459-.
- Wright, C. R. A. S. C. In. J.* 11 (1892) 297-.
- Zaloziecki, R. Z. Angew. C.* (1896) 552-.
- Alcoholometer, Atkins's. *Fletcher, J. Nicholson J.* 2 (1802) 276-.
- Alcoholometers. *Knoblauch, H. Halle Sb. Nf. Gs.* (1859) 8-.
- *Jacobi, H. St. Pét. Ac. Sc. Bll.* 7 (1864) 320-.
- *Müller, J. A. Par. S. C. Bll.* 7 (1892) 492-.
- , Atkins' system. *Jacobi, H. St. Pét. Ac. Sc. Bll.* 7 (1864) 438-.
- , tables for. *Tralles, J. G. Gilbert A.* 38 (1811) 349-.
- Apparatus. *Amat, L. Par. S. C. Bll.* 45 (1886) 482-.
- *Weber, L. Bresl. Schl. Gs. Jbr.* (1888) 83-.
- for liquids at temperatures other than atmospheric. *Hannay, J. B. C. S. J.* 12 (1874) 203-.
- , new. *Zambelli, L. [1888] Ven. I. At.* (1888-89) 147-.
- , *Salomon, W. N. Jb. Mn.* (1891) (*Bd. 2*) 214-.
- , *Lefebvre, M. Brux. S. Sc. A.* 20 (1896) (*Pt. 1*) 108-.
- Hydrometers.*
- Speer, W. Tilloch Ph. Mg.* 14 (1802) 151-, 229-.
- Barré, J. A. J. de Ps.* 57 (1803) 433-.
- Hare, R. Silliman J.* 11 (1826) 115-.
- Marozeau, —. J. Phm.* 16 (1830) 482-.
- Roster, G. Sperim.* 26 (1870) 59-.
- Hirsch, B. (xii) Arch. Phm.* 209 (1876) 107-.
- (*Werner.*) *Hirsch, B. (xii) Arch. Phm.* 211 (1877) 16-.
- Casamajor, P. C. N.* 37 (1878) 241-, 267-; 38 (1878) 3-.
- Plato, —. D. Nf. Vh.* (1893) (*Th. 2, Hälfte 1*) 23-.
- accuracy. *Demichel, A. Mulhouse S. In. Bll.* 70 (1900) 277-.
- accurate, for any temperature. *O'Toole, (Rev.) H. Publ. S. Sc. P.* 8 (1893-98) 753-.

- barometric. *Pillet, J.* As. Fr. C. R. (1885) (Pt. 2) 246-.
- Baumé's. *Bordier, M.* Bl. Phm. 4 (1812) 151-.
- *Neumann, A.* Baumgartner Z. 3 (1835) 372-.
- *Pemberton, H.* Am. J. Phm. 18 (1852) 1-.
- *Baudin, —.* C. R. 68 (1869) 932-.
- *Coulier, —.* Mm. Md. Mil. 23 (1869) 368-.
- *Chandler, C. F.* Wash. Nat. Ac. Mm. 3 (Pt. 1) (1885) 63-.
- , for calculating quantity of sugar in solutions. *Treviranus, L. G.* Dingler 70 (1838) 36-; 74 (1839) 421-.
- , comparison of scale with density. *Wigner, G. W.* Anal. 5 (1880) 138-.
- , verification. *Almeida, J. C. d', Berthelot, —, & Coulier, —.* J. Phm. 18 (1873) 257-; C. R. 77 (1873) 970-.
- Beck's. *Zenneck, L. H.* Baumgartner Z. 2 (1833) 244-.
- , use instead of hydrostatic balance for liquids, theory to be applied in. *Trautwein, J. B.* Lieb. A. 25 (1838) 337-.
- comparison of densities by various. *Gerlach, G. T.* Dingler 198 (1870) 313-.
- constant volume. *Ruau, L.* C. R. 45 (1857) 442-.
- construction and uses, with tables. *Giovambattista da S. Martino, —.* Verona Mm. S. It. 7 (1794) 79-.
- and their correction. *Weinstein, B.* Z. Ps. C. 7 (1891) 71-.
- correction and forms. *Guglielmo, G.* Rm. R. Ac. Linc. Rd. 8 (1899) (Sem. 2) 341-; 9 (1900) (Sem. 1) 9-.
- for temperature variation. *Casamajor, P.* Mon. Sc. 19 (1877) 862-.
- of corvette "Witjaz," investigations with. *Makarov, S. O.* Rs. Ps.-C. S. J. 23 (Ps.) (1891) 324-; J. de Ps. 1 (1892) 400-.
- for densities to .0001. *Planíavá, J. N.* Baumgartner Z. 2 (1833) 41-.
- which slightly exceed that of water. *Fellenberg, L. R. von.* [1858] Bern Mt. (1859) 1-.
- Derham's. *Anon.* Ntl. 37 (1888) 497-.
- Dicas's Liverpool. *Pile, W. H.* Am. Phm. As. P. 9 (1860) 216-.
- differential. *Fuchs, P.* Z. Angew. C. (1898) 505-.
- , of Fuchs. *Domke, —.* Z. Angew. C. (1899) 370-.
- Fahrenheit's, modification. *Niemann, J. H.* Lieb. A. 2 (1832) 357-.
- , —; and new form of balance. *Guglielmo, G.* Rm. R. Ac. Linc. Rd. 4 (1895) (Sem. 1) 77-; Rv. Sc.-Ind. 27 (1895) 205-; 28 (1896) 70-.
- form (Drijfbalans). *Harting, P.* Utr. Aant. Prv. Gn. (1849) 6-.
- glass, simple method of graduating. *Moore, C.* Thomson A. Ph. 11 (1826) 261-.
- graduation, new method. *Pouillet, C. S. M.* J. Phm. 36 (1859) 40-.
- , —. *Pouillet, C. S. M.* C. R. 56 (1863) 888-.
- Imperial Normal-Standard Commission on. *Kaisertl. Normal-Aichungs-Commission.* Z. Angew. C. (1890) 382-.
- improvements. *Arnim, L. A. von.* Gilbert A. 1 (1799) 412-.
- *Meissner, P. T.* Trommsdorff J. Phm. 22 (1813) 3-.
- inaccuracy. *Roster, G.* Sperim. 25 (1870) 265-.
- influence of capillarity. *Langberg, C.* (viii) Ps. Mdd. (1858) 1-; (iii) Pogg. A. 106 (1859) 299-.
- — —. *Jacobi, H.* [1871] St. Pet. Ac. Sc. Mm. (Rs.) 20 (*1872) (App. No. 4) 97 pp.; St. Pet. Ac. Sc. Mm. 17 (1872) (No. 5) 70 pp.
- — —. *Duclaux, E. J.* de Ps. 1 (1872) 197-.
- — —. *Coulier, —.* J. Phm. 23 (1876) 175-.
- — —. *Mensbrugge, G. van der.* Brux. Ac. Bl. 16 (1888) 31-.
- — — and pressure of air. *Stankart, F. J.* Amst. Vs. Ak. 1 (1866) (Ntk.) 320-; Arch. Néerl. 1 (1866) 355-.
- — dirt on surface. *Marangoni, C.* (xii) Rv. Sc.-Ind. 12 (1880) 55-.
- international. *Spence, F. C.* N. 55 (1887) 240-.
- invisible. *Parragh, G.* Termt. Közl. 21 (1889) 121; Fschr. Ps. (1889) (Ab. 1) 339.
- manufacture. *Körner, F.* Erdm. J. Tech. C. 5 (1829) 331-.
- modification. *Foord, G.* [1871] Vict. R. S. T. 10 (1874) 113-.
- new. *Richter, J. B.* Berl. Gs. Nt. Fr. N. Schr. 3 (1801) 329-.
- *Lavigne, —.* Mntp. Rec. Bl. 4 (1811) 199-.
- *Alexander, —.* Pogg. A. 70 (1847) 137-.
- *Sedlaczek, J. A.* Ps. C. 158 (1876) 650-.
- *Dahm, G.* Dingler 228 (1878) 235-.
- *Handl, A.* Wien Ak. Sb. 92 (1886) (Ab. 2) 433-; 101 (1892) (Ab. 2a) 896-.
- *Láska, W.* Z. Instk. 9 (1889) 176.
- *Lezé, R.* Rv. Sc. 52 (1893) 220-.
- *Lohnstein, T.* Z. Instk. 14 (1894) 164-.
- *Vandevyver, L. N.* Arch. Sc. Ps. Nt. 34 (1895) 409-.
- *Sandrucchi, A.* N. Cim. 6 (1897) 25-.
- normal. *Baumhauer, E. H. von.* Pogg. A. 113 (1861) 639-; Arch. Néerl. 1 (1866) 338-.
- origin. *Salverte, E. A. C.* 27 (1798) 113-.
- reading. *Marangoni, C.* Rm. R. Ac. Linc. Rd. 5 (1889) (Sem. 1) 657-.
- scale. *Witz, G.* As. Fr. C. R. (1884) (Pt. 2) 132-.
- , arbitrary. *Picini, A.* (xii) Rv. Sc.-Ind. 6 (1874) 249-.
- of equal divisions. *Gerlach, G. T.* Fresenius Z. 5 (1866) 185-.
- with 2 scales. *Planíavá, J. N.* Baumgartner Z. 2 (1833) 38-.
- scales. *Rauter, G.* Z. Angew. C. (1897) 215-.
- , adoption of uniform and invariable. *Witz, G.* As. Fr. C. R. (1883) 355-.
- , comparison. *Müller, (Dr.) J.* Lieb. A. 31 (1839) 81-.

- scales, comparison. *Gerlach, G. T.* Fresenius Z. 4 (1865) 1-.
- , construction and testing. *Schrön, H. L. F.* (xii) Arch. Phm. 83 (1843) 1-.
- for densities of liquids and volume of the kilogramme. *Jeannel, J.* Bordeaux J. Md. 4 (1859) 31-.
- , graduation, new mode. *Ricard, —.* Caen Tr. (1811) 124-.
- , —, —. *Smith, D. B.* [1825] Philad. Coll. Phm. J. 2 (1831) 9-.
- , — and testing. *Neumann, A.* Baumgartner Z. 5 (1837) 76-.
- for sea water. *Schück, A.* Z. NW. 68 (1895) 437-.
- — —. *Thoulet, J.* Rv. Mar. et Col. 124 (1895) 696-.
- — —, table for reduction of observations. *Tittmann, O. H.* U. S. Coast Geod. Sv. Bil. No. 18 (1890) 175-.
- siphon-, to find temperature of maximum density of water. *Meikle, H.* Tilloch Ph. Mg. 68 (1826) 166-.
- , improved. *Meikle, H.* Ph. Mg. 4 (1828) 258-.
- used as. *Meikle, H.* Edinb. N. Ph. J. 2 (1827) 366-.
- sources of error in using. *Fock, A.* Z. Ps. C. 2 (1888) 296-.
- standard. *Göckel, H.* Z. Angew. C. (1899) 712-.
- and stereometers. *Hachette, J. N. P.* A. C. 24 (1797) 333-.
- with temperature correction scale. *Fuchs, P.* Z. Angew. C. (1899) 15-.
- total immersion (Pisati system). *Reggiani, N.* Rm. R. Ac. Linc. Rd. 6 (1890) (Sem. 1) 99-.
- — —. *Warrington, A. W.* B. A. Rp. (1898) 791; Ph. Mg. 48 (1899) 498-.
- —, variable inclination and reflection hydrometers. *Guglielmo, G.* Rm. R. Ac. Linc. Rd. 9 (1900) (Sem. 1) 33-, 71-.
- Twaddle's. *Dingler, E. M.* Dingler 67 (1838) 147-.
- universal. *Lanier, —.* Bil. Phm. 4 (1812) 307-.
- use. *Malý, F.* Z. Instk. 12 (1892) 61-.
- for variable volume and constant weight. *Libert, —.* Finist. S. Sc. Bil. 6 (Fasc. 2) (1884) 50-.
- Hydrometric measurements in glass vessels, temperature correction, tables for. *Fuchs, P.* Z. Angew. C. (1898) 745-, 909-.
- Hydrometry. *Hassenfratz, J. H.* A. C. 26 (1798) 3-, 132-, 188-; 27 (1798) 118-; 28 (1798) 3-; 33 (1799) 3-.
- (Hassenfratz). *Schmidt, G. G.* Gilbert A. 4 (1800) 194-.
- — —. *Descroizilles, —.* [1804] A. C. 58 (1806) 237-.
- — —. *Bellani, A.* Mil. G. S. Inc. 1 (1808) 229-.
- — —. *Delezenne, —.* Lille Tr. (1819-22) 48-.
- — —. *Nobile, A.* [1829] Nap. At. I. Inc. 5 (1834) 79-.
- — —. *Göckel, H.* Z. Angew. C. (1898) 867-.
- Hydrometry and the centigrade hydrometer. *Francœur, L. B.* C. R. 14 (1842) 328-; Par. Bil. S. Encour. 41 (1842) 181-.
- , formulæ of Tadini and Eytelwein. *Franchini, P.* (vii) Bb. It. 5 (1842) 73-.
- , graphic representation in. *Meinecke, J. L. G.* (viii) Rpm. Phm. 5 (1819) 175-.
- , sliding rod in. *Hare, R.* Tilloch Ph. Mg. 67 (1826) 266-.
- Instrument for density determinations. *Ham, F. C.* Gz. 2 (1844) 125.
- Liquid and gaseous carbon dioxide. *Heen, P. de.* Brux. Ac. Bil. 31 (1896) 379-.
- metals, density and thermal expansion of certain. *Vicentini, G., & Omodei, D.* Tor. Ac. Sc. At. 23 (1887-88) 38-.
- methane, oxygen and nitrogen. *Olzowski, K.* Krk. Ak. (Mt.-Prz.) Rz. 14 (1886) 181-, 197-; A. Ps. C. 31 (1887) 58-.
- Liquids and bodies lighter than water. *Hockin, C., & Matthiessen, A.* Lb. 1 (1867) 189-.
- at their boiling points. *Schiff, R.* Berl. B. 14 (1881) 2761-.
- — higher temperatures. *Schiff, R.* Berl. B. 18 (1885) 1538-.
- Litrameter. *Hare, R.* (vi Add.) Ph. Mg. 4 (1828) 187-.
- Manometer, densities by. *Schiff, H.* Lieb. A. 121 (1862) 82-.
- Mercury, density at 0° C. *Volkman, P.* A. Ps. C. 13 (1881) 209-.
- , — in relation to barometric pressure. *Marek, W. J.* Par. Poids et Mes. Tr. Mm. 2 (*1883) D. 18-.
- Method, new. *Cagnassi, M.* (xii) Rv. Sc.-Ind. 11 (1879) 169-.
- , —. *Sommerkorn, H.* Berl. B. 13 (1880) 143-.
- , —. *Sandrucci, A.* Rv. Sc.-Ind. 19 (1887) 65-.
- Oils. *Dudley, C. B., & Pease, F. N.* Am. Eng. & Railroad J. 69 (1895) 449-.
- Pyknometer. *Boot, J. C. C.* Ztg. 20 (1896) 616.
- , glass, with constant volume and precision adjustment. *Fuchs, P.* Z. Angew. C. (1898) 359-.
- , improved. *Voeller, F.* Z. Angew. C. (1891) 401.
- , —. *Squibb, E. R.* Am. C. S. J. 19 (1897) 111-.
- for light liquids. *Göckel, H.* Z. Angew. C. (1899) 1194-.
- measurements, temperature correction tables. *Fuchs, P.* Z. Angew. C. (1899) 25-.
- , small variation in. *Wiedemann, E. E. G.* A. Ps. C. 17 (1882) 983-.
- , Sprengel's, modification. *Minozzi, A.* Rm. R. Ac. Linc. Rd. 8 (1899) (Sem. 1) 450-.
- , Wiedmann's, modification. *Schulze, R.* A. Ps. C. 28 (1886) 144.
- Refraction of light, instrument for measuring by. *Mojon, G.* Genova Mm. S. Md. 1 (1802) 49-.
- Salinometer for measuring density of brine in marine steam boilers. *Russell, J. S.* Edinb. N. Ph. J. 34 (1843) 278-.

Sea water. *Buchanan, J. Y.* R. S. P. 23 (1875) 301-.

— *Makarov, S. O.* Rs. Ps.-C. S. J. 23 (Ps.) (1891) 30-; *Fschr. Ps.* (1891) (Ab. 1) 51.

Variation of density produced by surface pressure in a liquid. *Monti, V.* Tor. Ac. Sc. At. 31 (1895) 150- or 194-.

Viscous and foamy liquids. *Genieser, A. Z.* Angew. C. (1890) 44-.

— substances. *Brühl, J. W.* Berl. B. 24 (1891) 182-, 2455-.

— *Scheibler, C.* Berl. B. 24 (1891) 357-.

Volumenometer, double, for liquids. *Marangoni, C.* N. Cim. 20 (1886) 112-; 6 (1897) 407-.

Water. *Stampfer, S.* Wien Jb. Pol. I. 16 (1890) 1-.

—, pure, volume and density. *Broch, O. J.* Par. Poids et Mes. Tr. Mm. 1 (*1881) A. 59-.

DENSITY OF SOLIDS.

Tralles, J. G. Gilbert A. 27 (1807) 261-.

Rau, A. Ac. Cæs. Leop. N. Acta 9 (1818) 325-.

Osann, G. Pogg. A. 73 (1848) 605-.

Laroque, F. Toul. Mm. Ac. 6 (1850) 152-.

Raimondi, A. Pogg. A. 99 (1856) 639-.

Dobbie, J. J., & Hutcheson, J. B. Glasg. Ph. S. P. 15 (1884) 82-.

Kleinstück, O. Arch. Phm. 226 (1888) 166-; C. Ztg. 14 (1890) 233-.

Leick, W. N. Vorp. Mt. 27 (1896) 96-.

Negreanu, D. Bucarest Ac. Rom. A. 22 (Pt. admin.) (1900) 72-.

Absolute and specific weight of bodies in liquid.

Mohr, C. F. Pogg. A. 112 (1861) 420-.

— — — — — precipitates in liquids. *Fleck, H.* Pogg. A. 113 (1861) 160-.

— — — — — (Fleck's method).

Mohr, C. F. Pogg. A. 113 (1861) 655-.

— — — — — *Kahl, E.* Schlömilch Z. 7 (1862) 456-.

Adhesion, determinations affected by. *Tünnermann, J.* Trommsdorff N. J. Phm. 26 (1833) (St. 2) 93-.

Alloys. *Matthiessen, A. C. S. J.* 5 (1867) 201-.

Apparatus. *Eckfeldt, J. R., & Dubois, W. E.* Silliman J. 22 (1856) 294-.

— *Fulton, H. B.* S. C. In. J. 11 (1892) 305-.

— for rapid determination. *Brown, M. W.* N. Eng. I. Mn. E. T. 36 (1887) 95-.

Arabian determinations. *Wiedemann, E. E. G.* A. Ps. C. 20 (1883) 539-.

Areometer, new (volumenometer). *Say, H. A. C.* 23 (1797) 1-.

—, *Say's.* *Arnim, L. A. von.* Gilbert A. 2 (1799) 238-.

—, —, improvement. *Miller, W. H.* Ph. Mg. 5 (1834) 203.

Barley and Scotch Bigg, new instrument for. *Keith, G. S.* Edinb. Ph. J. 5 (1821) 173-.

Cement. *Piens, C.* Brux. A. Tr. Pbl. 3 (1898) 453-.

Correction. *Osann, G.* Kastner Arch. C. 2 (1830) 58-, 271-.

—, error in certain. *Mach, E.* Carl. Rpm. 7 (1871) 377.

Crystals. *Berkeley (Earl of).* B. A. Rp. (1898) 837-.

Decomposable bodies. *Christomanos, A. C.* Berl. B. 10 (1877) 782-.

Density bottle, measurement by. *Jenzsch, G.* Pogg. A. 99 (1856) 151-.

— — — — — for powders. *Louis, H.* S. C. In. J. 13 (1894) 322-.

Flotation, determination of densities by. *Schaffgotsch, F. von.* Pogg. A. 116 (1862) 279-.

Gold coinage. *Broch, O. J.* N. Mg. Ntvd. 21 (1876) 363-.

— in gold-silver alloys. *Louis, H.* [1893] Am. I. Mn. E. T. 22 (1894) 117-, 724-, 775.

Gravimeter, new, for weight and density of solids. *Bustamente, J. M.* Edinb. J. Sc. 10 (1829) 207-.

Hydrometer, differential, for powders. *Fuchs, P.* Z. Angew. C. (1898) 623-.

—, *Nicholson's*, improved. *Briffandon, —.* Lyon A. S. L. (1836) 15 pp.

— for solids. *Baumgartner, A. von.* Baumgartner Z. 1 (1826) 5-.

— — — — — *Buignet, —.* J. de Ps. 9 (1880) 93-.

— — — — — *Munroe, C. E.* Smiths. Misc. Col. 33 (1888) Art. 1, 26- (Wash. Ph. S. Bl. 6 (1884).)

— — — — —, new form. *Failyer, G. H.* Kan. Ac. Sc. T. 11 (1889) 104.

Ice. *Osann, G.* Kastner Arch. C. 1 (1830) 95-.

— *Dufour, L.* Bb. Un. Arch. 8 (1860) 89-; 14 (1862) 5-.

— *Nichols, E. L.* Ps. Rv. 8 (1899) 21-.

—, 0° to -20° C. *Brunner von Wattenwyll, C.* A. C. 14 (1845) 369-.

Insoluble substances. *Symons, W. H.* Phm. J. 19 (1889) 205-.

Instrument for densities. *Dunnington, F. P.* C. N. 41 (1880) 154-.

— — — — — and weights. *Fox, R. W.* Cornwall Pol. S. Rp. (1847) 19-.

— — — — —, without weights or calculation. *Adie, A.* Edinb. Mm. Wern. S. 3 (1817-20) 495-.

—, new, for solids by measuring water displaced. *Baddeley, (Lt.) —.* Silliman J. 18 (1830) 263-.

Masonry. *Reuss, G.* As. Fr. C. R. (1897) (Pt. 1) 184-.

Method, new. *Lévy, A.* Quetelet Cor. Mth. 6 (1830) 208-.

—, —, *Persoz, J.* Par. A. Cons. 5 (1864) 532-; C. R. 60 (1865) 405.

—, —, *Sonstadt, E.* C. N. 29 (1874) 127-.

—, rapid. *Lezé, R.* Gén. Civ. 4 (1883-84) 181.

Minerals, apparatus for minute fragments. *La Touche, T. D.* Nt. 53 (1895-96) 199.

—, —, new. *Pisani, F.* C. R. 86 (1878) 350-.

Minute solids, density and mass. *Guglielmo, G.* Rm. R. Ac. Linc. Rd. 9 (1900) (Sem. 2) 261-.

Organic solids. *Schröder, H.* Berl. B. 12 (1879) 561-, 1611-; 13 (1880) 1070-.

Porous and friable substance. *Parize, [P.]* (xii) Finist. S. Sc. Bl. 4 (Fasc. 2) (1882) 45-; J. de Ps. 5 (1886) 222-.

— substances. *Reszow, N. A.* *Fschr. Ps.* (1889) (Ab. 1) 66.

- Porous substances, determination of density by enclosing in wax. *Aschauer, J. V.* Baumgartner Z. 4 (1837) 176-.
- Possible errors in determination. *Pierre, V.* (xii) Lotos 16 (1866) 22-.
- Powders. *Rüdorf, F.* Berl. B. 12 (1879) 249-.
- *Smeeh, W. F.* [1888] *Dubl. S. Sc. P.* 6 (1888-90) 61-.
- *Lenoble, E.* A. C. Anal. 3 (1898) 361-; 4 (1899) 44-.
- *Vandevyver, —.* A. C. Anal. 4 (1899) 2-.
- , apparatus for. *Leslie, J.* QJ. Sc. 21 (1826) 374-.
- , —, *Bremer, G. I. W.* Rec. Tr. C. P.-Bas 17 (1898) 263-, 404-.
- , heavy, small quantities. *Joly, J.* *Dubl. S. Sc. P.* 5 (1886-87) 41-.
- Pyknometer. *Berkeley, (Earl of).* [1895] *Mn. Mg.* 11 (1897) 64-.
- , modification. *Gintl, W. F.* *Fresenius Z.* 8 (1869) 122-.
- , —, *Kahlbaum, G. W. A.* A. Ps. C. 19 (1883) 378-.
- , physico-chemical. *Arpago, R.* *Rv. Sc.-Ind.* 25 (1893) 126-.
- Pyknometer. *Zenneck, L. H.* *Kastner Arch. Ntl.* 14 (1828) 81-.
- Salts soluble in water. *Andreae, J. L.* *J. Pr.* C. 30 (1884) 312-.
- — — *Retgers, J. W.* *Z. Ps. C.* 3 (1889) 289-; 4 (1889) 189-; 11 (1893) 328-.
- Seeds. *Wolfenstein, O.* (xii) *J. Lndw.* 23 (1875) 401-.
- Soluble substances. *Del Lupo, M.* (xii) *Rv. Sc.-Ind.* 13 (1881) 161-.
- — —, new method for. *Zehnder, L.* A. Ps. C. 29 (1886) 249-.
- Sprengel's apparatus, modification. *Sollas, —.* *Dubl. S. Sc. P.* 5 (1886-87) 623-.
- Spring balance, densities by. *Creighton, H.* *QJ. Sc.* 13 (1822) 257-.
- Substances with large pores. *Guyton de Morveau, L. B.* A. C. 60 (1806) 121-.
- Volumenometer see Areometer (Say).
- Volumenometer. *Kopp, H.* A. C. 6 (1842) 380-.
- *Raikow, P.* C. Ztg. 12 (1888) 525.
- *Muraközy, K.* [1890] *Föl. Közl.* 21 (1891) 117-, 148-.
- , modified, application. *Kalcsinszky, S.* [1890] *Föl. Közl.* 21 (1891) 109-, 142-.
- , new. *Tschaplowitz [Chaplovitz], F.* *Fresenius Z.* 18 (1879) 440-.
- , —, *Paalow, C. A.* A. Ps. C. 13 (1881) 332-; 14 (1881) 176.
- , —, *Muraközy, K.* *Termt. Közl.* 25 (1893) (Suppl.) 33-.
- , —, *Myers, J. E.* [1893] *L. Ps. S. P.* 12 (1894) 372-; *Ph. Mg.* 36 (1893) 195-.
- , —, *Oberbeck, A.* A. Ps. C. 67 (1899) 209-.
- for powders. *Schumann, C. C.* *Ztg.* 8 (1884) 1778-.
- , simple form. *Linebarger, C. E.* *Am. C. S. J.* 21 (1899) 435-.
- and weighing apparatus, description. *Ångström, K.* *Stockh. Öfv.* (1895) 643-; *Fschr. Ps.* (1895) (Ab. 1) 24-.
- Volumenometers, new. *Baumhauer, E. H. von.* *Arch. Néerl.* 3 (1868) 385-.
- Wood. *Anon.* (vi 1239) *Tilloch Ph. Mg.* 57 (1821) 366-.

DENSITY OF SOLIDS AND LIQUIDS.

- Hare, R.* *Silliman J.* 11 (1826) 121-.
- Apparatus. *Nicol, W. W. J.* C. N. 47 (1883) 85-.
- *Raikow, P., & Prodanow, N.* C. Ztg. 10 (1886) 1556.
- Areopyknometer with arbitrary scale. *Piccini, A.* (xii) *Rv. Sc.-Ind.* 11 (1879) 14-.
- Densimeter for solids and liquids. *Courtonne, H. J.* de Ps. 5 (1896) 315-.
- — — —, new. *Pâquet, E.* *Par. S. C. Bil.* 24 (1875) 51-.
- — — —, *Machado, V.* *Lisb. J. Sc. Mth.* 6 (1878) 285-.
- Formula for density. *Almeida, C. A. M. de.* [1879] *Lisb. J. Sc. Mth.* 7 (1880) 20-.
- Gravimeter for solids and liquids. *Guyton de Morveau, L. B.* *Nicholson J.* 1 (1797) 110-.
- Hydrometer for solids and liquids. *Atkins, G.* *Tilloch Ph. Mg.* 31 (1808) 254-.
- — — —, *Piervliet, — van.* *Brux. S. Sc. A.* 14 (1890) (Pt. 1) 60-.
- Hydrostatic weighings. *Lummer, O.* *Berl. Ps. Gs. Vh.* (1887) 65 (bis)-.
- — —, capillary influence. *Macé de Lépinay, J.* *J. de Ps.* 5 (1896) 266-.
- — — —, difficulty. *Macé de Lépinay, J.* *J. de Ps.* 5 (1886) 416-.
- Ice and sea-water, density and volumes. *Ashe, W. A.* *Science* 10 (1887) 24.
- Instrument, new. *Nicholson, W.* [1785] *Manch. Ph. S. Mm.* 2 (1789) 386-.
- Method of determination. *Gentilè, —.* *J. Phm.* 5 (1867) 401-.
- Pendulum, application. *Serra-Carpi, G.* *C. R.* 64 (1867) 659-.
- Pyknometer for volume and density of solids and liquids. *Bensemann, R.* *Rpm. Anal. C.* 7 (1887) 19-.
- Volumenometer for solids and liquids. *Kopp, H.* *Lieb. A.* 35 (1840) 17-.

VAPOUR DENSITIES.

- Couerbe, J. P.* *Bordeaux Act.* (1840) 5-.
- Sainte-Claire Deville, H.* C. R. 56 (1863) 729-.
- Pfaundler, L.* *Innsb. Nt. Md. B.* 1 (1870) 40-.
- Croullebois, M.* C. R. 78 (1874) 496-.
- (*Croullebois.*) *Sainte-Claire Deville, É. H.* C. R. 78 (1874) 534-.
- (*Sainte-Claire Deville.*) *Croullebois, M.* C. R. 78 (1874) 805-.
- Brühl, J. W.* *Berl. B.* 9 (1876) 1368-.
- Hautefeuille, —, & Troost, —.* C. R. 83 (1876) 220-.
- Ciamician, G. L., & Goldschmidt, G.* *Wien Ak. Sb.* 75 (1877) (Ab. 2) 431-.
- Sainte-Claire Deville, É. H.* C. R. 84 (1877) 1256-.
- (*Sainte-Claire Deville.*) *Wurtz, C. A.* C. R. 84 (1877) 1347-.

- Meyer, V.* Berl. B. 10 (1877) 2068-; 11 (1878) 1867-.
- Hofmann, A. W.* Berl. B. 11 (1878) 1684-.
- Troost, L. J.* C. R. 86 (1878) 331-, 1394-.
- Piccard, J.* Berl. B. 13 (1880) 1079-.
- Deuar, J., & Scott, A. B. A.* Rp. (1881) 597.
- Meyer, V.* Berl. B. 15 (1882) 2775-; 19 (1886) 1861-.
- Pawlewski, B.* (xii) Kosmos (Lw.) 8 (1883) 93-; (x) Berl. B. 16 (1883) 1293-.
- Nilson, L. F., & Pettersson, O. A. C.* 9 (1886) 554-.
- Schall, C.* Berl. B. 20 (1887) 1435-, 1759-; 21 (1888) 100-.
- Bott, W.* C. S. P. 4 (1888) 110.
- Richards, T. W.* C. N. 59 (1889) 87-.
- Krause, A., & Meyer, V.* Z. Ps. C. 6 (1890) 5-.
- Schall, C.* Berl. B. 23 (1890) 919-, 1701-.
- Lunge, G., & Neuberg, O.* Berl. B. 24 (1891) 729-.
- Schall, C.* J. Pr. C. 50 (1894) 87-.
- Winkler, L. W. C.* Ztg. 23 (1899) 627.
- acoustic method. *Goldschmidt, H.* Berl. B. 13 (1880) 768-.
- apparatus. *Grabowski, A. A. C.* Phm. 138 (1866) 174-.
- (in barometric vacuum). *Hofmann, A. W.* D. C. Gs. B. 1 (1868) 198-; Berl. B. 9 (1876) 1304-.
- *Bott, W., & Macnair, D. S.* Berl. B. 20 (1887) 916-, 1617.
- *Dyson, G. C. N.* 55 (1887) 88.
- *Macnair, D. S.* C. N. 55 (1887) 289.
- *Harker, J. A. C. N.* 62 (1890) 180.
- for determination by Gay-Lussac's method. *Warren, C. M.* [1866] Am. Ac. P. 7 (1868) 99-.
- , *Grabowski's*, modification. *Pfaundler, L.* D. C. Gs. B. 5 (1872) 575-.
- , *Hofmann's*, modification. *Wichelhaus, H.* D. C. Gs. B. 3 (1870) 166-.
- , —, —, *Engler, C.* Berl. B. 9 (1876) 1419-.
- , —, —, *Muir, M. M. P., & Suguira, S.* C. S. J. (1877) (2) 140-.
- , —, trough for. *Easterfield, T. H.* C. N. 60 (1889) 250-.
- in barometric vacuum. *Brühl, J. W.* Berl. B. 12 (1879) 197-.
- Dulong's* method. *Dumas, J. B. C.* R. 78 (1874) 536-.
- Dumas's* method, improved modification. *Habermann, J.* [1876] Wien Ak. Sb. 74 (1877) (Ab. 2) 423-.
- by gaseous displacement under varying pressure. *Meunier, J.* C. R. 98 (1884) 1268-.
- in glass vessels at boiling-point of selenium. *Troost, L. J.* C. R. 95 (1882) 30-.
- at high temperatures. *Meyer, V., & Recklinghausen, M. von.* Berl. B. 30 (1897) 1926-.
- — —, of substances which attack mercury. *Pfaundler, L.* Berl. B. 12 (1879) 165-.
- history. *Hofmann, A. W.* Berl. B. 10 (1877) 962-.
- *Brown, J. T.* B. A. Rp. (1879) 304-.
- Hofmann's* method. *Gabba, L.* Mil. I. Lomb. Rd. 2 (1869) 50-.
- *Tilden, W. A.* C. N. 37 (1878) 219.
- influence of shape of bulb. *Biltz, H.* Berl. B. 21 (1888) 2772-.
- of inorganic substances. *Meyer, C., & Meyer, V.* Berl. B. 12 (1879) 609-, 1282-.
- — — at very high temperatures. *Meyer, C., & Meyer, V.* Berl. B. 12 (1879) 1112-.
- at low temperatures, *V. Meyer's* method, modification. *Perrenoud, P.* Lieb. A. 187 (1877) 77-.
- V. and C. Meyer's* method. *Williams, C. G.* C. N. 39 (1879) 110.
- V. Meyer's* method. *Smith, Watson.* C. N. 39 (1879) 66-.
- — —. *Meyer, L.* Berl. B. 13 (1880) 991-.
- — —. *Ekstrand, A. G., & Pettersson, O.* Berl. B. 13 (1880) 1185-.
- — — modified. *Gudeman, E.* Am. C. S. J. 12 (1890) 399.
- — — for use under reduced pressure. *Richards, T. W.* C. N. 59 (1889) 39-.
- — —, possible cause of error in. *Piccard, J.* [1891] Laus. S. Vd. Bll. 27 (1892) 265-.
- — — simplified. *Schwarz, H.* Berl. B. 16 (1883) 1051-.
- — — (Schwarz). *Meyer, V.* Berl. B. 17 (1884) 1334-.
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- of organic substances with high boiling-points. *Troost, L. J.* C. R. 89 (1879) 351-.
- Pettersson and Ekstrand's* method, modification. *Schall, C.* Berl. B. 18 (1885) 2068-.
- under reduced pressure. *Malfatti, H., & Schoop, P.* Z. Ps. C. 1 (1887) 159-.
- — —. *Meyer, V.* D. Nl. Thl. (1889) 220.
- — —. *Schall, C.* Berl. B. 22 (1889) 140-; 23 (1890) 919-; 25 (1892) 1489-; J. Pr. C. 45 (1892) 134-; 62 (1900) 536-.
- — —, apparatus for. *Eytkman, J. F.* Berl. B. 22 (1889) 2754-.
- — —, *V. Meyer's* method. *Hoff, J. H. van't, & Romeny, J.* (xii) Mbl. Nt. 8 (1878) 135-.
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- , of liquids at different temperatures. *Pérot, A.* Nancy S. Sc. Bll. (1886) (Fasc. 20) xxxvii-.
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- — — in application of law of mixtures. *Hautefeuille, —, & Troost, —.* C. R. 83 (1876) 975-.
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- of substances with high boiling-points. *Klobukow, N. von.* A. Ps. C. 22 (1884) 493-.
- — — — —, under reduced pressure. *La Coste, W.* Berl. B. 18 (1885) 2122-.
- — — — —, — — — — —. *Schall, C.* Berl. B. 20 (1887) 1827-, 2127-.
- — — — — low boiling-points. *Klobukow, N. von.* A. Ps. C. 22 (1884) 465-.
- and temperature of experiment, simultaneous determination. *Nilson, L. F., & Pettersson, O.* Stockh. Ak. Hndl. Bh. 11 (1887) No. 6, 16 pp.
- in vapour of phosphorus pentasulphide. *Knecht, W.* [1879] Lieb. A. 202 (1880) 31-.
- of vapours which attack porcelain at red heat. *Züblin, H., & Meyer, V.* Berl. B. 12 (1879) 2204-.
- volatile liquids, at temperatures below boiling-point. *Playfair, L., & Wanklyn, J. A.* Edinb. R. S. T. 22 (1861) 441-.
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- at white heat, of elements and compounds. *Biltz, H., & Meyer, V.* Gött. Nr. (1889) 347-.

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- Wölsa, C. A.* [1849] Helsingf. Acta 3 (1852) 413-.
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- of knife edges. *Gauss, C. F.* As. Nr. 14 (1837) 241-.
- , machine for. *Hasemann, H.* Z. Instk. 14 (1894) 50-.
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- , improved. *Makins, G. H.* C. S. J. 6 (1854) 36-.
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- — —. *Barnard, F. A. P.* Wash. Nat. Ac. Mm. 4 (Pt. 1) (1888) 203-.
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- — — — —, new. *Lux, F.* Fresenius Z. 29 (1890) 13-.
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— (— —), modification. *Hassenfratz, J. H.* J. Mines 8 (1798) 683-.

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—, theory and description. *Schönemann, T.* Wien D. 8 (1854) (Ab. 2) 1-.

— machines. *Kent, W.* Franklin I. J. 126 (1888) 169-.

—, sensibility. *Schönemann, T.* [1852] Wien D. 5 (1853) 157-.

—, — (Schönemann). *Ettingshausen, A. von.* Wien Sb. 8 (1852) 442-.

— and recording machine, electrical. *McGarvey, E.* [1900] Sc. Abs. 4 (1901) 5.

0140 Numerical values of densities.

(See also Chemistry 7115.)

Air. *Agamennone, G.* Rm. R. Ac. Linc. Rd. 1 (1885) 111-.

—, liquid, and its components. *Wroblewski, S.* C. R. 102 (1886) 1010-.

—, — other liquefied gases. *Ladenburg, A., & Krügel, C.* Berl. B. 32 (1899) 46-, 1415-.

Alcohol, pure. *Pierre, J. I.* C. R. 76 (1873) 336-.

—, table for dilution of. *Anon.* Manch. Mer. S. T. (1891) 74.

Animal substances. *Kapff, —, & Schübler, —.* Erdm. J. Tech. C. 14 (1832) 89-.

Oxygen and nitrogen and hydrogen. *Leduc, A.* C. R. 113 (1891) 186-.

— — — — —; and composition of air. *Leduc, A. J.* de Ps. 1 (1892) 231-.

— — — — —, liquefied. *Cailletet, L., & Hautefeuille, P.* C. R. 92 (1881) 1086-.

— — — — — methane, liquefied. *Olzowski, K.* *Krk. Ak. (Mt.-Prz.)* Rz. 14 (1886) 181-, 197-; *A. Ps. C.* 31 (1887) 58-.

Phosphorus vapour. *Dumas, J. B. A. C.* 49 (1832) 210-.

Platinum. *Hess, H.* St. Pét. Ac. Sc. Mm. 1 (1831) 587-.

—, iridium, and platinum-iridium, physical properties. *Stas, —.* Par. Poids et Mes. PV. (*1877) 6-.

— metals and alloys, densities and expansions. *Broch, O. J.* Par. Poids et Mes. PV. (*1877) 209-.

Saline solutions. *Gerosa, G. G., & Mai, E.* *Rm. R. Ac. Linc. Mm.* 4 (1887) 134-.

Salts, various. *Clarke, F. W.* *Am. J. Sc.* 16 (1878) 199-; *Berl. B.* 12 (1879) 1398-; *Am. C. J.* 5 (1883-84) 240-.

Selenium. *Schaffgotsch, F. von.* *Berl. B.* (1847) 422-; *Pogg. A.* 90 (1853) 66-.

Soda and potash, solutions. *Pickering, S. U.* *Ph. Mg.* 37 (1894) 359-.

Sodium chloride, pure. *Unger, U. von.* *Erdm. J. Pr. C.* 8 (1836) 294-.

Solids, densities, influence of state of division. *Schiff, H. C.* *Ztg.* 10 (1886) 430.

— and liquids. *Clarke, F. W.* [1873] (ix) *Smiths. Misc. Col.* 12 (1874) Art. 2, 272 pp.; 32 (1888) Art. 1, xi+409 pp.

Steam. *Tralles, J. G.* *Gilbert A.* 27 (1807) 400-.

— *Schmedding, G. J.* *Pogg. A.* 27 (1833) 40-.

— *Rankine, W. J. M.* *Glasg. T. I. Eng.* 3 (1859-60) 53-; *Edinb. R. S. T.* 23 (1864) 147-.

— *Schmidt, G.* *Dingler* 160 (1861) 262-.

Steel, effect of tempering. *Fromme, C. A.* *Ps. C.* 8 (1879) 352-.

—, homogeneity. *Gruner, P. A.* *Ps. C.* 41 (1890) 334-.

Substances in solid state and in aqueous solution. *Groshans, J. A.* *Ph. Mg.* 18 (1884) 405-.

Sulphur vapour. *Biltz, —.* *Nt.* 38 (1888) 229.

— *Schall, C.* *Berl. B.* 33 (1900) 484-.

—, and progressive dissociation. *Riecke, E.* *Z. Ps. C.* 6 (1890) 430-.

Sulphuric acid, concentrated. *Kohlrausch, W. F. A.* *Ps. C.* 17 (1882) 69-.

—, dilute, density and composition. *Rücker, A. W.* *Ph. Mg.* 32 (1891) 304-; 33 (1892) 204-.

— solutions. *Pickering, S. U.* *Ph. Mg.* 33 (1892) 132-.

Sulphurous anhydride as liquid and saturated vapour. *Cailletet, —, & Mathias, —.* *J. de Ps.* 6 (1887) 414-.

Tellurium. *Lenher, V., & Morgan, J. L. R.* *Am. C. S. J.* 22 (1900) 28-.

Vapours at high temperatures. *Sainte-Claire Deville, H., & Troost, L.* *A. C.* 58 (1860) 257-.

— — — *Bott, W. B. A.* *Rp.* (1888) 632-.

— — — *Scott, A.* *Edinb. R. S. P.* 14 (1888) 410-.

—, saturated, and liquefied gases. *Cailletet, L., & Mathias, E. J.* de Ps. 5 (1886) 549-.

Wood, various kinds. *Karmarsch, K.* *Wien Jb. Pol. I.* 18 (1834) 120-.

Woods, principal industrial. *Filippo, P.* *Mil. S. It. At.* 25 (1882) 105-.

Zinc vapour. *Mensching, J., & Meyer, V.* *Gött. Nr.* (1887) 7-.

0150 Measurement of time; chronometers.

(See also Astronomy 2100.)

Absolute measurement by means of gravitational attraction. *Lippmann, G.* *C. R.* 128 (1899) 1137-.

— unit of time determined by electrical standards. *Lippmann, G.* *C. R.* 104 (1887) 1070-.

Chronoidek, for finding time within a second. *Chandler, S. C. (jun.).* *Obs. 4* (*1881) 14-.

CHRONOGRAPHS. (See also 1650.)

and application to gun ballistics. *Watkin, (Col.) H.* [1896] *R. I. P.* 15 (1899) 176-.

ballistic, Flamache "comparateur-régulateur" for. *Flamache, V.* *Lum. Élect.* 17 (1885) 583-.

with centrifugal pendulum. *Rebeur-Paschwitz, E. von.* *Z. Instk.* 7 (1887) 171-.

chronographic pendulum, Caspersen's. *Cochard, (Capt.) L.* *Rv. Artl.* 20 (1882) 535-.

and chronoscopes, control hammer for. *Külpe, O., & Kirschmann, A.* *Ph. Stud.* 8 (1893) 145-.

—, — — — (Külpe and Kirschmann). *Wundt, W.* *Ph. Stud.* 8 (1893) 653-.

—, variable error, and controlling apparatus. *Cattell, McK.* *Ph. Stud.* 9 (1894) 307-.

—, —, — — — (Cattell). *Wundt, W.* *Ph. Stud.* 9 (1894) 311-.

with controlling apparatus. *Lange, L.* *Ph. Stud.* 4 (1888) 457-.

Dubosec and Mercadier. *Mercadier, E.* *Lum. Élect.* 4 (*1881) 404-.

electric. *Locke, J.* *Silliman J.* 8 (1849) 231-.

— *Gibbs, W.* *Am. As. P.* (1854) 103-.

— *Deprez, M. C. R.* 78 (1874) 1427-, 1562-; *Par. S. Ps. Sé.* (1874) 93-.

—, new form. *Smith, (Rev.) F. J.* *Ph. Mg.* 29 (1890) 377-.

new. *Dodge, R. Z.* *Psychol.* 10 (1896) 414-.

phonograph used as. *Nansouty, M. de.* *Gén. Civ.* 19 (1891) 343-.

regulator for. *Anon.* *Elekttech. Z.* 11 (1890) 88-.

simple. *Cole, A. D.* *Denison Un. Sc. Lb. Bll.* 5 (1890) 19-.

simple. *Sanford, E. C.* Am. J. Psychol. 5 (1893) 385-.

spark, Siemens and Halske. *Frölich, O.* (xii) Elekttech. Z. 1 (1880) 346-, 405-.

special. *Lea, H., & Bragge, R.* B. A. Rp. (1894) 757-.

traces, instrument for measuring. *Smith, F. J.* Ph. Mg. 32 (1891) 126-.

with tuning-fork. *Webb, W. L.* Franklin I. J. 134 (1892) 219-.

use of microphone to register swings of pendulum on. *Folie, F.* Brux. Ac. Bil. 13 (1887) 198-.

Watkin. *Ayrton, W. E.* Tel. E. J. 9 (1880) 121-.

CHRONOMETERS.

Arago, D. F. J. (vi *Adds.*) Par. Bur. Long. An. (1824) 155-.

Frodsham, W. J., & Parkinson, —. Silliman J. 29 (1836) 297-.

Rouyaux, J. A. Rv. Mar. et Col. 51 (1876) 457-.

Peters, C. F. W. [1877] As. Nr. 91 (1878) 155-.

adjustment for position. *Phillips, É.* C. R. 58 (1864) 287-, 363-.

balance. *Ellis, R. L.* Camb. Mth. J. 4 (1845) 133-.

—, best form. *Phillips, —.* Cg. Int. Chron. (1889) 13-.

—, isochronism. *Young, C.* Nicholson J. 12 (1805) 56-.

— spring and best escapement. *Rozé, —.* Cg. Int. Chron. (1889) 18-.

—, conical spiral, and other spirals. *Phillips, É.* Par. Éc. Pol. J. Cah. 49 (1881) 1-.

—, gilt. *Dent, E. J.* B. A. Rp. (1841) (pt. 2) 41.

—, glass. *Dent, E. J.* B. A. Rp. (1833) (pt. 2) 421; 4 (1835) (pt. 2) 595.

—, —, *Arnold, J. R., & Dent, E.* Silliman J. 32 (1837) 330-.

—, spherical spiral. *Phillips, É.* C. R. 88 (1879) 1147-, 1234-.

—, spiral. *Phillips, É.* Par. Mm. Sav. Étr. 18 (1868) 129-.

—, —, new. *Phillips, É.* C. R. 78 (1874) 667-; 86 (1878) 26-.

—, —, non-symmetry of terminal curves. *Rozé, C.* C. R. 73 (1871) 1207-.

—, —, theorem. *Phillips, É.* C. R. 73 (1871) 1131-; 74 (1872) 581-.

—, —, with theoretical terminal curves, in 1877 competition. *Phillips, É.* C. R. 86 (1878) 1479-.

—, —, —, —, —, 7 years observations, Neuchâtel. *Phillips, É.* C. R. 73 (1871) 1069-.

— springs, spiral, isochronism. *Caspari, E.* C. R. 81 (1875) 1122-; 83 (1876) 47-; Par. S. Ps. Sé. (1876) 22-; Cg. Int. Chron. (1889) 89-.

— uncompensated. *Delamarche, —, & Ploix, —.* C. R. 48 (1859) 241-.

banking balance. *Hardy, W.* Tilloch Ph. Mg. 21 (1805) 181-.

and clocks. *Bianchi, G.* Tortolini A. 5 (1854) 18-; 6 (1855) 40-.

and clocks, action of airon regulator. *Jürgensen, U.* Kiøb. Dn. Vd. Selsk. Afh. 3 (1828) 391-.

—, —, improvements. *Rittenhouse, D.* [1794] Am. Ph. S. T. 4 (1799) 26-.

—, —, rates. *Riddle, E.* [1828] As. S. Mm. 3 (1829) 215-.

—, —, —. *Pagel, L.* [1859] Rch. Chron. Cah. 5 (1861) 289-.

—, —, — (Pagel). *Ploix, C.* Rch. Chron. Cah. 6 (1862) 375-.

—, —, variation. *Lieussou, A.* Rch. Chron. Cah. 4 (1860) 216-.

—, —, — (Lieussou). *Laugier, P. A. E.* C. R. 36 (1853) 894-.

—, —, rating. *T.* (vi *Adds.*) Tilloch Ph. Mg. 33 (1809) 402-.

comparison of times with time at a station. *Fallous, F.* QJ. Sc. 17 (1824) 315-.

compensation. *Yvon-Villarceau, A. J. F.* Par. A. Obs. 7 (1863) 1-.

—, *Rozé, C.* C. R. 90 (1880) 807-, 858-.

—, *Cellérier, G.* Gen. S. Ps. Mm. 29 (1884-87) No. 6, 45 pp.

—, *Phillips, —.* Cg. Int. Chron. (1889) 62-; C. R. 109 (1889) 489-.

— balance. *Hardy, W.* Nicholson J. 16 (1807) 120-.

—, effect of elasticity. *Phillips, É.* C. R. 67 (1868) 508-.

—, —, regulation. *Sang, E.* [1888] So. S. Arts. T. 12 (1891) 183-.

—, —, Winner's. *Caspari, E.* C. R. 82 (1876) 894-.

construction and regulation. *Rozé, C.* Cg. Int. Chron. (1889) 105-.

determination of constants. *Pugibet, (le lt.) H.* Rv. Mar. et Col. 131 (1896) 477-.

diurnal variations. *Bouquet de la Grye, —.* Cg. Int. Chron. (1889) 25-.

electric. *Graffigny, H. de.* Lum. Élect. 46 (1892) 66-, 321-, 572-, 618-.

electrolytic. *Parragh, G.* Term. Közl. 20 (1888) (Suppl.) 139-; Mth. Nt. B. Ung. 6 (1889) 415-.

errors, and new compensation balance. *Dent, E. J.* Silliman J. 45 (1843) 83-.

without fusee. *Sauvier, —.* Cg. Int. Chron. (1889) 27-.

improvements. *Mathew, D. D.* Nicholson J. 20 (1808) 224-.

—, *Yvon-Villarceau, A. J. F.* C. R. 82 (1876) 531-, 580-.

indicating $\frac{1}{1000}$ second. *Schmidt, W.* Par. S. Ps. Sé. (1890) 243-.

influence of atmospheric moisture. *Tennant, (Maj.-Gen.) J. F.* As. S. M. Not. 44 (1884) 22-, 73.

—, —, —, —, —, *Peters, C. F. W.* A. der Hydrog. 15 (1887) 505-.

—, —, —, —, —, pressure. *Harvey, G.* Phil. Trans. (1824) 372-.

—, —, —, —, —, *Yvon-Villarceau, A. J. F.* C. R. 82 (1876) 697-.

—, —, —, —, —, *Hilfiker, J.* As. Nr. 120 (1889) 109-; 122 (1889) 343-; Neuch. S. Sc. Bil. 17 (1889) 3-.

—, —, —, —, —, earth's magnetic field. *Cornu, A. C.* R. 131 (1900) 859-.

influence of induced magnetism of iron shell.

— *Harvey, G.* [1824] QJ. Sc. 18 (1825) 34-.

— magnetism. *Lecount, P.* Edinb. Ph. J. 6 (1822) 238-.

— — — *Harvey, G.* [1823-24] Edinb. Ph. J. 10 (1824) 1-, 342-; QJ. Sc. 17 (1824) 197-.

— — — *Piddington, H.* Beng. J. As. S. 20 (1851) 61-.

— — — *Boeddicker, O.* [1882] *Dubl. S. Sc. T. 3* (*1883-87) 1-.

— — — *Le Goarant de Tromelin, (le lt.) G. Rv. Mar. et Col.* 88 (1886) 5-.

— — — of balance. *Scoresby, (Rev.) W.* [1822] Edinb. R. S. T. (1823) 353-.

— — — ships. *Delamarche, —, & Ploix, —.* C. R. 48 (1859) 462-; *Rch. Chron.* (1862) (pte. 6) 389-.

— — — mode of suspension. *Thomson, (Sir) W.* *Glasg. T. I. Eng.* 10 (1867) 139-.

— — — proximity of masses of iron. *Barlow, P.* *Phil. Trans.* (1821) 361-.

— — — shocks on balance. *Antoine, —.* *Cg. Int. Chron.* (1889) 10-.

magnetic intensity, case. *Harvey, G.* [1823] Edinb. R. S. T. 10 (1826) 117-.

main springs, experimental researches. *Resal, H. A. Mines* 12 (1867) 93-.

— — — simplified formulæ relating to. *Resal, H. A. Mines* 13 (1868) 301-.

marine, competitions for, conditions. *Rollet de L'Isle, —.* *Cg. Int. Chron.* (1889) 137-.

— — — Dutch navy. *Kaiser, P. J.* *Cg. Int. Chron.* (1889) 146-.

— — — with electrical record. *Hirsch, A.* *Neuch. Bil.* 7 (pt. 2) (1866) 431-.

— — — French Navy, history and report. *Rollet de L'Isle, —.* *Rv. Mar. et Col.* 99 (1888) 324-, 480-.

— — — Grandjean's. *Hirsch, A.* *Neuch. Bil.* 6 (1861-63) 387-.

— — — history and development. *Gardner, H. D.* [1890] *Un. Serv. I. J.* 34 (1890-91) 313-.

— — — influence of atmospheric moisture. *Anon. A. der Hydrog.* 17 (1868) 107-.

— — — iron. *Fisher, G.* *Phil. Trans.* (1820) 196-.

— — — observations during voyage of "La Capricieuse." *Mouchez, E.* *Rch. Chron.* (1855) 1-.

— — — voyages of the "Isis" and "Iphigénie." *Martin, (Lt.) A.* *Rv. Mar. et Col.* 45 (1875) 385-.

— — — protection. *Belli, G.* *N. Cim.* 5 (1857) 459-.

— — — use. *Firminger, T.* *Tilloch Ph. Mg.* 42 (1813) 241-.

— — — *Givry, —.* [1840] *Rch. Chron. Cah.* 2 (1859) 73-.

— — — (de Magnac). *Yvon-Villarceau, A. C.* *R. 75* (1872) 897-.

— — — *Magnac, [H.] de.* *C. R.* 77 (1873) 609-.

— — — and their variation. *Magnac, A. de.* *Cg. Int. Chron.* (1889) 155-.

— — — — — *Mouchez, E.* *Cg. Int. Chron.* (1889) 160-.

— — — various. *Urban, L.* *As. Nr.* 53 (1860) 241-.

marine, and watches, influence of temperature. *Birkenmajer, L.* *Krk. Ak. (Mt.-Prz.) Rz.* 10 (1896) 357-; *Crc. Ac. Sc. Bil.* (1896) 78-.

— — — pivots, purifying olive oil for. *Walker, E.* *Tilloch Ph. Mg.* 36 (1810) 372-.

— — — rate, microphonic registration. *Berget, A. C. R.* 129 (1899) 712-.

— — — in rarefied air. *Jürgensen, U.* *Kiöb. Dn. Vd. Selsk. Afh.* 4 (1829) xxiv-.

— — — rates, comparative. *Bond, W. C.* (vi *Adds.*) *Bost. Mm. Am. Ac.* 1 (1833) 84-.

— — — comparison. *Epps, J.* [1832] *As. S. Mm.* 6 (1833) 119-.

— — — predetermination. *Börgen, —.* *A. der Hydrog.* 15 (1887) 31-.

— — — sea. *Toynbee, H.* *As. S. M. Not.* 9 (1848-49) 172-.

— — — and land. *Mudge, W.* *Edinb. Ph. J.* 5 (1821) 378-.

— — — — — *Frodsham, W. J., & Parkinson, —.* *Silliman J.* 26 (1834) 121-.

— — — rating. *Epps, J.* *As. S. M. Not.* 2 (1831-33) 124-.

— — — *Daussy, P.* [1835-40] *Rch. Chron. Cah.* 2 (1859) 43-; *Con. des Temps* (1843) 69-.

— — — *Hartnup, J.* *As. S. M. Not.* 23 (1863) 170-; *Nt.* 8 (1873) 394-.

— — — *Magnac, H. J. A. de.* *C. R.* 81 (1875) 715-.

— — — *Faye, H. A. É.* *C. R.* 88 (1879) 1143-, 1291-.

— — — by signals. *Wauchope, R.* *Edinb. N. Ph. J.* 8 (1830) 160-, 289-.

— — — regulation, and synchronising clocks. *Cornu, A.* *Cg. Int. Chron.* (1889) 176-.

— — — for small time intervals. *Negro, S. dal.* *Padova N. Sag.* 1 (1817) 127-.

— — — — — *Breguet, A. L.* *Edinb. Ph. J.* 1 (1819) 323-.

— — — — — *Barré, —.* *Lille Tr.* (1819-22) 1-.

— — — — — (Barré's). *Delisle, —.* *Lille Tr.* (1819-22) 34-.

— — — — — *Bellavitis, G.* *Ven. At.* 5 (1846) 282-.

temperature coefficients. (Chronometer testing conference.) *Stechert, C. A. der Hydrog.* 24 (1896) 348-; 25 (1897) 330-.

— — — (— — —) *Heuer, K., & Reinicke, (Kapt.) G. A. der Hydrog.* 26 (1898) 262-.

— — — — — calculation. *Stechert, C. A. der Hydrog.* 23 (1895) 388-.

— — — — — variation. *Börgen, —.* *A. der Hydrog.* 11 (*1883) 401-.

— — — — — compensation. *Phillips, É.* *C. R.* 90 (1880) 483-, 561-, 649-.

— — — — — effect of form of balance. *Phillips, É.* *C. R.* 66 (1868) 526-.

— — — — — correction and temperature coefficients. *Anon. A. der Hydrog.* 19 (1891) 27-.

— — — — — use. *Esenbeck, (Kapt.) N. von.* *A. der Hydrog.* 17 (1889) 149-.

— — — — — corrections. *Nevens, A. E.* [1874-76] *As. S. M. Not.* 35 (1875) 79-; *Lpoul. Lt. Ph. S. P.* 30 (1876) 227-.

— — — — — *Hartnup, J.* *As. S. M. Not.* 35 (1875) 314-.

temperature influence. (Memoirs, 1831, '32, '42, '44.) *Cornuier*, — *de*. *Rech. Chron. Cah.* 2 (1859) 87-; *Cah.* 3 (1859) 109-.

— — *Börger*, —. *A. der Hydrog.* 6 (*1878) 489-.

testing. *Hartnup*, *J.* *Lanc. T. Hist. S.* 9 (1857) 11-; *R. S. P.* 14 (1865) 548-.

—, *Greenwich*, 1823. *Hutton*, *G. F.* *Tilloch Ph. Mg.* 61 (1823) 177-.

—, — and elsewhere. *Caspari*, —. *Cg. Int. Chron.* (1889) 23-.

—, *Kiel Observatory*. *Peters*, *C. F. W.* *A. der Hydrog.* 3 (*1875) 343-.

tests of various kinds, recent. *Gelcich*, *E. Z.* *Instk.* 13 (1893) 343-.

variation. *Haley*, *J.* *Nicholson J.* 8 (1804) 46-.

—, and amplitude of vibration. *Nyren*, —. *Cg. Int. Chron.* (1889) 153-.

— — regulation. *Caspari*, *E.* *Cg. Int. Chron.* (1889) 67-.

and watches, effects of dynamos, etc. *Tromelin*, *G. de.* *Lum. Élect.* 3 (*1881) 312-, 326-, 367.

CHRONOSCOPES.

Benzenberg, *J. F.* *Voigt Mg.* 12 (1806) 181-.

electrochemical. *Hessler*, *F.* (vi *Adds.*) *D. Nf. Vsm. B.* 34 (1858) 156-.

experiments. *Hirsch*, *A.* (vi *Adds.*) *Sch. Ga. Vh.* 46 (1862) 215-.

gravitational, correction for resistance of air. *Leroux*, *F. P.* *A. C.* 12 (1867) 396-, 404-.

improvement. *Glasener*, *M.* *C. R.* 43 (1856) 814-.

method of marking by electric spark. *Leroux*, *F. P.* *C. R.* 55 (1862) 839-.

pendulum-, accessory apparatus. *Noyes*, *W.* [1890] *Am. J. Psychol.* 3 (1891) 367-.

—, and accessory apparatus. *Scripture*, *E. W.* *B. A. Rp.* (1897) 824.

simple. *Sanford*, *E. C.* [1890] *Am. J. Psychol.* 3 (1891) 174-.

Vernier. *Sanford*, *E. C.* *Am. J. Psychol.* 9 (1897-98) 191-.

vibration-. *Müller*, *Hub.* *Sch. Nf. Gs. Vh.* 52 (1868) 27-.

—, *Müller*, *Joh.* *A. Ps. C.* 139 (1870) 504-.

—, electric. *Beetz*, *W.* *A. Ps. C.* 135 (1868) 126-.

—, and experiments. *Müller*, *Joh.* [1868] *A. Ps. C.* 136 (1869) 151-.

Clock- and instrument-makers, oil used by, improved preparation. *Moll*, *G.* *Hall Bij.* 1 (1826) 1-.

— making. *Roussel*, *M.* *Amiens Mm. Ac. Sc.* (1841) 127-.

— —, application of mechanics. *Resal*, *H.* *A. Mines* 10 (1866) 423-; 11 (1867) 207-; 15 (1869) 211-; 18 (1870) 317-.

— —, toothed wheels. *Isely*, (*Prof.*) —. *Neuch. Bil.* 9 (1873) 381-.

Clock-work for continuous uniform motion. *Jacobi*, *M. H.* [1846] *St. Pét. Ac. Sc. Bil.* 6 (1848) 104-.

— — — — —. *Wagner*, *J.* *C. R.* 29 (1849) 701.

Clock-work, electric. *Zetsche*, —. *Elekttech. Z.* 5 (1884) 126-.

— — at Exhibition of 1889, machinery in manufacture. *Garnier*, *P.* *Cg. Int. Chron.* (1889) 38-.

CLOCKS.

Bessel, *F. W.* *B. A. Rp.* (1842) (pt. 2) 1-; *As. Nr.* 20 (1843) 137-.

Förster, *W.* *As. Nr.* 91 (1878) 337-, 353-, 369-.

in air-tight case. *Förster*, *W.* *Carl Rpm.* 3 (1867) 271-.

alteration of arcs by hygrometrical changes of the air; and a compensating pendulum of deal. *Squire*, *T.* *Tilloch Ph. Mg.* 65 (1825) 38-.

astronomical. *Cesaris*, *G. A. de.* *Mil. Effem. As.* (1814) 74-.

—, *Hirsch*, *A.* *Neuch. Bil.* 5 (1859-61) 461-.

—, *Newcomb*, *S.* *Sid. Mess.* 3 (1884) 206-.

—, equalisation of arcs. *Jürgensen*, *U.* *Kiöb. Dn. Vd. Selsk. Afh.* 1 (1824) 209-.

—, *Innsbruck*. *Czermak*, *P.* *Innsb. Nt. Md. B.* 24 (1899) 193-.

—, new. *Boys*, *C. V.* [1877] *As. S. M. Not.* 38 (1878) 74-.

—, with pendulum governor. *Thomson*, (*Sir*) *W.* *E. S. P.* 17 (1869) 468-.

—, regulation. *Hansteen*, *C.* *N. Mg. Ntvd.* 6 (1851) 30-.

and atmospheric pressure. *Bessel*, *F. W.* *As. Nr.* 2 (1824) 49-.

— — —. *Robinson*, *T. R.* *As. S. Mm.* 5 (1833) 125-.

— — —. *Förster*, *W.* *Berl. Mb.* (1867) 239-.

— — —. *Hipp*, *M.* [1877] *Neuch. S. Sc. Bil.* 11 (1879) 152-, 159-.

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— — —. *Robinson*, *T. R.* *B. A. Rp.* (1843) (pt. 2) 17-, 102.

— — —. *Krüger*, *A.* *As. Nr.* 62 (1864) 279-; 68 (1867) 327-.

— — —. *Airy*, (*Sir*) *G. B.* *Ph. Mg.* 41 (1871) 482.

— — —. *Denison*, *E. B.* *As. S. M. Not.* 33 (1873) 122-, 294-.

— — — (Denison's). *Robinson*, *T. R.* *As. S. M. Not.* 33 (1873) 295-.

— — —. *Redier*, *A.* *C. R.* 83 (1876) 1174-.

— — —. *Gulbransen*, *P. F.* *Belfast NH. S. Rp. & P.* (1890-91) 87-.

— — error. *Webster*, *R.* *As. S. M. Not.* 33 (1873) 296-.

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- Årsb. (1823) 77-.
- Berlinger, I.* *Wien Jb. Pol. I.* 6 (1825) 14-.
- Zecchini-Leonelli, —.* *Wien Jb. Pol. I.* 6 (1825) 53-.
- Herapath, W.* *Tilloch Ph. Mg.* 65 (1825) 374-.
- Krajenhoff, H. E.* *Hall Bij.* 7 (1832) 351-.
- Forman, W.* *Dingler* 55 (1835) 331-.
- Jones, W. G.* *Silliman J.* 38 (1840) 274-.
- Meikle, H.* *Edinb. N. Ph. J.* 41 (1846) 385-.
- Laugier, P. A. E.* *C. R.* 25 (1847) 415-.
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- Giulio, C. I.* [1848] *Tor. Mm. Ac.* 11 (1851) 187-.
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- , of lead and iron. *Benzenberg, J. F.* *Voigt Mg.* 4 (1802) 787-.
- , new. *Nicholson, W.* *Nicholson J.* 3 (1800) 205-.
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- mathematical rules for construction. *Stevally, J. B. A. Rp.* (1836) (*pt.* 2) 7-.
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- (*Lowe's*). *Firminger, T.* *Tilloch Ph. Mg.* 54 (1819) 102-.
- , *Baily, F.* *As. S. Mm.* 1 (1822) 381-.
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- , *Böhm, J. G.* *Wien SB.* 26 (1857) 345-.
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- correction by means of telephone. *Norden-skiöld, N. K.* *Stockh. Ofv.* 40 (1883) No. 4, 49-.
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- , *Barnard, F. A. P.* *Am. As. P.* (1858) 17-.
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- , *Arzberger, F.* *Brünn Vh.* 8 (1869) (*Ab.*) 91-; 9 (1870) (*Ab.*) 33-.
- , *Butkevich, F. S.* [1870] (xii) *Mosc. S. Sc. Bil.* 39 [No. 2] (1880) 11-.
- , *Brunn, J. A.* *Ps. C.* 157 (1876) 411-.
- , *Dumoulin-Froment, P. A.* *Tél.* 3 (1876) 345-.
- , *Gardner, H. D.* *Nt.* 20 (1879) 345-.
- , *Williot, —.* [1881] *Rv. Sc.* 2 (1882) 417-.
- , *Arzberger, F.* (xii) *Z. Instk.* 2 (1882) 51-.
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—, —, Valessie's report. *Dupuy de Lôme*, —. C. R. 86 (1878) 1364-.

—, —, —, *Jourden*, L. [1881] Rv. Mar. et Col. 74 (1882) 55-.

—, for motors. *Gérard*, A. Brux. Ac. Bil. 47 (1879) 47-.

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—, *Lambinet*, —. Rv. Mar. et Col. 81 (1884) 379-.

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—, *Amster*, A. Arch. Sc. Ps. Nt. 32 (1894) 291-.

—, *Tétot*, V. Rv. Mar. et Col. 128 (1896) 434-.

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—, —, *Dary*, G. Sc. Abs. 1 (1898) 673.

—, —, *Browne*, W. H. (*jun.*) Sc. Abs. 2 (1899) 432.

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—, magnetic. *Deprez*, M. Lum. Elect. 3 (*1881) 407-.

—, pneumatic. *Rung*, (*Capt.*) G. Z. Instk. 6 (1886) 201-.

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- , *Thomas, A. As. Fr. C. R.* (1874) 154-.
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- , *Burney, J. Nicholson J.* 24 (1809) 57-.
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- , by log-line. *Newman, J. QJ. Sc.* 2 (1817) 90-.
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- , correction of errors. *Keller, F. A. E. (vi Add.) A. Hydrog.* 14 (1858) 387-.
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- , —, —, —, —, —, —, *Le Goarant de Tromelin, G. C. R.* 96 (1883) 1441-.
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- , and apparatus for pendulum experiments. *Fischer, E. G. Gilbert A.* 14 (1803) 1-.
- , application. *Pfaundler, —. Innsb. Nt. Md. B.* 14 (1884) xxiii.
- and clock, a new. *Baker, W. C. Ps. Rv.* 11 (1900) 105-.
- , determination of friction resistances in. *Bender, C. A. Ps. C.* 149 (1873) 122-.
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- , influence of wheel. *Külp, L.* Arch. Mth. Ps. 54 (1872) 206-.
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- , —, —, —. *Malagoli, R.* Rv. Sc. Ind. 29 (1897) 275-; Spet. It. Mm. 28 (1900) 174-, 199-.
- , modification. *Dupré, —.* Pogg. A. 58 (1843) 466-.
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- , —, utility. *Knappert, L.* Leijd. A. Ac. (1817-18) 9 pp.
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- , —, experiments. *Haswell, C. H.* Franklin I. J. 24 (1852) 421-.
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- , —, —, idea. *Mansion, —.* Brux. S. Sc. A. 18 (1894) (Pt. 1) 92-.
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- , —, graphical demonstration. *Müller, Hub.* Sch. Nf. Gs. Vh. 52 (1868) 29-.
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- Chronographs and apparatus for determining laws of motion. *Didion, I.* Fr. Cg. Sc. (1837) 549-.
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- , measure of work in theory of. *Moon, R.* Ph. Mg. 47 (1874) 291-.
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- Solids, motion. *Delanges, P.* Verona S. It. Mm. 3 (1786) 1-.
- Watt's indicator, mathematical theory. *Lecornu, L.* C. R. 118 (1894) 1034-.

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- Ewart, P.* [1808] Manch. Ph. S. Mm. 2 (1813) 105-.
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- Gordon, L.* Glasg. Ph. S. P. 1 (1841-44) 41-.
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- Kapp, G.* Elect. 12 (1884) 13-, 33-, 79-, 103-, 151-, 224-, 345-, 538-; 13 (1884) 8-, 79-, 201-.
- Jamieson, & others.* Elect. 12 (1884) 139-, et seq.
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- and comparison of ships in matter of resistance. *Ledieu, A.* C. R. 100 (1885) 837-.
- — — — — (Ledieu). *Taurines, A.* C. R. 102 (1886) 1057-.
- — — — — (Taurines). *Ledieu, A.* C. R. 102 (1886) 1091-.
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- — — — — *Anon.* Rv. Sc.-Ind. 23 (1891) 34-.
- for effort of traction or force of animate motors. *Morin, A.* Par. Bll. S. Encour. 36 (1837) 161-.
- — — — — or work developed by animate or inanimate motors. *Morin, A.* Fr. Cg. Sc. (1837) 583-.
- electric recording. *Resio, C.* C. R. 96 (1883) 1361-; Lum. Elect. 9 (*1883) 81-.
- and ergometers. *Richelmy, P.* Tor. At. Ac. Sc. 5 (1869-70) 17-.
- Fischinger's. Buschkiel, C.* Elekttech. Z. 8 (1887) 386-.
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- — — — — *Thomson, J.* (vi Adds.) B. A. Rp. (1855) (pt. 2) 209-.
- — — — — *Mayer, J. R. von.* D. Nf. Tbl. (*1869) 63-.
- — — — — *Gutgon, —.* [1882] I. Égypt. Bll. 3 (*1883) 14-.
- — — — — *Menges, C. L. R. E.* 's Gravenh. I. Ing. Ts. (1886-87) (Verg.) 81-.
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- — — — — *Rigaut, A.* Lum. Elect. 36 (1890) 610-.
- — — — — *Goss, W. F. M.* Elect. Rv. 37 (1895) 98-, 125-, 158-.
- — — — — and belt. *Froude, W.* (vi Adds.) ME. I. P. (1858) 92-.
- — — — — direct reading. *Jimels, C.* Gén. Civ. 17 (1890) 375-.
- — — — — *Prony's* (for revolving shaft). *Prony, R. de.* A. C. R. 19 (1821) 165-.
- — — — — *Saint-Léger, — de.* A. Mines 12 (1837) 67-.
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- — — — — *Poncelet, J. V.* C. R. 4 (1837) 885-.
- — — — — *Passot, —.* Fr. Cg. Sc. 8 (1840) 31-.
- — — — — *Morris, E.* Franklin I. J. 5 (1843) 225-.
- — — — — *Pigeon, G.* Lyon Ac. Sc. Mm. 2 (1847) 507-.
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- — — — — *Tresca, H.* C. R. 58 (1864) 273-.
- — — — — *Kretz, —.* C. R. 58 (1864) 459-; Par. Ec. Norm. A. 2 (1873) 55-.
- — — — — arranged for evaluation of torque. *Hillairet, —.* C. R. 109 (1889) 798-.
- — — — — modifications. *Garnier, F.* A. Mines 12 (1837) 247-.
- — — — — reversed. *Wellner, G.* Dingler 223 (1877) 130-.
- — — — — and *Welter's* combined. *Hachette, J. N. P.* J. Gén. Civ. 11 (1846) 55-.
- — — — — *Raffard. Soubeyran, A.* [1885] Gén. Civ. 8 (1885-86) 68-.
- — — — — *Ventre, —.* [1886] I. Égypt. Bll. 7 (1887) 50-.
- — — — — run by circulation of water. *Ricco, A.* (xii) Rv. Sc.-Ind. 12 (1880) 443-.
- — — — — self-regulating. *Carpentier, J.* C. R. 89 (1879) 950-.
- — — — — for small motors. *Maréchal, C.* Éclair. Élect. 11 (1897) 210-.
- — — — — *Thiabaud. Bernardi, E.* Ven. I. At. (1884-85) 1355-.
- improved. *Tatham, W. P.* Franklin I. J. 82 (1881) 321-; 84 (1882) 401-.
- integrating. *Richard, G.* Lum. Elect. 16 (1885) 366-.
- — — — — *Raffard, —.* Par. S. Ps. Sé. (1887) 178-.
- — — — — of *Meze* and *Vernon-Boys.* *Richard, G.* Lum. Élect. 14 (1884) 11-.
- at International Exhibition. *Guerout, A.* Lum. Élect. 4 (*1881) 290-, 307-, 341-, 356-, 373-.
- Morin's. Trépiéd, C.* Lum. Elect. 1 (*1879) 85-.
- new. *Cagniard-Latour, C.* C. R. 4 (1837) 899-.
- — — — — *Froude, W.* Bath S. J. 5 (1857) 216-.
- — — — — *Richard, G.* Lum. Elect. 8 (*1883) 297-.
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- — — — — *Richard. Gouilly, A.* Gén. Civ. 20 (1891-92) 395-.
- at Royal Technological Institute, Stockholm. *Nystrom, J. W.* Franklin I. J. 49 (1865) 392-.
- Ruggles's. Eliot, C. W.* [1866] Am. Ac. P. 7 (1868) 65-.
- for small motors. *Hoskin, J.* Franklin I. J. 131 (1891) 489-.
- — — — — steam engines (Macnaught). *Combes, C.* A. Mines 16 (1839) 519-.
- suitable for physiological inquiries. *Henry, C.* C. R. 121 (1895) 716-.
- Tatham. Tatham, W. P.* Franklin I. J. 120 (1885) 449-; 122 (1886) 377-.
- transmission. *Ayrton, W. E., & Perry, J.* Lum. Élect. 3 (*1881) 405-.

- transmission. *Curie, P.* C. R. 103 (1886) 45-.
- , *Guigon, E.* [1888] I. Egypt. Bil. 9 (1889) 174-.
- , (*Guigon*). *Ventre, —.* [1888] I. Egypt. Bil. 9 (1889) 185-.
- , *Robinson, S. W.* Elect. Rv. 38 (1896) 625-, 656-.
- , autographic. *Kent, W.* [1879] Am. I. Mn. E. T. 8 (*1880) 177-.
- , with direct reading and photographic record. *Mascart, —.* C. R. 110 (1890) 605-.
- , electric. *Kuz'minskij, P. D.* Rs. Ps.-C. S. J. 28 (Ps.) (1896) 226-.
- , new. *Deprez, M.* Lum. Elect. 13 (1884) 481-.
- , —, *Meylan, E.* Lum. Elect. 27 (1888) 424-.
- , —, *Dalby, W. E.* I. CE. P. 132 (1898) 47-.
- , permanent. *Smith, C. A.* [1884] Am. S. CE. T. 15 (1886) 357-.
- for use with driving-bands. *Hefner-Alteneck, F. von.* (xii) Elekttech. Z. 2 (1881) 229-.
- with vernier. *Kleritj, L.* Berg-Hm. Ztg. 29 (1870) 3-, 16-.
- Dynamometric experiments (Ransonnet's). *Keraudren, —.* J. Méd. Chir. Phm. 24 (1812) 41-.
- , —, *Dollfus, G.* (vii) Mon. Sc. 3 (1861) 29-.
- methods on railways. *Desdovits, —.* A. Mines 8 (1885) 481-.
- testing of agricultural implements. *Grandvoinnet, J. A.* (xii) A. Agn. 2 (1876) 446-.
- Ergograph, new. *Binet, A., & Vaschide, N.* C. R. 125 (1897) 1161-.
- Ergometers. *Hefner-Alteneck, — von.* Elekttech. Z. 8 (1887) 514-; 9 (1888) 16.
- Explosive pressures, use of springs in measuring. *Vieille, P.* C. R. 115 (1892) 1268-.
- Explosives, force. *Vieille, P.* As. Fr. C. R. (1890) (Pt. 1) 53-.
- Gas-motors, atmospheric, power measurement. *Teichmann, K.* Dingler 220 (1876) 116-.
- Horse-power. *Gregory, O.* Nicholson J. 11 (1805) 145-.
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- , —, *Reuleaux, F.* Civing. 3 (1857) 112-.
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- , —, experiments. *Minard, C. J.* Par. A. Pon. Chauss. 4 (1832) 125-.
- , —, measure of force by. *Hornblower, J. C.* Nicholson J. 11 (1805) 95-.
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- Hydraulic brakes for guns, indicator-curve. *Vallier, —.* C. R. 129 (1899) 705-.
- Integrator, mechanical, for work done by a force. *Fuchs, K.* Mth. Termt. Étis. 13 (1895) 239-; Mth. Nt. B. Ung. 13 (1897) 144-.
- Locomotives, compound, tractive force. *Mellin, C. J.* Am. Eng. & Railroad J. 74 (1900) 152, 204.
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- Machines, power. *Marchal, O.* A. Gén. Civ. 5 (1866) 544-.
- , —, *Jacquemier, R.* Rv. Mar. et Col. 81 (1884) 535-.
- with revolving shafts, tangential force. *Hachette, J. N. P.* J. Mines 31 (1812) 213-.
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(See also 1240.)

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0430 Kinematics of machinery.

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Piola, G. *Mil. Effem. As.* (1831) 35-; (1832) 75-.

Grunert, J. A. *Grunert Arch.* 24 (1855) 21-.

Emsmann, H. *Pogg. A.* 110 (1860) 316-.

Schlüfli, L. A. *Mt.* 1 (1867-68) 105-.

Hermite, C. [1877] *Crelle J. Mth.* 85 (1878) 246-.

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French, J. R. *Franklin I. J.* 84 (1882) 336-.

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Sherman, O. T. *Am. J. Sc.* 24 (1882) 175-.

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Farquhar, H. *Smiths. Misc. Col.* 33 (1888) *Art.* 2, 89- (*Wash. Ph. S. Bil.* 7 (1885).)

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—, conical, isochronous. *Hoppe, R.* *Grunert Arch.* 25 (1855) 317-.

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Mogni, A. G. *Mt.* 4 (1866) 327-.

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Thermo-mechanical phenomena, equation $\frac{du}{dt} = \frac{d^2u}{dx^2} - b^2x \int_0^x \frac{du}{dt} dx$. *Liouville, J.* Liouv. J. Mth. 2 (1837) 439-; C. R. 5 (1837) 598-.

Trajectories defined by their tangents. *Koenigs, G.* Par. S. Phlm. Bil. 5 (1893) 28-.

Transformation of motion, case. *Dautheville, —.* C. R. 111 (1890) 877-.

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Transformations. *Painlevé, P.* C. R. 114 (1892) 901-, 1104-, 1412-.

2030 Applications of the first variation of integrals; the partial differential equations.

(See also 0820.)

Brachistochrone problem of a system. *Webb, R. R.* Mess. Mth. 9 (1880) 151-.

Canonical equations of motion, fundamental theorem. *Morera, G.* Mil. I. Lomb. Rd. 15 (1882) 640-.

Dynamics, reciprocity, law. *Siacci, F.* Tor. Ac. Sc. At. 15 (1879) 519-.

- Equations of dynamics. *Chessin, A. S.* N. Y. Am. Mth. S. Ill. 5 (1899) 424, 425-.
- — —, transformation. *Picciati, G.* Ven. I. At. (1895-96) 175-.
- — —, variation of constants. *Binet, J. P. M.* C. R. 13 (1841) 65-.
- — — equilibrium of flexible and inextensible surfaces. *Pennacchiotti, G.* Catania Ac. Gioen. At. 8 (1895) Mem. 5, 11 pp.
- — — — —, integration. *Pennacchiotti, G.* Catania Ac. Gioen. At. 8 (1895) Mem. 10, 4 pp.
- — — motion for frictionless point systems under inequality of conditions. *Mayer, A.* Leip. Mth. Ps. B. 51 (1899) (Mth.) 224-, 456.
- Hamiltonian principle of varying action. *Tait, P. G.* [1877] Ir. Ac. P. 3 (1883) 69.
- theory of motion, mechanical principle resulting from. *Müller, J. J.* A. Ps. C. 152 (1874) 105-.
- Hamilton-Jacobi theory for forces, measure of which depends on the motion of the bodies. *Schering, E.* Gött. Ab. 18 (1873) 54 pp.
- Infinitesimal transformations of trajectories of systems. *Painlevé, P.* C. R. 119 (1894) 637-.
- LEAST ACTION.**
- Sokoloff, J.* C. R. 55 (1862) 46-.
- Dienger, J.* Arch. Mth. Ps. 41 (1864) 194-.
- Studskii, T. A.* [1866-68] (xii) Rec. Mth. (Moscou) 2 (1867) (Pt. 1) 45-; 4 (1869-70) (Pt. 1) 225-.
- Sokolov, I. D.* (xii) Rec. Mth. (Moscou) 5 (1870) (Pt. 1) 179-.
- Serret, J. A.* C. R. 72 (1871) 697-; 73 (1871) 145-, 293-; Par. Ac. Sc. Mm. 38 (1873) 151-.
- Somov, I. I.* [1872] (xii) Rec. Mth. (Moscou) 5 (1870) (Pt. 1) 303-; 6 (1872-73) (Pt. 1) 466 a.
- Baehr, G. F. W.* Amst. Ak. Vs. M. 14 (1879) 232-.
- Rachmaninoff, I. I.* Z. Mth. Ps. 24 (1879) 206-.
- Serret, J. A.* C. R. 89 (1879) 57-.
- Beke, M.* Mag. Tud. Ak. Éts. 18 (1884) 43-.
- Joukovsky, N.* Liouv. J. Mth. 10 (1884) 97-.
- Sabinine, G.* A. Mt. 12 (*1883-84) 237-.
- (Ostrogradsky and Jacobi.) *Sabinine, G. A.* Mt. 15 (1887-88) 27-.
- Kobb, G.* Toul. Fac. Sc. A. 5 (1891) D, 3 pp.
- Réthy, M.* [1894-95] Mth. Term. Éts. 13 (1895) 1-, 299-; Mth. Nt. B. Ung. 13 (1897) 1-.
- application. *Larmor, J. L.* Mth. S. P. 15 (*1883-84) 158-.
- to finding equations of motion. *Rodrigues, (Dr.)* —. Par. Éc. Pol. Cor. 3 (1814-16) 159-.
- applications to constrained systems. *Bardelli, G.* Mil. I. Lomb. Rd. 17 (1884) 89-.
- and Gauss's theory of curvature. *Beke, M.* Mth. Term. Éts. 2 (1884) 133-; Mth. Nt. B. Ung. 2 (1883-84) 282-.
- generalisation. *Réthy, M.* Mth. Term. Éts. 14 (1896) 267-; Mth. Nt. B. Ung. 13 (1897) 270-.
- Hamilton and Maupertuis, principles. *Hölder, O.* Gött. Nr. (1896) 122-.
- — —, —. *Voss, A.* Gött. Nr. (1900) 322-.
- Hamiltonian principle, application in hydrodynamics and aerodynamics. *Neumann, C.* Leip. Mth. Ps. B. 49 (1897) 611-.
- — — and equations of dynamics. *Shebuev, G. N.* [1881] (xii) Kazan S. Nt. (Ps.-Mth.) P. 1 (1883) [No. 4] 24-.
- — —, significance, and Weber's law. *Scheibner, W.* Leip. Mth. Ps. B. 49 (1897) 578-.
- Helmholtz's form of statement. *Suslov, G. K.* [1897] Rec. Mth. (Moscou) 20 (1899) 105-; Fsch. Mth. (1897) 612.
- history. *Helmholtz, H. von.* Berl. Ak. Sb. (1887) 225-.
- and infinitesimal transformation in dynamical problems. *Kneser, A.* Dorpat Sb. 10 (1895) 501-.
- and two memoirs of Liouville. *Ostrogradsky, M. A.* (xii) Rec. Mth. (Moscou) [1] (1866) xxvii-.
- minimum of an integral. *Sabinine, G. A.* Mt. 14 (1886-87) 13-.
- quantity in. *Liouville, J.* C. R. 42 (1856) 1146-.
- particle on surface under no forces, theorem. *Lipschitz, R.* Bonn SB. Niedr. Gs. (1871) 121-.
- passage in "Mécanique Analytique." *Brassinne, E.* C. R. 94 (1882) 1110-.
- physical significance. *Helmholtz, H. von.* [1886] Crelle J. Mth. 100 (1887) 137-, 213-.
- proof for certain forces. *Laves, K.* N. Y. Am. Mth. S. Ill. 6 (1900) 373, 376-.
- theorems of calculus of variations corresponding to. *Mayer, A.* Leip. Mth. Ps. B. 38 (1886) 343-.
- 2nd variation of Hamilton's integrals, dynamical significance. *Novikov, P. M.* Kharkov Mth. S. Com. (1884) 65-; Fsch. Mth. (1884) 801.
- Mechanical problems, use of series given by Gauss in. *Lampe, E.* Berl. Ps. Gs. Vh. (1888) 47-.
- Mechanics of solids treated by calculus of variations. *Piola, G.* Opusc. Mt. Fis. 1 (1832) 201-.
- Motion of point system under inequality of conditions. *Zermelo, E.* Gött. Nr. (1899) 306-.
- — — system of particles. *Pennacchiotti, G.* [1891] Catania Ac. Gioen. At. 4 (1892) Mem. 5, 12 pp.
- Principle of last multiplier. *Jacobi, C. G. J.* G. Arcad. 99 (1844) 129-.
- — — — —. *Boltzmann, L.* Mth. A. 42 (1893) 374-.
- Trajectories, on given surface or in space, rendering minimum $\int_0^s \phi(v) ds$. *Roger, É.* C. R. 40 (1855) 1176-.
- , minimal, $\delta \int_{s_1}^{s_2} \phi(v) ds = 0$. *Schuringa, P.* [1872] Arch. Néerl. 8 (1873) 1-.

2040 Equivalence of dynamical problems, dynamical analogues, models. (See also 0430.)

- Analogy of second law of thermodynamics. *Boltzmann, L.* Crelle J. Mth. 100 (1887) 201-.
- , mechanical and electrical. *Bedell, F., & Crehore, A. C.* Elect. Rv. 32 (1893) 126-.
- Analogue, cyclic, of inductive action of circular currents. *Hasenoechl, F.* Wien Ak. Sb. 105 (1896) (Ab. 2a) 900-.
- Analogues, statical and kinematical. *Everett, J. D. B. A. Rp.* (1874) (Sect.) 11.
- Analogy between motion of rigid body about fixed point and equilibrium of elastic rod. *Žukovskij, N. E.* [1900] Rec. Mth. (Moscou) 21 (1901) 542-; Fsch. Mth. (1900) 703.
- Analytical equivalence of dynamical problems. *Stäckel, —.* Crelle J. Mth. 107 (1891) 319-.
- Berliner's molecularium. *Anon.* Tel. J. 22 (1888) 255-.
- Consonance, interference and absorption in sound and light, pendulum experiments. *Isenkrahe, C.* Carl Rpm. 16 (1880) 99-, 516-.
- Dynamical equations, transformation. *Picciati, G.* N. Cim. 33 (1893) 241-.
- equivalence of problems of stationary temperatures, torsion and flow in pipes. *Boussinesq, J.* Liouv. J. Mth. 6 (1880) 177-.
- Forces required to produce equal displacements, homologous systems. *Siacci, F.* Rm. R. Ac. Linc. Rd. 5 (1889) (Sem. 1) 626-, 856-.
- Gyroscope and Hall's and Faraday's phenomena. *Élie, B. J. de Ps.* 1 (1882) 269-.
- Homography in mechanics. *Appell, P.* C. R. 108 (1889) 224-; Am. J. Mth. 12 (1890) 103-.
- Imitation of magnetic phenomena by liquid currents. *Decharme, C.* C. R. 95 (1882) 340-, 387-; A. C. 29 (1883) 404-.
- Nobili's rings by liquid currents. *Decharme, C.* C. R. 94 (1882) 722-; A. C. 28 (1883) 198-.
- Imperfect bicyclic system representing induction of 2 circuits. *Garbasso, A.* Tor. Ac. Sc. At. 32 (1896) 746- or 1008-.
- Isogonal transformations in mechanics. *Goursat, É.* C. R. 108 (1889) 446-.
- — — — — *Darboux, G.* C. R. 108 (1889) 449-.
- Machines and models. *Sang, E.* Edinb. N. Ph. J. 14 (1833) 145-; 23 (1837) 262-; 28 (1838) 70-.
- — — — —, comparison. *Chaubry, —.* [1800] Le Mans Tr. S. (1820) 33-.
- — — — —, *Bertrand, J. C.* R. 25 (1847) 163-; Par. Éc. Pol. J. 32^e cah. (1848) 189-.

- Machines and models, comparison. *Barr, A.* Glasg. I. Eng. T. 42 (1899) 322-.
- — — — —, validity of inferences drawn from experiments with latter. *Nordmark, Z.* Stockh. Ak. Hndl. 34 (1813) 135-.
- Mechanical image of thermodynamic phenomena. *Chaperon, —.* C. R. 109 (1889) 852-.
- theories of physical phenomena. *Michelson, V. A.* Rs. Ps.-C. S. J. 23 (Ps.) (1891) 415-; J. de Pa. 1 (1892) 404.
- Model for demonstration of application of Lagrange's equations to heat and electricity. *Boltzmann, L.* D. Mth. Vr. Jbr. 1 (1892) 53-.
- of Hess's pendulum. *Žukovskij, N. E.* Mosc. S. Sc. Bil. 96 (No. 1) (1899) 3-; Fsch. Mth. (1899) 655-.
- to illustrate Hertz's equations, failure. *Boltzmann, L.* [1898] D. Mth. Vr. Jbr. 7 (1899) (Heft 1) 76-.
- of 2 jointed rods, illustrating Hertz's theories. *Boltzmann, L.* D. Nf. Vh. (1898) (Th. 2, Hälfte 1) 67.
- — — — — (Boltzmann). *Brill, A. D.* Mth. Vr. Jbr. 8 (1900) (Heft 1) 200-.
- Models for illustrating laws of mechanics. *Fischer, K.* D. Nf. Vh. (1899) (Th. 2, Hälfte 1) 289-.
- , physico-geometrical. *Herschel, A. S. L.* Ps. S. P. 10 (1890) 102-.
- , small, for study of stability of ships. *Lehaive, J. C. R.* 122 (1896) 704-.
- Motion producing effect of weight, lecture experiment. *Reichel, O.* Berl. Ps. Gs. Vh. (1890) 124-.
- Similar systems, performance. *Moon, W.* Tel. J. 27 (1890) 419-.
- Similitude in mechanics. *Delanges, P.* Bologna Mm. I. It. 2 (1810) (pte. 2) 251-.
- — — — — *Estocquois, Th. d'.* [1856] (xii) Doubs S. Mm. 8 (1857) 74-.
- — — — —, influence of scale on characteristics of machines. *Carvalho, E. J. de Ps.* 1 (1892) 209-.
- — — — —, law. *Breton, P.* Les Mondes 18 (1868) 728-.
- — — — —, and motion of solid of revolution. *Tilly, J. M. de.* Brux. Ac. Bil. 37 (1874) 815-.
- — — — —, physics, laws. *Vaschy, —.* A. Tél. [19] (1892) 25-.
- Transformation of motion. *Dautheville, —.* Par. Éc. Norm. A. 7 (1890) 361-.
- — — — —, *Appell, P.* Crelle J. Mth. 110 (1892) 37-.
- — — — —, *Stäckel, P.* Gött. Nr. (1898) 157-.
- Vibration of fluids or solids, Savart's law, demonstration. *Cauchy, A. L.* [1829] Par. Mm. Ac. Sc. 9 (1830) 117.

2050 Cyclical systems; self-equivalence.

- Concealed motion and elimination of coordinates. *Koenigsberger, L.* Berl. Ak. Sb. (1897) 158-.

- Kinetic energy not integrating divisor of energy absorbed, cases. *Boltzmann, L.* Wien Ak. Sb. 92 (1886) (Ab. 2) 853-.
- Monocyclic and similar systems, properties. *Boltzmann, L.* [1884] Wien Ak. Sb. 90 (1885) (Ab. 2) 231-; *Crelle J. Mth.* 98 (1885) 68-.
- systems, Helmholtz's theorem, new proof. *Boltzmann, L.* Gött. Nr. (1886) 209-.
- , statics. *Helmholtz, H. von.* Berl. Ak. Sb. (1884) 159-, 311-, 755-, 1197-; *Crelle J. Mth.* 97 (1884) 111-, 317-.
- Motion of system with internal variable motions. *Volterra, V.* Rm. R. Ac. Linc. Rd. 4 (1895) (Sem. 2) 107-.
- Rotation of body containing cyclic systems. *Volterra, V.* Rm. R. Ac. Linc. Rd. 4 (1895) (Sem. 2) 93-, 350.
- — — polycyclic systems. *Volterra, V.* A. Mt. 24 (1896) 29-.
- Variations of latitude. *Volterra, V.* Acta Mth. 22 (1899) 201-.

2060 Properties of the integrals, reciprocal relations, periodic solutions.

- Application of theory of complex variable. *Stankevič, I. V.* Rec. Mth. (Moscou) 19 (1897) 586 (bis)-.
- Bertrand's relations generalised. *Brioschi, F.* Tortolini A. 4 (1853) 395-.
- Determinantal invariant. *Bryan, G. H. L.* Ps. S. P. 13 (1895) 481-; *Ph. Mg.* 39 (1895) 531-.
- Dynamical law of Poincaré. *Boltzmann, L.* Wien Ak. Sb. 106 (1897) (Ab. 2a) 12-.
- Equations integrable by complex quantities. *Nekrasov, P. A.* Rec. Mth. (Moscou) 18 (1896) 728-; *Fschr. Mth.* (1896) 271, 272-, 609-.
- Force function in 3 variables admitting quadratic integral. *Levi-Civita, —.* C. R. 124 (1897) 1434-.
- Integral, first, of equations with two variables and homogeneous potential function, property. *Ebert, W., & Perchot, J.* C. R. 127 (1898) 657-.
- Integrals. *Painlevé, P.* C. R. 114 (1892) 1168-.
- , algebraic. *Koenigs, G.* C. R. 103 (1886) 460-.
- , —. *Levi-Civita, T.* Tor. Ac. Sc. At. 31 (1895) 484- or 816-.
- of general équations. *Ostrogradsky, M. A.* [1848] St. Pét. Ac. Sc. Bll. 8 (1850) 33-.
- linear in respect to velocity, property. *Cerruti, V.* Rm. R. Ac. Linc. Rd. 4 (1895) (Sem. 1) 283-.
- , quadratic. *Pirro, G. di.* C. R. 123 (1896) 1054-.
- , —. *Levi-Civita, —.* C. R. 124 (1897) 392-.
- , — (Levi-Civita). *Appell, —.* C. R. 124 (1897) 395.
- , skew symmetric, property. *Brioschi, F.* Tortolini A. 6 (1855) 430-.

- Motions and real trajectories of systems. *Painlevé, P.* Par. S. Mth. Bll. 22 (1894) 136-.
- Periodic motions, asymptotic, existence in Hess's example. *Mlodzhevskij, B. K., & Nekrasov, P. A.* Mosc. S. Sc. Bll. 83 (No. 1) (1893) 43-; *Fschr. Mth.* (1893-94) 1439.
- orbits. *Darwin, G. H.* Acta Mth. 21 (1897) 99-.
- solutions in case of problem of 3 bodies. *Perchot, J., & Mascart, J.* C. R. 120 (1895) 906-.
- and least action. *Poincaré, H.* C. R. 123 (1896) 915-; 124 (1897) 713-.
- of problem of motion of heavy body suspended at point. *Koenigs, G.* C. R. 122 (1896) 1048-.
- — — rotation of solid about fixed point. *Kobb, G.* Toul. Fac. Sc. A. 1 (1899) 5-.
- Poisson's theorem. *Marcolongo, R.* Nap. Rd. 27 (1888) 419-.
- on constancy of functions of differential coefficients of two integrals with respect to coordinates. *Laurent, H.* Liouv. J. Mth. 17 (1872) 422-.
- , integrals of system of particles. *Liouville, J.* Liouv. J. Mth. 5 (1840) 351-.
- Reciprocal theorems. *Lamb, H. L.* Mth. S. P. 19 (1889) 144-.
- Tautochrone problem, reduction to integration of partial differential equation of 1st order and 2nd degree. *Koenigs, G.* C. R. 116 (1893) 966-.
- Trajectories in dynamics, properties. *Hadamard, —.* Liouv. J. Mth. 3 (1897) 331-.
- Transformation of $\frac{1}{2} \sum_{rs} a_{rs} \frac{dV}{dx_r} \frac{dV}{dx_s}$; reciprocity law. *Beltrami, E.* [1866] G. Mt. 5 (1867) 24-.

2070 Methods for the actual determination of exact integrals.

- Connected particles, system under forces with potential. *Morera, G.* Mil. I. Lomb. Rd. 15 (1882) 537-.
- Dynamical problems, class, and geodesic lines. *Staeckel, P.* C. R. 116 (1893) 485-.
- which reduce to quadratures. *Staeckel, P.* C. R. 116 (1893) 1284-.
- Equations, finite, of permanent motion of system. *Formenti, C.* G. Mt. 15 (1877) 268-.
- First integrals of equations of motion. *Pennacchietti, G.* Catania Ac. Gioen. At. 3 (1891) 67-.
- Forces functions of coordinates only, case admitting of quadratures. *Jacobi, C. G. J.* [1842-43] C. R. 15 (1842) 202-; *St. Pét. Ac. Sc. Bll.* 3 (1845) 33-.
- Hamilton's equations, reduction to $2n-2$ canonical equations and quadrature. *Siacci, F.* Tor. Ac. Sc. At. 15 (1879) 809.

- Integrable case of equations of motion of system of particles. *Richelot, F. J.* [1849] *Crelle J.* 40 (1850) 178-.
- cases of equations of motion of particle. *Liouville, J.* *Liouv. J. Mth.* 11 (1846) 345-; 12 (1847) 410-.
- — — — — (Liouville). *Bertrand, J.* *Liouv. J. Mth.* 11 (1846) 379-.
- — — — — point in plane. *Elliot, —. C.* R. 116 (1893) 1117-; *Par. Éc. Norm. A.* 11 (1894) 9-.
- Integral more general than that of *vis viva* for system of material points. *Pennacchiotti, G.* *Mil. I. Lomb. Rd.* 18 (1885) 242-, 269-.
- Integrals of 2nd degree in mechanical problems. *Liouville, R.* *C. R.* 113 (1891) 838-.
- equations of motion of particle, that are linear fractional functions of velocities. *Vivanti, G.* *Palermo Cir. Mt. Rd.* 6 (1892) 127-.
- — — — —, simplest forms. *Bertrand, J.* *Liouv. J. Mth.* 2 (1857) 113-.
- — — — — in plane, use of curvilinear coordinates. *Joukovsky, N. E.* *Liouv. J. Mth.* 4 (1878) 425-.
- Integration. *Bertrand, J.* *C. R.* 35 (1852) 698-; *Liouv. J. Mth.* 17 (1852) 393-.
- *Bour, E.* *C. R.* 40 (1855) 524-; *Par. Mm. Sav. Étr.* 14 (1856) 792-.
- (Bour). *Liouville, J.* *Liouv. J. Mth.* 20 (1855) 135-.
- *Massieu, —.* *C. R.* 49 (1859) 352-.
- *Graindorge, J.* *Liège S. Sc. Mm.* 16 (1890) No. 1, 290 pp.
- of equations of motion of particle under potential forces. *Liouville, J.* *Con. des Temps* (1849) 255-.
- — — — — system of particles. *Liouville, J.* *Liouv. J. Mth.* 14 (1849) 257-.
- — — — —. *Bervi, N. V.* *Mosc. S. Sc. Bil.* 91 (No. 2) (1895) 32-; *Fschr. Mth.* (1895) 827-.
- Problem of analysis relating to equations of dynamics. *Liouville, R.* *C. R.* 115 (1892) 403-, 468.
- Quadratic first integrals. *Pirro, G. di.* *A. Mt.* 24 (1896) 315-.
- integrals. *Staeckel, P.* *A. Mt.* 25 (1897) 55-.
- of Lagrange's equations. *Painlevé, P.* *C. R.* 124 (1897) 221-; 125 (1897) 156.
- Variation of constants. *Poisson, S. D.* [1808] *Par. Éc. Pol. J.* 15^e cah. (1809) 266-.
- — — — —. *Ostrogradsky, M. A.* [1829] *St. Pét. Ac. Sc. Mm.* 1 (1831) 111-.
- — — — —. *Cauchy, A. L.* *Liouv. J. Mth.* 2 (1837) 406-.
- — — — —. *Binet, J. P. M.* *Par. Éc. Pol. J.* 28^e cah. (1841) 1-.
- — — — —. *Ostrogradsky, M. A.* [1847] *St. Pét. Ac. Sc. Bil.* 7 (1849) 113-.

2080 Approximate methods.

- Lindstedt's series for solution of $\frac{d^2\rho}{dx^2} + n^2\rho = \mu\phi(\rho, x)$. *Poincaré, J. H.* *C. R.* 108 (1889) 21-.

- Mechanical integration applied to problem of 3 bodies. *Strömgen, E.* *Stockh. Öfv.* (1900) 443-.
- Periodic orbits. *Darwin, G. H.* *Acta Mth.* 21 (1897) 99-.

2090 Oscillations and initial motions about a state of equilibrium.

- Harmonically vibrating particle, kinetic energy. *Herschkwitz, J. H.* *Mth. Gz.* 1 (1900) 108-.
- Instability of equilibrium in certain cases where force-function is not a maximum. *Liapounoff, A.* *Liouv. J. Mth.* 3 (1897) 81-.
- Lagrange's "Mecanique Analytique," correction. *A., H. J.* *Silliman J.* 11 (1826) 398-.
- Logarithmic decrement, correction formula. *Braun, W.* *Z. Mth. Ps.* 25 (1880) 342-.

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- conditionally periodic. *Staudé, O.* *Dorpat Sb.* 8 (1889) 249-.
- and periodic. *Staudé, O.* *Dorpat Sb.* 8 (1889) 155-.
- damped, reduced equations for calculation. *Curie, P.* *Lum. Élect.* 41 (1891) 201-, 270-, 307-, 356-.
- harmonic, graphic compounding. *Bazzi, E.* *N. Cim.* 22 (1887) 150-.
- infinitely small, of homogeneous bodies, especially plane waves, discovery of integrals representing. *Cauchy, A. L.* *C. R.* 29 (1849) 606-.
- periodic, systems with, theorem. *Ronkar, E.* *Bru. Ac. Bil.* 8 (1884) 121-.
- near position of unstable equilibrium. *Kneser, A.* *Crelle J. Mth.* 115 (1895) 303-; 118 (1897) 186-; *Dorpat Sb.* 11 (1896) 153-.
- — — — —. *Karstens, H.* [1898] *Dorpat Sb.* 12 (1901) 66-.
- rolling, fallacy concerning; small rolling oscillations about equilibrium. *Korteweg, D. J.* *N. Arch. Wisk.* 4 (1899) 130-.
- small, for one degree of freedom. *Elliot, E. B.* *Mess. Mth.* 15 (1886) 38-.
- , of material system in stable equilibrium. *Lucas, F.* *C. R.* 78 (1874) 1636-.
- , periodic, of systems. *Painlevé, P.* *C. R.* 124 (1897) 1222-.
- , —, — of long period. *Painlevé, P.* *C. R.* 124 (1897) 1340-.
- systematic, of suspended bodies. *Lagrange, O.* [1894] *Ciel et Terre* 15 (1894-95) 329-, 392.

- Oscillating constrained system, period-equation. *Nanson, E. J.* *Mess. Mth.* 26 (1897) 59-.
- system with synchronous pendular constraint, stability of motion. *Cornu, A.* *Par. S. Ps. Sé.* (1887) 142-.

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- of astatic systems. *Cassiani*, —. *At. Sc. It.* (1843) 468-.
- calculation of mean point. *Kurz*, *A.* *Exner Rpm.* 20 (1884) 165-.
- circular, of particle on surface of revolution. *Foucault*, [*J. B.*] *L. C. R.* 61 (1865) 515-.
- of cylinder with eccentric centre of gravity. *Bender*, *C.* *Arch. Mth. Ps.* 60 (1877) 113-.
- damped slightly, synchronisation. *Cornu*, *A.* *Par. S. Ps. Sé.* (1887) 150-.
- forced and free, demonstration of Daniel Bernoulli. *Jonquière*s, *J. P. E. de F. de C. R.* 103 (1886) 617-.
- harmonic, reaction of system executing, and applications to electricity. *Rayleigh*, (*Lord*). *Ph. Mg.* 21 (1886) 369-.
- of heavy string. *Routh*, *E. J.* *Mess. Mth.* 1 (1872) 51-.
- infinitely small, of material systems. *Jordan*, *C. C. R.* 74 (1872) 1395-.
- paradoxical case. *Stokes*, *G. G.* *Mess. Mth.* 1 (1872) 1-.
- (Stokes). *Ferrers*, *N. M.* *Mess. Mth.* 1 (1872) 21.
- rectilinear, of particle, theory. *Plana*, *G.* [1833] *Quetelet Cor. Mth.* 8 (1834) 18-.
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- , to any degree of approximation. *Routh*, *E. J.* (*xv*) *L. Mth. S. P.* 5 (1873-74) 101-.
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- — — — — *Charpentier, L.* Les Mondes 37 (1875) 576-.
- — — — — *Romilly, F. de.* C. R. 80 (1875) 189-, 954-; J. de Ps. 4 (1875) 267-, 334-.
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- , *Richelmy, P.* [1866] Tor. Mm. Ac. 25 (1871) 31-.
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- Ascending jets. *Cappa, S.* Tor. Ac. Sc. Mm. 41 (1891) 77-.
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- , *Nystrom, J. W.* Franklin I. J. 44 (1862) 391-.
- , *Résal, H.* A. Mines 1 (1862) 575-, 606-.
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- , efficiency. *Ledieu, A. C. H.* C. R. 81 (1875) 711-, 773-, 1023-.
- , experiments. *Villiers, —.* [1859] Par. Bll. S. Encour. 60 (1861) 335-.
- , —, *Deloy, —.* A. Mines 17 (1860) 301-.
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 [Darré de] *Saint-Venant, — & Wantzel, L.* C. R. 21 (1845) 366-.
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Harding, W. (vi Adds.) CE. I. P. 6 (1847) 392-.
Blake, E. W. Silliman J. 5 (1848) 78-.
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Rankine, W. J. M. [1869] Les Mondes 22 (1870) 90-, 391-; 23 (1870) 158-; Civing. 16 (1870) 35-.
Zeuner, G. Civing. 17 (1871) 71-.
Schmidt, G. Civing. 17 (1871) 375-.
Fliegner, A. [1873] (ix) Civing. 20 (1874) 13-.
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 — conjugate. *Neyreneuf, F. V.* (xii) Caen Ac. Mm. (1883) 17-.
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 — — — — walls. *Poncelet, J. V. C. R.* 21 (1845) 178-.
 — — — —. *Dupré, A. C. R.* 58 (1864) 1004-.
 — — — —. *Fliegner, A.* Civing. 24 (1878) 401-.
 — — — — and from ajutages. *Aubuisson de Voisins, J. F. d'.* Par. S. Phlm. N. Bll. (1826) 130-.
 — — — — — — — —. *Buff, H.* [1836] Gött. Vr. Stud. 4 (1841) 23-.
 — — — — — — — —, resistance. *Buff, H.* Pogg. A. 40 (1837) 14-.
 — — — — — — — — through pipes. *Majocchi, G. A.* (vi Adds.) *Majocchi A. Fis. C.* 24 (1846) 36-.
 — — — — — — — — at various pressures. *Lagerhjelm, P. J. Gén. Civ.* 3 (1829) 167-.
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 — — — —. *Parenty, H. C. R.* 113 (1891) 184-.
 — — — —, and steady motion within tubes. *Favero, G. B.* Rm. R. Ac. Linc. Mm. 1 (1894) 611-.
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 — — — — (Illeck). *Herrmann, E.* Civing. 23 (1877) 571-.
 — — — —. *Emden, R.* A. Ps. C. 69 (1899) 264-, 426-.
 — — — — motion. *Hugoniot, —.* A. C. 9 (1886) 375-.
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 — — — —. *Hood, C.* (vi Adds.) CE. I. P. 1 (1840) 87-.
 — — — —. *Froude, W.* (vi Adds.) CE. I. P. 6 (1847) 356-.
 — — — — high pressures. *Koch, F. K. L.* Gött. Stud. Vr. 1 (1824) 1-.
 — — — — (Koch). *Schmidt, G. G.* Pogg. A. 2 (1824) 39-.
 — — — —. *Weisbach, J.* Civing. 12 (1866) 1-, 77-.
 — — — —. *Zeuner, G. A.* [1871] (xi) Civing. 20 (1874) 1-.
 — — — —. *Salcher, P., & Whitehead, J.* [1888-90] Wien Az. 25 (1889) 165-; Wien Ak. Sb. 98 (1890) (Ab. 2a) 267-.
 — — — —, in diverging streams. *Hopkins, T.* [1823] Manch. Ph. S. Mm. 5 (1831) 208-.
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Potts, C. Franklin I. J. 4 (1829) 280-.
Donkin, B. CE. I. T. 1 (1836) 215-.
Gordon, L. Glasg. Ph. S. P. 1 (1841-44) 258-.
Leslie, J. (vi Add.) CE. I. P. 14 (1854-55) 273-; (iii) Franklin I. J. 29 (1855) 335-.
Gaukler, P. H. C. R. 64 (1867) 818-.
Clerk, H. B. A. Rp. (1869) (Sect.) 209.
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 — of jets. *Magnus*, G. Berl. B. (1855) 117-; *Pogg.* A. 95 (1855) 1-; 106 (1859) 1-.
 — — —, *Buff*, H. *Pogg.* A. 100 (1857) 168-.
 height of jet, in relation to head and diameter of orifice. *Razzaboni*, C. Bologna Ac. Sc. Mm. 3 (1892) 189-.
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 — — — (Baumgartner). *Meyer*, O. E. A. Ps. C. 153 (1874) 619-.
 from nozzles. *Napier*, R. D. V. Nost. Eng. Mg. 15 (1876) 240-.
 — — with converging entrance and diverging outlet, at various velocities, frictional resistance. *Brownlee*, J. Glasg. I. Eng. T. 19 (1876) 81-.
 orifices in bottom and sides of vessels. *Stratico*, S. Mil. Mm. I. Lomb. Ven. 2 (1814-15) 91-.
 — — of vessel. *Bonati*, T. Verona Mm. S. It. 5 (1790) 501-.
 — near bottom of vessel, velocity assumed by various elements. *Flamant*, A., & *Saint-Venant*, B. de. C. R. 97 (1833) 1027-, 1105-.
 — circular, form of jet. *Savart*, F. A. C. 53 (1833) 337-.
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 — in hemispherical bottom of open topped cylindrical vessel, influence of temperature. *Isherwood*, B. F. Franklin I. J. 75 (1878) 339-.
 — lateral. *Krebs*, G. Carl Rpm. 16 (1880) 131-.
 — —, pressure in and near orifice. *Napier*, R. D. Glasg. I. Eng. T. 22 (1879) 159-.
 — neighbouring. *Aubuisson de Voisins*, J. F. d'. Toul. Mm. Ac. 6 (1843) 112-.
 — open at top. *Lafont*, — de. Par. A. Pon. Chauss. 1 (1861) 225-.
 — in pierced plate. *Briggs*, R. [1876-77] Franklin I. J. 73 (1877) 123-; 74 (1877) 347-.
 — rectangular. *Aubuisson de Voisins*, J. F. d'. A. C. 44 (1830) 225-; Franklin I. J. 20 (1850) 1-, 73-; *Crelle* J. Bauk. 17 (1842) 289-.
 — —, with bilateral contraction. *Deschwenden*, J. W. von. Zür. Mt. 2 (1850-52) 483-; 3 (1853-55) 1-, 218-.
 — —, vertical. *Niemann*, —. Z. Bauw. 19 (1869) 395-.
 — —, —, experiments. *Poncelet*, —, & *Lesbros*, —, [1829] Par. Mm. Sav. Étr. 3 (1832) 242-.
 — —, —, —, *Lesbros*, —. Par. Mm. Sav. Étr. 13 (1852) 1-; C. R. 31 (1850) 86-.
 — —, —, open at top. *Eytelwein*, J. A. Berl. Ab. (1830) 129-.
 — —, —, in thin wall. *Minard*, C. J., & *Tourneux*, —. Par. A. Pon. Chauss. 3 (1832) 405-.
 — small. *Avanzini*, G. Mil. Mm. I. Lomb. Ven. 3 (1816-17) 203-.
 — —. *Betti*, E. Tortolini A. 1 (1850) 425-.
 — —, at bottom of vessel. *Parrot*, G. F. *Pogg.* A. 66 (1845) 389-.
 — —, and laws of impact. *Shellbach*, C. H. *Crelle* J. 45 (1853) 268-.
 — in thin wall. *Boussinesq*, J. C. R. 70 (1870) 33-, 177-, 1279-.
 — — —. *Phillips*, É. C. R. 75 (1872) 1733-.
 — — — and from ajutages. *Feilitzsch*, F. C. O. von. *Pogg.* A. 63 (1844) 1-, 173-, 216-.
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- in vertical plane. *Meissel*, *E.* Pogg. A. 95 (1855) 276-.
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- non-circular. *Strickland*, *T. P.*, & *Farmer*, *J. T.* Cn. R. S. P. & T. 4 (1898) (Sect. 3) 59-.
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- sharp-edged, and impact of jet on vanes. *Farmer*, *J. T.* Cn. R. S. P. & T. 2 (1896) (Sect. 3) 45-.
- with short pipe. *Frizell*, *J. P.* Franklin I. J. 122 (1886) 287-.
- slit-shaped, theoretical determination. *Kötter*, *F.* Berl. Ps. Gs. Vh. (1887) 40-.
- especially superheated liquids at high pressures. *Nicoli*, *N.* Rm. R. Ac. Linc. Mm. 2 (1895) 108-.
- in thin wall. *Boussinesq*, *J. J.* de Ps. 1 (1892) 265-.
- — —, approximate calculation. *Boussinesq*, *J. C. R.* 114 (1892) 704-.
- — —, experiments. *Vautier*, *T. J.* de Ps. 8 (1889) 301-, 396-.
- — —, stream lines. *Tumlirz*, *O.* Wien Ak. Sb. 105 (1896) (Ab. 2a) 1024-.
- transition to flow over sill. *Hégly*, —. C. R. 122 (1896) 916-.
- velocity of molecules nearest orifice. *Niccolo*, *G.*, & *Pacinotti*, *L.* (vi *Adds.*) II Cim. 4 (1846) 377-.
- in vessels filled partly with fluid, partly with air and closed at top. *Schäwen*, *P. von.* Carl Rpm. 18 (1882) 141-.
- of any form. *Prüll*, *R.* Civing. 20 (1874) 279-.
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- — —. *Rausenberger*, *O.* [1896] D. Mth. Vr. Jbr. 5 (1901) (Heft 1) 93-.
- Discontinuous fluid motion. *Helmholtz*, *H.* Berl. Mb. (1868) 215-.
- — —. *Oberbeck*, *A.* A. Ps. C. 2 (1877) 1-.
- — —. *Basset*, *A. B.* [1894] Nt. 51 (1894-95) 11.
- — — in 2 dimensions, theory. *Love*, *A. E. H.* Camb. Ph. S. P. 7 (1892) 175-.
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- Dynamics of gases, new experiment. *Parize*, —. Finist. S. Sc. Bl. 7 (Fasc. 1) (1885) 74-.
- Efflux and influx of gases. *Bauschinger*, *J.* Schölmilch Z. 8 (1863) 81-, 153-.
- — — liquid, reaction. *Zhukovskii*, *N. E.* (xn) Rs. Ps.-C. S. J. 14 (Ps.) (1882) [(Pt. 1)] 470-; Rec. Mth. (Moscou) 12 (1885) 787-; Fschr. Ps. (1886) (Ab. 1) 341-.
- , particular case. *Plateau*, *J. A. F.* Brux. Ac. Bil. 3 (1836) 145-.
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- Experiments on jets. *Smith*, *F. H.* Am. J. Sc. 45 (1868) 419-.
- — — and induced currents. *Morton*, *A.* [1874] Glasg. Ph. S. P. 9 (1875) 179-.
- — — of steam. *Rosenhain*, *W.* I. CE. P. 140 (1900) 199-.
- — — — — at East Holywell Colliery. *Taylor*, *T. J.* N. Eng. I. Mn. E. T. 1 (1852-53) 208-.
- Figures produced by fall of water-drop with red lead in suspension. *Decharme*, *C. C. R.* 93 (1881) 408-.
- Form of free surface. *Raillet*, —. C. R. 61 (1865) 446-.
- — — — — in pipes with constant flow. *Colding*, *L. A.* Kjöb. Dn. Vd. Selsk. Skr. 6 (1867) 1-.
- — — — — prismatic pipe. *Colding*, *L. A.* Kjöb. Ov. (1861) 159-.
- — — surface of fluid flowing from vessel through central orifice. *Riccati*, *G.* Verona S. It. Mm. 3 (1786) 238-.
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- Friction in free surfaces of fluids. *Oberbeck*, *A. A.* Ps. C. 11 (1880) 634-.
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- Lagrange*, *J. L. de.* Turin Mm. Ac. 1 (1784-85) 95-.
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- Avanzini*, *G.* [1815] Mod. Mm. S. It. 18 (1818) 19-.
- Taurinus*, *F. A.* Oken Isis 23 (1830) 546-.
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- Buff*, *H.* A. Ps. C. 137 (1869) 497-.
- of air, combination with atmospheric pressure. *Hachette*, *J. N. P.* A. C. 35 (1827) 34-.
- — — — —. *Quetelet*, *L. A. J.* Quetelet Cor. Mth. 3 (1827) 92-.
- — — on cylinders and plates, optical investigation. *Mach*, *E.*, & *Salcher*, *P.* Wien Ak. Sb. 93 (1890) (Ab. 2a) 1303-.
- — —, optical investigation. *Mach*, *L.* Wien Ak. Sb. 106 (1897) (Ab. 2a) 1025-.
- continuous, on plane surfaces. *Lorgna*, *A. M.* Verona S. It. Mm. 4 (1788) 418-.

- on curved vanes. *Church, I. P.* [1879] *V. Nost. Eng. Mg.* 22 (1880) 210-.
- determination by water wheel. *Nordmark, Z.* *Stockh. Ak. Hndl.* 34 (1813) 1-.
- of isolated jets, etc. *Arzberger, J.* *Gilbert A.* 44 (1813) 430-.
- — — of air and water, experiments. *Weisbach, J.* *Civing.* 8 (1862) 1-.
- — — — — of Weisbach. *Zeuner, G.* *Civing.* 1 (1854) 1-.
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- Laws. *Navier, C. L. M. H. A. C.* 19 (1821) 244-; Par. S. Phlm. Bil. (1825) 49-.
- Measurement of wake currents. *Calvert, G. A.* Nv. Archt. T. 34 (1893) 61-.
- Mobility of heterogeneous fluids. *Albini, G.* Nap. Rd. 29 (1890) 24-.
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- Motion caused by rotating cylinder. *Edwardes, D.* QJ. Mth. 26 (1893) 157-.
- — — ellipsoid. *Edwardes, D.* QJ. Mth. 26 (1893) 70-.
- of different points of ductile cylindrical block flowing under strong pressure from circular orifice. *Saint-Venant, B. de.* C. R. 66 (1868) 1311-.
- Motion of different points of ductile solid or of liquid during flow from orifice. *Saint-Venant, B. de.* C. R. 67 (1868) 131-, 203-, 278-; 68 (1869) 221-, 290-.
- — — fat globules in centrifugal separation of milk. *Fleischmann, W.* Lndw. V.-St. 39 (1891) 31-.
- — — fluid between 2 eccentric cylinders. *Žukovskij, N. E.* Kharkov Mth. S. Com. (1887) 31-; Fschr. Ps. (1887) (Ab. 1) 387-.
- — — in spherical vessel. *Lamb, H. L.* Mth. S. P. 16 (1884-85) 27-.
- — — heterogeneous liquid with given boundary motion. *Kelvin, (Lord).* Edimb. R. S. P. 21 (1897) 119-.
- — — incompressible fluid. *Forsyth, A. R.* Mess. Mth. 9 (1880) 134-.
- — — — — *Whitehead, A. N.* QJ. Mth. 23 (1889) 78-.
- — — — — *Brill, J.* Mess. Mth. 27 (1898) 147-.
- — — — — case. *Steklov, V. A.* Kharkov Mth. S. Com. 5 (1896?) 101-; Fschr. Mth. (1895) 877-.
- — — — — energy integral. *Brill, J. L.* Mth. S. P. 26 (1895) 474-.
- — — — — thin film of fluid. *Hele-Shaw, H. S.* B. A. Rp. (1898) 136-.
- — — — — *Stokes, (Sir) G. G. B. A.* Rp. (1898) 143-.
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- — — spirit level. *Liagre, J.* Brux. Ac. Bil. 11 (1844) (pte. 2) 274-.
- Oscillatory motion of water in 2 prismatic vessels communicating by means of a third. *Razzaboni, C.* Bologna Ac. Sc. Mm. 5 (1883) 387-.
- Phenomena. *Thayer, E. F.* Pogg. A. 31 (1834) 37-.
- — — *Marangoni, C.* (xii) Rv. Sc.-Ind. 11 (1879) 144-, 188-.
- Rate of flow of various liquids through siphons. *Galletly, J. C. N.* 11 (1865) 150-.
- Rotation of homogeneous liquid. *Tumlirz, O.* Wien Ak. Sb. 85 (1882) (Ab. 2) 105-.
- Semi-fluids, statics and mechanics. *Delanges, P.* Verona S. It. Mm. 4 (1788) 329-.
- Slipping of peat bogs in Ireland due to hydrostatic pressure. *Watts, W.* [1897] Manch. Gl. S. T. 25 (1898) 165-.
- Stationary fluid-motions. *Oberbeck, A.* Crelle J. Mth. 81 (1876) 62-.
- Stream-lines in fluids. *Bezold, W. von.* Münch. Ak. Sb. 14 (1885) 611-; A. Ps. C. 26 (1885) 407-.
- Theorem, and application. *Lorentz, H. A.* Amst. Ak. Vs. 5 (1897) 168-; Fschr. Ps. (1896) (Ab. 1) 307-.
- Tides of spheroid. *Darwin, G. H.* [1878] Phil. Trans. 170 (1879) 539-.
- Uniform motion. *Moseley, H.* Ph. Mg. 37 (1869) 370-.
- Varying motion, cases. *Stearn, H. T.* QJ. Mth. 17 (1881) 90-.
- — — transversal components. *Boussinesq, V. J. C. R.* 124 (1897) 1411-, 1492-.

- Viscosity of insulating liquids in electric field. *Quincke, G. A. Ps. C. 62* (1897) 1-.
- — — — — (Quincke). *Schaufel-berger, W. A. Ps. C. 65* (1898) 635-.
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- — — — — incompressible fluids. *Fabri, C. Bologna Ac. Sc. Mm. 4* (1894) 383-.
- Waves. *Basset, A. B. B. A. Rp.* (1888) 563-.
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- Steklov, V. A. Kharkov Mth. S. Com. 3* (1893) 263-.
- Air damping, dependence on temperature fluctuations. *Braun, W. Exner Rpm. 20* (1884) 821-.
- Apparatus for separating coarse and fine particles. *Schreiber, F. Karsten Arch. 14* (1840) 123-.
- washing minerals. *Badoureau, A. A. Mines 7* (1885) 521-.
- Ascent of hollow glass bulbs in liquids. *Mills, E. J. L. Ps. S. P. 4* (1881) 265-; *Ph. Mg. 12* (1881) 27-.
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- Dynamical actions in fluids, and between fluids and solids. *Saint-Venant, — de. C. R. 103* (1886) 179-.
- Flow of incompressible fluid past solid. *Craig, T. Am. J. Mth. 3* (1880) 269-; *Ph. Mg. 10* (1880) 342-.
- solids under great pressures, Tresca's investigations. *Marshall, W. P.* [1884] *Midl. Ntlst. 10* (1887) 137-.
- Friction of disks revolving in water. *Thomson, J.* [1855] (vi *Adds.*) *R. S. P. 7* (1856) 509-.
- — rotated in fluid, experiments. *Unwin, W. C. I. CE. P. 80* (1885) 221-.
- solids on liquids. *Kuziminskij, P. D. Rs. Ps.-C. S. J. 23* (Ps.) (1891) 437-.
- Frictional resistance of water on surface, experiments. *Froude, W. B. A. Rp.* (1874) 249-.
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- Immersion of small spherical ball in jet of high-pressure steam. *M., R.* (vi *Adds.*) *Ph. Mg. 22* (1843) 267-.
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- Motion of air round rotating cylinder. *Freund, G. A. Pogg. A. 18* (1863) 1-.
- earth and the ether. *Lorentz, H. A. Amst. Ak. Vs. [1]* (1893) 74-.
- molecules of water in contact with rotating plane. *Behrens, G. B. Gilbert A. 23* (1806) 232-.
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- —, effect of internal friction of fluids. *Stokes, G. G.* [1850] *Camb. Ph. S. T. 9* (1856) [8]-.
- Oscillation of circular plate in resisting fluid. *Braun, W.* [1883] *Exner Rpm. 20* (*1884) 771-.
- Oscillations of spheroid in viscous liquid. *Buchanan, J. L. Mth. S. P. 22* (1891) 181-.
- Pendular motion of sphere under influence of viscosity of surrounding medium. *Meyer, O. E.* [1870] *Crelle J. 73* (1871) 31-.
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- —, methods. *Curioni, G. Tor. Ac. Sc. At. 9* (1874) 616-.

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- Avanzini, F. Bologna Mm. I. It. 1* (1806) 199-; 2 (1810) 185-.
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- Juan, G.* (viii) *Pp. Nv. Archt. 1* (1827) 30-.
- Bossut, (l'abbé) —.* (vii) *Pp. Nv. Archt. 1* (1827) 167-, 342-.
- Walker, Jas.* [1827] *Phil. Trans.* (1828) 15-.
- Wilson, J.* (viii) *Pp. Nv. Archt. 1* (1827) 414-; 2 (1829) 186-.
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- Gibbes, L. R. Silliman J. 27* (1835) 135-.
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- Bertrand, J. J. Sav.* (1852) 401-.
- Hoppe, R. Pogg. A. 93* (1854) 321-.
- Dupré, A. C. R. 58* (1864) 1150-.
- Joule, J. P. Manch. Lt. Ph. S. P. 7* (1868) 223-.
- Walton, W.* [1868] *QJ. Mth. 10* (1870) 122-.
- Perrigault, —.* *Les Mondes 23* (1870) 440-.
- Potter, R.* [1870] *Camb. Ph. S. P. 2* (1876) 160-.
- Zuschlag, C. Cuyper Rv. Un. 31* (1872) 361-.
- Rayleigh, (Lord). Ph. Mg. 2* (1876) 430-.
- Pénaud, A.* [1878] *Par. S. Phlm. Bil. 3* (1879) 36-.
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- Touche, (le lt.-col.) P. E. Aér.* (1893) 54-.
- Jäger, G. Wien Ak. Sb.* 106 (1897) (*Ab. 2a*) 1118-.
- of air to pendulum. *Stamkart, F. J. Amst. Vh. 1* (1849) 217-.
- — — — — *Deforges, G. C. R.* 112 (1891) 217-.
- — — — —, determination. *Savitsch, A.* [1865] *St Pét. Ac. Sc. Bll.* 9 (1866) 477-.
- — — — — slow oscillations. *Baillé, J. B. Par. Éc. Pol. J. cah. 52* (1882) 211-; *C. R.* 96 (1883) 1493-.
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- elastic sphere. *Leray, —. Les Mondes* 23 (1870) 359-.
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- — — — — due to form and to friction of wetted surface. *Colthurst, J. (vi Add.) CE. I. P.* 23 (1863-64) 339.
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- and impact. *Fossombroni, V. Mod. S. It. Mm.* 9 (1802) 585-.
- Juan's law. *Avanzini, G. Bologna Mm. I. It. 2* (1808) (*pte. 1*) 241-; 2 (1810) (*pte. 2*) 59-, 321-.
- observations on Poncelet's theory. *Richelmy, P. Tor. Ac. Sc. At.* 13 (1877) 730-.
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- — — — — moving obliquely. *Osengui, G. At. Sc. It.* (1846) 296-.
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- of water. *Beaufoy, M. Thomson A. Ph.* 3 (1822) 276-.
- — — — — *Phipps, G. H. CE. I. P.* 23 (1863-64) 321-.
- — — — — to floating and to immersed bodies. *Brit. Ass. Comm. B. A. Rp.* 35 (1865) 56-; 36 (1866) 148-.
- — — — — — — — — — — *Rankine, W. J. M. B. A. Rp.* 36 (1866) (*Sect.*) 147-.
- — — — — — — — — — —, experiments, 1793-98. *Beaufoy, M. Thomson A. Ph.* 3 (1814) 42-.
- — — — — — — — — — —, of Beaufoy. *Precht, J. J. Wien Jb. Pol. I.* 11 (1827) 56-.
- Running water, power of holding matters in suspension. *Frizell, J. P. Franklin I. J.* 76 (1878) 177-.
- Sliding of fluid in contact with solid, electric endosmose. *Lamb, H. B. A. Rp.* (1887) 495-.
- Sphere. *Basset, A. B.* [1887] *Phil. Trans.* (A) 179 (1889) 43-.
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- Spherical and cylindrical motion. *Röhrs, J. H. (xi) L. Mth. S. P.* 5 (1873-74) 125-.
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- Stream lines due to motion of ellipsoid. *Herman, H. A. QJ. Mth.* 23 (1889) 378-.
- Subsidence of fine particles in liquids. *Barus, C. U. S. Gl. Sv. Bll. No. 36* (1886) 51 pp.; No. 60 (1890) 139-.
- Surface friction of water on cylinder. *Rawson, R. B. A. Rp.* (1849) (*pt. 2*) 3-.
- — — — — plane. *Froude, W. B. A. Rp.* 42 (1872) 118-.
- Torsional oscillations of solid. *Couette, —. C. R.* 105 (1887) 1064-.
- vibrations of sphere with air-resistance. *Lampel, A. Wien Ak. Sb.* 93 (1886) (*Ab. 2*) 291-.
- Viscous fluid motion around sphere, second approximations to. *Whitehead, A. N. QJ. Mth.* 23 (1889) 143-.

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- Graetz, L. Z. Mth. Ps.* 25 (1880) 316-, 375-.
- Greenhill, A. G.* [1881] *L. Mth. S. P.* 13 (1881-82) 43-.
- Air. *Spiller, J. Aér. S. Rp.* 6 (1871) 15-.
- *Hoffmann, P. A. Ps. C.* 21 (1884) 470-.
- , gauging of flow. *Leblanc, F. C. R.* 32 (1851) 807-.
- in long pipes. *Unwin, W. C. I. CE. P.* 63 (1881) 297-.
- Capillary siphons with electrified and with heated liquids. *Cornubiensis [Pseud.], (vi Add.) Tilloch Ph. Mg.* 42 (1813) 202-.
- Flow in capillary tubes. *Girard, P. S. Par. Mm. Ac. Sc. I* (1816) 187-, 260-.
- — — — — *Tait, P. G.* [1873] (xi) *Edinb. R. S. P.* 8 (1875) 208-.
- — — — — *Guerout, A. C. R.* 78 (1874) 351-.
- — — — — *Colson, A. C. R.* 113 (1891) 740-.
- — — — —, coefficient. *Guerout, A. C. R.* 81 (1875) 1025-; 83 (1876) 1291-.
- — — — —, influence of temperature. *Girard, P. S. Par. Mm. de l'I.* (1813-15) 249-; *Par. Mm. Ac. Sc. I* (1816) 187-, 260-.
- — — — — *Guerout, A. C. R.* 79 (1874) 1201-.
- of gases through capillary tubes at low pressures. *Rossander, G. Fschr. Ps.* (1900) (*Ab. 1*) 227.
- — — — — small orifice at different temperatures. *Timofejew, W. Z. Ps. C.* 6 (1890) 586-.

- Fluid motion, two manners of. *Reynolds, O. R. I. P.* 11 (1887) 44-.
- Friction coefficient. *Masoni, U. Nap. I. Inc. At. 10* (1897) No. 6, 8 pp.
- for riveted steel pipe. *Hawks, A. McL. Am. S. CE. T. 42* (1899) 155-.
- of steam. *Carpenter, R. C., & Sickles, E. G. Sc. Abs. 2* (1899) 638-.
- of fluids in channels or prismatic tubes. [*Barré de Saint-Venant, —. Par. S. Phlm. P.V.* (1846) 49-.
- Gases, limiting velocity. *Hugoniot, —. Par. S. Ps. Sé.* (1886) 120-.
- Incompressible fluid. *Tumlirz, O. Wien Ak. Sb. 85* (1882) (*Ab. 2*) 133-.
- Lateral pressure, alteration on sudden narrowing of tube. *Hürthle, K. Pflüg. Arch. Pl. 82* (1900) 443-.
- Length of tubes, influence on quantity of liquid traversing them in given time. *Poiseuille, J. L. M. Par. S. Phlm. P.V.* (1838) 77-.
- Mercury in capillary tubes. *Villari, E. Bologna Ac. Sc. Mm. 6* (1875) 487-.
- Motion of gases in ducts and towers. *Jurisch, K. W. S. C. In. J. 13* (1894) 513-.
- New problem. *Kobald, E. Wien Ak. Sb. 96* (1888) (*Ab. 2*) 592-.
- Stationary currents. *Helmholtz, H.* [1868] *Heidl. Vh. Nt. Md. 5* (1871) 1-.
- Uniform flow of liquid. *Moseley, H. R. S. P. 19* (1871) 286-; *Ph. Mg. 42* (1871) 184-, 349-; 44 (1872) 30-.
- motion in circular tubes, 2nd approximation. *Boussinesq, J. C. R. 123* (1896) 141-.
- Verification of Navier's equations. *Couette, —. Par. S. Ps. Sé.* (1889) 60-, 103-.
- Water in cylindrical, almost horizontal pipes. *Hagen, G. H. L. Berl. Ab. (Mth.)* (1869) (2) 1-.
- , influence of temperature on flow. *Hagen, G. H. L.* [1853-54] *Berl. Ab.* (1854) (*Mth.*) 17-.
- in straight pipe. *Rudski, M. P. Ph. Mg. 35* (1893) 499-.
- Anon.* [1886] *Wetter 3* (1887) 38-.
- Cloué, G. C. R. 104* (1887) 1586-; *A. Hydrog. 9* (1887) 173-.
- Mensbrugge, G. van der. Brux. Ac. Bll. 14* (1887) 205-.
- Riche, C. Rv. Sc. 40* (1887) 698-.
- Rottok, —. A. der Hydrog. 15* (1887) 291-.
- Kuhlmann, —. A. der Hydrog. 15* (1887) 416.
- Drigalski, E. von. A. der Hydrog. 15* (1887) 416-.
- Anon. A. der Hydrog. 15* (1887) 461-.
- Geiseler, —. A. der Hydrog. 15* (1887) 516.
- Townsend, T. F. Franklin I. J. 124* (1887) 42-.
- Labraque-Bordenave, —. Bordeaux Ac. Act. 49 & 50* (1888) 5-.
- Marshall, W. P. Midl. Ntlist. 11* (1888) 170-, 207-.
- Mensbrugge, G. van der. Brux. Ac. Bll. 15* (1888) 263-.
- Seemann, K. H. Wetter 5* (1888) 239-.
- Rimpau, W. Wetter 5* (1888) 283.
- Schmid, A. Wetter 5* (1888) 283-; 6 (1889) 24.
- Anon. A. der Hydrog. 16* (1888) 103-.
- Schienenmann, J. A. der Hydrog. 16* (1888) 281-.
- Anon. A. der Hydrog. 16* (1888) 369-.
- Barandon, —. A. der Hydrog. 16* (1888) 457.
- Schulze, —. A. der Hydrog. 16* (1888) 499.
- Pawelsz, —. A. der Hydrog. 16* (1888) 499-.
- Weinberg, J.* [1889] *Mosc. S. Nt. Bll. 2* (1889) 618-; 3 (1890) (*Prot.*) 8-.
- Anon. A. der Hydrog. 17* (1889) 86.
- Ascher, —. A. der Hydrog. 18* (1890) 81.
- Beynon, R. Nt. 41* (1890) 205-.
- Basset, A. B. Nt. 41* (1890) 297.
- Freeman, —. A. der Hydrog. 18* (1890) 116.
- Anon. A. der Hydrog. 18* (1890) 240.
- Anon. A. der Hydrog. 18* (1890) 281-.
- Kampehl, O. A. der Hydrog. 18* (1890) 330-.
- Grönn, A. A. der Hydrog. 18* (1890) 466.
- Anon. A. der Hydrog. 19* (1891) 256.
- Anon. A. der Hydrog. 19* (1891) 339.
- Deutsche Seewarte. A. der Hydrog. 19* (1891) 375-.
- Anon. A. der Hydrog. 19* (1891) 379-.
- Cuerville, J. M. A. C. de. A. Hydrog. 14* (1892) 18-.
- Klímpert, R. Wetter 9* (1892) 259-, 283-; 10 (1893) 21-, 45-, 64-, 90-.
- Anon. A. der Hydrog. 20* (1892) 65-.
- Schulz, A. A. der Hydrog. 20* (1892) 108.
- Grünewald, C. A. der Hydrog. 21* (1893) 310-.
- Deutsche Seewarte. A. der Hydrog. 22* (1894) 388-.
- Pockels, A. Nt. 50* (1894) 223-.
- Henking, —. [1895] Hann. Jbr. (1893-97) 58-.*
- Schumacher, D. A. der Hydrog. 23* (1895) 467.
- Baretge, —. C. R. 124* (1897) 253-; *As. Fr. C. R. (1897) (Pt. 1)* 183-.
- Christiansen, J. A. der Hydrog. 27* (1899) 263.
- Debrosse, E. Rv. Mar. et Col. 147* (1900) 212-, 422-.
- and experiment with soapy water. *Gathemann, H. A. der Hydrog. 26* (1898) 218-.
- history. *Beek, A. van. A. C. 4* (1842) 257-.

2520 Stability and instability of perfect and of viscous fluid motions. Turbulent motion.

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- Otto, J. F. W. Tilloch Ph. Mg. 4* (1799) 225-.
- Lipkens, —. C. R. 16* (1843) 684-.
- Viret d'Aoust, P. T. C. R. 95* (1882) 797-.
- Bourgeois, S. C. R. 95* (1882) 1152-.
- Aitken, J.* [1883] *Edinb. R. S. P. 12* (1884) 56-.
- Boulin, P. Rv. Sc. 33* (1884) 255.
- Mancini, E. N. Antol. Sc. 78* (1884) 273-.
- Vivier, A. Charente-Inf. S. Sc. A. 20* (1884) 509-.
- Anon. Am. Met. J. 1* (1884-85) 514-.
- Wead, C. K. Science 7* (1886) 214-.
- Wyckoff, A. B. Am. Ph. S. P. 23* (1886) 383-.

- passage in Plutarch. *Baldassini, F. A. Sc. Lomb. Ven.* 12 (1842) 83-, 89-.
- and of soapy water. *Köppen, W. A. der Hydrog.* 21 (1893) 134-.
- wave motion. *Rosenbach, —. Bresl. Schl. Gs. Jbr.* (1894) (*Ab. 2a*) 59-.
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- Breaking of jet, phenomena. *Lullin, T. Arch. Sc. Ps. Nt.* 2 (1896) 201-.
- Calming of waves by soapy water. *Deutsche Seewart.* A. der Hydrog. 21 (1893) 323-.
- — — — —. *Köppen, W. A. der Hydrog.* 24 (1896) 136-.
- — — — —, experiments. *Deutsche Seewart.* A. der Hydrog. 22 (1894) 232-; 23 (1895) 164-.
- — — — —, theory. *Meyer, G. A. der Hydrog.* 22 (1894) 144.
- — — — —. *Richter, M. M. A. der Hydrog.* 22 (1894) 250-.
- Combined streams, mathematical theory. *Rankine, W. J. M.* [1870] R. S. P. 19 (1871) 90-.
- Convection-currents. *Bénard, H. Par. S. Ps. Sé.* (1900) 202-.
- Dynamical theory of incompressible viscous fluids, and criterion. *Reynolds, O.* [1894] *Phil. Trans. (A)* 186 (1896) 123-.
- Efflux and influx of elastic fluids at variable pressures. *Fliegner, A. Zür. Vjschr.* 19 (1874) 272-.
- Explosions, theory. *Threlfall, R. Ph. Mg.* 21 (1886) 165-.
- Formation of drops in liquid stream, experiment and apparatus. *Bussat, P.* [1890] *Laus. S. Vd. Bl.* 26 (1891) xviii.
- Geyser apparatus, experiments with G. Wiedemann's. *Ebert, H. A. Ps. C.* 63 (1897) 342-.
- Gyration of liquid masses flowing from orifice in base of cylinder. *Laroque, F. C. R.* 51 (1860) 758-; A. C. 61 (1861) 345-; 67 (1863) 484-.
- — — — — in rotation, experiments. *Osborne, J. W. Am. As. P.* (1876) 60-.
- Hydrodynamic phenomena of mixed turbid and clean waters. *Ribaucour, A. As. Fr. C. R.* (1885) (*Pt. 2*) 252-.
- Instability of cylinder of viscous liquid under capillary force. *Rayleigh, (Lord).* *Ph. Mg.* 34 (1892) 145-, 177-.
- — fluid motions. *Rausenberger, O. D. Nf. Vh.* (1896) (*Th. 2, Hälfte 1*) 41-.
- — jets. *Rayleigh, (Lord).* L. Mth. S. P. 10 (1878-79) 4-.
- Internal current of fluids. *Heller, Á. Termt. Közl.* 20 (1888) (*Suppl.*) 171-.
- Liquid passing through another without mixing. *Morisot, —. Bordeaux S. Sc. Mm.* 2 (1886) li-.
- Oil and water, agitation of common surface observed by Franklin. *Wall, M.* [1784] *Manch. Ph. S. Mm.* 2 (1789) 435-.
- — — — —. *Patterson, R.* [1787] *Am. Ph. S. T.* 3 (1793) 13-.
- — — — —. *Robinet, (Prof.)* —. *J. de Ps.* 65 (1807) 277-.
- Oil and water, agitation of common surface observed by Franklin, Robinet's explanation. *Bellani, A. Brugnatelli G.* 1 (1808) 257-.
- — — — —, supposed surface attraction. *Dispan, P. A. C.* 57 (1806) 14-.
- — — — —. *Carradori, G. A. C.* 62 (1807) 65-.
- Oscillations of water in pipe. *Caligny, A. de. Liouv. J. Mth.* 6 (1841) 89-.
- Resolution of liquid cylinders into drops. *Hagen, G. H. L. Berl. B.* (1849) 281-.
- — — — —. *Plateau, F. Brux. Ac. Bil.* 24 (1867) 21-.
- Rotational oscillations of fluid cylinders. *Margules, M. Wien Ak. Sb.* 85 (1882) (*Ab. 2*) 343-.
- Splash of drop and allied phenomena. *Worthington, A. M.* [1894] R. I. P. 14 (1896) 289-.
- Stability of flow of fluids. *Rayleigh, (Lord).* *Ph. Mg.* 34 (1892) 59-.
- — fluid motion. *Thomson, (Sir) W.* *Edinb. R. S. P.* 14 (1888) 359-.
- — frictionless liquid. Theory of critical planes. *Basset, A. B. Mth. A.* 48 (1897) 89-.
- — or instability of certain fluid motions. *Rayleigh, (Lord).* [1880-95] L. Mth. S. P. 11 (1879-80) 57-; 19 (1889) 67-; 27 (1896) 5-.
- — — — —, examples of Lord Rayleigh's theory. *Love, A. E. H. L. Mth. S. P.* 27 (1896) 199-.
- — — — — viscous fluids. *Basset, A. B.* [1892] R. S. P. 52 (1893) 273-.
- of motion. Broad river flowing down an inclined plane bed. *Thomson, (Sir) W.* *Ph. Mg.* 24 (1887) 272-.
- and small oscillations of liquid full of nearly straight corseless vortices. *Thomson, (Sir) W.* [1889] *Ir. Ac. P.* 1 (1889-91) 340-.
- of steady and of periodic fluid motion. *Thomson, (Sir) W.* *Ph. Mg.* 23 (1887) 459-.
- Stationary motion of incompressible viscous fluid. *Korteweg, D. J.* [1882] *Amst. Ak. Vs. M.* 18 (1883) 343-; *Ph. Mg.* 16 (1883) 112-.
- Steady motion of fluids, conditions for. *Popov, A. T. (xii) Kazan Un. Mm.* (1850) (*Bk. 1*) 20-.
- — — — —. *Lamb, H. L. Mth. S. P.* 9 (1877-78) 91-.
- — — — —, property. *Salvert, F. de. C. R.* 60 (1865) 1153-.
- — — incompressible fluids. *Stokes, G. G. Camb. Ph. S. T.* 7 (1842) 439-, 465.
- — — viscous incompressible fluid. *Brill, J. Camb. Ph. S. P.* 8 (1895) 313-.
- Stream line surfaces. *Rankine, W. J. M. Nv. Archt. T.* 11 (1870) 175-.
- Thermodynamic acceleration and retardation of streams. *Rankine, W. J. M. Ph. Mg.* 40 (1870) 288-.
- Turbulent liquid, energy per cubic centimetre when transmitting laminar waves. *Fitzgerald, G. F. B. A. Rp.* (1899) 632-.
- — — — —, propagation of laminar motion through. *Thomson, (Sir) W.* *Ph. Mg.* 24 (1887) 342-.
- — — — — motion, friction external. *Boussinesq, J. C. R.* 122 (1896) 1445-.

- Turbulent motion, friction internal. *Boussinesq, J.* C. R. 122 (1896) 1517-.
- in viscous liquids. *FitzGerald, G. F.* [1889] *Dubl. S. Soc. P.* 6 (1888-90) 289.
- and steady efflux of fluids. *Couette, M.* J. de Ps. 9 (1890) 414-.
- — — motion, stage intermediate between. *Boussinesq, J.* C. R. 125 (1897) 69-.
- streams, propagation of waves in, with reference to Boussinesq's formulæ, experiments. *Bazin, —.* C. R. 100 (1885) 1492-.
- vortex flow of liquids in pipes and open channels. *Boussinesq, J.* C. R. 122 (1896) 1289-.
- — — motion, formulæ for mean local pressures. *Boussinesq, J.* C. R. 122 (1896) 1369-.
- Unsteady motion of viscous liquids in capillary tubes. *Wolff, H. C.* *Wisconsin Ac. T.* 12 (1900) 550-.
- Vibrating dams, phenomena. *Edwards, W.* *Bost. P. N. H. S.* 7 (1859-61) 153-.
- Vibrations of fall over dam at Holyoke, Mass. *Snell, E. S.* *Am. As. P.* (1857) 110-; (1859) 204-.
- — — liquid in cylindrical vessel. *Rayleigh, (Lord).* *Nt.* 12 (1875) 251.
- — — water falling over dams. *Stodder, C.* *Bost. P. N. H. S.* 6 (1856-59) 264-.
- — — — — cause. *Edwards, W.* *Bost. P. N. H. S.* 6 (1856-59) 327-, 338-.
- Vibratory movements accompanying flow of gases and liquids. *Maurat, J.* *Rv. Cours Sc.* 6 (1869) 490-.

2530 Measurement of fluid pressure. Measurement of fluid velocity.

(See also 2830, Physics 0835, and Meteorology 0310, 0312, 0314.)

- Action of powder in gun, theoretical determination. *Wrede, F. J.* *Stockh. Ak. Hndl.* 10 (1871) No. 1, 42 pp.
- Air meter, integrating. *Morin, A.* C. R. 54 (1862) 232-.
- — — for measuring draught for furnaces. *Kallstenius, G. S.* *Stockh. Ak. Hndl.* (1820) 260-; *Karsten Arch. Bergbau* 5 (1822) 345-.
- — — — — velocity of air in flues and chimneys. *Fletcher, A. E.* *B. A. Rp.* 37 (1867) (Sect.) 33-; 39 (1869) (Sect.) 48-; *Lpool. Lt. Ph. S. P.* 24 (1870) 31-.
- — — — — mines, etc. *Combes, C.* *A. Mines* 13 (1838) 103-.
- Barometer, mathematical theory of oscillations. *Liais, E.* *Cherb. Mm. S. Ac.* (1852) 97-.
- Compressibility of gases. *Akin, C. K.* *Ph. Mg.* 25 (1863) 289-.
- Compression of gases. *Despretz, C.* *A. C.* 34 (1827) 335-.
- — — liquids. *Despretz, C.* C. R. 21 (1845) 216-.

- Dubuat's paradox on solid in moving fluid and vice versa. *Žukovskij, N. E.* *Mosc. S. Sc. Bll.* 73 (No. 1) (1891) 21-; *Fschr. Ps.* (1891) (Ab. 1) 253-.
- Efflux of air, experiments. *Wilde, H.* *Manch. Lt. Ph. S. Mm.* 10 (1887) 182-.
- Elastic after-effect in spring barometer. *Reinhertz, C.* *Z. Instk.* 7 (1887) 153-, 189-.
- Expansive power of compressed air compared with that of powder gas. *Borkenstein, F.* *Mg. Ntvd.* 8 (1828) 121-.
- Flow of fluid down inclined plane. *Seddon, J. A.* [1888] *St. Louis Ac. T.* 5 (1892) xxvii-.
- — — gases. *Reynolds, O.* [1885] *Manch. Lt. Ph. S. Mm.* 10 (1887) 164-.
- — — — — constant. *Hugoniot, H.* C. R. 102 (1886) 1545-; *A. C.* 9 (1886) 375-.
- Gas meter, wet. *Ullherr, J. C.* *Dingler* 165 (1862) 259-; 166 (1862) 112-.
- — — — — at constant level. *Moors, B. P.* *Delft Ec. Pol. A.* 4 (1888) 168-; 5 (1889) 139-.
- — — — — meters. *Elsner, R. W.* (vi *Adds.*) *Berl. Pol. Gs. Vh.* 17 (1856) 61-.
- — — — — apparatus for gauging. *Ruhmann, —.* *Dingler* 155 (1860) 337-.
- — — — — improved method of maintaining just water level. *Sanders, G.* *Dubl. R. S. J.* 1 (1856-57) 32-.
- — — — — improvements. *Abria, —.* *Bordeaux Act.* (1850) 509-.
- — — — — regulation of pressure. *Cavaillé-Coll, A.* C. R. 56 (1863) 339-.
- Gasometer with uniform pressure. *Stevens, J.* *Tilloch Ph. Mg.* 24 (1806) 163-; 27 (1807) 34-.
- Impact of water on plane surface, Weisbach's theory. *Smith, W. C., & Sheble, F.* *Franklin I. J.* 124 (1887) 257-.
- Instrument to measure force of blast in bellows, etc. *Banks, —.* [1800] *Manch. S. Mm.* 5 (1802) 398-.
- — — — — — — — — — — and experiments on flow of air from vessels. *Gilbert, L. W.* *Gilbert A.* 22 (1806) 286-.

MANOMETERS.

- Rettberg, E. F.* *Gilbert A.* 42 (1812) 99-.
- Russell, H.* *Tilloch Ph. Mg.* 63 (1824) 92-.
- Ziegler-Pellis, J.* *Act. S. Helv.* (1858) 128-.
- Silva-Pinto, M. V. da.* *Lisb. J. Sc. Mth.* 3 (1871) 239-.
- Yagn [Jagn], N.* [1876] (xii) *Mosc. S. Sc. Bll.* 39 [No. 2] (1880) 181-.
- Kraevich, K. D.* (xii) *Rs. C. Ps. S. J.* 9 (Ps.) (1877) [(Pt. 1)] 252-.
- Bristol, W. H.* *Am. As. P.* (1888) 89-.
- Villard, —.* C. R. 116 (1893) 1124-.
- balance. *Schreiber, K. A. P.* (xii) *Z. Instk.* 1 (1881) 257-, 288-, 333-.
- bell. *Rateau, —.* *As. Fr. C. R.* (1892) (Pt. 1) 160.
- for blast-engines. *Nordenskiöld, N.* [1887] *St. Pét. Ac. Sc. Bll.* 3 (1838) 265-.
- Bourdon. Samuelson, A.* *Civing.* 7 (1861) 455-.
- — — — — *Worthington, A. M.* *Nt.* 41 (1890) 296.

- Bourdon. *Greenhill, A. G.* Nt. 41 (1890) 517-.
- , *Worthington, A. M.* Nt. 42 (1890) 125-.
- , *Rayleigh, (Lord).* Nt. 42 (1890) 197.
- , formulæ. *Résal, H. A.* Mines 11 (1867) 381-.
- , Tait, and Amagat gauges, comparison. *Barus, C.* Ph. Mg. 31 (1891) 400-.
- compensation, for air pressure. *Prytz, K.* Ts. Ps. C. 24 (1885) 129-, 224; Fsch. Ps. (1885) (Ab. 1) 391-.
- compressed air. *Machado, V.* [1882] Lish. J. Sc. Mth. 9 (1883) 110-.
- , *Lussana, S. N.* Cim. 12 (1900) 237-.
- , general formulæ, and for stereometer. *Volpicelli, P.* Tortolini A. 8 (1857) 169-.
- , graduation. *Garnault, E.* (vii) A. Gén. Civ. 2 (1863) (pt. 2) 377-.
- construction and use. *Lemkes, C. R. L.* [1894] Glasg. I. Eng. T. 38 (1895) 15-.
- crusher, law of resistance of cylinder. *Vielle, P.* C. R. 114 (1892) 1468-.
- , measurement of pressure by. *Kellner, W., & Deering, W. H.* R. S. P. 57 (1895) 404-.
- , — of explosives by. *Sarrau, —, & Vielle, —.* C. R. 102 (1886) 1054-.
- data for use with. *Amagat, E. H.* C. R. C. R. 99 (1884) 1017-, 1153-.
- differential. *König, A. C.* Ztg. 13 (1889) 1159; Dingler 275 (1890) 513-.
- (König). *Kás, A.* Oestr. Z. Brgw. 38 (1890) 308-.
- (—). *Brown, M. W.* [1892] N. Eng. I. Mn. E. T. 41 (1893) 160-; 42 (1893) 50-.
- mercury. *Ravenek, H. A.* 's Gravenh. I. Ing. Ts. (1884-85) (Vh.) 1-.
- piston, for very high pressures. *Amagat, E. H.* C. R. 103 (1886) 429-.
- Edson self-recording. *Franklin Institute Comm.* Franklin I. J. 137 (1894) 241-.
- electric. *Deprez, M.* Par. S. Ps. Sé. (1879) 20-.
- , for small variations of pressure. *Richard, G., & Richard, L.* C. R. 112 (1891) 1359-.
- Kundt's. *Dvořák, V.* Wien Sb. 68 (1873) (Ab. 2) 7-.
- 2-liquid amplifying. *Grenier, W.* Laus. S. Vd. Bil. 13 (1874-75) 652-.
- differential. *Achard, A.* Arch. Sc. Ps. Nt. 49 (1874) 344-.
- McLeod gauge and air pumps. *Bertin, A. A.* C. 19 (1880) 231-.
- metallic, theory. *Marangoni, C.* (xii) Rv. Sc.-Ind. 12 (1880) 326-.
- micromanometer. *Smits, A.* Amst. Ak. Vs. 4 (1896) 145-, 198; 5 (1897) 292-; Arch. Néerl. 1 (1899) 97-.
- mirror. *Parragh, G.* Termt. Közl. 20 (1888) (Suppl.) 78-; Mth. Nt. B. Ung. 6 (1889) 408-.
- , *Kont, G.* Mth. Termt. Éts. 12 (1894) 277-.
- new method of reading. *Marek, W. J.* Carl Rpm. 16 (1880) 585-.
- open (Richard). *Combes, C.* A. Mines 7 (1845) 481-.
- , *Hemptinne, A. D. de.* Brux. Ac. Bil. 12 (1845) 541-.
- open, on Eiffel Tower. *Cailletet, L.* C. R. 112 (1891) 764-.
- , ——. *Nansouty, M. de.* Gén. Civ. 18 (1890-91) 385-.
- , for high pressures. *Cailletet, L.* C. R. 84 (1877) 82-.
- , — low pressures. *Marnier, A.* Dingler 255 (1885) 471-.
- for high pressures. *Seaward, S.* Tilloch Ph. Mg. 63 (1824) 36-.
- , —. *Cailletet, L.* C. R. 83 (1876) 1211-; Les Mondes 42 (1877) 50-, 239-, 450-.
- , —. *Marié, G.* I. ME. P. (1880) 455-.
- , —. *Tait, P. G.* Edinb. R. S. P. 10 (1880) 572-.
- , —. *Thiesen, M. F.* (xii) Z. Instk. 1 (1881) 114-.
- , —. *Nansouty, M. de.* Gén. Civ. 9 (1886) 19-.
- low pressures of gas. *McLeod, H. L.* Ps. S. P. 1 (1876) 30-; Ph. Mg. 48 (1874) 110-.
- Rateau's, with magnified scale. *Hauer, J. von.* Oestr. Z. Brgw. 41 (1893) 5-.
- self-recording. *Giltay, J. W.* [1882] 's Gravenh. I. Ing. Ts. (1883) 95-.
- , for guns. *Vielle, P.* C. R. 112 (1891) 1052-.
- , for high pressures. *Minotti, N. G.* Ven. At. 5 (1846) 311-.
- , —. *Parenty, H.* C. R. 102 (1886) 811-; Dingler 264 (1887) 74-.
- sensitive. *Villard, —.* C. R. 116 (1893) 1187-.
- , *Charpentier, P.* C. R. 120 (1895) 439-.
- of simple construction. *Guglielmo, G.* Rv. Sc.-Ind. 25 (1893) 175-.
- spring, apparatus for testing. *Giltay, J. W.* Z. Instk. 5 (1885) 395-.
- standard. *Kamerlingh Onnes, H.* Amst. Ak. Vs. 8 (1900) 45-; Amst. Ak. P. 2 (1900) 29-.
- , mercury meniscus, correction. *Schalkwijk, J. C.* [1900-01] Amst. Ak. Vs. 9 (1901) 462-, 512-; Amst. Ak. P. 3 (1901) 421-, 481-.
- open, of reduced height. *Kamerlingh Onnes, H.* [1898] Amst. Ak. Vs. 7 (1899) 176-; Amst. Ak. P. 1 (1899) 213-.
- telegraphic. *Armellini, T.* Rm. N. Linc. At. 28 (1875) 229-.
- uniformly sensitive. *Moutier, J.* Par. S. Phlm. Bil. 1 (1877) 171-.
- for highest vacua. *Sutherland, W.* Ph. Mg. 43 (1897) 83-.
- vapour-tension. *Perrier, L.* C. R. 91 (1880) 538-.
- water. *Forbes, J. D.* Edinb. N. Ph. J. 19 (1835) 36-.
- , and anerometer. *Silliman, J. M.* [1888] Am. I. Mn. E. T. 17 (1889) 66-.
- Wollaston's. *Napier, J. R.* Glasg. T. I. Eng. 12 (1869) 119-.
- Manometry, influence of weight on. *Kapustin, T.* Rs. Ps.-C. S. J. 26 (Ps.) (1894) 307-; J. de Ps. 4 (1895) 585-.
- Manostat. *Smits, A.* [1897] Amst. Ak. Vs. 6 (1898) 321-; Z. Ps. C. 33 (1900) 39-.

- Measurement of air enclosed in barometer. *Schreiber, P.* Exner Rpm. 22 (1886) 162-.
- — in mines. *Dickinson, J.* [1875] Manch. Gl. S. T. 14 (1878) 31-.
- — draught and analysis of gas, apparatus. *Kasalovský, J.* Oestr. Z. Brgw. 26 (1878) 407-.
- — in chimneys. *Schwartz, L.* Erdm. J. Tech. C. 2 (1828) 345-.
- — very high vacua. *Rood, O. N.* Am. J. Sc. 22 (1881) 90-.
- — velocity by gauging tube. *Bazin, H.* A. Pon. Chauss. 14 (1887) 195-.
- — *vis viva* of fluid in pipe. *Masoni, U.* Nap. I. Inc. At. 11 (1898) No. 2, 4 pp.
- Motion of steam in tubes. *Auscher, —.* A. Mines 7 (1895) 325-.
- Pascal's principle, experimental demonstration. *Pisati, G.* N. Cim. 27 (*1868) 351-.
- Piezometers used in hydraulic investigations, experiments. *Mills, H. F.* [1878] Am. Ac. P. 14 (1879) 26-.
- Pitot's tube. *Rateau, —.* A. Mines 13 (1898) 331-.
- —, modifications. *Darcy, H.* Dijon Mm. Ac. 6 (1857) (pte. 2) 159-.
- Pneumatic analogue of potentiometer. *Shaw, W. N.* B. A. Rp. (1898) 778-.
- — Wheatstone's bridge. *Shaw, W. N.* R. S. P. 47 (1890) 462-.
- — brakes. *Huberti, A.* Rv. Un. Mines 1 (1888) 1-.
- —, quick working. *Kapteyn, A. P.*'s Gravenh. I. Ing. Ts. (1888-89) (Vh.) 103-, 122-.
- Powder gases, movement in bore of gun. *Piobert, —.* C. R. 49 (1859) 757-, 829-, 909-, 953-.

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- Bevan, B.* Ph. Mg. 6 (1829) 284-.
- Moutier, J.* Par. S. Phlm. Bl. 11 (1874) 48-.
- Mensbrugge, G. van der.* Brux. S. Sc. A. 18 (1894) (Pt. 1) 16-.
- of air, application in water installations. *Herhold, —.* Hann. Archt.-Vr. Z. 31 (1885) 509-.
- —, balance. *Perrigault, —.* Les Mondes 38 (1875) 355-.
- in air-pipes. *Pagliani, S., & Morisani, E.* Nap. I. Inc. At. 5 (1892) No. 3, 24 pp.
- changes, measurement apparatus. *Wolff, L. C.* Z. Instk. 4 (1884) 50-.
- —, by mirror method. *Röntgen, W. C. A.* Ps. C. 51 (1894) 414.
- and density, relations, deduced from principle of energy. *Herran, A.* As. Fr. C. R. (1898) (Pt. 1) 133-.
- difference between hydrostatic and hydraulic. *Wallentin, I. G.* A. Ps. C. 4 (1878) 294-.
- von Drieberg's views. *Kersting, R.* [1845] (VIII) Riga Cor.-Bl. 1 (1846) 81-.
- effective, in hydraulic presses, arrangement of levers for measurement. *Köpping, H.* Carl Rpm. 17 (1881) 662-.
- exerted by flow of liquid. *Bernardi, E.* Ven. I. At. (1887-88) 1309-.
- of explosives. *Vieille, P.* As. Fr. C. R. (1890) (Pt. 1) 53-.
- — fluid jet on wedge. *Kotel'nikov, A. P.* Kazan S. Nt. (Ps.-Mth.) P. 8 (1890) 4-; Fschr. Ps. (1889) (Ab. 1) 358-.
- — fluids in motion. *Bonnycastle, C.* [1840] Am. Ph. S. T. 7 (1841) 113-.
- — — —, instrument for measuring. *Caligny, A. de.* Par. S. Phlm. PV. (1840) 106-.
- — gas, measurement under different conditions. *Prytz, K.* Ts. Ps. C. 30 (1891) 289-.
- —, regulation. *Obach, E.* Tel. E. J. 14 (1885) 339-.
- —, regulator. *Murrill, P.* Mer. S. J. (1898) 480-.
- —, regulators. *Peebles, D. B.* [1876] Sc. S. Arts T. 9 (1878) 351-.
- —, theories, critical account. *Gosiewski, W.* Par. T. Nauk Śc. Pam. 5 (*1874) Art. 2, 15 pp.
- gaseous, small. *Brush, C. F.* Ph. Mg. 44 (1897) 415-.
- high. *Cailletet, L.* A. C. 19 (1880) 386-.
- — *Marié, G.* A. Mines 19 (1881) 104-.
- — *Barus, C.* Am. Ac. P. 25 (1890) 93-.
- — *Jacobus, D. S.* Am. As. P. (1893) 123-.
- — *Lisell, E.* Stochh. Öfv. (1898) 697-.
- — *Palmer, A. de F.* Am. J. Sc. 6 (1898) 451-.
- —, apparatus for production. *Stratton, S. W.* Ph. Mg. 38 (1894) 160.
- indicator for pneumatic brake. *Kapteyn, A. P.* [1886]'s Gravenh. I. Ing. Ts. (1886-87) (Vh.) 102-.
- — Westinghouse brake. *Kapteyn, A.* Rv. Un. Mines 19 (1886) 86-.
- internal. *Steinhauser, A.* Carl Rpm. 13 (1877) 285-.
- —, in moving liquid. *Boussinesq, J.* Liouv. J. Mth. 9 (1883) 425-.
- kinetic, in homogeneous and incompressible fluid. *Gosiewski, W.* Krk. Ak. (Mt.-Prz.) Pam. 17 (1890) 128-; Cre. Ac. So. Bl. (1889) No. 9, xix-.
- lateral, apparatus for demonstrating. *Carl, P.* Carl Rpm. 11 (1875) 68-.
- laws, apparatus for demonstrating. *Strehl, K.* Cztg. Opt. 18 (1897) 181-.
- in light fluids. *Julius, V. A.* Mbl. Nt. (1887) 1-.
- —, *Plaats, J. D. van der.* Mbl. Nt. (1888) 23-.
- methods of measuring. *Rojas, F. de P.* (XII) Barcel. Ac. Mm. 1 (1878) 237-.
- — — — *Guglielmo, G.* Rm. R. Ac. Linc. Rd. 2 (1893) (Sem. 2) 8-.
- on part of surface of fluid. *Schiller, N.* Mosc. S. Sc. Bl. 91 (No. 1) (1894) 31-.
- — plate and wedge by Kirchoff's method. *Réthy, M.* (XII) Orv.-Term. Éts. 4 (1879) (Term. Szak) 105-.
- potential. *Lyapunov, A. M.* (XII) Rs. Ps.-C. S. J. 13 (Ps.) (1881) [(Pt. 1)] 351-.
- problem. *Malfatti, G. F.* Mod. S. It. Mm. 12 (1805) 100-.

- produced by change of velocity in water pipes. *Frizell, J. P.* Am. S. CE. T. 39 (1898) 1-.
- explosive gaseous mixtures. *Petavel, J. E.* B. A. Rp. (1900) 655-.
- powder gases, accelerometer of Deprez for measuring. *Sebert, H.* Par. S. Ps. Sé. (1879) 107-.
- regulation in gasometers. *Nöggerath, E. J.* Civing. 2 (1856) 67-.
- in running water. *Schönemann, T.* Berl. Mb. (1861) 1136-.
- small. *Fitzgerald, G. F. & Joly, J.* [1888] *Dubl. S. Sc. P.* 6 (1888-90) 128-.
- sounding apparatus for ships. *Anon.* Rv. Sc.-Ind. [24 (1892)] 220-.
- static and dynamical, of water. *Bainbridge, E.* N. Eng. I. Mn. E. T. 21 (1872) 49-.
- of stream of air on flat plate. *Willis, (Prof.) R.* [1823] *Camb. Ph. S. T.* 3 (1830) 129-.
- , infinite, on wedge-shaped wall. *Bobuilev, D. K.* (XII) *Rs. Ps.-C. S. J.* 13 (Ps.) (1881) [Pt. 1] 63-; (ix) A. Ps. C. (Beibl.) 6 (1882) 163-.
- at right angles to direction of current. *Ludwig, C., & Stefan, J.* Wien SB. 32 (1858) 25-.
- streams. *Cattaneo, G.* [1822] *Padova N. Sag.* 2 (1825) 224-.
- on surface of immersed body. *Razzaboni, C.* [1862] (xi) *Mod. Ac. Sc. Mm.* 5 (1863) 3-.
- , plane or curved. *Martynowski, A.* Par. T. Nauk Sc. Pam. 3 (*1873) 215-; 4 (*1874) *Art. 1.* 78 pp.
- , —, theory. *Steen, A.* [1872] *Kjöh. Skr.* 9 (1873) 539-; *Résumé,* 558-.
- and temperature measurements, capillary corrections. *Pernet, J. Z.* *Instk.* 6 (1886) 377-.
- theory. *Cournot, A. A.* (vi *Adds.*) *Férussac Bll. Sc. Mth.* 9 (1823) 10-.
- , *Moon, R.* *Ph. Mg.* 36 (1868) 27-, 116-.
- true theory as applied to elastic fluids. *Moon, R.* (viii) *Ph. Mg.* 26 (1863) 70-.
- variation in fluid in motion. *Lagerhjelm, P.* *Sk. Nf. F.* 3 (1842) 319-.
- on wall (passage in Fischer's Physics). *Volpicelli, P.* *G. Arcad.* 49 (1831) 103-.
- (— — —) (Volpicelli). *Oddi, G.* *G. Arcad.* 50 (1831) 62-.
- of water at different depths. *Borel, F.* *Neuch. Bll.* 7 (pt. 2) (1866) 155-.
- against foundations. *Brennecke, L. Z.* *Bauw.* 36 (1886) 101-, iv.
- on walls of pipes. *Turazza, D.* *Cuyper Rv. Un.* 29 (1871) 405-.

- Reaction of liquid jet. *Webb, J. B.* *Franklin I. J.* 124 (1837) 144-, 463-; 125 (1838) 31-.
- produced by efflux of fluids in vessels containing them. *Brunacci, V.* *Brunatelli G.* 7 (1814) 89-; *Mil. Mm. I. Lomb. Ven.* 3 (1816-17) 257-.
- Resistance to air currents in mines. *Elwen, T. L.* [1889] *N. Eng. I. Mn. E. T.* 38 (1891) 205-.
- — — — —. *Murgue, D.* [1893-94] *Fed. I. Mn. E. T.* 6 (1894) 135-, 418-; 7 (1894) 211-.

- Resistance formula for river flow. *Seddon, J. A.* *St. Louis Ac. T.* 5 (1892) lvi.
- Rheometer, application to Drummond's light and to the analysis of gas-burners. *Lemoine, É.* *As. Fr. C. R.* 2 (1873) 153-.
- Rhysimeter. *Fletcher, A. E.* B. A. Rp. 41 (1871) (Sect.) 234-.
- Safety valve, Dulac's, experiments. *Walckenaer, C. A.* *Mines 16* (1899) 124-.
- valves. *Libert, J.* *Rv. Un. Mines* 20 (1892) 269-.
- Suction by blowing. *Schinz, E.* *Bern Mt.* (1859) 104-.
- phenomenon. *Caligny, A. de.* *Par. S. Phlm. PV.* (1843) 30-.
- Sympiezometers, Adie's, and Cummins', observations with. *Swart, J.* *Tindal Vh. Zee-wezen* 3 (1843) 613-.
- Theory of efflux of elastic fluids. *Hugoniot, —.* *Par. S. Ps. Sé.* (1887) 7-.
- Vacuum produced by air current. *Girouard, (Dr.) —.* *Les Mondes* 6 (1864) 513-.

VELOCITY.

- Vautier, T.* *C. R.* 103 (1886) 372-.
- of air. *Serrell, E.* *Aër. S. Rp.* 17 (1882) 5-.
- currents, underground. *Fuchs, P. Z.* *Berg.-H. Salw.* 47 (1899) (Ab.) 227-; 48 (1900) (Ab.) 12-.
- , distribution over section of tube. *Recknagel, G.* *D. Nf. Vh.* (1899) (Th. 2, *Hälfte 1*) 76-.
- in pipes. *Donkin, B. I.* *CE. P.* 111 (1893) 345-.
- rushing into vacuum. *Wilde, H.* *Manch. Lt. Ph. S. Mm.* 10 (1887) 146-.
- in spout. *Hanappe, S.* *Rv. Un. Mines* 40 (1897) 114-.
- currents, adaptation of Robinson's anemometer to measurement. *Razzaboni, C.* *Bologna Ac. Sc. Mm.* 8 (1887) 597-.
- of air or water carrying mineral grains in suspension. *Thoulet, J.* *C. R.* 97 (1883) 1513-; *A. Mines* 5 (1884) 507-.
- , Amsler's hydrometric apparatus. *Zdziarski, A.* *Am. Eng. & Railroad J.* 67 (1893) 239-.
- , and direction, instrument for measuring, Leupold's electric. *Weber, L.* *Elekttech. Z.* 7 (1886) 303-.
- , —, instruments for recording. *Jones, J. R.* *R. S. P.* 24 (1876) 321-.
- , —, observations at single point. *Estignard, X.* *Rv. Mar.* 38 (1873) 224-.
- , —, registering apparatus for. *Weber, L.* [1896] *Schl.-Holst. Nt. Vr. Schr.* 11 (1898) 61.
- , experiments. *Fossombroni, V.* *Siena At. Ac.* 9 (1808) 261-.
- , hydrometric pendulum for measuring. *Bonati, T.* *Mod. Mm. S. It.* 8 (1799) 435-.
- , —, —, —, —, *Venturoli, G.* [1809-14] *Mod. S. It. Mm.* 14 (1809) 158-; *Bologna Opusc. Sc.* 1 (1817) 81-.
- , —, —, —, —, *Gerstner, F. J. von.* [1819] *Böhm. Gs. Ab.* 6 (1820) 92 pp.

- Correction for ends of tubes. *Couette, M. J.* de Ps. 9 (1890) 560-.
- Damping of oscillations by air. *Sang, E.* Edinb. R. S. P. 16 (1890) 181-.
- of solids in fluids. *Klemenčič, I.* [1881] Wien Ak. Sb. 84 (1882) (Ab. 2) 146-.
- Deviations upon Poiseuille's law. *Wetzstein, G.* A. Ps. C. 68 (1899) 441-.
- "Drag" of water upon water at low velocities. *Houghton, S. B. A.* Rp. (1879) 275-.
- — — — —, and of air upon air. *Houghton, S., & Reynolds, J. E.* [1880] Ir. Ac. P. 3 (1883) 277-.
- Efflux of air at different pressures through different orifices and tubes of different sizes and lengths. *Magrini, L.* Mil. At. I. Lomb. 1 (1858) 333-.
- method. *Hagenbach, E.* Basel Vh. 2 (1860) 532-.
- — — — —. *Knibbs, G. H.* N. S. W. R. S. J. 29 (1895) 77-; 30 (1897) 186-.
- Fluidity of liquids. *Heen, P. de.* Brux. Ac. Bil. 45 (1878) 798-.
- measurer. *Heyer, —.* [1893] St. Gal. B. (1893-94) 93-.
- of water at various temperatures. *Gerstner, F. J. von.* Gilbert A. 5 (1800) 160-.
- Fluids in corresponding states. *Haas, M. de.* Amst. Ak. Vs. [2] (1894) 126-; 3 (1895) 62-.
- Friction between oil and air. *Markovits, S.* Wien Ak. Sb. 100 (1891) (Ab. 2a) 785-.
- Gases. *Meyer, O. E. A.* Ps. C. 125 (1865) 177-, 401-, 564-; 127 (1866) 253-, 353-; 148 (1873) 1-, 203-.
- *Meyer, O. E., & Springmühl, F.* [1872] A. Ps. C. 148 (1873) 526-.
- *Boltzmann, L.* Wien Ak. Sb. 81 (1880) (Ab. 2) 117-; 84 (1882) (Ab. 2) 40-, 1230-.
- at high temperatures. *Barus, C. Am. J. Sc.* 35 (1888) 407-; A. Ps. C. 36 (1889) 358-.
- Glycerin solutions. *Schall, C., & Rijn, W. van.* Z. Ps. C. 23 (1897) 329-.
- Influence of magnetisation and electrification. *König, W.* A. Ps. C. 25 (1885) 618-.
- Liquids. *Marangoni, C.* (xii) Rv. Sc.-Ind. II (1879) 144-, 188-.
- *Pagliani, S., & Battelli, A.* Tor. Ac. Sc. At. 20 (1885) 607-, 845-.
- *Pagliani, S., & Oddone, E.* Tor. Ac. Sc. At. 22 (1886-87) 314-.
- *Graetz, L.* A. Ps. C. 34 (1888) 25-.
- *Vautier, T. A. C.* 15 (1888) 289-.
- *Perry, J. L.* Ps. S. P. 12 (1894) 236-; Ph. Mg. 35 (1893) 441-.
- *Jones, O. G.* L. Ps. S. P. 13 (1895) 49-; Ph. Mg. 37 (1894) 451-.
- *Petroff, N.* St. Pét. Ac. Sc. Bil. 5 (1896) 365-.
- , apparatus for study, new. *Couette, M. C.* R. 107 (1888) 388-.
- , application of graphic methods to study. *Vautier, T. A. C.* 15 (1888) 433-.
- , bibliography, 1800-1889. *Gee, W. W. H. Manch. Lt. Ph. S. Mm. & P.* 3 (1890) 123-.
- Liquids, definition. *Hagenbach-Bischoff, E.* Arch. Sc. Ps. Nt. 34 (1895) 377-.
- in electric field. *Pacher, G., & Finazzi, L.* Ven. I. At. (1899-1900) (Pt. 2) 389-.
- , measurement by torsional vibrations. *König, W.* A. Ps. C. 32 (1887) 193-.
- Measurement by oscillating discs. *Grossmann, L.* [1880] A. Ps. C. 16 (1882) 619-.
- — oscillations. *Meyer, O. E. A.* Ps. C. 32 (1887) 642-; 33 (1888) 712; Bresl. Schl. Gs. Jbr. (1887) 173-.
- Mercury. *Umani, A.* N. Cim. 3 (1896) 151-.
- vapour. *Noyes, A. A., & Goodwin, H. M.* Am. Ac. P. 32 (1897) 225-.
- Method. *Meyer, O. E. A.* Ps. C. 43 (1891) 1-; 44 (1891) 787.
- , Maxwell's. *Schmidt, T. S.* A. Ps. C. 16 (1882) 633-.
- , —, for air. *Meyer, O. E. A.* Ps. C. 143 (1871) 14-.
- , Stokes's. *Meyer, O. E.* Münch. Ak. Sb. 17 (1888) 343-.
- Methyl chloride between boiling point and critical point. *Haas, M. de.* Amst. Ak. Vs. [2] (1894) 123-.
- Mixtures of liquids and of solutions. *Lees, C. H.* [1900] L. Ps. S. P. 17 (1901) 460-.
- — saline solutions, relation to state of ionisation. *Barnes, J.* [1899] N. Scotia I. Sc. P. & T. 10 (1903) 113-.
- Pendulums, effect of rotation of ball on logarithmic decrement. *Stokes, G. G.* Phil. Trans. 177 (1887) 789-.
- Rate of flow from capillary tube. *Wilberforce, L. R.* Ph. Mg. 31 (1891) 407-.
- — — — —, influence of electricity. *Langer, C.* Exner Rpm. 25 (1889) 461-.
- Saline solutions. *Moore, B. E.* Ps. Rv. 3 (1896) 321-.
- — and their mixtures. *Kanitz, A.* Z. Ps. C. 22 (1897) 336-.
- Solutions of chromates. *Slotte, K. F.* A. Ps. C. 14 (1881) 13-.
- Steam at high temperatures. *Cantone, M.* Rm. R. Ac. Linc. Mm. 19 (1884) 253-.
- Superficial viscosity of films of solution of saponine. *Mensbrugge, G. van der.* Brux. Ac. Bil. 29 (1870) 368-.
- — liquids. *Marangoni, C.* N. Cim. 5 & 6 (1871) 239-.
- — — — —. *Luvini, G.* (xii) Rv. Sc.-Ind. 4 (1872) 262-.
- — — — —. *Plateau, J. A. F.* Brux. Ac. Bil. 34 (1872) 404-; 48 (1879) 106-.
- Torsion viscosimeter. *Doolittle, O. S.* Am. Eng. & Railroad J. 67 (1893) 583-.

VARIATION OF VISCOSITY.

- with chemical composition. *Handl, A., & Pflibram, R.* [1878-81] Wien Ak. Sb. 78 (1879) (Ab. 2) 113-; 80 (1880) (Ab. 2) 17-; 84 (1882) (Ab. 2) 717-.
- — — — —, of liquids. *Thorpe, T. E., & Rodger, J. W.* Phil. Trans. (A) 189 (1897) 71-.
- — — — —. *Thorpe, T. E.* [1898] R. I. P. 15 (1899) 641-.

- with density. *Warburg, E., & Babo, C. H. L.* von. A. Ps. C. 17 (1882) 390-.
- , of liquids. *Warburg, E., & Sachs, J.* A. Ps. C. 22 (1884) 518-.
- moisture, of hydrogen. *Rayleigh, (Lord).* R. S. P. 62 (1898) 112-.
- pressure. *Röntgen, W. C. A.* Ps. C. 22 (1884) 510-.
- , *Cohen, R.* A. Ps. C. 45 (1892) 666-.
- temperature, of air. *Holman, S. W.* [1876-86] Am. Ac. P. 12 (1877) 41-; 21 (1886) 1-.
- , — argon. *Rayleigh, (Lord).* R. S. P. 66 (1900) 68-.
- , — bromine. *Kann, L.* Wien Ak. Sb. 106 (1897) (*Ab. 2a*) 431-.
- and chemical composition. *Graetz, —.* D. Nf. Tbl. (1887) 83.
- , — empirical formulæ. *Duff, A. W.* Ps. Rv. 4 (1897) 404-.
- , — of gases. *Wiedemann, E. E. G.* Arch. Sc. Ps. Nt. 56 (1876) 277-.
- , —, —. *Breitenbach, P.* A. Ps. C. 67 (1899) 803-.
- , —, —. *Rayleigh, (Lord).* [1900] R. S. P. 67 (1901) 137-.
- , — and vapours. *Schumann, O. A.* Ps. C. 23 (1884) 353-.
- , — liquids. *Heen, P. de.* Brux. Ac. Bil. 7 (1884) 248-; 11 (1886) 29-.
- , — mercury. *Koch, S. A.* Ps. C. 14 (1881) 1-.
- , —, —. *Bažinskij, A. I.* Mosc. S. Nt. Bil. 14 (1900) (*Prot.*) 56-; *Fschr. Ps.* (1900) (*Ab. 1*) 213.
- , —, — vapour. *Koch, S. A.* Ps. C. 19 (1883) 857-.
- , —, — oils. *Garvanoff, J. G.* Wien Ak. Sb. 103 (1894) (*Ab. 2a*) 873-.
- , —, — Roseneranz's observations. *Meyer, O. E. A.* Ps. C. 2 (1877) 387-.
- , — of water. *Slotte, K. F.* A. Ps. C. 20 (1883) 257-.
- vapour pressure. *Heen, P. de.* Brux. Ac. Bil. 10 (1885) 251-.
- velocity. *Élie, B.* J. de Ps. 1 (1882) 224-.

Very viscous liquids. *Schöttner, F.* Wien Ak. Sb. 79 (1879) (*Ab. 2*) 477-.

—, —. *Brodmann, C.* A. Ps. C. 48 (1893) 188-.

Viscometer. *Babcock, S. M.* [1886] J. Anal. C. 1 (1887) 151-.

Viscosity, density and refractivity of argon and helium. *Rayleigh, (Lord).* R. S. P. 59 (1896) 198-.

— and elastic after effect in liquids. *Roiti, A.* N. Cim. 3 (1878) 5-.

— electrical conductivity of mercury and amalgams. *Schweidler, E. (Ritter) von.* Wien Ak. Sb. 104 (1895) (*Ab. 2a*) 273-.

— of elements in liquid state. *Pacher, G.* Ven. I. At. (1897-98) 516-.

— in liquids, and instruments for measurement. *McGill, A.* Cn. R. S. P. & T. 1 (1895) (*Sect. 3*) 97-.

— on passing from fluid to solid, change of order. *Barus, C.* Ph. Mg. 29 (1890) 337-.

Viscosity and resistance. *Rennie, G.* Phil. Trans. (1831) 423-.

—, —, electrolytic, of gelatin solution. *Griffiths, A.* Manch. Lt. Ph. S. Mm. & P. 41 (1897) ix-.

— of supercooled fluids. *Tammann, G. Z.* Ps. C. 28 (1899) 17-.

Water. *Geoffroy, L.* C. R. 88 (1879) 573-.

—, —. *Mallock, A.* R. S. P. 45 (1889) 126-.

—, —. *Barnett, R. E.* R. S. P. 56 (1894) 259-.

—, —. *Pacher, G.* Ven. I. At. (1898-99) (*Pt. 2*) 785-.

HYDRAULICS AND FLUID RESISTANCE.

2790 General.

Pictet, M. A. Bb. Un. 15 (1820) 315-; 16 (1821) 153-, 244-; 17 (1821) 158-; 19 (1822) 220-, 299-; 20 (1822) 68-.

ARTESIAN WELLS.

Arago, D. F. J. Par. Bur. Long. An. (1835) 181-.

Héricart-Ferrand (vicomte de Thury), L. É. F. [1835] (xii) Fr. S. Ag. Mm. (1834) 361-.

Viollet, J. B. Par. S. Gl. Bil. 6 (1834-35) 144-; Par. Bil. S. Encour. 36 (1837) 121-; 37 (1838) 83-.

Milne, D. Edinb. N. Ph. J. 35 (1843) 79-.

Buckland, W. Edinb. N. Ph. J. 37 (1844) 318-.

Carteron, —. (vi *Adds.*) Aube Mm. S. Ag. 16 (1851-52) 277-.

crushing of interior tube. *Caligny, A. de.* C. R. 13 (1841) 1156-.

discharge. *Dru, —.* Par. Ing. Civ. Mm. (1862) 57-.

gauging. *Degoussé, J.* (vii) Rv. Sc. 6 (1841) 341-.

—, —. *Sagey, —.* A. Mines 3 (1843) 347-.

and Modenese wells. *Campilanzi, E.* Ven. Esercit. Aten. 3 (1839) 105-.

pipes. *Bertot, H.* A. Gén. Civ. 1 (1862) (*pte. 2*) 13-.

yield at different depths. *Michal, A. C. R.* 56 (1863) 78-; A. Pon. Chauss. 11 (1866) 211-.

Channels, streams and pipes; evaluation of intermolecular work. *Boileau, P.* Cherb. S. Sc. Nt. Mm. 21 (1877) 5-.

—, —, —, properties common to. *Boileau, P.* C. R. 82 (1876) 1479-; 84 (1877) 326-; 85 (1877) 429-.

Cohesion of liquids, application in mechanics. *Davaigne, —.* Fr. Cg. Sc. 20 (1853) 355-.

Draining by sinking a pit. *Stetten-ob-Lonthal. Bruckmann, A. E.* Würtb. Jh. 9 (1853) 173-.

— wells, artesian. *Emmary, H. C.* Par. A. Pon. Chauss. 10 (1835) 362-.

2800 Hydraulic Resistance

- Efficiency of sails, windmills, screws, etc., in air or water. *Kelvin, (Lord)*. Nt. 50 (1894) 425-.
- Hydraulic moment of canal section. *Aird, C. K.* Hann. Archt.-Vr. Z. 46 (1900) 401-.
- Hydraulics. *Saint-Guilhem, P. D.* Toul. Mm. Ac. 4 (1834-36) 229-.
- , *Györy, S.* Évk. 5 (1842) (Pt. 2) 214-.
- , *Rossi, V. A.* Nap. Ms. 7 (1845) 348-.
- in 1833. *Rennie, G. B. A.* Rp. (1833) 153-; (1834) 415-.
- , applied. *Vigreux, L. A.* Gén. Civ. 5 (1876) 505-.
- , Italian works. *Anon.* (vi 156) Bb. It. 59 (1830) 367-.
- , principles. *Lombardi, A.* [1811] Mod. S. It. Mm. 16 (1813) 1-.
- , —, new. *D'Auria, L.* Franklin I. J. 75 (1878) 73-.
- , progress. *Brioschi, F.* Il Polit. 1 (1866) (Tech.) 101-, 419-.
- , researches. *Peacock, R. A.* Weale Q. Pp. 5 (1846) 63 pp.
- , —. *Sommerfeld, A. D.* Nf. Vh. (1900) (Th. 2, Hälfte 1) 56.
- Hydrotechnic notes. *Fischer, —.* Münch. Z. Archt. 2 (1870) 80.
- Maritime engineering practice. *Stevenson, T.* [1885] Edinb. R. S. P. 13 (1886) 80-.
- Resistance of air to planes in motion. *Hagen, G. H. L.* Berl. Ak. Ab. (1874) (Mth.) 31 pp.
- Standard levee sections (water pressure). *Coppée, H. St. L.* Am. S. CE. T. 39 (1898) 191-.

2800 Delivery of fluids in pipes.

(See also 2460.)

- Collignon, É. A.* Pon. Chauss. 4 (1892) 845-.
- Fedorow, E.* Fsch. Ps. (1893) (Ab. 1) 354-.
- AIR.
- Combes, C.* C. R. 4 (1837) 945-; A. Mines 12 (1837) 373-.
- Choene, W. D. R. S. P.* 7 (1854-55) 467-; 8 (1856-57) 177-; 10 (1859-60) 461-.
- Joule, J. P.* [1860] Manch. Ph. S. Mm. 1 (1862) 102-.
- compressed. *Koch, F. K. L.* Gött. Stud. Vr. 1 (1824) 1-.
- , *Schmidt, G. G.* Pogg. A. 2 (1824) 39-.
- , *Koch, F. K. L.* [1828] Gött. Stud. Vr. 3 (1833) 1-.
- , *Cagnoni, A.* Mil. At. I. Lomb. 1 (1858) 299-.
- , *Weisbach, J.* Civing. 12 (1866) 1-, 77-.
- , *Schmidt, G.* Dingler 238 (1880) 441-; 240 (1881) 329-.
- discharge through uniform pipes or channels. *Wilkinson, T. T.* (viii) Manch. Gl. S. T. 3 (1862) 289-.
- experiments of Pecqueur. *Poncelet, J. V.* C. R. 21 (1845) 178-.

Delivery in Pipes 2800

- formulæ. *Aubuisson de Voisins, J. F. d'.* Toul. Mm. Ac. 2 (1830) 149-.
- , theoretical. *Morin, A.* C. R. 54 (1862) 406-.
- motion in sewers. *Rözsahgyi, A. von.* Z. Bl. 17 (1881) 23-.
- velocity. *Banks, —.* [1800] Manch. S. Mm. 5 (1802) 398-.
- Apparatus for preventing accumulation of air in pipes. *Steevens, J.* Tilloch Ph. Mg. 39 (1812) 173-.
- study of flow of fluids in pipes. *Élie, B.* J. de Ps. 1 (1882) 459-.
- Application of theory of motion of fluids to Marozeau's experiments. *Morin, A.* C. R. 22 (1846) 1102-.
- Bernoulli's hydraulic theorem, extension. *Buquoy, G. von.* Oken Isis (1823) 688-.
- Carnot's theorem, true sense and sense in hydraulics. *Ramsing, H. M.* Mth. Ts. 4 (1862) 49-.
- Circulation of blood. *Hoorweg, J. L.* Amst. Ak. Vh. 27 (1890) 72 pp.; Fsch. Mth. (1890) 972-.
- — — application of mathematical analysis. *Kramp, C.* Gergonne A. Mth. 3 (1812-13) 77-; 7 (1816-17) 270-.
- water in hot water pipes, theory. *Riccó, A.* Palermo G. Sc. Nt. 17 (1886) 9-.
- Cock, substitute for vent-pg. *Hare, R.* Am. Ph. S. T. 6 (1809) 105-.
- Dimensions of orifices, practical calculation (reference to valves). *Parenty, H. C. R.* 115 (1892) 109-.
- Discharge of 30 in. stop valve. *Smith, J. W.* Am. S. CE. T. 34 (1895) 235-.
- Distribution of velocities in circular pipe, widened at mouth, between entrance and establishment of uniform flow. *Boussinesq, J. C. R.* 113 (1891) 9-.
- — — pipes, new experiments. *Bazin, —.* C. R. 122 (1896) 1250-.
- Drainage of houses. *Carmichael, N.* [1880] Glasg. Ph. S. P. 12 (1880) 132-; Sc. S. Arts T. 10 (1883) 396-.
- , principles. *Clairmont, W. G.* Wien Jb. Gl. 3 (1852) 73-.
- Draining, deep, theory. *Clutterbuck, J. C.* Ag. S. J. 6 (1845) 489-.
- Drains of low-lying plains, formulæ for calculation. *Turazza, D.* Ven. I. Mm. 21 (1879) 189-.
- , tests for leaks. *Thomson, G.* [1898] Sc. S. Arts. T. 15 (1903) 16-.
- Effect of enlargements in pipes. [*Barré de Saint-Venant, —.* C. R. 23 (1846) 147-.
- — — —. *Fliegner, A.* Civing. 21 (1875) 97-.
- — — — and channels. *Boussinesq, J. C. R.* 87 (1878) 491-.
- Elastic fluids. *Navier, C. L. M. H.* [1829] Par. Mm. Ac. Sc. 9 (1830) 311-.
- Equivalent orifices, theory. *Lafitte, —.* St. Ét. Bil. S. In. Mn. 11 (1897) 637-.
- Flood waves in sewers, and their automatic action. *Grover, A. J.* Am. S. CE. T. 28 (1893) 1-, 199-.

- Flow in sewers and water-mains. *Crimp, W. S., & Bruges, C. E.* I. CE. P. 122 (1895) 198-.
- Flushing in pipe sewers. *Ogden, H. N.* Am. S. CE. T. 40 (1898) 1-.
- Friction of air on walls of blast-pipe. *Rittinger, P.* Oestr. Z. Brgw. 4 (1856) 401-.
- in fluid passing from state of rest to one of motion. *Boussinesq, J. C. R.* 90 (1880) 736-.
- of fluid against solid. *Chaudy, F.* Par. Ing. Civ. Mm. (1896) (Pt. 2) 24-.
- and waste of water in mains. *Brush, C. B.* Am. S. CE. T. 19 (1888) 89-.
- of water. *Caligny, A. de.* Par. S. Phlm. PV. (1849) 58-; *Liouv. J. Mth.* 15 (1850) 169-.
- — — — — *Thomson, James, & Fuller, G.* CE. I. P. 14 (1854-55) 310.
- — — in conical pipes. *Weisbach, J.* Civing. 13 (1867) 1-.
- — — — cylindrical pipes. *Busse, F. G. von.* Gilbert A. 34 (1810) 152-.
- — — against smooth surfaces. *Fink, F.* Civing. 38 (1892) 213-.
- — — — solid surfaces of different degrees of roughness. *Unwin, W. C.* [1880] R. S. P. 31 (1881) 54-.
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- for working revolving bridges. *Weyts, A.* Brux. A. Tr. Pbl. 45 (1887) 483-.
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- — — *Steel, J.* Eng. S. T. (1876) 65-.
- — —, hydraulic. *Séguin, — (ainé).* Moigno Cosmos 3 (1853) 136-.
- — —, —. *Frizell, J. P.* Franklin I. J. 74 (1877) 193-; 80 (1880) 145-.
- — — with spray cooling, theory. *Lorenz, H.* Civing. 36 (1890) 109-.

AIR COMPRESSORS.

- Guidi, F.* Rm. N. Linc. At. 32 (1879) 361-.
- Spilsbury, E. G.* [1879] Am. I. Mn. E. T. 8 (*1880) 269-.
- Cailletet, L.* C. R. 94 (1882) 623-.
- Soulary, C.* St. Ét. Bil. S. In. Mn. 7 (1893) 85-.
- Boisset, — de.* St. Et. Bil. S. In. Mn. 7 (1893) 395-.
- Lauras, —.* St. Ét. Bil. S. In. Mn. 7 (1893) 411-.
- Burdy, P.* St. Et. Bil. S. In. Mn. 7 (1893) 419-.
- Peele, R.* Sch. Mines Q. N. Y. 18 (1897) 196-, 309-.
- Jüngst, C.* Z. Berg.-H.-Salw. 48 (1900) (Ab.) 491-.
- Chaquette, and yield of compressors. *Nansouty, M. de.* Rv. Sc. 6 (1896) 508.
- without clearance. *Käs, A.* Oestr. Z. Brgw. 34 (1886) 287-, 305-.
- distribution of work among. *Flamant, A.* [1891] Gén. Civ. 20 (1891-92) 14-.
- hydraulic. *Caligny, A. de.* L'I. 26 (1858) 408-.
- (Sommellier, Grattoni and Grandis). *San Roberto, P. di.* A. Mines 3 (1863) 281-.
- *Caligny, A. de.* C. R. 68 (1869) 770-.
- *Fournier, A.* As. Fr. C. R. (1884) (Pt. 2) 82-.
- , application of mechanical theory of heat. *Cazin, A.* Seine et Oise Mm. 9 (1865) 1-.
- , method of lessening waste due to heating of air during compression. *Caligny, A. de.* C. R. 63 (1866) 828-.
- , Mont Cenis tunnel. *Caligny, A. de.* (VI Add.) Tor. Mm. Ac. 19 (1861) xciv-.
- for motive power. *Colladon, —.* Halle Z. Nw. 6 (1872) 458-.
- Air as motive power in mines. *Fonseca, E.* Santiago de Chile Un. A. 43 (*1873) 585-; 45 (*1874) 327-.

AIR PUMPS.

- Prince, J.* [1783] Bost. Mm. Am. Ac. 1 (1785) 497-.
- Little, J.* [1796] Ir. Ac. T. 6 (1797) 319-.
- MacKenzie, (Sir) G. S.* (VI Add.) Nicholson J. 2 (1799) 28-.
- Marum, M. van.* Gilbert A. 1 (1799) 379-.
- Muncke, G. W.* Voigt Mg. 6 (1803) 146-.
- Voigt, J. H.* Voigt Mg. 10 (1805) 144-.
- Wright, E.* Nicholson J. 12 (1805) 305-.
- Mendelssohn, N.* Gilbert A. 22 (1806) 96-.
- Sylvester, T.* Tilloch Ph. Mg. 26 (1806) 38-.
- Muncke, G. W.* Gilbert A. 42 (1812) 387-.
- Messerschmidt, —.* Gilbert A. 43 (1813) 144-.
- Kiernan, G.* Ir. Ac. T. 13 (1818) 109-.
- Patten, J. H.* Silliman J. 8 (1824) 143-.
- (Patten's.) *Dana, J. F.* Silliman J. 8 (1824) 275-.
- Joiner, J. H.* Thomson A. Ph. 10 (1825) 301-.
- Robinson, T. R.* [1825] Ir. Ac. T. 15 (1828) 13-.
- Belli, G.* Brugnatelli G. 10 (1827) 436-.
- Mohr, C. F.* Pogg. A. 32 (1834) 476-.
- Waltenhofen, A. von.* Wien SB. 17 (1855) 238-.
- Ransome, J. A.* Manch. Ph. S. P. 1 (1857-60) 181-.
- Thalén, R.* Ts. Mt. Fys. 1 (1868) 180-.
- Rouché, E.* N. A. Mth. 19 (1880) 42-.
- Sutton, H.* [1881] Viet. R. S. T. 18 (1882) 122.
- Lubimow, N. A.* Fschtr. Ps. (1890) (Ab. 1) 367.
- Raps, A.* A. Ps. C. 55 (1895) 556-.
- application. *Teissier, L. J.* J. de Ps. 2 (1883) 463-.
- automatic. *Thomson, J. J.* Elect. 31 (1893) 588.

with automatic valve. *Körner, F. Kastner Arch. C. 5 (1832) 240-*.
 bellows, theory. *Strait, H. Silliman J. 27 (1835) 88-*.
 Berrenberg's, for glow-lamps. *W., J. H. Elekttech. Z. 21 (1900) 214-*.
 Bianchi's, metallic connector for. *Swan, W. Ph. Mg. 37 (1869) 442-*.
 Bunsen's. *Johnson, S. W. Am. J. Sc. 43 (1869) 113-*.
 centrifugal. *Ruitov, M. (xii) Rs. Ps.-C. S. J. 14 (Ps.) (1882) [(Pt. 1)] 10-*.
 without clearance. *Pohl, G. F. Pogg. A. 32 (1834) 628-*.
 ——. *Schobl, E. Pogg. A. 84 (1851) 544-*.
 ——. *Gill, R. [1864] Ph. Mg. 32 (1866) 256-*.
 and condenser. *Austin, G. Phil. Trans. (1813) 138-*.
 ——. *Witty, W. Dingler 43 (1832) 445-*.
 condensing. *Joule, J. P. Manch. Ph. S. P. 3 (1862-63) 5*.
 — and exhausting. *Hare, R. Am. Ph. S. T. 5 (1837) 385-*.
 ——. *Johnston, J. Silliman J. 34 (1838) 86-*.
 ——. *Bulk, C. Berl. B. 9 (1876) 1871-*.
 ——. new tap for. *Silbermann, J. J. C. R. 42 (1856) 1051-*.
 construction and use. *Körner, F. Kastner Arch. C. 5 (1832) 250-*.
 double acting. *Ritchie, W. R. I. J. 2 (1831) 288-*.
 —, with Cabinet's tap, limit of exhaustion. *Deventer, J. G. van. Batav. Ntk. Ts. 56 (1897) 183-*.
 —, — single cylinder. *Cramer, J. W. Gilbert A. 71 (1822) 103-*.
 —, ——. *Tate, T. Ph. Mg. 11 (1856) 297-*, 360-.
 with double cylinder. *Clare, R. A. Nicholson J. 4 (1801) 264-*.
 ——. *Derode, V. Lille Tr. (1826-27) 72-*.
 exhausting, theory, and new hydrostatic air pump. *Silva Pinto, M. V. da. [1872-73] (xi) Libs. J. Sc. Mth. 4 (1873) 43-*, 95-.
 forms, old and new. *König, W. Frkf. a. M. Ps. Vr. Jbr. (1896-97) 32-*.
 and gasometer and balance beam. *Patten, J. H. Silliman J. 9 (1825) 92-*.
 hydraulic exhaust apparatus. *Wright, S. [1887-89] Sc. S. Arts T. 12 (1891) 227-*.
 hydrodynamic. *Feilitzsch, F. C. O. von. N.-Vorp. Mt. 9 (1877) 118-*.
 hydrostatic. *Romershausen, E. Kastner Arch. Ntl. 2 (1824) 359-*.
 —. *Seaward, S. Tilloch Ph. Mg. 64 (1824) 441-*.
 —. *Mile, J. Kastner Arch. Ntl. 15 (1828) 1-*.
 —. *Christiansen, C. A. Ps. C. 146 (1872) 155-*.
 —. *Jagn, N. [1872-73] A. Ps. C. 148 (1873) 317-*; *A. C. Phm. 166 (1873) 208-*.
 — (Jagn). *Rennard, E. Phm. Z. Russl. (1873) 257-*.
 —. *Arzberger, F., & Zulkowsky, —. Lieb. A. 176 (1875) 327-*.

hydrostatic, condensing. *Seaward, S. Tilloch Ph. Mg. 64 (1824) 12-*.
 —, forms-. *Linnemann, E. Lieb. A. 177 (1875) 295-*.
 —, modification. *Roster, G. (xii) Rv. Sc.-Ind. 12 (1880) 6-*.
 improved, and barometer scale. *C., L. O. (vi Add.) Nicholson J. 29 (1811) 105-*.
 and McLeod gauge. *Bertin, A. A. C. 19 (1880) 231-*.

Mercury Air Pumps.

Clare, R. A. Nicholson J. 4 (1801) 264-.
Morren, A. A. C. 4 (1865) 320-.
Poggendorf, J. C. Berl. Mb. (1865) 158-.
Jolly, G. Carl Rpm. 1 (1866) 144-.
Babo, C. H. L. von. Freiburg B. 4 (1867) 392-.
Le Bon, G. Carl Rpm. 3 (1867) 267-.
Busch, H. Pflüg. Arch. Pl. 2 (1869) 445-.
Lachinov, D. A. [1873] (xii) Rs. C. Ps. S. J. 6 (Ps.) (1874) [(Pt. 1)] 17-.
Mellies, J. Toul. Mm. Ac. 5 (1873) 363-.
Las Marismas, — de. C. R. 79 (1874) 676-.
Mendelejeff, D. I. Berl. B. 7 (1874) 731-.
Serravallo, G. (xii) Rv. Sc.-Ind. 13 (1881) 215-; 14 (1882) 401-.
Romilly, — de. Par. S. Ps. Sé. (1885) 94-.
Bottomley, J. T. B. A. R. P. (1886) 519-.
Greiner, —, & Friedrichs, —. A. Ps. C. 29 (1886) 672-.
Neesen, F. Berl. Ps. Gs. Vh. (1893) 21-.
Santel, A. Z. Instk. 13 (1893) 93-.
Wood, R. W. A. Ps. C. 58 (1896) 205-.
Neesen, F. Berl. Ps. Gs. Vh. (1897) 83-.
Tuma, J. Wien Ak. Sb. 106 (1897) (Ab. 2a) 473-.
Chatelain, E. U. C. R. 128 (1899) 1131-.
Debrun, C. Bordeaux S. Sc. PV. (1898-99) 88-.
Neesen, F. D. Ps. Gs. Vh. (1900) 82-.
 adaptation for estimation of gases in blood.
Neesen, F. Z. Pl. C. 22 (1896-97) 478-.
 annular. *Antolik, K. Mth. Termt. Éts. 3 (1885) 135-*; *Mth. Nt. B. Ung. 3 (1884-85) 40-*.
 apparatus for connecting and disconnecting receiver under exhaustion. *Bottomley, J. T. R. S. P. 40 (1886) 249-*.
 application of hydraulic power to. *Smith, F. J. Ph. Mg. 25 (1888) 313-*; 29 (1890) 138-.
 automatic. *Couttolenc, G. C. R. 90 (1880) 920-*.
 —. *Schuller, A. A. Ps. C. 13 (1881) 528-*.
 —. *Raps, A. A. Ps. C. 43 (1891) 629-*.
 —. *Morley, E. W. Am. J. Sc. 47 (1894) 439-*.
 —. *Neesen, F. Z. Instk. 14 (1894) 125-*; *A. Ps. C. 55 (1895) 732-*.
 —. *Pupin, M. I. Am. J. Sc. 49 (1895) 19-*.
 —. *Zoth, O. Z. Instk. 16 (1896) 65-*.
 —. *Boas, H. Z. Instk. 16 (1896) 146-*.
 —. *Kahlbaum, G. W. A. Z. Instk. 16 (1896) 151-*.
 —. *Friedrichs, F. A. Ps. C. 62 (1897) 383-*.

- automatic. *Jaumann, G.* Z. Instk. 17 (1897) 243-.
- , *König, W.* Frkf. a. M. Ps. Vr. Jbr. (1896-97) 33-.
- , *Greiner, —, & Friedrichs, —.* Czgt. Opt. 19 (1898) 113-.
- , *Laurence, R. R.* Science 9 (1899) 510-.
- , different systems, comparison of efficiency. *Neesen, F.* Z. Instk. 15 (1895) 273-.
- , experiments. *Raps, A. A.* Ps. C. 48 (1893) 377-.
- , hydrostatic. *Babo, C. H. L. von.* [1878?] Freiburg B. 7 (1880) 350-.
- , regulator without tap for. *Jaumann, G.* A. Ps. C. 61 (1897) 204-.
- , *Schuller's*, efficiency. *Kiss, K.* Mth. Termnt. Éts. 12 (1894) 305-; Mth. Nt. B. Ung. 12 (1895) 47-.
- , simplification. *Neesen, F.* Z. Instk. 20 (1900) 205-.
- development. *Thompson, S. P.* Tel. J. 21 (1887) 556-, 587-, 610-, 632-, 659-.
- double acting, without tap. *Neesen, F.* A. Ps. C. 11 (1880) 522-.
- duplex. *Wood, R. W.* Ph. Mg. 41 (1896) 378-.
- Geissler's*, new form. *Rock, F.* Czgt. Opt. 4 (*1883) 159-.
- Giovenale's improvement (removal of mercury vapour). *Egidi, G.* Rm. N. Linc. At. 46 (1893) 43-.
- intermittent. *Prytz, K.* Ts. Ps. C. 29 (1890) 241-; A. Ps. C. 42 (1891) 191-.
- Kravog's*. *Waltenhofen, A. von.* Wien SB. 44 (1861) (Ab. 2) 603-.
- limit of exhaustion. *Kraevich, K. D.* (xii) Rs. Ps.-C. S. J. 13 (Ps.) (1881) [(Pt. 1)] 335-.
- modification. *Neesen, F.* A. Ps. C. 3 (1878) 608-.
- , *Pflüger, E.* Pflüg. Arch. Pl. 44 (1889) 5-.
- , *Gréhan, N., & Henry, L. d'.* Par. S. Bl. Mm. 45 (1893) (C. R.) 534-.
- , of *Jolly's*. *Narr, F.* A. Ps. C. 25 (1885) 542-.
- modifications. *Guglielmo, G.* Tor. Ac. Sc. At. 19 (*1883) 665-.
- periodic. *Smith, F. J.* Nt. 48 (1893) 320-.
- in Physical Cabinet at Karlsruhe. *Wucherer, G. F.* Kastner Arch. Ntl. 5 (1825) 329-.
- for rapid production of vacuum. *Berlemont, —, & Jouard, —.* C. R. 131 (1900) 110-; Par. S. Ps. Sé. (1900) 194-.
- simplifications; comparison of efficiency. *Neesen, F.* Z. Instk. 19 (1899) 147-.
- Sprengel, Dewar, J.* Edinb. R. S. P. 7 (1872) 662-.
- , automatic. *Macaluso, D.* Spet. It. Mm. 8 (1879) (App.) 35-.
- , —, *Kahlbaum, G. W. A.* A. Ps. C. 53 (1894) 199-.
- , —, *Donle, W.* Z. Instk. 20 (1900) 78-.
- , for filling barometers and thermometers. *Francis, E. E. H.* [1875] C. N. 33 (1876) 68.
- , improvement. *Rood, O. N.* Am. J. Sc. 20 (1880) 57-.
- , —, *Usagin, I. F.* Rs. Ps.-C. S. J. 22 (Ps.) (1890) 229-; J. de Ps. 10 (1891) 592-.
- Sprengel*, inverted and worked backwards for raising mercury. *Smith, F. J.* Ph. Mg. 34 (1892) 115-.
- , limit of exhaustion. *Donkin, W. F. C.* N. 29 (1874) 125-.
- , modifications. *Guglielmo, G.* Rm. R. Ac. Linc. Rd. 6 (1890) (Sem. 2) 153-.
- , new form. *Gimingham, C. H.* [1876] R. S. P. 25 (1877) 396-.
- , —, *Müller, E.* A. Ps. C. 65 (1898) 476-.
- , self feeding. *Wells, H. L.* Am. J. Sc. 41 (1891) 390-.
- , for high vacua. *Rood, O. N.* Am. J. Sc. 22 (1881) 90-.
- , working. *Boas, H. D.* Ps. Gs. Vh. (1900) 246-.
- without taps. *Neesen, F.* (xii) Z. Instk. 2 (1882) 285-; 3 (1883) 245-; 9 (1889) 343-; A. Ps. C. 58 (1896) 415-.
- , —, *Chabaud, —.* C. R. 125 (1897) 101.
- , —, or movable joints. *Henriet, H.* C. R. 125 (1897) 22-.
- Töpler*, modification. *Karavodine, V.* J. de Ps. 2 (1883) 558-.
- , new form. *Hagen, E. B.* [1880] A. Ps. C. 12 (1881) 425-.
- , —, (Hagen). *Neesen, F.* A. Ps. C. 13 (1881) 383-.
- Töpler-Hagen*, modification. *Sundell, A. F.* Helsingf. Acta 14 (1885) 545-; 15 (1888) 169-.
- Weston, Nansouty, M. de.* Gén. Civ. 7 (1885) 289-.
- with free piston. *Deleuil, —.* C. R. 60 (1865) 571-; 64 (1867) 666.
- plate, inventor. *Gerland, E.* A. Ps. C. 2 (1877) 665-.
- , new form. *Terquem, A.* J. de Ps. 9 (1880) 346-.
- pressure changes in. *Golicyn, (Prince) B. B.* St. Pét. Ac. Sc. Bl. 5 (1896) xi-; 7 (1897) 409-.
- of Prince and of Cuthbertson. *Nicholson, W.* Nicholson J. 1 (1797) 119-.
- , —, —, —, *Adet, —.* A. C. 25 (1798) 126-.
- on principle of Torricellian vacuum. *Trail, T. S.* Nicholson J. 21 (1808) 63-.
- , —, —, —, (same principle as Geissler's). *Fafchamps, —.* A. Gén. Sc. Ps. 6 (1820) 101-.
- , —, —, —, *Kemp, K. T.* Edinb. J. Nt. Gg. Sc. 2 (1830) 95-.
- rotary. *Schulze-Berge, F.* A. Ps. C. 50 (1893) 368-.
- simplification of work with. *Bauer, K. L.* A. Ps. C. 20 (1883) 542-.
- substitute for taps in vacuum experiments. *Romilly, F. de.* Par. S. Ps. Sé. (1888) 351-.
- with taps, application of Babinet's improvement. *Hessler, F.* D. Nf. Vsm. B. (1843) 229-.
- theory. *Barrois, T.* Lille Tr. (1826-27) 77-.
- and construction. *Felitzsch, F. C. O. von.* N.-Vorp. Mt. 5 & 6 (1874) 145-.

for high vacua. *Joule, J. P.* Manch. Lt. Ph. S. P. 12 (1873) 43, 55-.

— — — *Swinburne, J. C.* N. 62 (1890) 188-.

— very perfect vacua. *Dewar, J., & Tait, P. G.* [1874-75] Edinb. R. S. P. 8 (1875) 348-, 628.

vacuum formation, Plateau's experiment. *Mensbrugge, — van der.* Brux. S. Sc. A. 23 (1899) (Pt. 1) 10-.

— — in given space, work performed. *Koláček, F.* A. Ps. C. 159 (1876) 643-.

—, preservation. *Charière, A., & Midre, —.* Lyon S. Ag. A. 4 (1860) 181-.

— produced by. *Auerbach, F.* A. Ps. C. 41 (1890) 364-.

—, production by centrifugal force of mercury. *Plateau, J. A. F.* Brux. Ac. Bil. 9 (1842) (pte. 2) 178-.

without artificial valves. *Ritchie, W.* Thomson A. Ph. 12 (1826) 153-.

Applied mechanics, general principles and theorems; calculation of work transmitted by liquid masses. *Reech, F.* (vi *Adds.*) C. R. 16 (1843) 1356-.

Bellows with continuous draught. *Madelaine, —.* A. Mines 4 (1819) 271-.

BLOWING MACHINES.

Rambourg, —. (vi *Adds.*) J. Mines 7 (1797-98) 105-.

Beauvier, —, & Gallois, —. J. Mines 16 (1804) 37-.

Clapeyron, E. A. Mines 7 (1822) 3-.

Aubuisson de Voisins, J. F. d'. A. Mines 9 (1824) 521-; 11 (1825) 161-; 4 (1828) 210-.

Caligny, A. de. C. R. 19 (1844) 1267-.

Furiet, —. A. Mines 11 (1857) 681-.

Caligny, A. de. Liouv. J. Mth. 13 (1868) 43-.

Ihering, A. von. Wien Berg-Hm. Jb. 40 (1892) 381-.

Kennedy, J. [1893] Am. I. Mn. E. T. 22 (1894) 537-, 709-.

bucket-wheel. *Wellner, G.* Wien Berg-Hm. Jb. 28 (1880) 93-.

changes in working. *Hauer, J. von.* Oestr. Z. Brgw. 14 (1866) 156-.

with constant blast. *Braun, —.* Dingler 68 (1838) 34-.

cylinder. *Baader, J. von.* J. Mines 25 (1809) 81-, 161-.

—, maximum of suction. *Wellner, G.* Wien Berg-Hm. Jb. 25 (1877) 8-.

—, new apparatus for. *Nordenskiöld, N.* Jern-Kont. A. 6 (1823) 204-.

experiments. *Lampadius, W. A.* Schweigger J. 19 (1817) 319-.

— *Tardy, —, & Thibaud, —.* A. Mines 8 (1823) 595-.

fan. *Saint-Léger, — de.* A. Mines 7 (1835) 295-; 11 (1837) 89-.

— *Burdin, —.* A. Mines 10 (1836) 471-.

— *Münster, E. N.* Mg. Ntdv. 6 (1851) 89-.

— *Rankine, W. J. M.* Glasg. T. I. Eng. 1 (1857-58) 25-.

for giving supply of coal-gas under pressure for sensitive flames. *Marshall, F. H.* B. A. Rp. (1874) (Sect.) 42.

of Francis Gréhan. *Gréhan, N.* Par. S. Ps. Sé. (1888) 374-, 375-.

with hot blast. *Buff, H.* Pogg. A. 37 (1836) 196-.

hydraulic. *Baader, J. von.* J. Mines 29 (1811) 51-.

— *Marignac, C. de.* A. Mines 1 (1842) 69-.

— (Lüders). *Frapolli, L.* A. Mines 12 (1847) 391-.

— *Buff, H.* Lieb. A. 79 (1851) 249-.

—, indicator diagrams. *Firmstone, F.* Am. I. Mn. E. T. 7 (*1879) 339-.

Lataye's tympanum. *Lebette, L. P.* A. Mines 6 (1844) 113-.

regulators for. *Baillet, A.* J. Mines 14 (1803) 188-, 302-.

Upper Assam. *Mallet, F. R.* I. Gl. Sv. Ro. 10 (1877) 152-.

useful effect. *Buff, H.* Gött. Vr. Stud. 4 (1841) 393-.

volume of air. *Aubuisson de Voisins, J. F. d'.* J. Mines 38 (1815) 155-.

— — —, calculation. *Koch, F. K. L.* [1832] Gött. Stud. Vr. 3 (1833) 27-.

— — —, tables. *Neuschild, C.* Berg-Hm. Ztg. 18 (1859) 27-.

— — —, —, —, *Hauer, J. von.* Wien Berg-Hm. Jb. 24 (1876) 74-.

— — — corresponding to given height of manometer. *Weisbach, J.* Schlämilch Z. 6 (1861) 421-.

working at high velocities. *Slate, A.* Franklin I. J. 23 (1852) 32-.

Carbon dioxide as motive power. *Baggs, J.* (vi *Adds.*) Majocchi A. Fis. C. 9 (1843) 210-.

— — — —, and ammonia. *Hutchinson, H. N.* Rugby NH. S. Rp. 6 (1872) 28-.

— — — press. *Kobell, F. von.* Münch. Nt. Tech. Com. Ab. 1 (1857) 75-.

COMPRESSED AIR.

apparatus for sinking mine-shafts, etc. under water and in submerged sand. *Triger, —.* C. R. 13 (1841) 884-.

application in mechanics. *Cederblom, J. E.* Jern-Kont. A. 32 (1877) 456-; Berg-Hm. Ztg. 37 (1878) 23-; 38 (1879) 107-.

for coal cutting machinery. *Firth, W. B. A.* Rp. 43 (1873) 175-.

energy. *Perrigault, —.* Les Mondes 26 (1871) 431 [441]-.

engines. *Delisle, —.* Lille Tr. (1826-27) 101-.

— *Sekowski, A.* Par. T. Nauk Śc. Pam. 7 (*1875) Art. 4, 15 pp.

in foundries. *Pedrick, H. A.* Am. Eng. & Railroad J. 69 (1895) 357-.

machinery for underground haulage. *Daniel, W.* I. ME. P. (1874) 204-.

in making foundations. *Faton, —.* Gen. Bil. I. Nt. 16 (1870) 267-.

- in making foundations. *Malézieux, É. A.* Pon. Chauss. 7 (1874) 329-.
- mechanical boring. *Soulary, C.* St. Ét. Bil. S. In. Mn. 6 (1892) 383-.
- — — — — *Druge, J.* St. Ét. Bil. S. In. Mn. 7 (1893) 387-.
- mining. *Blavier, Éd.* Nord Mm. S. Ag. (1845-46) 263-.
- — — — — *Godron, A.* Nancy Mm. Ac. Stanislas (1858) 235-.
- as motor. *Pecqueur, —.* (vi *Adds.*) *Majocchi A. Fis. C.* 23 (1846) 219-.
- — — — — *Mareschal, J.* Presse Sc. 1 (1860) 42-, 533-.
- — — — — *Jordan, W.* Am. As. P. 21 (1872) 63-.
- — — — — *Banneux, P.* Brux. A. Tr. Pbl. 34 (1876) 187-, 391-.
- — — — — *Frey, H.* Dingler 224 (1877) 233-, 353-.
- — — — — *Bramwell, F. J. B. A. Rp.* (1882) 666.
- motors. *Biez, —.* Les Mondes 14 (1867) 7-.
- — — — — *Jacobus, D. S.* [1890] Am. I. Mn. E. T. 19 (1891) 553-.
- — — — — *Jenkins, R.* Aer. J. 1 (1897) (No. 2) 5.
- in aeronautics. *Saunders, W. L.* Franklin I. J. 133 (1892) 370-.
- — — — — mines. *Boca, E.* As. Fr. C. R. 12 (1883) 270-.
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- , *Rossigneux, —.* St. Ét. Bil. S. In. Mn. 4 (1890) 733-.
- , *Henrotte, J.* Brux. A. Tr. Pbl. 50 (1893) 373-.
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- , *Doble, W. A.* [1899] Am. I. Mn. E. T. 29 (1900) 852-.
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- Deverell, S. R.* [1877] Vict. R. S. T. 14 (1878) 7-.
- Benot y Rodriguez, E.* (xii) Madrid Ac. Ci. Mm. 9 (1881) 871 pp.

- Snell, C. S.* Tel. J. 11 (1882) 454-.
- Stahl, A. W.* Rv. Sc. 50 (1892) 314-.
- Linden, H.* Nt. 47 (1892-93) 438-.
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- — — slightly curved surfaces. *Obermayer, A. von.* Wien Ak. Sb. 104 (1895) (Ab. 2a) 963-.
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- — —, gauging. *Hamal, C.* Brux. A. Tr. Pbl. 19 (1860-61) 317-; 21 (1863-64) 149-.
- — —, motion and composition. *Förster, B. R., & Hausse, R.* Jb. Berg.-Hw. (1879) 1-.
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- , Murgue recording volumetric. *Murgue, D.* [1899] N. Eng. I. Mn. E. T. 48 (1900) 113-.
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- —, rifled. *Longridge*, *J. A. R. S. P.* 16 (1868) 263-.
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- — with high velocities. *Didion*, *I. C. R.* 42 (1856) 1025-.
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- Barruel*, *E. Par. Éc. Pol. J.* 11° *cah.* (1801-02) 295-.
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- Tyro (Pseud.)*. *Gleanings Sc.* 1 (1829) 87-.
- Masson*, *A. Par. S. Phlm. PV.* (1843) 85-.
- Wertheim*, *G. C.R.* 19 (1844) 229-; *A. C.* 12 (1844) 385-, 581-.
- Kupffer*, *A. T. Erman Arch. Rs.* 16 (1857) 400-.
- Besant*, *W. H. Mess. Mth.* 11 (1882) 63-.
- Beltrami*, *E. Palermo Cir. Mt. Rd.* 3 (1889) 67-.
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- Causes of elasticity. *Treschow*, *N. Kiöb. Dn. Vd. Selsk. Skr.* 4 (1805-06) 51-.
- Dilatancy of media composed of rigid particles in contact. *Reynolds*, *O. Ph. Mg.* 20 (1885) 469-.
- Elastic bodies and electricity, quaternion investigations. *Glan*, *P. Münch. Ak. Sb.* 28 (1899) 117-.
- — — light, absorption, strong, of light by metals. *Glan*, *P. A. Ps. C.* 59 (1896) 401-.
- — — — of ultra violet light. *Glan*, *P. A. Ps. C.* 59 (1896) 131-, 155-.
- — — — circular vibrations in crystals. *Glan*, *P. A. Ps. C.* 63 (1897) 230-, 563-.
- — — — quaternion investigations. *Glan*, *P. A. Ps. C.* 57 (1896) 112-, 604-.
- — — — on crystals. *Glan*, *P. A. Ps. C.* 60 (1897) 174-.
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- Elasticity as mode of motion. *Thomson*, (*Sir*) *W.* [1881] *R. I. P.* 9 (1882) 520-.
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- Geology, applications of physics and mathematics. *Chree*, *C. Ph. Mg.* 32 (1891) 233-, 342-.
- Green's medium. *Beltrami*, *E. Mil. I. Lomb. Rd.* 24 (1891) 717-, 779-.
- Homogeneous bodies with constant elasticity. *Lorenz*, *L.* [1860] *Crelle J.* 58 (1861) 329-.
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- — —, theorem. *Gosiewski, W.* Par. T. Nank Śc. Pam. 8 (*1876) (Art. 1) 7 pp.; *Bll. Sc. Mth. As. 1* (*1877) (Pt. 2) 223.
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- Potentials, electrodynamic and magnetic. *Élie, B. J. de Ps.* 2 (1883) 489-.
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- , general property. *Lévy, M. C. R.* 107 (1888) 414-, 453-.
- , — — (Lévy). *Cesaro, —.* *C. R.* 107 (1888) 520-.
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- Betti, E.* (ix) *N. Cim.* 7 & 8 (1872) 5-, 69-, 158-, 357-; 9 (1873) 34-; 10 (1873) 58-.
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- *Kennedy, A. B. W. Nt.* 32 (1885) 269-, 504-.

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- , solids with several. *Baudrimont, A. C. R.* 31 (1850) 886-.
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- — — and crystalline forms. *Rankine, W. J. M.* [1855] *Phil. Trans.* (1856) 261-.
- — —, dispersion in monoclinic crystals. *Heusser, J. C. Pogg. A.* 91 (1854) 497-.
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- — —, vertical, equilibrium under gravity. *Voigt, W. Gött. Nr.* (1886) 598-.
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- , —, transmission by elastic strip. *La Rive, L. de.* Arch. Sc. Ps. Nt. 30 (1893) 349-.
- Media, distinct solid, in contact. *Chree, C.* QJ. Mth. 21 (1886) 107-.
- Motion in infinite solid produced by body moving through same space. *Kelvin, (Lord).* [1900] Edinb. R. S. P. 23 (1902) 218-.
- of solid strained by extraneous forces. *Betti, E. L.* Mth. S. P. 20 (1889) 246-.
- Navier's formula. *Belliard, —.* A. Pon. Chaus. 5 (1893) 728-.
- Problems of elasticity and hydrodynamics, identity in solution. *Poisson, G. C. R.* 129 (1899) 513-.
- Reflection of displacements. *Kretz, X. C. R.* 97 (1883) 476-.
- Rigidity of the earth. *Darwin, G. H.* B. A. Rp. (1882) 472-.
- — —. *Rudski, M. P.* Ph. Mg. 38 (1894) 218-.
- — —, Sir William Thomson's estimate. *Love, A. E. H.* Camb. Ph. S. T. 15 (1894) 107-.
- Rotating cylinders, circular long. *Chree, C.* Camb. Ph. S. P. 7 (1892) 283-.
- of elliptic section. *Chree, C.* Ph. Mg. 34 (1892) 70-, 154-.
- ellipsoid, problem (Chree). *Edwardes, D.* QJ. Mth. 27 (1895) 81-.
- spheroid. *Hough, S. S.* [1896] Phil. Trans. (A) 187 (1897) 319-.
- Similar bodies, forces and vibrations. *Galliot, —.* A. Pon. Chaus. 11 (1886) 490-.
- , motion. *Phillips, É.* Par. Ac. Sc. Mm. 38 (1873) 91-.
- Statistical problem. *Crelle, A. L.* Crelle J. 51 (1856) 100-.
- problems leading to Clapeyron's equations. *Müller-Breslau, H.* Z. Bauw. 41 (1891) 103-.
- Transmission of external forces through solids. *Leger, J. P. A.* Par. Ing. Civ. Mm. (1879) 288-.
- impact through solids. *Christoffel, E. B.* A. Mt. 8 (1877) 193-.
- motion through elastic media. *Poisson, S. D.* [1830] Par. Mm. Ac. Sc. 10 (1831) 549-.
- — — —. *Schmitt, N.* Hann. Archt.-Vr. Z. 45 (1899) 175-, 393-.
- — —, general theorem. *Hugoniot, —.* C. R. 102 (1886) 858-.
- — —, especially in perfect gases. *Hugoniot, H.* Par. Éc. Pol. J. 57 (1887) 3-; 58 (1889) 1-.
- pressure through isotropic solid. *Boussinesq, J. C. R.* 93 (1881) 703-; 95 (1882) 1149-.
- strains in metals under stress. *Mengin, —.* C. R. 124 (1897) 681-.
- stress in isotropic media, and action at a distance. *Chree, C.* Edinb. Mth. S. P. 11 (1893) 107-.
- — — — solid, across plane of discontinuity. *Mitchell, J. H.* [1899] L. Mth. S. P. 31 (1900) 183-.

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- Tendering, F.* Arch. Mth. Ps. 66 (1881) 147-.
- Volterra, V.* Rm. R. Ac. Linc. Rd. 2 (1893) (Sem. 1) 389-.
- Tedone, O.* Rm. R. Ac. Linc. Rd. 5 (1896) (Sem. 2) 58-.
- Amplitudes not infinitely small. *Braun, F.* [1873] (vii) Pogg. A. 151 (1874) 51-, 250-.
- Communication of vibrations. *Duhamel, J. M. C.* C. R. 15 (1842) 1-.
- — —. *Peirce, B.* Am. As. P. 16 (1867) 17-.

- Composition of vibrations. *Mach, E.* Wien SB. 47 (1863) (Ab. 2) 33-.
- Cylinders, infinite isotropic, small vibrations, velocity of transmission. *Pochhammer, L.* Crelle J. Mth. 81 (1876) 324-.
- , solid and hollow, longitudinal vibrations. *Chree, C.* [1898] L. Ps. S. P. 16 (1899) 304-; Ph. Mg. 47 (1899) 333-.
- Cylindrical shell, infinitely long, free vibrations. *Rayleigh, (Lord).* R. S. P. 45 (1889) 443-.
- , radical vibrations. *Basset, A. B.* [1839] L. Mth. S. P. 21 (1891) 53-.
- vessel containing liquid. *Rayleigh, (Lord).* Ph. Mg. 15 (1883) 365-.
- Damping in perfectly elastic media. *Podlaski, L.* Prace Mt.-Fiz. 9 (1898) 46-.
- Determination, experiments. *Felici, R. N.* Cim. 26 (*1867) 255-.
- Disks, crystalline, transverse vibrations. *Sundberg, E.* Stockh. Öfv. (1885) No. 5, 77-; Fsch. Mth. (1885) 965.
- Elasticity and vibrations. *Barré de Saint-Venant, —.* L'I. 23 (1855) 440-.
- Engine foundations. *Whitchee, J.* Elect. Rv. 39 (1896) 68-, 102-.
- Equations. *O'Brien, M.* [1847] Camb. Ph. S. T. 8 (1849) 508-.
- in curvilinear coordinates. *Tedone, O.* Tor. Ac. Sc. At. 35 (1900) 302- or 460-.
- , general. *Stefan, J.* Pogg. A. 102 (1857) 365-.
- , integral. *Duhem, P.* Bordeaux S. Sc. Mm. 3 (1899) 317-.
- , —, for strings or rods. *Osorio, R. G.* Coimbra I. 3 (1855) 59-, 105-; 5 (1857) 213-.
- Forms. *Chree, C.* Edinb. Mth. S. P. 4 (1886) 65-.
- Free vibrations of structures, harmonic analysers for periods. *Reynolds, O.* Manch. Lt. Ph. S. Mm. & P. 4 (1891) 223-.
- Friction as cause. *Duhamel, J. M. C.* C. R. 42 (1856) 973-.
- General expressions for vibrations. *Somigliana, C.* Rm. R. Ac. Linc. Rd. 1 (1892) (Sem. 2) 111-.
- theory illustrated by earthquakes and earthquake sounds. *Knott, C. G.* Jap. Seism. S. T. 12 (1888) 115-.
- Infinite medium outside solid body. *Brillouin, M.* C. R. 117 (1893) 94-.
- Isochronous vibration, elementary solution of dynamical problem. *Reynolds, O.* [1882] Manch. Lt. Ph. S. P. 22 (1883) 38-.
- , —, — (Reynolds). *Rawson, R.* Manch. Lt. Ph. S. P. 22 (1883) 51-.
- Isotropic medium, general form of law. *Mercadier, E.* C. R. 115 (1892) 1264-.
- solids of nearly spherical form. *Chree, C.* Am. J. Mth. 16 (1894) 299-; 19 (1897) 121-.
- Lateral vibrations, period equation. *Greenhill, A. G.* Mess. Mth. 16 (1867) 115-.
- Light, differential equations. *Brill, A.* [1868] Mth. A. 1 (1869) 225-.
- Longitudinal vibrations of cylinders and prisms. *Peyré, J. M. M.* Seine-et-Oise Mm. (1835) 27-.
- Maintained vibrations. *Rayleigh, (Lord).* Ph. Mg. 15 (1883) 229-.
- Mutual action of oscillatory twists in elastic medium, application to vibratory theory of electricity. *Leahy, A. H.* [1885] Camb. Ph. S. T. 14 (1889) 188-.
- Pendulum observations, correction for elasticity. *Pizzetti, P.* N. Cim. 8 (1898) 215-.
- , —, —. *Almansi, E.* N. Cim. 9 (1899) 260-; 10 (1899) 85-, 305-.
- Plates, circular. *Résal, H.* A. Mines 2 (1872) 226-.
- , —. *Mercadier, E.* J. de Ps. 4 (1885) 541-.
- , clamped. *Lauricella, G.* N. Cim. 4 (1896) 134-.
- , infinite, free vibrations. *Rayleigh, (Lord).* L. Mth. S. P. 20 (1889) 225-.
- , —, propagation of transverse motion. *Boussinesq, J.* C. R. 108 (1889) 639-.
- and rods, experiments. *Baudrimont, A.* A. C. 32 (1851) 288-.
- Polyhedric concamerations. *Perry, G. C. R.* 76 (1873) 721-.
- Rings. *Love, A. E. H.* L. Mth. S. P. 24 (1893) 118-.
- , integration of equations. *Bulgakov, N.* Rs. Ps.-C. S. J. 31 (Ps.) (1899) 103-, 143-; Fsch. Ps. (1899) (Ab. 1) 477.

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- Seebeck, A.* Leip. Ab. Mth. Ps. 1 (1852) 131-.
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- , —. *Hugoniot, —, & Sébert, H.* C. R. 95 (1882) 213-, 278-, 338-, 381-, 775-.
- , —. *Chree, C.* QJ. Mth. 21 (1886) 287-; 23 (1889) 317-.
- , —. *Jäger, G.* Wien Ak. Sb. 109 (1900) (Ab. 2a) 81-.
- of anisotropic bars. *Chree, C.* QJ. Mth. 24 (1890) 340-.
- rods, compound. *Obermann, J.* Arch. Mth. Ps. 55 (1873) 22-.
- and strings. *Chladni, E. F. F.* Voigt Mg. 1 (1797) 7-.
- wires, terminally loaded. *Navier, C. L. M. H.* Par. S. Phlm. Bil. (1823) 73-.
- thin elastic, and beams, motion. *Röhrs, J. H.* [1860] Camb. Ph. S. T. 10 (1864) 359-.
- , equilibrium and motion. *Kirchhoff, G.* Crelle J. 56 (1859) 285-.
- torsional vibrations. *Chladni, E. F. F.* Berl. Gs. Nt. Fr. N. Schr. 2 (1799) 274-.
- , —. *Cauchy, A. L.* Par. Mm. Ac. Sc. 9 (1830) 119-.
- , —. *Barré de Saint-Venant, —.* C. R. 28 (1849) 69-.
- , —. *Wertheim, G.* C. R. 28 (1849) 126-.
- transverse vibrations. *Stefan, J.* Wien SB. 32 (1858) 207-.
- (Stefan). *Lang, V. von.* Wien SB. 34 (1859) 63-.

- transverse vibrations, constants, determination. *Lang, V. von*. Pogg. A. 103 (1858) 624-.
- , equation. *Davidoglou, A.* Par. Éc. Norm. A. 17 (1900) 359-.
- , laws. *Mercadier, E. C. R.* 98 (1884) 803-, 911-; Par. S. Ps. Sé. (1884) 163-.
- , nodes. *Strehlke, F.* Pogg. A. 27 (1833) 505-; 28 (1833) 512-.
- of rods of variable section. *Kirchhoff, G.* Berl. Ak. Mb. (1879) 815-.
- — — weighted rods. *Lippich, F.* [1861] Wien SB. 45 (Ab. 2) (1862) 91-.
- Savart's law, proof. *Cauchy, A. L.* [1829] Par. Mm. Ac. Sc. 9 (1830) 117.

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- geometrical theory. *Kövesligethy, R.* Mth. Term. Ets. 13 (1895) 363-; Mth. Nt. B. Ung. 13 (1897) 418-; Föl. Közl. 30 (1900) 23-, 120-.
- mathematical theory. *Chree, C.* [1896] L. Ps. S. P. 15 (1897) 31-; Ph. Mg. 43 (1897) 173-.
- propagation of earthquake motion. *Oldham, R. D.* Phil. Trans. (A) 194 (1900) 135-.
- — —, velocity. *Fouqué, F., & Michel-Lévy, —*. Rv. Sc. 41 (1888) 97-, 161-.
- — —, apparent. *Rudzki, M. P.* [1897] Krk. Ak. (Mt.-Prz.) Rz. 13 (1898) 348-; Btr. Geops. 3 (1898) 495-.
- shocks. *Le Conte, J.* Science 6 (1885) 540.
- waves, phenomena analogous to dispersion of light. *Rudzki, M. P.* [1898] Krk. Ak. (Mt.-Prz.) Rz. 16 (1899) 115-; Crc. Ac. Sc. Bll. (1898) 166-.
- , velocity, Brescian earthquake, Nov. 1894. *Baratta, M.* Nt. 53 (1895-96) 564.
- , —, Constantinople earthquake. *Eginitis, —*. Nt. 54 (1896) 447.
- , —, and elastic constants of rocks. *Nagao, H.* Ph. Mg. 50 (1900) 53-.
- Shells bounded by confocal spheroids, free normal vibrations. *Ibbetson, W. J.* Camb. Ph. S. P. 5 (1886) 68-, 312-.
- , rotating ellipsoidal, containing fluid. *Hough, S. S.* [1895] Phil. Trans. (A) 186 (1896) 469-.
- Small body fastened to elastic body. *Dienger, J.* Grunert Arch. 8 (1846) 205-.
- vibrations, integration of partial differential equations. *Ostrogradsky, M. A.* [1829-32] St. Pét. Ac. Sc. Mm. 1 (1831) 455-; 2 (1833) 339-.
- — of surface. *Civinini, L.* G. Mt. 28 (1890) 375-.
- Solids. *Heim, J. P. G. von.* [1849] Crelle J. 40 (1850) 1-.
- *Lauricella, G.* A. Mt. 26 (1897) 113-.
- , isotropic. *Cerruti, V.* Rm. R. Ac. Linc. Mm. 8 (1880) 361-; 13 (1882) 123.
- , —, *Volterra, V.* Acta Mth. 18 (1894) 161-.
- , —, *Lauricella, G.* Catania Ac. Gioen. At. 12 (1899) Mem. 2, 9 pp.

- Solids, isotropic and homogeneous. *Tedone, O.* Tor. Ac. Sc. Mm. 47 (1897) 181-.
- Spheres. *Mainardi, G.* A. Sc. Lomb. Ven. 8 (1838) 122-.
- *Lamb, H. L.* Mth. S. P. 13 (1881-82) 189-.
- *Jaerisch, P.* Hamb. Mth. Gs. Mt. 3 (1900) 51-.
- , hollow, frequency of oscillation. *Loschmidt, J.* Wien Ak. Sb. 93 (1886) (Ab. 2) 434-.
- , isotropic. *Henneberg, L.* [1877] A. Mt. 9 (1878-79) 193-.
- , —, *Jaerisch, P.* [1879] Crelle J. Mth. 88 (1880) 131-.
- , motion in infinite elastic medium, and reaction of medium on spheres, theory. *Brillouin, —*. A. C. 2 (1894) 117-.
- and spherical shells, isotropic, forced vibrations. *Chree, C.* Camb. Ph. S. T. 16 (1898) 14-.
- , tides. *Darwin, G. H.* Mess. Mth. 8 (1879) 23-.
- Spherical shells. *Lamb, H.* [1882] L. Mth. S. P. 14 (1882-83) 50-.
- — containing liquid, free and forced vibrations. *Love, A. E. H.* L. Mth. S. P. 19 (1889) 170-.
- Spheroid, viscous, and yielding nucleus, tides. *Darwin, G. H.* Phil. Trans. 170 (1879) 1-.
- Springs, spiral, loaded. *Wülfen, L. R.* Ph. Mg. 38 (1894) 386-.
- , —, longitudinal vibrations, character. *Geršič, A.* Rs. Ps.-C. S. J. 31 (Ps.) (1899) 249-; Fsch. Ps. (1899) (Ab. 1) 490.
- , —, propagation of gradual stretching. *La Rive, L. de.* Arch. Sc. Ps. Nt. 6 (1898) 380-.
- , uniform straight. *Sang, E.* [1867] Edinb. R. S. P. 6 (1869) 150-.

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- approximately sinusoidal oscillations of long period, applications to resistance of air and elastic properties of thin cords. *Bouasse, H.* Toul. Fac. Sc. A. 11 (1897) F, 76 pp.
- elastic, motion. *M. QJ.* Mth. 4 (1861) 178-.
- , suspended at one end and cut at any point, motion. *Niven, C.* [1878] Mess. Mth. 8 (1879) 75-.
- , — — —, motion. *Mercadier, E. de.* C. R. 77 (1873) 639-, 671-, 1292-, 1366-.
- , — — —, — (Mercadier). *Valerius, H.* C. R. 77 (1873) 1184-.
- experiments. *Melde, F.* A. Ps. C. 21 (1884) 452-.
- indiarubber, longitudinal vibrations. *Lang, V. von.* Wien Ak. Sb. 108 (1899) (Ab. 2a) 692-.
- , stretched, forced longitudinal and transverse vibrations, phase differences. *Oosting, H. J.* Amst. Ak. Vs. 3 (1895) 262-; Fsch. Ps. (1895) (Ab. 1) 425.
- , —, vibrations, stroboscopic experiments. *Oosting, H. J.* Amst. Ak. Vs. 4 (1896) 152-; Fsch. Ps. (1895) (Ab. 1) 425.

- indiarubber, stretched, transverse vibrations, frequency. *Baker, T. J.* [1900] L. Ps. S. P. 17 (1901) 107-; Ph. Mg. 49 (1900) 347-.
- periodically loaded, discontinuities connected with propagation of wave-motion. *Godfrey, C.* Ph. Mg. 45 (1898) 356-.
- stretched. *Harnack, A.* Mth. A. 29 (1887) 486-.
- , wave-motion. *Barlow, W. B. A.* Rp. (1894) 593.
- and strips. *Gripon, E. C. R.* 73 (1871) 1213-; Par. Ec. Norm. A. 2 (1873) 357-.
- vibrating, elasticity and change of volume. *Cagniard-Latour, C.* Edinb. J. Sc. 8 (1828) 201-.
- , —, influence. *Savart, N. A. C.* 6 (1842) 5-; C. R. 14 (1842) 915-.

- Systems, approximately simple. *Rayleigh, (Lord).* Ph. Mg. 46 (1873) 357-; 48 (1874) 258-.
- , compound. *Chree, C.* Camb. Ph. S. T. 15 (1894) 139-.
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- — points. *Duhamel, J. M. C.* [1832] Par. Ec. Pol. J. 23^e cah. (1834) 1-.
- —, properties of vibrations. *Stefan, J.* Wien Sb. 66 (1872) (Ab. 2) 159-.
- Transverse vibrations of strips, laws. *Mercadier, E.* Lum. Élect. 12 (1884) 81-.
- Vis viva*, determination, new theorem. *Saint-Venant, B. de.* C. R. 60 (1865) 732-.
- , equation. *Oppenheim, S. A.* Ps. C. 14 (1881) 705-.

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- of elastic displacement, propagation along helical wire. *Love, A. E. H.* Camb. Ph. S. T. 18 (1900) 364-.
- explosive, propagation in solids and liquids. *Berthelot, —.* C. R. 112 (1891) 16-.
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- influence of gravity, and case of elastic globe. *Bromwich, T. J. P. A.* [1898] L. Mth. S. P. 30 (1899) 98-.
- plane, general theory. *Beltrami, E.* Palermo Cir. Mt. Rd. 5 (1891) 227-.
- , in incompressible medium, and double refraction. *Kohl, E.* Mh. Mth. Ps. 10 (1899) 343-.
- , of 3rd order in isotropic elastic medium. *Pearson, K.* Camb. Ph. S. P. 5 (1886) 296-.
- , propagation. *Haughton, S.* Camb. and Dubl. Mth. J. 8 (1853) 159-; 9 (1854) 129-.
- transverse, in elastic bodies. *Glan, P.* Wien Ak. Sb. 107 (1898) (Ab. 2a) 1050-.
- propagation. *Mathieu, É.* C. R. 56 (1863) 255-.
- in absorbent media and seismological application. *Kohl, E.* Mh. Mth. Ps. 9 (1898) 358-.

- propagation due to internal forces, transformation of equations. *Warren, J. W.* QJ. Mth. 6 (1863) 137-.
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- along plane surface of elastic solid. *Rayleigh, (Lord).* L. Mth. S. P. 17 (1887) 4-.
- in variable medium, and seismological applications. *Kohl, E.* Mh. Mth. Ps. 9 (1898) 151-.
- reflexion and refraction, with seismological applications. *Knott, C. G.* Ph. Mg. 48 (1899) 64-.
- solitary plane, reflexion and refraction. *Kelvin, (Lord).* Edinb. R. S. P. 22 (1900) 366-.
- , spherical, in elastic solid, force necessary for production. *Kelvin, (Lord).* Ph. Mg. 47 (1899) 480-; 48 (1899) 227-, 388-.
- transverse spherical, reflexion and refraction. *Jaerisch, P.* Crelle J. Mth. 117 (1897) 291-.
- types, 2, graphical. *Kelvin, (Lord).* B. A. Rp. (1898) 792.

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- period and logarithmic decrement. *Thompson, J. O.* Ps. Rv. 8 (1899) 141-.
- — — (Thompson). *Peddie, W.* Edinb. R. S. P. 22 (1900) 598-.
- straight, curves produced by vibrations. *Sang, E.* [1889] Sc. S. Arts T. 12 (1891) 295-.
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- —, damping. *Streintz, H.* Wien Ak. Sb. 69 (1874) (Ab. 2) 337-; A. Ps. C. 153 (1874) 387-.
- —, — (Streintz). *Meyer, O. E.* A. Ps. C. 154 (1875) 354-.
- —, — (Meyer). *Streintz, H.* A. Ps. C. 155 (1875) 588-.
- —, —. *Braun, W., & Kurz, A.* Carl Rpm. 15 (1879) 561-; 17 (1881) 233-.
- —, —. *Koch, A. A.* Ps. C. 36 (1889) 122-.
- —, — due to internal friction. *Klemenčič, I.* Wien Ak. Sb. 81 (1880) (Ab. 2) 791-.
- of heated iron wire. *Messer, H.* [1878] Freiburg B. 7 (1880) 260.
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3230 Torsion and flexure of prisms.

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- Barré de Saint-Venant, —.* Par. Mm. Sav. Étr. 14 (1856) 233-.
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— —, flexure. *Pochhammer, L.* Crelle J. Mth. 81 (1876) 33-.

— —, —. *Ribière, —.* C. R. 128 (1899) 86-.

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resisting flexure, equilibrium. *Sayno, A.* Mil. I. Lomb. Rd. 24 (1891) 1131-; 25 (1892) 147-.

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External forces of beams, estimation. *Szűts, M.* [1895] Mth. Termt. Éts. 14 (1896) 85-.

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Vidal, V. Cuyper Rv. Un. 17 (1865) 1-.

Burr, W. H. Am. J. Mth. 2 (1879) 13-, 191.

Résal, H. C. R. 102 (1886) 658-.

(*Résal.*) *Boussinesq, J.* C. R. 102 (1886) 797-.

Apparatus for experiments with beams. *Greenleaf, J. L.* Franklin I. J. 140 (1895) 27-.

Bars. *Airy, G. B.* As. S. Mm. 15 (1846) 157-.

—, *Hoppe, R.* [1857] Pogg. A. 102 (1857) 227-; (vi *Adds.*) Berl. Pol. Gs. Vh. 19 (1858) 161-.

—, change of form. *Peschka, G. A. V. Z.* Mth. Ps. 13 (1868) 38-.

—, thin (*Kater*). *Sang, E.* Edinb. N. Ph. J. 30 (1841) 321-.

Beams. *Padula, F.* Nap. Rd. 1 (1842) 103 [203]-.

—, deflection. *Cox, H.* [1850] Camb. Ph. S. T. 9 (1856) 177-.

—, —, experiments. *Eddy, H. T.* V. Nost. Eng. Mg. 11 (1874) 248-.

— fixed at ends, strength. *Cooper, T.* Franklin I. J. 41 (1861) 195-.

— — —, transverse strength. *Rebhann, G.* Förster Al. Bauztg. 18 (1853) 130-.

— under flexure, diagrams of equivalents of pressure. *Heinzerling, F.* Förster Al. Bauztg. 42 (1877) 9-.

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— in one plane, formulæ. *Nicour, C.* [1884] Gén. Civ. 6 (1884-85) 142-.

— with scarfed ends. *Villareal, F.* Arg. S. Ci. A. 47 (1899) 104-.

—, transverse strength. *Barlow, W. H.* Phil. Trans. (1855) 225-; (1857) 463-.

— — —, *Hänel, A.* Hann. Z. Archt. Vr. 7 (1861) 137-.

— — —, *Norton, W. A.* Am. As. P. 18 (1869) 47-.

— — —, *Barlow, W. H.* R. S. P. 18 (1870) 345-.

— — —, *Barnard, J. G.* [1874] Am. S. CE. T. 3 (1875) 123-.

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
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- *Planet, E. de.* Toul. Ac. Sc. Mm. 6 (1874) 401-.
- steamships. *Hare, R.* Dingler 52 (1834) 81-.
- *Séguier, A. C. R.* 6 (1838) 796-.
- *Latrobe, B. H.* Franklin I. J. 4 (1842) 312-.
- *Cailloux, P. R., & Pigeon, —.* A. Mines 6 (1844) 311-, 320-.
- *Callon, J., & Debette, —.* A. Mines 4 (1853) 77-.
- *Callon, J.* A. Mines 5 (1854) 444-; 6 (1854) 84-.

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- Earle, T. Dingler 43 (1832) 242-.
- Ziegler-Steiner, —. Sch. Gs. Vh. (1834) 28-.
- Lagüe, G. [1839] St. Pét. Ac. Sc. Bll. 6 (1840) 380-.
- Jobard, —. Mulhouse Bll. S. In. 15 (1841) 598-.
- Swart, W. S. Amst. I. (1841) 321-.
- Modera, J. Tindal Vh. Zeewezen 5 (1845) 726-.
- Du Pré, J. Brux. A. Tr. Pbl. 5 (1847) 249-.
- Fairbairn, W. Franklin I. J. 22 (1851) 128-.
- 175-; B. A. Rp. (1853) 53-.
- Guthrie, A. Franklin I. J. 23 (1852) 423-.
- Horsford, E. N., Lovering, J., Treadwell, D., & Peirce, B. Am. Ac. P. 2 (1848-52) 129-.
- Pless, F. Wien Sb. 54 (1866) (Ab. 2) 75-.
- Grashof, F. [1869] (xii) Karlsruhe Nt. Vr. Vh. 5 (1871) 72-.
- Cresson, C. M. [1874] Am. Ph. S. P. 14 (1876) 264-.
- Marcelle, A. Brux. A. Tr. Pbl. 41 (1884) 127-.
- Fowler, F. G. Railroad & Eng. J. 64 (1890) 200.
- K. Railroad & Eng. J. 64 (1890) 294.
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- Miller, J. A. Am. As. P. 17 (1868) 129-.
- Kays, T. V. Nost. Eng. Mg. 31 (1884) 353-.
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- steam, nature and action. Dyer, J. C. Manch. Ph. S. P. 2 (1860-62) 66-.
- Coefficient and comparison of destructive energy with that of gunpowder. Airy, (Sir) G. B. (vii) Ph. Mg. 26 (1868) 329-.
- Experiments (reports). Franklin Inst., Comm. (vi Add.) Franklin I. J. 17 (1836) 1-, 73-, 145-, 217-, 289-; 19 (1837) 73-, 157-, 241-, 325-, 409-; 20 (1837) 1-, 73-.
- Gurney, G. B. A. Rp. (1841) (pt. 2) 49-.
- Scott, J. Nv. Archt. T. 30 (1889) 285-.
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- Person, C. C. Rouen Tr. Ac. (1837) 86-.
- Schafhäütl, C. E. [1841] CE. I. T. 3 (1842) 435-.
- Brit. Ass., Comm. B. A. Rp. 40 (1870) 1-.
- and action of zinc. Trève, A. R. S. C. R. 95 (1882) 522-; 96 (1883) 1043-.
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- — Séguier, A. C. R. 13 (1841) 162-.
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- "—" — Bramwell, F. J. [1880] R. I. P. 9 (1882) 309-.
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- , safe load and ultimate strength. *Colburn, Z.* Eng. S. T. (1863) 35-.
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- , steel, causes of liability to fracture. *Garcke, J.* [1875] Z. Bauw. 26 (1876) 423-, 537-.
- , —, danger of too great hardness. *Sandberg, C. P. I. & S. I. J.* (1898) (No. 2) 76-.
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- Shafts, crank-, in marine engines, causes of failure. *Milton, J. T.* Nv. Archt. T. 20 (1879) 180-.
- , steel, mysterious fractures. *Schanzer, R.* Nv. Archt. T. 42 (1900) 249-.
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- Steel, rupture by longitudinal stress. *Carus-Wilson, C. A.* R. S. P. 49 (1891) 243-.
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- Glass, deformation, and change of zero of thermometers. *Marchis*, L. Bordeaux S. Sc. Mm. 4 (1898) 1-.
- Iron, annealed and unannealed, effect of prolonged strain. *Thurston*, R. H. Science 1 (*1883) 418-.
- , cast, mobility of molecules. *Outerbridge*, A. E. (jun.) [1896] Am. I. Mn. E. T. 26 (1897) 176-.
- , effect of continued and progressively increasing strain. *Huston*, C. [1878] Franklin I. J. 77 (1879) 41-.
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- , — — — use. *François*, J. C. R. 14 (1842) 796-.
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- , elongation after rupture. *Barba*, J. Par. Ing. Civ. Mm. (1880) (1) 682-.
- , molecular changes in. *Thurston*, R. H. Franklin I. J. 69 (1875) 441-.
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- , —. *Brillouin*, M. A. C. 13 (1898) 377-; 14 (1898) 311-.
- , —, accompanying phenomena. *Hartmann*, —. St. Et. Bil. S. In. Mn. 14 (1900) (Cg. Int. Mines) 1659-.
- , —, influence of time. *Charpy*, G. Par. S. Ps. Sé. (1898) 27*.
- , — and limits of elasticity. *Brillouin*, M. A. C. 15 (1898) 447-.
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- Tension by loading, change of density due to. *Grunmach*, L. [1898] A. Ps. C. 67 (1899) 227-.
- Wires. *Lenoble*, —. Bordeaux S. Sc. PV. (1897-98) 74-; *Brux*. S. Sc. A. 22 (1898) (Pt. 1) 52-; *J. de Ps.* 9 (1900) 532-.
- , hard-drawn, effect of elongation on cross section. *Gray*, T., & *Mees*, C. L. Ph. Mg. 29 (1890) 355-.

- Wires, molecular forces in. *Miller*, A. Münch. Ak. Sb. 15 (1886) 9-.
- in wire-rope. *Wabner*, R. Berg-Hm. Ztg. 49 (1890) 181-, 209-, 217-.
- Wood, pressure, effect. *Reusch*, E. Würtb. Jh. 25 (1869) 35-.

3630 After-strain. Alternating Stress. Repeated Loading. Fatigue of elasticity. (See also 3220 Vibrations, Wires.)

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- Boltzmann*, L. Wien Ak. Sb. 70 (1874) (Ab. 2) 275-.
- Meyer*, O. E. A. Ps. C. 151 (1874) 108-.
- Kohlrausch*, F. Gött. Nr. (1875) 41-.
- Neesen*, F. A. Ps. C. 157 (1876) 579-.
- Kohlrausch*, F. A. Ps. C. 158 (1876) 337-.
- Braun*, F. A. Ps. C. 159 (1876) 337-.
- Boltzmann*, L. [1877] Wien Ak. Sb. 76 (Ab. 2) (1878) 815-.
- Meyer*, O. E. A. Ps. C. 4 (1878) 249-.
- Warburg*, E. [1878] Freiburg B. 7 (1880) 225-.
- Streintz*, H. [1879] Wien Ak. Sb. 80 (1880) (Ab. 2) 397-.
- Gezekhus* [*Heschus*], N. A. (xii) Rs. Ps.-C. S. J. 14 (Ps.) (1882) [Pt. 1] 287-; (x) A. Ps. C. Beibl. 7 (1883) 654-.
- Michaelis*, G. J. A. Ps. C. 17 (1882) 726-; *Amst. Ak. Vs. M.* 20 (1884) 300-; *Fschr. Ps.* (1884) (Ab. 1) 408-.
- Šebuev*, G. Kazan S. Nt. (Ps.-Mth.) P. 7 (1889) 241-; *Fschr. Ps.* (1889) (Ab. 1) 422-.
- Lamb*, H. Nt. 41 (1890) 463.
- Boltzmann's theory. *Kohlrausch*, F. [1876] A. Ps. C. 160 (1877) 225-.
- , —. *Riecke*, C. V. E. Gött. Nr. (1883) 162-.
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- Flexure, action in. *Messer*, H. [1879] Freiburg B. 7 (1880) 364-.
- Glass, after-strain in. *Klemenčič*, I. [1878] Wien Ak. Sb. 78 (1879) (Ab. 2) 481-.
- , — — and chemical composition. *Sherman*, O. T. Am. J. Sc. 29 (1885) 385-.
- , — —, torsional, of fibre. *Hopkinson*, J. [1878] R. S. P. 28 (1879) 148-.
- Longitudinal after-strain, experiments. *Neesen*, F. A. Ps. C. 7 (1879) 460-.
- and torsional after-strain in metals. *Austin*, L. A. Ps. C. 50 (1893) 659-.
- Method of observation. *Warburg*, —. D. Nf. Tbl. (*1876) (Beil.) 68.
- Temperature, constant, laws for. *Wiechert*, E. A. Ps. C. 50 (1893) 335-, 546-.
- , influence. *Schröder*, T. A. Ps. C. 28 (1886) 369-.
- Torsional after-strain. *Kohlrausch*, R. Pogg. A. 119 (1863) 337-.

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— — — (Neesen). *Kohlrausch, F.* A. Ps. C. 155 (1875) 579-.

— — —. *Bouasse, H.* J. de Ps. 8 (1899) 241-.

Vibrations of strings, effect of after-strain. *Šebuev, G. N.* Kazan S. Nt. (*Ps.-Mth.*) P. 7 (1889) 374-.

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— — — (Braun and Kurz). *Tammen, —.* Exner Rpm. 20 (1884) 413-.

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—, steel, action in torsion. *Finger, J.* [1875] Wien Ak. Sb. 72 (1876) (*Ab. 2*) 257-.

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— — — screw steamers, and cure. *Brauer, —.* [1897] Karlsruhe Nt. Vr. Vh. 13 (1900) (*Sb.*) 120.

— — — ships. *Schlick, O.* Nv. Archt. T. 25 (1884) 29-; 35 (1894) 350-.

— — — and engines. *Mallock, A.* Nv. Archt. T. 36 (1895) 296-.

— — —, methods of diminishing. *Normand, A.* C. R. 113 (1894) 701-.

— — — —, prevention. *Robinson, M., & Sankey, (Capt.) H. R.* Nv. Archt. T. 36 (1895) 309-.

— — —, higher order, and torsional vibrations. *Schlick, O.* Nv. Archt. T. 36 (1895) 287-.

—, sympathetic, in machinery. *Lovering, J.* Am. As. P. 21 (1872) 59-.

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- Steel bars, endurance under repeated tensional stress. *Coker, E. G.* *I. CE. P.* 135 (1899) 294-.
- Strength of materials, effect on. *Merriman, M. V.* *Nost. Eng. Mg.* 32 (1885) 96-.

3640 Hardness. Friction between solids. Abrasion.

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