













CATALOGUE  
OF  
SCIENTIFIC PAPERS  
1800—1900

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SUBJECT INDEX

VOLUME I

PURE MATHEMATICS

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ROYAL SOCIETY OF LONDON

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VOLUME I

PURE MATHEMATICS

CAMBRIDGE:  
AT THE UNIVERSITY PRESS  
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ARRANGED FOR A COMMITTEE OF THE ROYAL SOCIETY  
UNDER THE SUPERINTENDENCE OF

**HERBERT M<sup>C</sup>LEOD, LL.D., F.R.S.**

DIRECTOR OF THE CATALOGUE

with the assistance of

**R. J. DALLAS, M.A.**

KING'S COLLEGE, CAMBRIDGE

## PREFACE

WHEN the plan for a Catalogue of Scientific Papers was drawn up in 1857 by the Royal Society, it was also contemplated that a Subject Index to the papers should be made. During the compilation of the well known twelve volumes of the Catalogue of Authors (1800—1883) much material was collected for the Subject Index by the Committee of the Society which had charge of the work, but nothing was printed.

In 1898 it was determined to undertake the continuation for the period 1884—1900, and at the same time to prepare material for a Subject Index for these last seventeen years of the century. It was afterwards decided that one Index should be made to the papers of the whole of the Nineteenth Century; and to bring this Index into relation with the International Catalogue of Scientific Literature, which deals with publications subsequent to 1900, the Index was to be arranged in accordance with the schedules of the different sciences which form the basis of the International Catalogue.

The extent of the work for the period 1884—1900 proved to be so great that the resources of the Royal Society would have been quite inadequate for its completion. Its continuation has been made possible by liberal donations received from various sources. The Catalogue is especially indebted to Dr Ludwig Mond, F.R.S., a member of the Committee entrusted with its preparation, who has encouraged and forwarded its progress in every way for many years past; in particular, in addition to similar generous donations at earlier stages, Dr Mond recently undertook to provide an extremely liberal subsidy during the three years 1907—9, which has enabled the work to be pressed forward rapidly.

The Subject Index will be published as separate Index-volumes for each of the seventeen Sciences of the Schedules of the International Catalogue, viz. Mathematics, Mechanics, Physics, Chemistry, Astronomy, Meteorology, Mineralogy, Geology, Geography, Palaeontology, Biology, Botany, Zoology, Anatomy, Anthropology, Physiology, and Bacteriology.

The practical advantage which will accrue from thus classifying the literature of each Science seems to be amply sufficient, in spite of unavoidable imperfections, to justify the great expense that has been involved. In the past a student interested in a single branch of the subject would probably consult special Treatises and Reports from which he could obtain references to the more important memoirs. But it often happens that such references are transferred simply from one treatise to another, and

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experience shows that important contributions that have once dropped out of sight may for a long time, or indeed ever afterwards, be overlooked. When the whole literature is set out systematically and exhaustively under appropriate headings as in the present volume, such accidents are guarded against so far as seems to be possible.

The present volume dealing with Pure Mathematics is the first instalment of the Subject Index: it contains 38748 entries referring to 700 serials. It is believed that these entries cover all the contents of the serials indexed with the exception of about 750 short notes (mostly falling under 6810 and 7210) which were not thought of sufficient permanent interest to be entered.

The Index titles for papers published 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 titles as printed in the Catalogue of Authors, but it was soon found that many of the 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 latter part of this work was commenced by the late Mr George Griffith of Harrow, whose untimely death was a great loss to the Committee.

The entries in the Index are arranged so that reference can be made 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. 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.

When an error has been found in an author's name in the Catalogue, it is corrected in the Index by 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 heading of an original paper, no attempt has been made to find the name for the Index, but this will be done for the Catalogue of Authors.

The Catalogue of 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 into order.

Entries on the same subject are arranged, so far as possible, in order of

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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 of the names of the serials used in the Royal Society Catalogue 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.

The list of serials will, it is hoped, be a valuable feature of the Index. It has been drawn up by the Director and contains the names of 701 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-three 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 Patent Office, Dr B. Daydon Jackson and Mr A. W. Kappel of the Linnean Society, Mr W. H. Wesley of the Royal Astronomical Society, Mr C. V. Crook of the Geological Museum, Mr F. W. Clifford of the Chemical Society, and Mr R. W. Chambers of University College, London; Mr R. Lloyd Praeger obtained the information from the five libraries in Dublin, and Dr Hugh Marshall, F.R.S., from two libraries in Edinburgh and two in Glasgow.

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 subjects are arranged under the registration numbers adopted in the International Catalogue; a copy of Schedule A, Mathematics, is prefixed to the Index, with indication of the pages on which the titles for the

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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.

The first portion of the present volume of the Index having been sent to press before the whole of the material had been sorted, some slips belonging to earlier sections were discovered during the arrangement of the later ones. These titles have been placed in an Appendix under their appropriate registration numbers.

The following referees have assisted at various times in the preparation of the Subject Index in Pure Mathematics:—the late Professor J. D. Everett, F.R.S., Mr R. J. Dallas, Miss Alice Everett, Mr R. Hargreaves, Miss W. M. Hudson, Mr H. Knapman, Miss E. Perrin 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 members of the Catalogue Staff thanks are due for careful and conscientious work.

At the request of the other members of the Committee, Mr G. B. Mathews, F.R.S., examined the whole of the proof-sheets, and made suggestions for their improvement: he was also consulted from time to time about questions of arrangement, head lines and sub-headings.

When the time for going to press approached, the Committee learned with much satisfaction that the Syndics of the Cambridge University Press were willing to undertake 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.

Finally 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.

*March 1908.*

## SUBJECT INDEX OF PURE MATHEMATICS

### 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.P.S.	Royal Philosophical Society of Glasgow.
Camb.P.S.	Cambridge Philosophical Library.	Glasg.U.	Glasgow University.
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.	P.O.	Patent Office, London.
Edinb.R.S.	Royal Society of Edinburgh.	R.A.S.	Royal Astronomical Society.
Edinb.U.	Edinburgh University.	R.S.	Royal Society.
Geol.M.	Geological Survey Museum, Jer- myn St.	U.C.L.	University College, London.
<b>Abv. Mm. S. Ém.</b> .....	{ Mémoires de la Société d'Émulation d'Abbeville. Abbeville.		
<b>Abv. S. Mm.</b> .....	{ 1833— B.M.; Camb.U. <i>i</i> ; Dub.T.C.; Edinb.R.S. <i>i</i> ; Linn.S. <i>i</i> ; N.H.M. <i>i</i> ; Oxon.B. <i>i</i> ; R.S. <i>i</i> .		
<b>A. C.</b> .....	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>i</i> ; Dub.T.C. <i>i</i> ; Edinb.R.S.; Edinb.U.; N.H.M.; Oxon.B. <i>i</i> (R.); P.O.; R.S.; U.C.L.		
<b>Ac. Cæs. Leop. N. Acta</b> ...	Nova Acta physico-medica Academiæ Cæs. Leopoldino-Carolinæ Naturæ Curiosorum. Erlangen, Bonn, Breslau.		
	1758— Camb.P.S.; Camb.U.; Chem.S. <i>i</i> ; Dub.T.C.; Edinb.R.S. <i>i</i> ; Edinb.U.; Linn.S. <i>i</i> ; Math.S. <i>i</i> ; N.H.M.; Oxon.R.; R.A.S. <i>i</i> ; R.S.; U.C.L. <i>i</i> .		
	<i>See Ac. Nt. C. N. Acta and Cæs. Leop. Ac. N. Acta.</i>		
<b>Acireale Ac. At.</b> .....	Atti e Rendiconti dell' Accademia di Scienze, Lettere e Arti dei Zelanti e PP. dello Studio di Acireale.		
	1890— Camb.P.S. <i>i</i> ; N.H.M. <i>i</i> ; R.S. <i>i</i> .		
<b>A. Cond. Pon. Chauss.</b> ...	Annales des Conducteurs des Ponts et Chaussées; recueil de mémoires, etc., concernant le Service de Conducteurs des Ponts et Chaussées. Paris.		
	1857— P.O.		
<b>A. Cons. Arts et Mét.</b> ...	Annales du Conservatoire des Arts et Métiers. Paris.		
	1861— B.M.; Camb.U.; Glasg.P.S. <i>i</i> ; Oxon.B.; P.O.; R.S.		
	<i>See Par. A. Cons.</i>		
<b>Ac. Nt. C. N. Acta</b> .....	<i>See Ac. Cæs. Leop. N. Acta and Cæs. Leop. Ac. N. Acta.</i>		
<b>Acta Mth.</b> .....	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.		

## List of Serial Publications

- A. der Hydrog.** ..... Annalen der Hydrographie und Maritimen Meteorologie. Herausgegeben von der Deutschen Seewarte in Hamburg. Berlin. 1873— B.M.; P.O.i.
- A. di C.** ..... Annali di Chimica. Milano. 1845—1900. B.M.; Chem.S.i.; P.O.i.
- Aer. J.** ..... The Aeronautical Journal. London. 1897— B.M.; Camb.U.i.; P.O.; R.S.
- 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.; P.O.
- A. Hydrog.** ..... Annales Hydrographiques. Recueil d'avis, instructions, documents, et mémoires relatifs à l'Hydrographie et à la Navigation. Paris. 1849— B.M.; Ebinb.R.S.i.; Oxon.B.; R.A.S.i.; R.S.i.
- Aix Ac. Mm.** ..... Mémoires de l'Académie des Sciences, Agriculture, Arts et Belles-lettres. Aix.
- Aix Mm.** ..... 1819— B.M.; Dub.R.I.A.; N.H.M.i.; Oxon.B.i.; R.S.i.
- Aix Mm. Ac.** ..... Transactions of the Albany Institute. Albany.
- Alb. I. T.** ..... 1830— B.M.; N.H.M.; R.S.
- Allelod. S. T.** ..... The Transactions of the Allelodidactic Society. London. 1848. R.S.
- 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.; Linn.S.; N.H.M.; Oxon.R.; P.O.i.; R.A.S.; R.S.; 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.; Glasg.P.S.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.; P.O.; R.A.S.; R.S.; 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.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.i.; R.S.
- Am. C.** ..... The American Chemist, a monthly Journal of theoretical Chemistry. New York. 1871—77. Chem.S.i.; N.H.M.; P.O.
- Am. Eng. & Railroad J.** ..... American Engineer and Railroad Journal. New York. 1893—95. B.M.; P.O.
- Amiens Ac. Mm.** ..... Mémoires de l'Académie des Sciences, Agriculture, Commerce, Belles-lettres, et Arts du département de la Somme. Amiens.
- Amiens Mm.** ..... 1835— B.M.; Camb.U.; Dub.T.C.i.; N.H.M.i.; Oxon.B.i.; R.S.i.
- Amiens Mm. Ac.** ..... 1835— B.M.; Camb.U.; Dub.T.C.i.; N.H.M.i.; Oxon.B.i.; R.S.i.
- Amiens Mm. Ac. Sc.** ..... 1835— B.M.; Camb.U.; Dub.T.C.i.; N.H.M.i.; Oxon.B.i.; R.S.i.
- 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.; Glasg.P.S.i.; N.H.M.; Oxon.B.(R.); P.O.; R.S.
- Am. I. T.** ..... [Reports and Transactions] of the American Institute of the City of New York. Albany. 1841— B.M.i.; P.O.i.; R.S.i.
- 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.; Math.S.; Oxon.B.; Oxon.R.; R.A.S.; R.S.; U.C.L.
- 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.; Glasg.P.S.; Glasg.U.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.i.; R.S.
- See Silliman J.*
- 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.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.; Math.S.i.; N.H.M.i.; Oxon.B.; Oxon.R.i.; P.O.; R.A.S.; R.S.; 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.i.



## List of Serial Publications

Edinb.R.S.; Linn.S.; N.H.M.i.; Oxon.B.; Oxon.R.i.; P.O.; R.A.S.i.; R.S.; U.C.L.i.

- Am. S. CE. T.** ..... Transactions of the American Society of Civil Engineers. New York. 1871— P.O.
- 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.; Linn.S.; N.H.M.; R.A.S.i.; 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.S.
- 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.; Linn.S.; N.H.M.; Oxon.B.; R.A.S.; R.S.; 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.S.
- 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.; Linn.S.; N.H.M.; Oxon.B.i.; R.A.S.i.; R.S.; 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. 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.
- Amst. Jb.** ..... } See **Amst. Ak. Jb.**
- Amst. Jb. Ak.** ..... }
- Amst. Mengelwerk** ..... Mengelwerk van uitgeleezene 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.; Linn.S.; N.H.M.; R.S.
- Amst. N. Ws. Ntk. Vh.** ..... Nieuwe Wis- en Natuurkundige Verhandelingen van het Genootschap te Amsterdam. Amsterdam. 1844—54. B.M.; 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
- Amst. Vh. Ak.** ..... } Instituut van Wetenschappen, Letterkunde, en Schoone Kunsten te Amsterdam. Amsterdam. 1812—25. B.M.; Camb.U.; Dub.T.C.; Edinb.R.S.; N.H.M.; Oxon.B.; R.S.
- 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.; Math.S.i.; Oxon.B.(R.); R.S.; U.C.L.  
See **Tortolini A.**

## List of Serial Publications

- 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.
- Amt. Mch. S. J.**..... The [Quarterly] Journal of the Amateur Mechanical Society. London. 1872—79. B.M.; P.O.
- 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. Bil.**..... Bulletin de la Société d'Études Scientifiques d'Angers. Angers. 1872— B.M.; N.H.M.
- 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.; P.O.; R.S.i.  
*See Par. A. Pon. Chauss.*
- A. Ps. C.**..... Annalen der Physik und Chemie; Poggendorff. Leipzig. 1824— 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.; N.H.M.; Oxon.B.(R.); P.O.; R.S.; U.C.L.i.  
*See Pogg. A.*
- Arch. f. Ap.**..... Archiv für Anthropologie. Zeitschrift für Naturgeschichte und Urgeschichte des Menschen. Braunschweig. 1867— B.M.; Camb.U.; Dub.N.L.I.; N.H.M.i.; Oxon.R.; R.S.
- Arch. Mth. Ntvd.**..... Archiv for Mathematik og Naturvidenskab. Kristiania. 1876— B.M.; Camb.U.; Dub.R.I.A.i.; Edinb.R.S.; 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.; Glasg.P.S.; Glasg.U.; Linn.S.; Math.S.; N.H.M.; Oxon.R.; P.O.; R.S.; U.C.L.i.
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- Arch. Wisk. Gn.**..... *See Amst. Arch. Wisk. Gn.*
- Arg. S. Ci. A.**..... Anales de la Sociedad Científica Argentina. Buenos Aires. 1876— B.M.i.; 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.
- As. & Aspa.**..... Astronomy and Astrophysics. Northfield, Minn. 1892—94. B.M.; Camb.P.S.i.; Dub.N.L.I.i.; R.A.S.; R.S.
- 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.  
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- 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.
- A. Sc. Nt.**..... Annales des Sciences Naturelles, comprenant la Physiologie animale et végétale, l'Anatomie comparée des deux règnes, la Zoologie, la Botanique, la Minéralogie et la Géologie. Paris. 1824— B.M.; Camb.P.S.; Camb.U.; Dub.R.D.S.; Dub.T.C.; Geol.M.i.; Glasg.P.S.i.; Linn.S.; N.H.M.; Oxon.R.; P.O.i.; R.S.; U.C.L.i.
- As. Fr. C. R.**..... Association Française pour l'Avancement des Sciences. Compte Rendu. Paris, etc. 1872— B.M.; Camb.U.; Edinb.R.S.; Edinb.U.; Geol.M.; Glasg.P.S.; Glasg.U.; N.H.M.; P.O.; R.A.S.i.; R.S.
- Ashmol. S. P.**..... Abstracts of the Proceedings of the Ashmolean Society. Oxford. 1844—81. Camb.U.; Dub.R.D.S.; Edinb.R.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.i.; R.S.

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- As. J.** ..... The Astronomical Journal. Boston.  
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R.A.S.; R.S.i.  
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- As. Nr.** ..... Astronomische Nachrichten; Schumacher. Altona.  
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- Asps. J.** ..... The Astrophysical Journal. Chicago.  
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- As. Researches** ..... Asiatick Researches; or Transactions of the [Bengal] Society instituted  
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N.H.M.; Oxon.B.; Oxon.R.; R.A.S.; R.S.; U.C.L.i.
- As. S. J.** ..... Journal of the Royal Asiatic Society. London.  
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Linn.S.; Oxon.B.; Oxon.R.; P.O.i.; R.A.S.i.; R.S.i.; U.C.L.i.
- As. S. Mm.** ..... Memoirs of the Astronomical Society of London. London.  
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Dub.T.C.; Edinb.R.S.; Edinb.U.; Glasg.P.S.i.; Glasg.U.;  
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- 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.; R.A.S.; R.S.i.
- As. S. T.** ..... Transactions of the Royal Asiatic Society of Great Britain and  
Ireland. London.  
1827—35. B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.; Edinb.U.;  
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- Assur. Mg.** ..... The Assurance Magazine and Journal of the Institute of Actuaries.  
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1830—67. B.M.; Camb.U.i.; Edinb.R.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  
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1855— B.M.i.; Camb.U.i.; P.O.
- Atlantis** ..... The Atlantis, or Register of Literature and Science, conducted by  
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1858—63. B.M.; Camb.U.; Dub.N.L.I.; Dub.R.I.A.i.; Edinb.R.S.i.;  
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- At. Sc. It.** ..... Riunione degli Scienziati Italiani. Atti. Pisa, etc.  
1839— B.M.; Camb.U.; N.H.M.; R.S.
- Aube Mm. S. Ag.** ..... Mémoires de la Société d'Agriculture, des Sciences, et des Lettres du  
département de l'Aube. Troyes.  
1823— B.M.; Camb.U.i.; Dub.T.C.i.; Oxon.B.; R.S.i.
- Ausl.** ..... Das Ausland. München und Stuttgart.  
1828—93. B.M.; Camb.U.i.; N.H.M.i.; Oxon.B.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.;  
Edinb.R.S.; Edinb.U.i.; Geol.M.; Glasg.U.; Linn.S.i.; N.H.M.;  
Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.S.
- Barcel. Ac. Bl.** ..... Boletín de la Real Academia de Ciencias y Artes de Barcelona.  
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- Barcel. Ac. Mm.** ..... Memorias de la Real Academia de Ciencias Naturales y Artes de  
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- Basel B.**..... Bericht über die Verhandlungen der Naturforschenden Gesellschaft in Basel. Basel.  
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- Basel Vh.** ..... Verhandlungen der Naturforschenden Gesellschaft in Basel. Basel.  
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- 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.
- Baumgartner Z.**..... Zeitschrift für Physik, Mathematik, und verwandte Wissenschaften; Baumgartner und von Ettingshausen. Wien.  
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- Bb. Mth.** ..... Bibliotheca Mathematica. Stockholm and Leipzig.  
1887— B.M.; Camb.U.; Glasg.U.; Oxon.B.; Oxon.R.; R.S.; U.C.L.
- Bb. Un.** ..... Bibliothèque Universelle des Sciences, Belles-Lettres, et Arts, faisant suite à la Bibliothèque Britannique rédigée à Genève. Partie des Sciences. Genève.  
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- Bb. Un. Arch.** ..... Bibliothèque Universelle. Archives des Sciences Physiques et Naturelles. Genève.  
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- See **Arch. Sc. Ps. Nt.**
- Belfast NH. S. P.** ..... Report and Proceedings of the Belfast Natural History and Philo-  
sophical Society. Belfast.
- Belfast NH. S. Rp. & P.** ..... { 1852— B.M.i.; Camb.P.S.; Dub.N.L.I.; Dub.R.D.S.; Dub.T.C.;  
Edinb.R.S.i.; Glasg.P.S.i.; N.H.M.; P.O.i.; R.A.S.
- Beng. As. S. J.**..... Journal of the Asiatic Society of Bengal. Calcutta.  
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Dub.T.C.; Edinb.R.S.i.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.i.;  
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- See **Beng. J. As. S.**
- Beng. As. S. P.** ..... Proceedings of the Asiatic Society of Bengal. Calcutta.  
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- Berg-Hm. Ztg.** ..... Berg- und hüttenmännische Zeitung; mit besonderer Berücksichtigung der Mineralogie und Geologie; Hartmann. Nordhausen und Leipzig.  
1842— B.M.; N.H.M.; P.O.
- Berg. Ms. Aarb.** ..... Bergens Museums Aarbog for.....Afhandlinger og Aarsberetning udgivne af Bergens Museum. Bergen.  
1892— B.M.; Camb.P.S.; Edinb.R.S.; Linn.S.; N.H.M.; Oxon.R.; R.S.
- Berl. Ab.** ..... Abhandlungen der Königlichen Akademie der Wissenschaften zu Berlin. Berlin.
- Berl. Ak. Ab.** ..... { 1804— B.M.; Camb.P.S.; Camb.U.; Dub.R.D.S.; Edinb.R.S.;  
Edinb.U.; Glasg.U.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.;  
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R.S.; U.C.L.

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Glasg.U.; Linn.S.; Math.S.; N.H.M.i.; Oxon.B.; Oxon.R.;  
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Oxon.B.; P.O.; R.A.S.; R.S.
- Berl. B.** ..... Berichte der Deutschen Chemischen Gesellschaft. Berlin.  
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P.S.; Glasg.U.; N.H.M.; Oxon.R.; P.O.; R.S.; U.C.L.i.
- Berl. Mb.** ..... See **Berl. Ak. Mb.**
- Berl. Mm.** ..... 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.; N.H.M.; Oxon.B.; P.O.; R.S.; U.C.L.
- Berl. Mm. Ac.** ..... Bericht über die Verhältnisse und die Wirksamkeit der Polytech-  
nischen Gesellschaft zu Berlin. Berlin.  
1839—51. R.S.
- Berl. Pol. Gs. B.**..... Verhandlungen der Polytechnischen Gesellschaft. Berlin.  
1851— R.S.i.
- Berl. Ps. Gs. Vh.**..... Verhandlungen der Physikalischen Gesellschaft in Berlin. Berlin.  
1882— Camb.P.S.i.; Camb.U.; N.H.M.; Oxon.B.; P.O.; R.A.S.; R.S.
- Berl. Sm. D. Ab.**..... Sammlung der Deutschen Abhandlungen, welche in der K. Akademie  
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- Berl. Z. Erdk.**..... Zeitschrift der Gesellschaft für Erdkunde zu Berlin; Koner.  
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1866— B.M.; Camb.U.; Dub.R.I.A.i.; N.H.M.; Oxon.B.; R.S.i.
- 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.
- 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.; Linn.S.i.; N.H.M.;  
Oxon.B.; Oxon.R.; P.O.; R.A.S.i.; R.S.; U.C.L.i.
- Bll. As.** ..... Bulletin Astronomique publié sous les Auspices de l'Observatoire de  
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1884— B.M.; Camb.U.; Edinb.R.S.; Oxon.R.; R.A.S.
- Bll. Sc. Mth.** ..... Bulletin des Sciences Mathématiques. Paris.  
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1869— Camb.U.; Linn.S.; N.H.M.
- Bode As. Jb.**..... Astronomisches Jahrbuch, nebst einer Sammlung der neuesten in  
die astronomischen Wissenschaften einschlagenden Abhandlungen,  
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**Bode Jb.** ..... 1776—1829. Dub.T.C.i.; R.A.S.; R.S.i.
- Böhm. Gs. Ab.**..... Abhandlungen der K. Böhmischen Gesellschaft der Wissenschaften.  
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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.; R.S.i.
- Böhm. Gs. Ws. Jbr.** ..... See **Prag Ab.**  
Jahresbericht der Königl. Böhm. Gesellschaft der Wissenschaften.  
Prag.  
1876— B.M.i.; Edinb.R.S.i.; Linn.S.i.; N.H.M.; R.S.

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- Bologna Ac. Mm.** ..... { Memorie della Accademia delle Scienze dell' Istituto di Bologna.  
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- Bologna Ac. Sc. Mm.** ... { 1850— B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.; N.H.M.;  
Oxon.B.; R.A.S.; R.S.; U.C.L.i.
- Bologna Mm. Ac.** ..... { Memorie dell' Istituto Nazionale Italiano: Classe di Fisica e di  
Matematica. Bologna.
- Bologna Mm. I. It.** ..... { 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,  
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- 1838—54. Camb.U.; N.H.M.; Oxon.B.i.; R.S.
- See **N. A. Sc. Nt.**
- Bologna N. Cm.** ..... Novi Commentarii Academiæ Scientiarum Instituti Bononiensis.  
Bononiæ.
- 1834—49. Camb.U.; Edinb.R.S.; N.H.M.; Oxon.B.; R.S.
- Bologna Opusc. Sc.** ..... Opuscoli Scientifici. Bologna.
- 1817—23. B.M.; Camb.U.; Edinb.R.S.i.; N.H.M.
- Bologna Opusc. Sc. N.** ..... Nuova collezione d' Opuscoli Scientifici. Bologna.
- Col. 1824—25. Camb.U.
- Bologna Rd.** ..... 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.; N.H.M.i.;  
Oxon.B.i.; R.A.S.i.; R.S.i.; U.C.L.i.
- Bône Ac. Hip. Bil.** ..... Bulletin de l'Académie d'Hippone. Bône.
- 1865— Camb.U.; N.H.M.i.
- 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.; Linn.S.i.; N.H.M.;  
Oxon.R.; R.S.i.
- 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.; Oxon.B.i.; R.S.i.
- See **Bordeaux Act. Ac. Sc.**
- Bordeaux Ac. Sc. Sé. Pbl.** { Séances publiques de l'Académie Royale des Sciences, Belles-lettres,  
Bordeaux Ac. Sé. Pbl. ... { et Arts de Bordeaux. Bordeaux.
- 1819—37. N.H.M.
- Bordeaux Act. Ac. Sc.** ... See **Bordeaux Ac. Act.**
- Bordeaux Mm. S. Sc.** ... { Mémoires de la Société des Sciences Physiques et Naturelles de  
Bordeaux. Bordeaux.
- Bordeaux Mm. S. Sc. Ps.** { 1855— Camb.P.S.; Dub.R.D.S.; Dub.T.C.; Edinb.R.S.; Glasg.P.S.;  
Linn.S.; Math.S.; N.H.M.; Oxon.B.; R.A.S.; R.S.
- See **Bordeaux S. Sc. Mm.**
- Bordeaux Obs. A.** ..... Annales de l'Observatoire de Bordeaux. Paris, Bordeaux.
- 1885— Dub.R.D.S.; R.A.S.; R.S.
- Bordeaux S. Sc. Mm.** ... See **Bordeaux Mm. S. Sc.**
- Bordeaux S. Sc. FV.** ..... Procès-Verbaux des Séances de la Société des Sciences Physiques  
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- 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.; Linn.S.; N.H.M.; Oxon.R.; P.O.i.;  
R.A.S.; R.S.; 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.**
- Braunsch. 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.
- 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.
- Brescia At. Cm.** ..... { Commentarij 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.

## List of Serial Publications

- Bresl. Sl. Gs. Jbr.** ..... Jahresbericht der Schlesischen Gesellschaft für vaterländische Cultur. Breslau.  
1850— Dub.R.D.S.i.; Dub.R.I.A.i.; N.H.M.; R.S.
- Brest S. Ac. Bil.** ..... Bulletin de la Société Académique de Brest. Brest.  
1858— B.M.; Camb.U.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 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. Bil.** ..... 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.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.S.  
See **Brux. Bil. Ac.**
- Brux. Ac. Cent. Anniv.**... Centième Anniversaire de Fondation (1772—1872) de l'Académie Royale de Belgique. Bruxelles.  
1872. B.M.; Camb.U.; Edinb.R.S.; Glasg.P.S.; Linn.S.; N.H.M.; P.O.; R.A.S.; R.S.
- 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.; Linn.S.i.; N.H.M.; Oxon.B.(R.); P.O.i.; R.A.S.i.; R.S.  
See **Brux. Mm. Ac. Sc.**
- Brux. A. Tr. Pbl.** ..... Annales des Travaux Publics de Belgique. Bruxelles.  
1843— B.M.; P.O.
- Brux. A. Un.** ..... Annales des Universités de Belgique. Bruxelles.  
1842—59. Camb.U.; Oxon.B.; P.O.; R.S.i.
- Brux. Bil. Ac.** ..... See **Brux. Ac. Bil.**
- Brux. Mm. Ac. Sc.** ..... See **Brux. Ac. Sc. Mm.**
- Brux. Mm. Cour.** ..... } Mémoires Couronnés et Mémoires des Savants Etrangers, publ. par  
**Brux. Mm. Cour. 4°** ..... } 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.; Glasg.U.i.; Linn.S.i.; N.H.M.; Oxon.B.; P.O.i.; R.A.S.i.; R.S.
- Brux. Mm. Cour. 8°** ..... 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.; Glasg.U.i.; Linn.S.i.; N.H.M.; Oxon.B.; P.O.; R.A.S.i.; R.S.
- Brux. Obs. A. (As.)** ..... Annales de l'Observatoire Royal de Belgique. Bruxelles.  
1834— B.M.; Camb.U.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; Glasg.P.S.i.; Glasg.U.i.; Oxon.B.i.; R.A.S.; R.S.; U.C.L.i.
- Brux. S. As. Bil.** ..... 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. Sc. A.** ..... Annales de la Société Scientifique de Bruxelles. Bruxelles.  
1877— B.M.; Dub.N.L.L.i.; Edinb.R.S.; N.H.M.
- 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.
- Cadiz Period. M. Ci.** ..... Periódico mensual de Ciencias matemáticas y físicas. Cadiz.  
1848. B.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.
- Cæs. Leop. Ac. N. Acta.** Nova Acta physico-medica Academiae Cæs. Leopoldino-Carolinæ naturæ Curiosorum. Erlangen, Bonn, Breslau.

## List of Serial Publications

- 1758— Camb.P.S.; Camb.U.; Chem.S.i.; Dub.T.C.; Edinb.R.S.i.;  
Edinb.U.; Linn.S.i.; Math.S.i.; N.H.M.; Oxon.R.; R.A.S.i.; R.S.  
*See* **Ac. Cæs. Leop. N. Acta.**
- 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.; Glasg.P.S.;  
Linn.S.i.; N.H.M.; P.O.i.; R.S.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.; N.H.M.; Oxon.B.; R.S.; U.C.L.
- Camb. Mm. Anal. S.** ..... Memoirs of the Cambridge Analytical Society. Cambridge.  
1813. B.M.; Camb.U.; Edinb.R.S.; P.O.; R.A.S.; R.S.; U.C.L.
- Camb. (M.) Mth. M.** ..... The Mathematical Monthly; Bunkle. 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.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.i.;  
Math.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.i.; P.O.; R.A.S.i.;  
R.S.; 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.; Glasg.P.S.i.; Glasg.U.; Linn.S.; Math.  
S.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.S.; U.C.L.
- Camb. (U.S.) Mth. M.** ... *See* **Camb. (M.) Mth. 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.; Glasg.P.S.i.;  
Linn.S.; N.H.M.; Oxon.B.i.; R.S.i.
- Carl Rpm.** ..... Repertorium für physikalische Technik, für mathematische und astronomische Instrumentenkunde; Carl. München.  
1865—91. B.M.; Camb.U.i.; Dub.N.L.L.i.; Oxon.R.; P.O.; R.S.  
*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.; Linn.S.i.;  
N.H.M.; Oxon.B.; R.S.
- Catania Ac. Gioen. Bll.** Bulletin mensile della Accademia Gioenia di Scienze Naturali in Catania. Catania.  
1888— Dub.R.I.A.; N.H.M.; R.S.
- Catania At. Ac. Gioen.** ... *See* **Catania Ac. Gioen. At.**
- 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.; Glasg.P.S.i.; Glasg.U.;  
Oxon.B.; Oxon.R.i.; P.O.; R.S.; U.C.L.  
*See* **I. CE. P.**
- 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.**
- Charleston Md. J.** ..... Charleston Medical Journal and Review; Gaillard, de Saussure, etc. Charleston.  
1846—60. B.M.
- 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.** ..... }  
**Cherb. S. Sc. Nt. Mm.** ... } 1852— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.;  
Linn.S.; N.H.M.; R.A.S.i.; R.S.
- Chile A. Un.** ..... Anales de la Universidad de Chile. Santiago de Chile.  
1843— B.M.i.; Dub.T.C.; N.H.M.i.; Oxon.B.i.  
*See* **Santiago de Chile Un. A.**



## List of Serial Publications

- Chilil 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.; Linn.S.i.; N.H.M.; R.S.i.
- Christiania F.** ..... Forhandlinger i Videnskabs-Selskabet i Christiania. Christiania.  
1859— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.; Glasg.P.S.; N.H.M.; Oxon.B.; R.S.; U.C.L.i.
- Christiania Skr. (Mth.-  
Nt. Kl.)** ..... Skrifter udgivne af Videnskabsselskabet i Christiania. Mathematisk-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.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.
- Civing.** ..... Der Civilingenieur: Zeitschrift für das Ingenieurwesen. Freiberg, Leipzig.  
1854— B.M.; Camb.U.i.; Dub.R.I.A.i.; 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.; Glasg.P.S.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.; R.S.; U.C.L.i.
- Cn. I. P.** ..... Proceedings of the Canadian Institute, Toronto. Toronto.  
1879—90; 1897— B.M.; Camb.P.S.i.; Dub.R.D.S.; Edinb.R.S.i.; Edinb.U.; Glasg.P.S.; Math.S.i.; N.H.M.; Oxon.B.; P.O.; R.A.S.i.; R.S.
- Cn. I. T.** ..... Transactions of the Canadian Institute. Toronto.  
1889— B.M.; Camb.P.S.; Dub.R.D.S.; Edinb.R.S.; Edinb.U.; Glasg.P.S.; Linn.S.; Math.S.i.; N.H.M.; P.O.; R.A.S.; R.S.
- Cn. J.** ..... The Canadian Journal of Industry, Science, and Art. Toronto.  
1853—78. B.M.i.; Dub.R.I.A.; Edinb.R.S.; N.H.M.; P.O.; R.A.S.i.; R.S.
- 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.; Glasg.P.S.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.S.; U.C.L.
- Coimbra I.** ..... O Instituto, jornal científico e litterario; Forjaz. Coimbra.  
1853— B.M.
- Con. des Temps** ..... Connaissance des Temps, à l'usage des Astronomes et des Navigateurs. Paris.  
1679— B.M.i.; Camb.U.; Dub.T.C.; Oxon.B.; R.A.S.i.; R.S.
- 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.S.
- Conn. Mm. Ac.** ..... Memoirs of the Connecticut Academy of Arts and Sciences. New Haven.  
1810—16. Linn.S.i.; N.H.M.i.; R.S.
- Cornwall Pol. S. Rp.** ..... } Reports and Transactions of the Royal Polytechnic Society of  
**Cornwall Pol. S. T.** ..... } Cornwall. Falmouth.  
1833— B.M.; Camb.U.i.; Dub.R.D.S.; Edinb.R.S.i.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.i.; P.O.; R.S.; 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.; Glasg.P.S.i.; N.H.M.; Oxon.B.i.; P.O.; R.A.S.i.; R.S.i.; U.C.L.i.
- 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.; Glasg.P.S.i.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.i.; P.O.; R.A.S.; R.S.; 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.; Glasg.U.; N.H.M.; Oxon.B.; Oxon.R.i.; R.A.S.i.; R.S.; U.C.L.i.
- Crelle J.** ..... }  
**Crelle J. Mth.** ..... } Journal für die reine und angewandte Mathematik; Crelle. Berlin.  
1826— B.M.; Camb.U.; Dub.N.L.L.I.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Glasg.U.; Math.S.i.; Oxon.B.(R.); R.S.; U.C.L.

## List of Serial Publications

- 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.; Glasg.P.S.; N.H.M.i.; Oxon.B.; Oxon.R.i.; P.O.; R.S.; U.C.L.
- Cuyper Rv. Un.** ..... Revue Universelle des Mines, de la Métallurgie, des Travaux Publics, des Sciences, et des Arts, appliqués à l'Industrie; de Cuyper. Paris et Liège. 1857— B.M.; Camb.U.; Dub.R.I.A.i.; Glasg.P.S.i.; Glasg.U.i.; N.H.M.; P.O.  
*See Rv. Un. Mines.*
- Cztg. Opt.** ..... Central-Zeitung für Optik und Mechanik. Leipzig. 1880— Edinb.U.i.; P.O.i.; R.S.i.
- D. Alpvr. Z.** ..... Zeitschrift des Deutschen [und des Oesterreichischen] Alpenvereins. München. 1870— B.M.; Camb.U.; Oxon.B.
- Danzig N. Schr.** ..... Neueste Naturforschenden Gesellschaft in Danzig. Danzig. 1820—62. B.M.i.; Dub.R.I.A.i.; N.H.M.; Oxon.R.; R.S.
- Danzig Schr.** ..... Schriften der Naturforschenden Gesellschaft in Danzig. Danzig. 1863— Camb.P.S.; Camb.U.i.; Dub.R.D.S.i.; Dub.R.I.A.i.i.; Edinb.R.S.i.; Linn.S.i.; N.H.M.; Oxon.R.i.; R.S.
- 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.
- 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.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.i.; P.O.; R.S.
- D. Gs. Ostas. Mt.** ..... Mittheilungen der Deutschen Gesellschaft für Natur- und Völkerkunde Ostasiens. Yokohama. 1873— B.M.; Edinb.R.S.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.; N.H.M.; Oxon.B.i.; R.A.S.; R.S.i.
- Dijon Mm. Ac.** ..... Séances publiques de l'Académie des Sciences, Arts, et Belles-lettres de Dijon. Dijon.
- Dijon Ac. Sé.** ..... 1810—29. B.M.i.; N.H.M.
- Dijon Sé. Ac.** ..... Polytechnisches Journal; Dingler. Stuttgart.
- Dingler** ..... 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.; P.O.; R.S.i.
- 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.; N.H.M.i.; Oxon.R.i.; R.S.i.  
*See D. Nf. Vsm. B.*
- D. Nf. Tbl.** ..... Tageblatt der...Versammlung Deutscher Naturforscher und Aerzte. 1836— Irregular, *see* Ber. and Verh. Camb.U.; N.H.M.; Oxon.R.i.
- D. Nf. Vh.** ..... Verhandlungen der Gesellschaft Deutscher Naturforscher und Aerzte. Leipzig. 1890— Camb.U.; N.H.M.; Oxon.R.  
*See D. Nf. B.*
- D. Nf. Vsm. B.** ..... Det Kongelige Danske Videnskabernes Selskabs Skrifter. Kiöbenhavn. 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.*
- Dn. Vd. Selsk. Skr.** ..... Det Kongelige Danske Videnskabernes Selskabs Skrifter. Kiöbenhavn. 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.*

## List of Serial Publications

- 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.*
- Douai Mm. S. Ag.** ..... Mémoires de la Société d'Agriculture, de Sciences, et d'Arts, séant à Douai. Douai. 1826— B.M.; Camb.U.*i.*; Oxon.B.*i.*; R.S.*i.*
- Doubs S. Mm.** ..... Mémoires et Comptes Rendus de la Société [Libre] d'Émulation du Doubs. Besançon. 1841— B.M.; N.H.M.*i.*
- Dresden Isis Sb.** ..... { Sitzungsberichte der Naturwissenschaftlichen Gesellschaft Isis in Dresden. Dresden. 1861— Camb.U.*i.*; Dub.T.C.; Geol.S.; N.H.M.
- Dresden Sb. Isis** ..... {
- 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.; Geol.M.; Glasg.U.*i.*; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.*i.*; P.O.; R.A.S.; R.S.
- 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.; Glasg.P.S.; Linn.S.; Math.S.*i.*; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.S.; 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.; Glasg.P.S.; Linn.S.; Math.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.S.; U.C.L.*i.*
- Dunkerque Mm. S. Encour.** ..... Mémoires de la Société Dunkerquoise pour l'Encouragement des Sciences, des Lettres, et des Arts. Dunkerque. 1853— B.M.; Oxon.B.; R.S.*i.*
- 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.; Glasg.P.S.*i.*; Glasg.U.; N.H.M.; Oxon.B.*i.*; Oxon.R.; P.O.; R.S.
- 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. B.M.; Camb.P.S.; Camb.U.; Chem.S.*i.*; Dub.T.C.*i.*; Edinb.R.S.; Edinb.U.; Glasg.P.S.; Linn.S.*i.*; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.*i.*; R.S.
- 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. B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Glasg.P.S.; Linn.S.; N.H.M.; Oxon.B.*i.*; Oxon.R.; P.O.; R.A.S.; R.S.; U.C.L.*i.*
- Edinb. P. R. S.** ..... { Proceedings of the Royal Society of Edinburgh. Edinburgh. 1845— B.M.*i.*; Camb.P.S.; Camb.U.; Chem.S.*i.*; Dub.N.L.I.; Edinb.R.S.; Edinb.U.; Geol.M.*i.*; Glasg.P.S.; Linn.S.; Math.S.*i.*; N.H.M.; Oxon.B.*i.*; Oxon.R.; P.O.*i.*; R.A.S.; R.S.; U.C.L.*i.*
- Edinb. R. S. P.** ..... {
- 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.*; Glasg.P.S.; Glasg.U.; Linn.S.; Math.S.*i.*; N.H.M.; Oxon.B.*i.*; Oxon.R.; P.O.*i.*; R.A.S.; R.S.; U.C.L.
- Edinb. Sc. S. Arts T.** ..... See **Edinb. T. R. S.**  
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.; P.O.; R.S.  
See **Edinb. T. Sc. S. Arts and S. Sc. Arts T.**

## List of Serial Publications

- Edinb. T. R. S.** ..... See **Edinb. R. S. T.**
- Edinb. T. Sc. S. Arts** ..... See **Edinb. Sc. S. Arts T. and Sc. S. Arts T.**
- 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.; Math.S.i.; Oxon.B.i.; Oxon.R.i.; R.S.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.; Oxon.B.i.; Oxon.R.i.; P.O.; R.S.i.; U.C.L.i.
- Elekt. Z.** ..... Elektrotechnische Zeitschrift. Berlin, München.  
1880— B.M.; Glasg.U.; P.O.
- 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.; Oxon.B.; P.O.; R.S.i.
- Ens. Mth.** ..... L'Enseignement Mathématique. Revue Internationale. Paris.  
1899— Math.S.
- Épinal (Vosg.) A.** ..... Annales de la Société d'Émulation du département des Vosges. Épinal.  
1831— B.M.; R.S.i.
- 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.; Dub.R.D.S.i.; N.H.M.; Oxon.B.; Oxon.R.; R.S.; U.C.L.i.
- Erfurt Ak. Jb.** ..... Jahrbücher der königlichen Akademie gemeinnütziger Wissenschaften zu Erfurt. Erfurt.  
1860— B.M.; N.H.M.
- Erfurt N. Acta** ..... Nova Acta Academiae Electoralis Moguntinae Scientiarum utilium quae Erfurti est. Erfurti.  
1799—1809. B.M.i.; Camb.U.; N.H.M.; Oxon.B.i.; R.S.
- Erlang. Ps. Md. S. Sb.** ..... { Sitzungsberichte der Physikalisch-Medicinischen Societät zu Erlangen. 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.
- Erman Arch. Rs.** ..... Archiv für wissenschaftliche Kunde von Russland; Erman. Berlin.  
1841—67. B.M.; Camb.U.; N.H.M.; Oxon.B.; R.S.i.
- Eure J. d'Ag.** ..... Journal d'Agriculture, de Médecine et des Sciences accessoires. Evreux.  
1824—29. B.M.; R.S.
- 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.
- 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.; N.H.M.; Oxon.B.; R.A.S.i.; R.S.; 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.; Oxon.R.; P.O.; R.S.  
See **Carl Rpm.**
- Férussac Bil. Sc. Mth.** ..... Bulletin des Sciences Mathématiques, Astronomiques, Physiques, et Chimiques; Baron de Férussac. Paris.  
1824—31. B.M.; Edinb.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.  
**Firenze At. Ac. Georg.** ..... { 1818— Camb.U.; Dub.T.C.i.; Edinb.R.S.i.; Oxon.B.  
**Firenze Opusc. Sc.** ..... } Collezione d' Opuscoli scientifici, etc. Firenze.  
1807—18. B.M.; N.H.M.
- Förster Al. Bauztg.** ..... Allgemeine Bauzeitung; Förster. Wien.  
1836— B.M.; Camb.U.; P.O.
- 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.; Glasg.P.S.i.; Oxon.B.; P.O.; R.A.S.i.; R.S.; U.C.L.i.

## List of Serial Publications

- Fr. Cg. Md. Chir.** ..... Congrès Médico-Chirurgical de France. Paris.  
1863— B.M.
- Fr. Cg. Sc.**..... Sessions des Congrès Scientifiques de France.  
1833—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.
- 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. Bll.** ..... Bulletin de la Société Minéralogique de France. Meulan, Paris.  
1878— B.M.; Dub.T.C.; Geol.M.; N.H.M.; Oxon.R.; R.S.
- 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. Fs.**..... 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.; Oxon.B.(R.); P.O.; R.A.S.i.; R.S.; U.C.L.
- Gand. A. Ac.**..... Annales Academiæ Gandavensis. Gandavi. (Ghent).  
1819—31. B.M.; Camb.U.; N.H.M.; Oxon.B.
- G. Arcad.** ..... Giornale Arcadico di Scienze, etc. Roma.  
1819— B.M.; N.H.M.i.; Oxon.B.
- Gard Aperçu Tr.**..... Notice [ou Aperçu analytique] des Travaux de l'Académie Royale du Gard. Nîmes.  
1807—? B.M.; Camb.U.; Oxon.B.
- Gard Mm. Ac.**..... See **Gard Not. Tr. Ac. and Gard Tr. Ac.**  
Mémoires de l'Académie du Gard. Nîmes.  
1832— B.M.; Camb.U.; Oxon.B.; R.S.i.
- Gard Not. Tr. Ac.** }  
**Gard Tr. Ac.** } See **Gard Aperçu Tr.**
- Gen. I. Nt. Mm.** ..... Mémoires de l'Institut National Gévinois. Genève.  
1854— B.M.; Camb.U.; Dub.R.D.S.; N.H.M.i.; Oxon.B.; R.S.
- 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.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.i.; R.A.S.i.; R.S.; U.C.L.i.
- See **Gen. S. Ps. Mm.**
- Genova Mm. Ac.**..... Memorie dell' Accademia Imperiale delle Scienze di Genova. Genova.  
1809—14. Camb.U.i.; N.H.M.i.; R.S.
- Genova Mm. I. Ligure** ... Memorie dell' Istituto Ligure. Genova.  
1806. B.M.; Camb.U.; R.S.
- Genova Un. At.** ..... Atti della R. Università di Genova. Genova.  
1869— B.M.; Camb.U.; N.H.M.
- 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.; Oxon.B.(R.); R.A.S.i.; R.S.; U.C.L.
- 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.; Glasg.P.S.; Glasg.U.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.S.
- Gg. S. P.** ..... Proceedings of the Royal Geographical Society of London. London.  
1857—92. Camb.P.S.i.; Camb.U.; Dub.T.C.; Edinb.R.S.; Geol.M.; Glasg.P.S.i.; Glasg.U.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.i.; R.A.S.i.; R.S.
- Giamb. Vico**..... Il Giambattista-Vico, giornale scientifico. Napoli.  
1857. N.H.M.; Oxon.B.i.
- See **Il Giamb. Vico.**
- Giessen Oberh. Gs. B.** ... Berichte der Oberhessischen Gesellschaft für Natur- und Heilkunde. Giessen.  
1847— B.M.i.; Camb.P.S.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Glasg.P.S.i.; Linn.S.i.; N.H.M.; P.O.i.; R.S.i.

## List of Serial Publications

- Gilbert A.** ..... Annalen der Physik; Gilbert. Halle und Leipzig.  
1799—1824. Camb.U.; Chem.S.; Edinb.U.; N.H.M.; Oxon.B.(R.); P.O.; R.S.
- Gill Tech. Rep.** ..... The Technical Repository; Gill. London.  
1822—27. B.M.; Camb.U.; Edinb.R.S.i.; Oxon.B.; P.O.; R.S.i.
- Glasg. I. Eng. T.** ..... Transactions of the Institution of Engineers [and Shipbuilders] in Scotland. Glasgow.  
1857— Camb.U.i.; P.O.; U.C.L.i.  
{ Proceedings of the 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.;  
**Glasg. Ph. S. P.** ..... Edinb.R.S.; Geol.M.i.; Glasg.P.S.; Glasg.U.i.; N.H.M.; Oxon.B.;  
P.O.i.; R.A.S.; R.S.
- Gleanings Sc.** ..... Gleanings in Science. Calcutta.  
1829—31. B.M.; Edinb.R.S.i.; N.H.M.; 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.;  
Glasg.P.S.; Glasg.U.; Linn.S.; N.H.M.; Oxon.R.; P.O.i.; 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.; Glasg.U.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.;  
R.A.S.; R.S.; U.C.L.
- 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.
- 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.; 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. Got-  
tingæ.  
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. Gottingæ.  
1808—37. B.M.; Camb.U.; Edinb.R.S.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.; Linn.S.; Math.S.i.; N.H.M.;  
Oxon.B.; Oxon.R.; R.A.S.i.; R.S.
- Gött. Stud.** ..... Göttinger Studien; Krische. Göttingen.  
1845—47. N.H.M.; Oxon.B.i.; R.S.i.
- 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.  
See **As. J.**
- 's Gravenh. I. Ing. Ts.** ... Tijdschrift van het Koninklijk Instituut van Ingenieurs. 's Graven-  
hage.  
1869— B.M.
- Grenoble Ac. Delph. Bll.** 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.
- Groningen A. Ac.** ..... Annales Academiæ Groninganae. Groningæ.  
1815—37. B.M.i.; Camb.U.; Dub.T.C.; Oxon.B.; R.S.
- 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.I.; Dub.R.C.S.; Edinb.U.;  
Glasg.U.; Math.S.i.; Oxon.B.(R.); R.S.; U.C.L.i.  
See **Arch. Mth. Ps.**

## List of Serial Publications

- G. Teix. J. Sc.** ..... *Journal de Ciencias Mathematicas e Astronomicas*, publicado pelo Dr Francisco Gomes Teixeira. Coimbra. 1878— *Math.S.*; *R.S.i.*
- 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.*
- Haarl. Ntk. Vh. Mtsch.**.... *Naturkundige Verhandelingen van de [Bataafsche] Hollandsche Maatschappij der Wetenschappen te Haarlem*. Haarlem. 1799— *B.M.*; *Camb.U.i.*; *Dub.R.D.S.*; *N.H.M.*; *R.S.*
- Haidinger Ab.**..... *Naturwissenschaftliche Abhandlungen*; Haidinger. Wien. 1847—51. *Camb.U.*; *Chem.S.i.*; *Edinb.R.S.i.*; *Linn.S.*; *N.H.M.*; *R.A.S.i.*; *R.S.*
- Haidinger B.** ..... *Berichte über die Mittheilungen von Freunden der Naturwissenschaften in Wien*; Haidinger. Wien. 1847—51. *Camb.U.*; *Chem.S.i.*; *Edinb.R.S.*; *Linn.S.*; *N.H.M.*; *R.A.S.*; *R.S.*
- 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.*
- Hall Bij.** ..... } *Bijdragen tot de Natuurkundige Wetenschappen*; Hall, etc.  
 Amsterdam.  
 1826—32. *B.M.*; *Camb.U.*; *N.H.M.*; *R.S.*
- Halle Ab. Nt. Vr.** ..... *Abhandlungen des Naturwissenschaftlichen Vereins für Sachsen und Thüringen in Halle*; Giebel. Berlin. 1860— *B.M.*; *Camb.U.*; *N.H.M.i.*; *R.S.i.*
- Halle Nf. Gs. B.** ..... *Bericht der Naturforschenden Gesellschaft zu Halle*. Halle. 1856— *Camb.U.i.*; *Dub.R.D.S.i.*; *Dub.R.I.A.i.*; *Oxon.R.i.*; *R.S.*
- Halle Z.**..... } *Zeitschrift für die gesammten Naturwissenschaften*; herausgegeben  
**Halle Z. Nw.** ..... } von dem Naturwissenschaftlichen Vereine für Sachsen und Thüringen in Halle; Giebel. Berlin. 1853— *B.M.*; *Camb.U.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.*
- See Z. Nw.*
- Hamb. Mth. Gs. Mt.** ..... *Mitteilungen der Mathematischen Gesellschaft in Hamburg*. Leipzig. 1889— *Math.S.*
- Hammerschmidt Al.** ..... *Allgemeine Oesterreichische Zeitschrift für den Landwirth, Forstmann und Gärtner*; Hammerschmidt. Wien.
- Hann. Archt.-Vr. Z.** ..... } *Zeitschr. des Architekten- und Ingenieur-Vereins zu Hannover*.  
**Hann. Z. Archt.-Vr.** ..... } Hannover. 1855— *Camb.U.i.*; *P.O.*
- Heidl. Nt. Md. Vh.**..... } *Verhandlungen des Naturhistorisch-Medicinischen Vereins zu Heidelberg*.  
**Heidl. Vh. Nt. Md.**..... } Heidelberg. 1857— *Camb.U.i.*; *Chem.S.i.*; *Dub.R.I.A.*; *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.*; *N.H.M.*; *Oxon.B.*; *R.A.S.*; *R.S.*
- Helsingf. Bd.** ..... *Bidrag till Kännedomen af Finlands Natur och Folk, utgifna af Finska Vetenskaps-Societeten*. Helsingfors. 1858— *B.M.*; *Camb.P.S.i.*; *Camb.U.*; *Dub.R.I.A.*; *Edinb.R.S.i.*; *N.H.M.*; *Oxon.B.*; *R.A.S.*; *R.S.*
- Helsingf. Öfv.** ..... *Öfversigt af Finska Vetenskaps-Societetens Förhandlingar*. Helsingfors. 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.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 Productenwaaren und Handelskunde, und der bürgerlichen Haushaltung, etc.*; Hermbstädt. Berlin. 1814—18. *B.M.*; *R.S.*
- Hertha** ..... *Hertha, Zeitschrift für Erd-, Völker-, und Staaten-Kunde*; Berghaus und Hoffmann. Stuttgart und Tübingen. 1825—29. *B.M.*; *Camb.U.*; *Oxon.B.*; *R.S.*; *U.C.L.i.*
- I. Act. J.** ..... *Journal of the Institute of Actuaries*. London. 1869— *B.M.*; *Camb.U.*; *Dub.N.L.I.i.*; *Oxon.B.*; *R.A.S.i.*

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- I. CE. 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.i.; Camb.U.i.; Dub.R.C.S.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.; Edinb.U.; Glasg.P.S.i.; Glasg.U.; Oxon.B.; Oxon.R.i.; P.O.; R.S.; U.C.L.  
See **CE. I. P.**
- I. Égypt. Bil.** ..... Bulletin de l'Institut Égyptien. Caïre. 1859— Camb.P.S.i.; Camb.U.i.; N.H.M.; U.C.L.i.
- I. Égypt. Mm.** ..... Mémoires ou Travaux Originaux présentés et lus à l'Institut Égyptien publiés sous les auspices de S. A. Mohammed Saïd, vice-roi d'Égypte, sous la direction de M. le Docteur B. Schnepf. Paris & Caïre. 1862— Camb.P.S.i.; Camb.U.; N.H.M.
- I. Elect. E. J.** ..... Journal of the Institution of Electrical Engineers. London. 1889— B.M.; Camb.U.; Dub.R.D.S.; Edinb.R.S.i.; Edinb.U.; Glasg.U.i.; Oxon.R.i.; P.O.; R.S.; U.C.L.
- II Cim.** ..... Il Cimento, rivista di Scienze, Lettere, ed Arti. Torino. 1852—55. B.M.
- II Giamb. Vico** ..... Il Giambattista-Vico, giornale scientifico. Napoli. 1857. N.H.M.; Oxon.B.i.  
See **Giamb. Vico.**
- II 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.; P.O.
- I. ME. P.** ..... Institution of Mechanical Engineers. Proceedings. Birmingham, London. 1847— B.M.; Camb.P.S.i.; Camb.U.; Dub.R.D.S.; Glasg.U.; P.O.; R.S.; U.C.L.
- I. Mn. Mtl. T.** ..... Transactions of the Institution of Mining and Metallurgy, London. London. 1892— B.M.; Camb.U.i.; Geol.S.; N.H.M.; P.O.
- II Progresso** ..... Il Progresso delle Scienze, Lettere, ed Arti. Napoli. First series undated; Second series 1832— Camb.U.; Oxon.B.
- Ing.** ..... Der Ingenieur; Zeitschrift für das gesammte Ingenieurwesen; Bornemann, Freiberg. 1848—50. B.M.; P.O.
- Inghirami Opusc.** ..... Nuova Collezione di Opuscoli e Notizie di Scienze; Inghirami. Fiesole. 1820—23. B.M.
- Innsb. Nt. Md. B.** ..... Berichte des Naturwissenschaftlich-Medizinischen Vereins in Innsbruck. 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.
- Intell. Obs.** ..... The Intellectual Observer; a Review of Natural History, Microscopic Research, and Recreative Science. London. 1862—68. B.M.; Camb.U.; Linn.S.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.; R.A.S.; R.S.i.
- 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.i.; Glasg.U.; Linn.S.; N.H.M.i.; Oxon.B.; Oxon.R.; R.A.S.; 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.; Glasg.P.S.i.; Glasg.U.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.i.; R.A.S.; R.S.; 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.; Glasg.P.S.; Glasg.U.i.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.i.; R.A.S.; R.S.; U.C.L.
- I. Rv.** ..... India Review and Journal of Foreign Science and the Arts. Calcutta. 1837—38. B.M.; N.H.M.i.



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- Isère S. Bl.** ..... 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.; Glasg.P.S.i.; Glasg.U.i.; Oxon.B.; P.O.; R.S.; U.C.L.
- 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.S.
- Jb. Berg- Hw.** ..... Jahrbuch für das Berg- und Hüttenwesen im Königreiche Sachsen. Freiberg. 1873— B.M.; N.H.M.i.; P.O.
- J. Bt.** ..... The Journal of Botany. London. 1863— B.M.; Camb.U.; Dub.N.L.I.i.; Dub.R.C.S.; Glasg.U.; Linn.S.; N.H.M.; P.O.i.
- J. de Ps.** ..... Journal de Physique, de Chimie, et de l'Histoire Naturelle; de Lamétherie etc. Paris. 1794—1823. B.M.; Camb.U.; Glasg.U.i.; N.H.M.i.; Oxon.B.; Oxon.R.; R.S.; 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.; Oxon.R.; P.O.; R.S.
- Jena. Sb.** ..... Sitzungsberichte der Jenaischen Gesellschaft für Medicin und Naturwissenschaft. Jena. 1877—86. Edinb.R.S.i.; Linn.S.i.; Oxon.R.; R.S.
- 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.; U.C.L.
- 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.; Math.S.i.; N.H.M.; Oxon.B.; Oxon.R.; R.A.S.i.; R.S.; U.C.L.i.
- J. Mscr. 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.; Glasg.P.S.; Linn.S.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.; R.S.; U.C.L.
- 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.; Linn.S.i.; N.H.M.; Oxon.B.(R.); R.S.i.
- J. Ps. C.** ..... The Journal of Physical Chemistry. Ithaca, N.Y. 1896— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Edinb.R.S.; Edinb.U.; Glasg.U.; Oxon.R.; P.O.; R.S.i.
- J. Sav.** ..... Journal des Savants. Paris. 1816— B.M.; Camb.U.; Dub.N.L.I.; Dub.T.C.; Edinb.R.S.i.; Glasg.U.i.; Oxon.B.; Oxon.R.; P.O.i.; R.S.
- 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.; Glasg.P.S.i.; Linn.S.i.; N.H.M.; Oxon.B.i.; R.S.i.
- Kan. Un. Q.** ..... The Kansas University Quarterly. Lawrence, Kansas. 1893— B.M.i.; Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Glasg.P.S.i.; Math.S.; N.H.M.; R.S.
- Karlsruhe Nt. Vr. Vh.** ... Verhandlungen des Naturwissenschaftlichen Vereins in Karlsruhe. Karlsruhe. 1864— B.M.i.; Dub.R.I.A.; N.H.M.
- Karsten Arch.** ..... Archiv für Mineralogie, Geognosie, Bergbau, und Hüttenkunde; Karsten. Berlin. 1829—55. B.M.; Edinb.R.S.i.; Geol.M.; N.H.M.; P.O.; R.S.

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- Kastner Arch. Ntl.** ..... Archiv für die gesammte Naturlehre; Kastner. Nürnberg. 1824—35. B.M.; N.H.M.; P.O.
- 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.; 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. R.S.
- Kazan S. Ps.-Mth. Bll.** ... Bulletin de la Société Physico-Mathématique de Kasan. Kasan. 1891— Dub.R.I.A.i.; Edinb.R.S.i.; R.S.i.
- Kazan Un. Bll.** ..... Bulletin of the Imperial University of Kazan. Kazan. 1865— B.M.i.; Camb.U.i.; Edinb.R.S.i.; Linn.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.S.
- Kiøb. Dn. Vd. Selsk. Afh.**  
**Kjøb. Dn. Vd. Selsk. Afh.** { Det Kongelige Danske Videnskabernes Selskabs naturvidenskabelige og matematiske Afhandlinger. Kiøbenhavn. 1824—46. B.M.; Dub.T.C.; Edinb.R.S.; Linn.S.i.; N.H.M.; R.S.
- Kiøb. Dn. Vd. Selsk. Skr.**  
**Kjøb. Dn. Vd. Selsk. Skr.** { Det Kongelige Danske Videnskabernes Selskab Skriver. Kiøbenhavn. 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.**
- Kjøb. Dn. Vd. Selsk. Skr.**  
**Kiøb. Skr.** ..... { Det Kongelige Danske Videnskabernes Selskabs Skrifter. Naturvidenskabelig og Mathematisk Afdeling. Kjøbenhavn. 1849— B.M.; Camb.U.i.; Edinb.R.S.; Linn.S.; N.H.M.; R.A.S.; R.S.; U.C.L.i.
- Kjøb. Skr.** ..... {
- Kiøb. Ov.** ..... { Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlinger. Kjøbenhavn. 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.; Glasg.U.i.; Linn.S.i.; N.H.M.i.; Oxon.R.; P.O.i.; R.A.S.i.; R.S.
- Kjøb. Ov.** ..... {
- Königsb. Arch.** ..... Königsberger Archiv für Naturwissenschaften und Mathematik; Bessell, etc. Königsberg. 1812. B.M.; Camb.U.; Linn.S.
- 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.S.
- 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.; N.H.M.
- Krk. Ak. (Mt.-Prz.) Rz.**... { Rozprawy... Wydziału Matematyczno-Przyrodniczego Akademii Umiejętności. [Proceedings of the Section of Mathematics and Natural Science of the Academy of Science.] Kraków. 1874— B.M.; Edinb.R.S.i.; N.H.M.
- Krk. Ak. (Mt.-Prz.) Rz. & Sp.** {
- Krk. Roczn. Tow. Nauk.** { Rocznik Towarzystwa Naukowego z Uniwersytetem Krakowskim Połączonem. Krakowie. [Annals of the Scientific Society of the Polish University of Krakow. Krakow.] 1817—72. B.M.
- Krk. Roczn. Uniwers.** ... {
- Lanc. Hist. S. T.**..... { Proceedings and Papers of the Lancashire and Cheshire Historic Society. Liverpool. 1849—54. Continued as: Transactions, etc., 1855— B.M.; Camb.U.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Glasg.P.S.i.; Oxon.B.i.; R.S.
- Lanc. T. Hist. S.**..... {

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- Laus. Bll. S. Vd.** ..... { Bulletin des Séances de la Société Vaudoise des Sciences Naturelles.  
Lausanne.
- Laus. S. Vd. Bll.** ..... { 1842— Dub.R.D.S.i.; Dub.R.I.A.i.; Edinb.R.S.i.; Linn.S.;  
N.H.M.; Oxon.B.i.; R.S.
- Leic. S. T.** ..... The Transactions of the Leicester Literary and Philosophical Society.  
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1835— Camb.U.; Dub.R.D.S.; Geol.S.; Glasg.P.S.; Linn.S.i.;  
N.H.M.i.; Oxon.B.; P.O.; 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. Jablon. Gs.** ..... Abhandlungen bei Begründung der k. Sächsischen Gesellschaft der  
Wissenschaften am Tage der zweihundertjährigen Geburtsfeier  
Leibnizens; herausg. v. d. Jablonowski'schen Gesellschaft zu  
Leipzig. Leipzig.  
1846. Camb.U.; Dub.R.I.A.; Edinb.R.S.; N.H.M.; R.A.S.; R.S.
- 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.;  
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.
- 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.;  
U.C.L.i.
- Leip. Jablon. Preisschr.** ..... See **Leip. Mth. Fs. B.**  
Preisschriften gekrönt und herausgegeben von der Fürstlich Jab-  
lonowski'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.**
- Le Mans S. R. Tr.** ..... Analyse des Travaux de la Société [Royale] des Arts du Mans.  
Le Mans.  
1820. N.H.M.; R.S.
- Les Mondes** ..... Les Mondes, Revue hebdomadaire des Sciences et de leurs Appli-  
cations aux Arts, et à l'Industrie; l'Abbé F. Moigno. Paris.  
1863— B.M.; Camb.U.i.; Dub.N.L.I.i.; Glasg.P.S.i.; Oxon.R.;  
P.O.; R.S.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.; Glasg.P.S.i.;  
N.H.M.; Oxon.B.(R.); P.O.i.; R.S.i.
- Liège A. Ac.** ..... Annales Academiæ Leodiensis. Liège.  
1817—27. B.M.; Camb.U.; Dub.T.C.; N.H.M.; Oxon.B.; R.S.
- Liège Mm. S. Sc.** ..... { Mémoires de la Société [Royale] des Sciences, de l'Agriculture, et  
**Liège S. Sc. Mm.** ..... { des Arts à Liège. Liège.  
1843— B.M.; Camb.U.; Dub.T.C.; Edinb.R.S.i.; Glasg.P.S.i.;  
Glasg.U.i.; Linn.S.i.; N.H.M.; Oxon.B.; P.O.; R.S.
- Lille Mm.** ..... { Mémoires de la Société [Royale] des Sciences, etc. à Lille. Lille.  
**Lille Mm. S.** ..... { 1827— 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.
- Lille Tr. Mm.** ..... Travaux et Mémoires de l'Université de Lille. Lille.  
1889— Camb.P.S.; Camb.U.; Dub.R.D.S.; Dub.R.I.A.; N.H.M.;  
R.S.
- Lindenau Z.** ..... Zeitschrift für Astronomie und verwandte Wissenschaften; Lindenau.  
Tübingen.  
1816—18. B.M.; Camb.U.; R.A.S.; R.S.

## List of Serial Publications

- Liouv. J.** ..... { Journal de Mathématiques pures et appliquées, fondé par Joseph Liouville. Paris.
- Liouv. J. Mth.** ..... { 1836— B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; Edinb.U.; Glasg.P.S.i.; Glasg.U.; Math.S.i.; Oxon.B.(R.); R.S.; U.C.L.
- Lisb. A.** ..... { Annaes das Sciencias e Lettras, publicados debaixo dos auspicios da Academia Real das Sciencias:—Sciencias mathematicas, physicas, historico-naturaes, e medicas. Lisboa.
- Lisb. Ac. Sc. Mm.** ..... { 1857— B.M.; Dub.R.I.A.; Edinb.R.S.i.; N.H.M.; R.A.S.i.; R.S.i. See **A. Sc.**
- Lisb. Ac. Sc. Mm.** ..... { Historia e Memorias da Academia Real das Sciencias de Lisboa. Lisboa.
- Lisb. Ac. Sc. Mm.** ..... { 1797— B.M.; Camb.U.; Edinb.R.S.; N.H.M.; Oxon.B.; R.A.S.; R.S.i.
- Lisb. J. Sc. Mth.** ..... { See **Lisb. Mm.**, **Lisb. Mm. Ac. Sc.** and **Lisb. Mm. Sc.**
- Lisb. J. Sc. Mth.** ..... { Jornal de Sciencias mathematicas, physicas e naturaes. Publicado sob os auspicios da Academia R. das Sciencias de Lisboa. Lisboa.
- Lisb. Mm.** ..... { 1868— B.M.; Camb.U.; Dub.R.D.S.i.; Edinb.R.S.i.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.; R.A.S.; R.S.; U.C.L.i.
- Lisb. Mm. Ac. Sc.** } ..... See **Lisb. Ac. Sc. Mm.**
- Lisb. Mm. Sc.** } ..... See **Lisb. Ac. Sc. Mm.**
- L. Mth. S. P.** ..... { Proceedings of the London Mathematical Society. London.
- L. Mth. S. P.** ..... { 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.; U.C.L.
- Lndw. V.-St.** ..... { Die landwirthschaftlichen Versuchs-Stationen. Organ für wissenschaftliche Forschungen auf dem Gebiete der Landwirthschaft. Dresden, Chemnitz.
- Lndw. V.-St.** ..... { 1859— B.M.i.; Camb.U.; Chem.S.i.; Oxon.B.; P.O.i.; R.S.i.
- Lotos** ..... { Lotos. Zeitschrift für Naturwissenschaften. Prag.
- Lotos** ..... { 1851—95. B.M.; Camb.U.; Dub.R.I.A.i.; N.H.M.
- Louvain A. Ac.** ..... { Annales Academiæ Lovaniensis. Bruxelles, Louvain.
- Louvain A. Ac.** ..... { 1821—27. B.M.; Camb.U.; Dub.T.C.; Oxon.B.; R.S.
- Lplidina** ..... { Leopoldina: amtliches Organ der Kaiserlichen Leopoldino-Carolinischen Deutschen Akademie der Naturforscher. Dresden.
- Lplidina** ..... { 1859— B.M.; Camb.P.S.; Camb.U.i.; Edinb.R.S.i.; Linn.S.; N.H.M.; R.A.S.i.; R.S.
- Lpool Lt. Ph. S. P.** ..... { Proceedings of the Literary and Philosophical Society of Liverpool. London, Liverpool.
- Lpool Lt. Ph. S. P.** ..... { 1844— B.M.; Camb.U.i.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.i.; Glasg.P.S.; Linn.S.; N.H.M.; Oxon.B.i.; P.O.i.; R.A.S.i.; R.S.; U.C.L.i.
- L. Ps. S. P.** ..... { Proceedings of the Physical Society of London. London.
- L. Ps. S. P.** ..... { 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.; Glasg.P.S.i.; Glasg.U.i.; Math.S.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.S.; U.C.L.i.
- Lucca At. Ac.** ..... { Atti della R. Accademia Lucchese di Scienze, Lettere, ed Arti. Lucca.
- Lucca At. Ac.** ..... { 1821— B.M.; Camb.U.; Dub.T.C.i.; Oxon.B.i.
- Lum. Élect.** ..... { La Lumière Electrique. Journal universel d'Electricité. Paris.
- Lum. Élect.** ..... { 1879—94. B.M.; Glasg.U.i.; P.O.
- Lund. Acta Un.** ..... { Acta Universitatis Lundensis. Lunds Universitets Års-skrift. Afdelningen för Matematik och Naturvetenskap. Lund.
- Lund. Acta Un.** ..... { 1864— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; Linn.S.i.; N.H.M.; Oxon.B.; R.S.
- Lund. Acta Un.** ..... { See **Lund. Un. Acta.**
- Lund Phys. Sällsk. Ts.** ..... { Physiografiska Sällskapets Tidskrift. Lund.
- Lund Phys. Sällsk. Ts.** ..... { 1837—38. Camb.U.; N.H.M.; R.S.
- Lund. Un. Acta** ..... { See **Lund. Acta Un.**
- Lux. I. R. Fb.** ..... { Publications de l'Institut Royal Grand-Ducal de Luxembourg. Section des Sciences Naturelles et Mathématiques: ci-devant "Société des Sciences Naturelles." Luxembourg.
- Lux. I. R. Fb.** ..... { 1870— Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.i.; N.H.M.; R.S.i.
- Lux. S. Sc. Mm.** ..... { Société des Sciences Naturelles du Grand-Duché de Luxembourg. Luxembourg.
- Lux. S. Sc. Mm.** ..... { 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.** ..... {

## List of Serial Publications

- 1845— B.M.; Camb.U.; Edinb.R.S.i.; Linn.S.i.; N.H.M.; Oxon.B.; R.S.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.  
*See Lyon S. A. Ag. and Lyon S. Ag. A.*
- Lyon Mm. Ac.** .....  
**Lyon Mm. Ac. Sc.** .....  
**Lyon S. A. Ag.** .....  
**Lyon S. Ag. A.** .....  
**Lyon Un. A.** .....  
*See Lyon Ac. Mm. (Sc.) and Lyon Ac. Sc. Mm.*  
*See Lyon A. S. Ag.*  
 Annales de l'Université de Lyon. Paris, Lyon.  
 1891— B.M.; Edinb.R.S.; N.H.M.i.; R.S.i.
- Maclurian Lyceum Ct.**... Contributions of the Maclurian Lyceum to the Arts and Sciences. Philadelphia.  
 1827—29. B.M.; Linn.S.i.; N.H.M.
- 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. 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. 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.; Linn.S.i.; N.H.M.; Oxon.B.i.; P.O.; R.A.S.i.; R.S.i.; U.C.L.i.
- Madrid Ac. Ci. Mm.** ..... Memorias de la Real Academia de Ciencias. Madrid.  
**Madrid Mm.** .....  
**Madrid Rv.** .....  
 1850— B.M.; Camb.U.i.; Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Linn.S.i.; N.H.M.; Oxon.B.; R.A.S.i.; R.S.i.; U.C.L.i.  
 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.; N.H.M.; Oxon.R.i.; R.A.S.i.; R.S.i.
- Mag. Ak. Éts.** ..... Magyarakadémiai Értesítő. [Report of the Hungarian Academy.] Pest.  
 1840—59. B.M.
- Mag. Ak. Éts. (Mth. Term.)** Magyar akadémiai Értesítő. A matematikai és természettudományi osztályok közlönye. [Report of the Hungarian Academy. Communications of the Mathematical and Natural Science sections.] Pest.  
 1860—65. B.M.; Camb.P.S.i.; R.S.
- Magdeb. Nt. Vr. Jbr. u. Ab.** ..... Jahresbericht und Abhandlungen des Naturwissenschaftlichen 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.; R.S.
- Mag. Tud. Ak. Éts.** ..... A Magyar Tudományos Akadémia Ertesitoje. [Report of the Hungarian Academy of Science.] Pest.  
 1867— B.M.
- 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. Lt. Ph. S. Mm.**... Memoirs of the Literary and Philosophical Society of Manchester. London and Manchester.  
 1785—1887. B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.D.S.; Dub.R.I.A.; Glasg.P.S.i.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.i.; R.S.; 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.

## List of Serial Publications

- 1888— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.I.A.i.;  
Edinb.R.S.; Glasg.P.S.; Linn.S.; Math.S.; N.H.M.; Oxon.B.;  
Oxon.R.; P.O.; R.A.S.; R.S.; U.C.L.i.
- Manch. Lt. Ph. S. P.** ..... Proceedings of the Literary and Philosophical Society of Manchester.  
Manchester.
- 1857—87. B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.D.S.;  
Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Glasg.P.S.; Linn.S.; Math.  
S.i.; N.H.M.; Oxon.B.; P.O.; R.A.S.; R.S.; U.C.L.i.  
See **Manch. Ph. S. P.**
- 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 Natur-  
wissenschaften zu Marburg. Marburg.
- 1823— B.M.i.; Camb.U.; N.H.M.; Oxon.R.; R.S.  
**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.  
**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.  
**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.  
**Medley I. Eng.** ..... Professional Papers on Indian Engineering; Major J. G. Medley.  
Roorkee.
- 1864—68. P.O.i.; R.S.  
**Mengelwerk Wisk. Vh.** ..... Mengelwerk van uitgelezene en andere Wis- en Natuurkundige Ver-  
handelingen; door het Genootschap der Mathematische Weten-  
schappen, 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.; U.C.L.
- M.-et-L. Mm. S. Ac.** ..... Mémoires de la Société Académique de Maine et Loire. Angers.
- 1857— B.M.; Camb.U.; N.H.M.; R.S.i.  
**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.; Linn.  
S.i.; Oxon.R.; P.O.; R.A.S.; R.S.  
**Met. Z.** ..... Meteorologische Zeitschrift. Berlin.
- 1884— Camb.U.; Edinb.R.S.; P.O.; R.S.  
**Metz Ac. Mm.** ..... (Mémoires de l'Académie (Royale, Impériale) de Metz. Metz.
- 1821— B.M.; Camb.U.; Dub.T.C.; N.H.M.; Oxon.B.; R.S.i.  
**Metz Mm. Ac.** ..... Archives de la Commission Scientifique du Mexique, publiées sous  
les auspices du Ministère de l'Instruction Publique. Paris.
- 1865—69. Oxon.B.; R.S.  
**Méx. Reg. Trim.** ..... Registro trimestre, ó Coleccion de Memorias de Historia, Literatura,  
Ciencias, etc., por una Sociedad de Literatos. México.
- 1832—33.  
**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.; Linn.S.i.;  
Math.S.i.; N.H.M.i.; R.A.S.; R.S.; 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.; Linn.S.; P.O.  
**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.; N.H.M.; Oxon.B.; R.S.

## List of Serial Publications

- Mil. Effem.** ..... { Effemeridi Astronomiche di Milano. Con Appendice di Osservazioni e Memorie Astronomiche. Milano.  
1806— Camb.U.; Oxon.B.; R.A.S.i.
- Mil. Effem. As.** ..... {
- Mil. Ephem. As.** ..... { Ephemerides Astronomicæ, ad Meridianum Mediolanensem supputatæ ab Angelo de Cesaris. Accedit Appendix cum Observationibus et Opusculis. Mediolani. (Milan.)  
1774—1805. Oxon.B.
- 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.; N.H.M.; Oxon.B.; R.S.  
See **Mil. I. Lomb. G.**
- Mil. G. S. Inc.** ..... { Giornale della Società d' Incoraggiamento delle Scienze, etc. stabilita in Milano. Milano.  
1808—65. B.M.; Camb.U.
- Mil. I. Lomb. G.** ..... See **Mil. G. I. Lomb.**
- Mil. I. Lomb. Mm.** ..... { 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.; Math.S.i.; N.H.M.; Oxon.B.; R.A.S.i.; R.S.; 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.; Math.S.i.; N.H.M.; Oxon.B.i.; R.A.S.i.; R.S.; U.C.L.i.
- Mil. Mm. I. Lomb.** ..... See **Mil. I. Lomb. Mm.**
- Mil. Mm. I. Lomb. Ven.** ..... { Memorie dell' I. R. Istituto del regno Lombardo-Veneto. Milano.  
1819—38. B.M.; Camb.U.; N.H.M.; Oxon.B.i.; R.S.
- Mitau Arb. Kurländ. Gs.** ..... { Arbeiten der Kurländischen Gesellschaft für Literatur und Kunst. Mitau.  
1847—51. B.M.; Camb.U.
- Mitau Quatember** ..... { Die Quatember; Zeitschrift für naturwissenschaftl., geschichtl., philolog. und gemischte Gegenstände; von Trautvetter. Mitau.  
1829—30. B.M.
- Mitau Send. Kurländ. Gs.** ..... { Sendungen der Kurländischen Gesellschaft für Literatur und Kunst. Mitau.  
1840—47. B.M.
- 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.I.; Geol.M.; N.H.M.; Oxon.B.(R.); P.O.; R.S.
- 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.  
See **Mntp. Ac. Sc. Mm., Mntp. Mm. Ac. and Mntp. Mm. Ac. Sect. Sc.**
- Mntp. Ac. FV** ..... { Extraits des Procès-Verbaux des Séances de l'Académie des Sciences et Lettres, établie à Montpellier. Montpellier.  
1847—54. N.H.M.i.
- Mntp. Ac. Sc. Mm.** ..... }  
**Mntp. Mm. Ac.** ..... } See **Mntp. Ac. Mm.**  
**Mntp. Mm. Ac. Sect. Sc.** }  
**Mntp. Mm. Ac. Sect. Md.** } Mémoires de l'Académie des Sciences et Lettres: Section de la Médecine. Montpellier.  
1849— B.M.; Camb.U.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.i.; Oxon.B.; R.S.
- Mntp. Rec. Bil.** ..... { Recueil des Bulletins publiés par la Société Libre des Sciences, etc., de Montpellier. Montpellier.  
1803—14. B.M.; Camb.U.; Oxon.B.i.
- Mod. Ac. Sc. Mm.** ..... { 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.; U.C.L.i.
- Mod. Mm. Ac. Sc.** ..... {
- Mod. Mm. S. It.** ..... { 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.; Linn.S.i.; Oxon.B.i.; R.A.S.i.; R.S.; U.C.L.i.  
See **Rm. S. It. Mm., Verona Mm. S. It. and Verona S. It. Mm.**

## List of Serial Publications

- Mod. S. Nt. At.** ..... Atti della Società dei Naturalisti di Modena. Modena.  
1883— Camb.U.; Dub.R.I.A.i.; N.H.M.
- Moigno An. Cosmos** ..... Annuaire du Cosmos; Moigno. Paris.  
1859—70. B.M.
- Moigno Cosmos** ..... { Cosmos. Révue Encyclopédique Hebdomadaire des Progrès des  
Sciences; Moigno. Paris.
- Mondes (1es)** ..... { 1852— B.M.; Camb.U.; Dub.T.C.i.; Edinb.R.S.i.; N.H.M.i.;  
Oxon.B.; P.O.i.; R.A.S.i.; R.S.
- Mon. Sc.** ..... Le Moniteur Scientifique du Chimiste et du Manufacturier; Quesneville. Paris.  
1857— B.M.; Chem.S.i.; Dub.R.C.S.i.; Oxon.B.; 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.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.i.;  
Oxon.R.; P.O.i.; R.A.S.i.; R.S.
- See **Mosc. S. Nt. Bil.**
- 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. Moscow.  
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.; U.C.L.
- Mth. Gz.** ..... The Mathematical Gazette. London.  
1894— B.M.; Camb.U.; Math.S.; 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.; R.A.S.i.; R.S.
- 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.
- Mth. Termt. Éts.** ..... { 1883— B.M.i.; Edinb.R.S.; N.H.M.; R.S.
- Mth. Ts.** ..... Mathematisk Tidsskrift. Kjøbenhavn.  
1859— B.M.; Camb.U.; Oxon.B.; R.S.i.
- Mulhouse Bil.** ..... Bulletin de la Société Industrielle de Mulhouse. Mulhouse.
- Mulhouse Bil. S. In.** ..... { 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.; Oxon.B.i.; P.O.
- Mulhouse S. In. Bil.** ..... { Abhandlungen der mathematisch-physikalischen Classe der Königl.  
Bayerischen Akademie der Wissenschaften. München.
- Münch. Ab.** ..... { 1832— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.T.C.;  
Edinb.R.S.; Edinb.U.; Glasg.U.; Linn.S.; Oxon.B.; Oxon.R.;  
P.O.; R.A.S.i.; R.S.
- Münch. Ak. Ab.** ..... { Sitzungsberichte der Mathematisch-Physikalischen Classe der K. B.  
Akademie der Wissenschaften zu München. München.
- Münch. Ak. Sb.** ..... { 1871— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.T.C.;  
Edinb.R.S.; Glasg.U.i.; Linn.S.; Oxon.B.; Oxon.R.; P.O.;  
R.A.S.; R.S.; U.C.L.i.
- Münch. D.** ..... Denkschriften der Königl. Bayerischen Akademie der Wissenschaften  
zu München. München u. Salzburg.  
1808—24. B.M.; Camb.P.S.; Camb.U.; N.H.M.; Oxon.R.; P.O.; R.S.
- Münch. Sb.** ..... Sitzungsberichte der Königl. Bayerischen Akademie der Wissen-  
schaften zu München. München.  
1860—70. 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.; Linn.S.; N.H.M.;  
Oxon.B.; P.O.i.; R.A.S.; R.S.



## List of Serial Publications

- 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.; U.C.L.i.
- Nancy Mm. S. Sc.** ..... Mémoires de la Société [Royale] des Sciences, Lettres, et Arts de  
Nancy. Nancy.  
1833— B.M.; Camb.U.i.; N.H.M.i.; Oxon.B.; R.S.i.
- Nancy S. Sc. Bil.** ..... Bulletin de la Société des Sciences de Nancy. Nancy, Paris.  
1873— B.M.; N.H.M.; R.S.
- 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. 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.; N.H.M.; Oxon.B.;  
R.A.S.i.; R.S.  
Atti della R. Accademia delle Scienze Fisiche e Matematiche.  
Napoli.  
1863—82; 1898— B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.;  
Glasg.U.i.; Linn.S.i.; Math.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.;  
R.A.S.i.; R.S.  
*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.; N.H.M.; R.S.i.; U.C.L.i.
- Nap. Ac. Sc. Mm.** ..... Memorie della R. Accademia delle Scienze, etc. Napoli.  
1852—57. B.M.; Camb.U.; Dub.R.D.S.; Edinb.R.S.; Linn.S.;  
N.H.M.; Oxon.B.; Oxon.R.; R.A.S.; R.S.  
*See Nap. Mm. Ac. Sc.*
- 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.; N.H.M.; Oxon.B.; P.O.;  
R.S.i.  
*See Nap. I. Inc. At.*
- Nap. At. S. Pont.** ..... Atti della Società Pontaniana di Napoli. Napoli.  
1810—47. B.M.; Camb.U.; N.H.M.; R.S.  
*See Nap. S. Pont. At.*
- Nap. I. Inc. At.** ..... }  
**Nap. Mm. Ac. Sc.** ..... } *See Nap. At. I. Inc.*
- Nap. Ms.** ..... *See Nap. Ac. Sc. Mm.*  
Museo di Letteratura e Filosofia; Gatti. Napoli.  
1842—62. B.M.; Oxon.B.
- 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. Pont. At.** ..... }  
**N. Arch. Wisk.** ..... } *See Nap. At. S. Pont.*  
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.; N.H.M.; Oxon.B.i.; R.S.  
*See Bologna N. A.*
- 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.;  
N.H.M.; Oxon.R.i.; P.O.i.; R.S.
- Nebr. Un. Stud.** ..... University Studies. Published by the University of Nebraska.  
Lincoln, Nebraska.  
1888— B.M.; Camb.P.S.; Camb.U.; Dub.R.I.A.; Edinb.R.S.;  
Oxon.B.; R.S.
- 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.; Oxon.B.i.; P.O.i.; R.S.
- Neuch. Bil.** ..... }  
**Neuch. S. Sc. 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.; N.H.M.;  
Oxon.B.i.; R.A.S.i.; R.S.i.
- NH. Rv.** ..... The Natural History Review and Quarterly Journal of Science.  
London and Dublin.

## List of Serial Publications

- 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.; U.C.L.i.  
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.; Glasg.P.S.; Glasg.U.; Linn.S.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.; R.S.
- 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.; Glasg.P.S.i.; Glasg.U.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.i.; R.S.; U.C.L.
- Niort Mm. de l'Athénée** Mémoires de l'Athénée de Niort, Société Libre des Sciences et des Arts du département des Deux-Sèvres. Niort.  
1808 (?). B.M.; Oxon.B.; R.S.i.
- N. Jb. Min.**..... Neues Jahrbuch für Mineralogie, Geologie und Palaontologie. Stuttgart.  
1833— B.M.; Camb.U.; Chem.S.i.; Dub.N.L.I.i.; Dub.R.D.S.i.; Geol.M.; N.H.M.; Oxon.R.; R.S.
- N. Mg. Ntvd.** ..... Nyt Magazin for Naturvidenskaberne. Christiania.  
1838— Camb.U.i.; Edinb.R.S.i.; Linn.S.i.; N.H.M.; R.S.
- Norske Vd. Skr.** ..... Det Kongelige Norske Videnskabselskabs Skrifter i det 19de Aarhundrede. Kjøbenhavn og Trondhjem.  
1817— B.M.; Camb.U.i.; Dub.T.C.i.; Edinb.R.S.i.; N.H.M.; R.S. See **Thrond. Skr.**
- N. Rs. S. Nt. Mm. (Mth.)** Memoirs of the Mathematical Section of the New Russian Society of Naturalists. [In Russian.] Odessa.  
1878— B.M.i.; Dub.R.I.A.i.; Math.S.i.; R.S.i.
- N. S. W. Ph. S. T.** ..... Transactions of the Philosophical Society of New South Wales. Sydney.  
1866. Camb.P.S.; Camb.U.; Chem.S.; Edinb.R.S.i.; Glasg.U.; Linn.S.; Oxon.B.; R.A.S.; R.S.
- 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.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.i.; P.O.i.; R.A.S.; R.S.
- 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.; Glasg.U.i.; N.H.M.; R.A.S.; R.S.
- 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.; Glasg.P.S.; Glasg.U.i.; Linn.S.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.S.; U.C.L.
- N. Ts. Mth.** ..... Nyt Tidsskrift for Matematik. Kjøbenhavn.  
1890— B.M.; Math.S.i.
- Nürnb. Nt. Gs. Ab.** ..... Abhandlungen der Naturhistorischen Gesellschaft zu Nürnberg. Nürnberg.  
1852— B.M.i.; Camb.U.; Dub.R.I.A.; N.H.M.; R.S.i.
- Nv. Archt. T.** ..... Transactions of the Institution of Naval Architects. London.  
1860— B.M.; Camb.U.; Dub.R.I.A.; Edinb.U.; P.O.; R.S.; U.C.L.i.
- 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.
- N. Y. Am. Mth. S. Bl.** ... Bulletin of the American Mathematical Society. New York.  
1895— 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.
- N. Y. Mth. S. Bl.** ..... Bulletin of the New York Mathematical Society. New York.  
1892—94. B.M.; Camb.P.S.; Camb.U.; Edinb.R.S.; Glasg.P.S.; Math.S.; Oxon.B.; Oxon.R.; R.A.S.

## List of Serial Publications

- 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.; Glasg.P.S.i.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.S.; 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.
- Oestr. Z. Brgw.** ..... Oesterreichische Zeitschrift für Berg- und Hüttenwesen; von Otto Freiherrn von Hingenu. Wien.  
1853— B.M.; P.O.
- Oken Isis** ..... Isis, oder Encyclopädische Zeitung; Oken. Jena.  
1817—48. B.M.i.; Camb.U.; Edinb.U.; Linn.S.i.; N.H.M.; Oxon.B.(R.); R.S.
- Opusc. Mt. Fis.** ..... Opuscoli matematici e fisici di diversi Autori. Milano.  
1832—34. 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— Edinb.R.S.; 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.
- Padova N. Sag.** ..... Nuovi Saggi dell' Accademia di Scienze, Lettere, ed Arti di Padova. Padova.  
1817—83. 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.
- Padova Rv. Period.** ..... Revista Periodica dei Lavori della I. R. Accademia di Scienze, Lettere, ed Arti di Padova. Padova.  
1851— B.M.; Edinb.R.S.i.; N.H.M.; R.S.i.
- 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.; N.H.M.; Oxon.B.i.; R.A.S.i.; R.S.
- Palermo At.** ..... 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.; 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.; Oxon.B.; P.O.; R.S.  
*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.; N.H.M.; Oxon.B.; Oxon.R.; P.O.i.; R.A.S.i.; R.S.; U.C.L.
- Par. A. Éc. Norm.** ..... *See Par. Mm. Ac. Sc.*  
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.; R.S.
- Par. An. Mét.** ..... *See Par. Éc. Norm. A.*  
Annuaire de la Société Météorologique de France. Paris.
- Par. An. S. Mét.** ..... 1849— B.M.; Camb.U.i.; Dub.T.C.i.; Edinb.R.S.i.; R.S.i.
- Par. A. Obs.** ..... Annales de l'Observatoire de Paris; mémoires publiées par U. J. Le Verrier. Paris.

## List of Serial Publications

- 1855— B.M.; Camb.U.; Dub.N.L.I.; Dub.T.C.; Edinb.R.S.; 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.  
 1831— B.M.; Camb.U.; Edinb.U.i.; Glasg.P.S.i.; Glasg.U.i.; P.O.; R.S.i.  
*See A. Pon. Chauss.*
- 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.; Oxon.B.; P.O.; R.S.
- 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.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. Éc. Norm. A.** ..... *See Par. A. Éc. Norm.*
- Par. Éc. Pol. Cor.** ..... Correspondance sur l'École Polytechnique, à l'usage des Éléves 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.; Linn.S.i.; Math.S.i.; Oxon.B.(R.); P.O.; R.A.S.i.; R.S.; U.C.L.i.  
*See Par. J. Éc. Pol.*
- Par. Gg. S. Bil.** ..... *See Par. Bil. S. Gg.*
- Par. Ing. Civ. Mm.** ..... Mémoires et Comptes Rendus des Travaux de la Société des Ingénieurs Civils. Paris.  
 1848— B.M.; Glasg.U.i.; 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.; 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.; N.H.M.; Oxon.R.; P.O.; R.A.S.; R.S.; 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.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.i.; R.A.S.i.; R.S.
- 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.  
*See Par. A. Obs.*
- Par. Obs. A.** .....  
**Par. Obs. A. (Mm.)** .....  
**Par. Poids et Mes. PV.** ..... Comité International des Poids et Mesures. Procès-Verbaux des Séances. Paris.  
 1875— Camb.P.S.; Camb.U.i.; Dub.R.D.S.; Oxon.R.; P.O.; R.A.S.; R.S.
- Par. S. Amat. Tr.** ..... Notices des Travaux de la Société des Amateurs des Sciences physiques et naturelles de Paris. Paris.  
 1807—08.  
*See Par. Tr. S. Amat.*
- Par. S. Ap. Bil.** ..... Bulletin de la Société d'Anthropologie de Paris. Paris.  
 1860— B.M.; Camb.U.; Dub.R.I.A.; Edinb.R.S.i.; N.H.M.i.; Oxon.R.; R.S.

## List of Serial Publications

- Par. Sé. Éc. Norm.** ..... Séances des Écoles Normales. Paris.  
1800—01. R.S.; U.C.L.
- Par. S. Gg. Bll.** ..... See **Par. Bll. S. Gg. and Par. Gg. S. Bll.**
- Par. S. Mth. Bll.**..... 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. Bll.** ..... See **Par. Bll. 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. Bll.**..... 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. PV.** ..... Extraits des Procès-Verbaux des Séances de la Société Philomathique.  
Paris.  
1836—63. N.H.M.; R.S.
- Par. T. Nauk Śc. Pam.** ... Pamiętnik Towarzystwa Nauk Ścisłych w Paryżu. Paris.  
1871—82. B.M.; N.H.M.
- Par. Tr. S. Amat.** ..... See **Par. S. Amat. Tr.**
- Perpignan Bll. S. Ag.**  
**Fyr. Orient.**..... [Bulletin de la] Société Agricole, Scientifique, et Littéraire des  
Pyénées-Orientales. Perpignan.  
1834— N.H.M.; R.S.i.
- 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.; Glasg.P.S.i.;  
Glasg.U.; N.H.M.i.; Oxon.B.; Oxon.R.; R.S.; U.C.L.i.
- 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.;  
Dub.R.I.A.; Dub.T.C.; Edinb.R.S.; Edinb.U.; Geol.M.; Glasg.  
P.S.; Glasg.U.i.; Linn.S.i.; Math.S.i.; N.H.M.; Oxon.B.;  
Oxon.R.; P.O.; R.A.S.i.; R.S.; 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.; Glasg.P.S.i.; Glasg.U.;  
Linn.S.i.; Math.S.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.;  
R.S.; 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.; N.H.M.; Oxon.B.; Oxon.B.(R.); R.S.i.;  
U.C.L.
- Ph. Stud.** ..... Philosophische Studien herausgegeben von Wilhelm Wundt.  
Leipzig.  
1883— Camb.U.; Dub.T.C.; Edinb.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. Oxon.B.; Oxon.R.; R.S.
- Pisa A. Un. Tosc.** ..... { Annali delle Università Toscane. (Parte 2da.) Scienze Cosmo-  
**Pisa A. Un. Tosc. Sc.** ..... { logiche. Pisa.  
**Cosm.**..... { 1846— Camb.U.i.; N.H.M.; R.S.i.
- Pisa N. G.**..... Nuovo Giornale de' Letterati. Pisa.  
1822—39. B.M.; Camb.U.; Oxon.B.
- Pisa S. Tosc. At. (PV.)**... Atti della Società Toscana di Scienze Naturali residente in Pisa.  
Processi Verbali. Pisa.  
1875— B.M.; Camb.P.S.i.; Dub.T.C.; N.H.M.; R.S.
- Pistoja At. Ac.** ..... Atti della R. Accademia Pistoiese di Scienze, Lettere, ed Arti:  
Memorie di Matematica e Fisica, per l' anno 1816. Pistoja.  
1816. B.M.; Camb.U.; N.H.M.; Oxon.B.; R.S.
- Pogg. A.** ..... Annalen der Physik und Chemie; Poggendorff. Leipzig.  
1824— 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.;  
N.H.M.; Oxon.B.(R.); P.O.; R.S.; U.C.L.i.
- See **A. Ps. C.**
- Poligrafo** ..... Il Poligrafo: Giornale di Scienze, Lettere, ed Arti. Verona.  
1830—45. B.M.; Oxon.B.

## List of Serial Publications

- 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.
- 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.
- Prag 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.; R.S.i.  
*See Böhln. Gs. Ab.*
- Prag 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.
- Prag 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.
- Prag Fr. Jos. Ac. Sc. Bll. (Mth. Nt.)**..... Académie des Sciences de l'Empereur François Joseph I (Česká Akademie Císaře Františka Josefa I). Bulletin International. Résumé des Travaux présentés. Sciences Mathématiques et Naturelles. Prag. 1897— Edinb.R.S.; N.H.M.i.
- Prag Jb. Böhm. Ms.**..... Jahrbücher des Böhmisches Museums für Natur- und Länderkunde, etc. Prag. 1830—31. B.M.; N.H.M.
- Prag 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.; U.C.L.i.
- Presse Sc.**..... Presse Scientifique des Deux Mondes. Paris. 1860—66. B.M.; R.S.i.
- 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.; Oxon.R.; P.O.; R.S.
- Ps. Z.**..... Physikalische Zeitschrift. Leipzig. 1899— Camb.P.S.; Edinb.U.; Oxon.R.; R.S.
- Queb. T.**..... { Transactions of the Literary and Historical Society of Quebec. Quebec.
- Queb. T. Lt. S.**..... { 1829— B.M.i.; Dub.R.I.A.; Edinb.R.S.i.; Glasg.P.S.i.; Linn.S.i.; N.H.M.; R.S.i.
- 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.
- 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.; Math.S.i.; Oxon.B.; Oxon.R.; P.O.; R.A.S.i.; R.S.; 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.; Oxon.B.; Oxon.R.; R.S.; U.C.L.
- Railroad & Eng. J.**..... The Railroad and Engineering Journal. New York. 1887—92. B.M.; P.O.
- Ranuzzi An. Gg.**..... Annuario geografico Italiano; Ranuzzi. Bologna. 1844—45. B.M.; Camb.U.

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- Rec. Mth. (Moscou)** ..... Recueil mathématique. Publié par la Société Mathématique de Moscou. [In Russian.] Moscow. 1866— R.S.
- R. E. Fp.** ..... Papers on subjects connected with the duties of the Corps of Royal Engineers. London. 1844— Camb.U.; Geol.M.i.; Glasg.U.i.; P.O.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.; Linn.S.i.; N.H.M.; Oxon.R.; R.S.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.; Glasg.P.S.i.; Linn.S.i.; N.H.M.i.; Oxon.R.; P.O.i.; R.A.S.i.; R.S.; U.C.L.i.
- Rio Arch. Palestr.** ..... Archivos da Palestra Scientifica do Rio de Janeiro. Rio de Janeiro. 1858. N.H.M.; R.S.
- 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.; Glasg.P.S.; Glasg.U.; Linn.S.; N.H.M.; Oxon.R.; P.O.; R.A.S.; R.S.; U.C.L.
- Rm. At.** ..... { Atti dell' Accademia Pontificia dei Nuovi Lincei. Roma. 1847— B.M.; Dub.R.I.A.; Edinb.R.S.; N.H.M.; Oxon.B.i.; R.A.S.i.; R.S.
- Rm. At. N. Linc.** ..... { See **Rm. N. Linc. At.**
- Rm. At. R. Ac.** ..... 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.; Linn.S.; Math.S.; N.H.M.; Oxon.B.; Oxon.R.i.; R.A.S.i.; R.S.; U.C.L.i.
- Rm. Cor. Sc.** ..... See **Rm. R. Ac. Linc. At.**  
Corrispondenza Scientifica in Roma per le avanzamento delle Scienze, etc. Roma. 1848—  
See **Rm. S. Cor.**
- Rm. Mm. Osserv.** ..... Memorie dell' Osservatorio dell' Università Gregoriana del Collegio Romano, diretto dai PP. della Compagnia di Gesu. Roma. 1850—63. B.M.; R.A.S.; R.S.
- Rm. N. Linc. At.** ..... See **Rm. At. and Rm. At. N. Linc.**
- Rm. N. Linc. Mm.** ..... 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. R. Ac. Linc. At.** ..... See **Rm. At. R. Ac.**
- Rm. R. Ac. Linc. Mm.** ... 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.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.; Math.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.i.; R.A.S.; R.S.; U.C.L.
- Rm. R. Ac. Linc. Rd.** ..... Atti della R. Accademia dei Lincei. Rendiconti. Roma. 1885— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.T.C.; Edinb.R.S.; Glasg.U.i.; Linn.S.; Math.S.; N.H.M.; Oxon.B.; Oxon.R.; R.A.S.; R.S.; U.C.L.
- Rm. R. Ac. Linc. T.** ..... 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.; Glasg.P.S.i.; Linn.S.; Math.S.; N.H.M.; Oxon.B.; Oxon.R.; R.A.S.; R.S.; U.C.L.
- Rm. S. 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.; Linn.S.i.; Oxon.B.i.; R.A.S.i.; R.S.; U.C.L.i.
- Rochester (N. Y.) Ac. Sc. P.** ..... See **Mod. Mm. S. It., 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.

## List of Serial Publications

- 1800— B.M.i.; Camb.U.i.; Chem.S.i.; Dub.R.D.S.; Edinb.R.S.i.; Oxon.B.; R.S.  
**Rouen Bl. S. Em.** ..... Bulletins [des travaux] de la Société Libre d'Émulation de Rouen. Rouen.  
 1837— B.M.; Oxon.B.  
**Rouen Ac. Tr.** ..... } Précis analytique des Travaux de l'Académie des Sciences, Belles-  
**Rouen Tr. Ac.** ..... } 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.  
**Rpm. Mth.** ..... Repertorium der literarischen Arbeiten aus dem Gebiete der reinen und angewandten Mathematik. Leipzig.  
 1877—79. Camb.U.; R.S.  
**Rpm. Ps.** ..... Repertorium der Physik. Enthaltend eine vollständige Zusammenstellung der neuern Fortschritte dieser Wissenschaft. Berlin.  
 1837—49. Chem.S.; Glasg.P.S.i.; P.O.; R.S.; U.C.L.  
**Rs. Gg. Gs. D.** ..... Denkschriften der Russischen Geographischen Gesellschaft zu St Petersburg. Weimar.  
 1849. B.M.; Camb.U.; R.S.  
**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.; Glasg.P.S.; Glasg.U.i.; Linn.S.i.; Math.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.; R.A.S.; R.S.; 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.  
 1869— 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.)  
**Rv. Artl.** ..... Revue d'Artillerie. Paris, Nancy.  
 1872— B.M.; P.O.  
**Rv. Brazil** ..... Revista Brasileira, Jornal de Ciencias, Lettras, e Artes; Oliveira. Rio de Janeiro.  
 1857—61. B.M.; N.H.M.; R.S.i.  
**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.  
**Rv. Ligure** ..... Rivista Ligure, giornale di Lettere, Scienze, etc. Genova.  
 1843. B.M.; N.H.M.; Oxon.B.  
**Rv. Mar.** ..... (Revue maritime et coloniale. Paris.  
**Rv. Mar. et Col.** ..... } 1861— B.M.; Oxon.B.; Oxon.R.; P.O.  
**Rv. Mt.** ..... Rivista di Matematica. Torino.  
 1891—95. Camb.U.; Oxon.B.; R.S.  
**Rv. Mth.** ..... Revue de Mathématiques. (Rivista di Matematica.) Turin.  
 1896— Camb.U.; Oxon.B.; Oxon.R.; R.S.  
**Rv. Sc.** ..... La Revue Scientifique de la France et de l'Étranger. Paris.  
 1871— B.M.; Camb.U.; Edinb.R.S.; Edinb.U.; N.H.M.; Oxon.R.; P.O.; R.A.S.i.; R.S.  
**Rv. Sc.-Ind.** ..... Rivista Scientifico-Industriale delle principali scoperte ed invenzioni fatte nelle scienze e nelle industrie. Firenze.  
 1869— P.O.  
**Rv. Un. Mines** ..... Revue Universelle des Mines, de la Métallurgie, etc. Liège & Paris.  
 1857— B.M.; Camb.U.; Dub.R.I.A.i.; Glasg.P.S.i.; Glasg.U.i.; N.H.M.; P.O.  
*See Cuyper Rv. Un.*  
**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.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.S.  
**S. Afr. QJ.** ..... The South African Quarterly Journal; edited at the African Institution. Cape Town.  
 1830—35. B.M.i.; Edinb.R.S.i.; N.H.M.  
**Santiago de Chile Un. A.** ..... Anales de la Universidad de Chile. Santiago de Chile.  
 1843— B.M.i.; Dub.T.C.; N.H.M.i.; Oxon.B.i.  
*See Chile A. Un.*  
**Sarthe S. Bl.** ..... Bulletin de la Société d'Agriculture, etc., de la Sarthe. Le Mans.  
 1833— R.S.i.



## List of Serial Publications

- S. Aust. R. S. T.** ..... Transactions and Proceedings and Report of the Royal Society of South Australia. Adelaide.  
1877— Camb.P.S.i.; Camb.U.i.; Chem.S.i.; Dub.R.I.A.i.; Edinb. R.S.; Linn.S.i.; N.H.M.; P.O.; R.A.S.; 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.**
- 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.; Oxon.B.; P.O.; R.A.S.i.; R.S.; U.C.L.
- 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.; Linn.S.i.; N.H.M.; Oxon.B.; R.S.  
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.; Linn.S.i.; N.H.M.; R.S.  
See **Sch. Nf. Gs. Vh.**
- 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.; U.C.L.i.  
See **Z. Mth. Ps.**
- Sch. Nf. Gs. Vh.** ..... See **Sch. Gs. Vh.**
- Schumacher As. Ab.** ..... Astronomische Abhandlungen; Schumacher. Altona.  
1823—25. B.M.; Camb.U.; Dub.R.D.S.; Edinb.R.S.; R.A.S.; R.S.
- Schweigger J.** ..... Journal für Chemie und Physik; Schweigger. Nürnberg.  
1811—29. Edinb.R.S.; N.H.M.; Oxon.R.; P.O. 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.
- 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.; Glasg.P.S.i.; N.H.M.; Oxon.R.i.; P.O.; R.A.S.i.
- 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.; P.O.; R.S.  
See **Edinb. Sc. S. Arts T. and Edinb. T. Sc. S. Arts.**
- Sid. Mess.** ..... The Sidercal Messenger. Northfield, Minn.  
1883—91. B.M.; R.A.S.
- Siena At. Ac.** ..... Atti dell' Accademia delle Scienze di Siena detta de' Fisio-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.; Glasg.P.S.; Glasg.U.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.i.; R.S.  
See **Am. J. Sc.**
- Skandia** ..... Skandia. Tidskrift för Vetenskap och Konst; utgifven af Svenska Litteratur-Föreningen. Upsala.  
1833—37. B.M.  
Förhandlingar vid det af Skandinaviska Naturforskare och Läkare hållna Môte..... Göteborg, etc.  
1839— Oxon.B.i.; R.S.i.  
Forhandlingerne ved de Skandinaviske Naturforderseres...Møde.... Göteborg, etc.
- Sk. Nf. F.** ..... }  
**Sk. Nt. Mgd. F.** ..... }  
**Sk. Nt. Möt. F.** ..... }
- 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.; Glasg.P.S.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.i.; P.O.i.; R.A.S.; R.S.; 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.; Glasg.P.S.; Glasg.U.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.i.; P.O.i.; R.A.S.; R.S.; U.C.L.i.

## List of Serial Publications

- 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.; Linn.S.i.; Math.S.i.; N.H.M.i.; Oxon.B.; Oxon.R.i.; P.O.i.; R.A.S.i.; R.S.i.; U.C.L.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.; Linn.S.i.; N.H.M.; R.S.; U.C.L.i.
- 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.; Glasg.P.S.; Linn.S.i.; N.H.M.; Oxon.B.; P.O.i.; R.S.
- Stockh. Ac. Hndl.** ..... (Kongliga Svenska Vetenskaps-Akademiens Handlingar. Stockholm.  
1739— B.M.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.I.A.; Edinb.R.S.i.; Glasg.P.S.i.; Linn.S.i.; N.H.M.; R.A.S.; R.S.)
- Stockh. Ak. Hndl.** ..... (Edinb.R.S.i.; Glasg.P.S.i.; Linn.S.i.; N.H.M.; R.A.S.; R.S.)
- Stockh. Ak. Hndl. Bh.** ... Bihang till Kongl. Svenska Vetenskaps-Akademiens Handlingar. Stockholm.  
1872— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.R.I.A.; Edinb.R.S.; Glasg.P.S.; Linn.S.i.; N.H.M.; R.A.S.; R.S.
- 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.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.i.; N.H.M.; Oxon.R.; R.A.S.; R.S.; U.C.L.i.
- Stockh. Vt. Ak. Lefn.** ... Lefnads-teckningar öfver Kongl. Svenska Vetenskaps Akademiens... ledamöter. Stockholm.  
1869—73. Chem.S.i.; Dub.R.I.A.; Edinb.R.S.; Glasg.P.S.; Linn.S.i.; R.A.S.; R.S.
- 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.; Glasg.U.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.i.; R.S.; U.C.L.i.
- St. Pét. Ac. Sc. Bll.** ..... See **St. Pét. Ac. Sc. Mm.**, **St. Pét. Mm.** and **St. Pét. Mm. Ac. Sc.**  
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.; 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.S.
- St. Pét. Ac. Sc. Mm.** ..... See **St. Pét. Bll. Ac. Sc.** and **St. Pét. Bull. Sc.**
- St. Pét. Ac. Sc. Mm. (Rs.)** ..... See **St. Pét. Ac. 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. Pet. Ac. Sc. N. Acta**... Nova Acta Academiae 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. Ac. Sc. Rec.** ..... Recueil des Actes des Séances Publiques de l'Académie Impériale des Sciences de St. Pétersbourg. St. Pétersbourg.  
1827—48. B.M.; Camb.U.; Chem.S.i.; Dub.R.I.A.i.; Edinb.R.S.; N.H.M.; Oxon.B.; Oxon.R.i.; R.A.S.; R.S.
- St. Pét. Bll. Ac. Sc.** ..... }  
**St. Pét. Bll. Sc.** ..... } See **St. Pét. Ac. Sc. Bll.**
- St. Pét. Mm.** ..... }  
**St. Pét. Mm. Ac. Sc.** ..... } See **St. Pét. Ac. Mm.**
- St. Pét. Mm. Sav. Étr.** ... Mémoires présentés à l'Académie Impériale des Sciences de St. Pétersbourg par divers Savans. St. Pétersbourg.

## List of Serial Publications

- 1831—59. B.M.; Camb.U.; Edinb.R.S.; Glasg.U.; Linn.S.; N.H.M.; R.A.S.; R.S.; U.C.L.i.
- Strasb. Mm. S. Sc.**..... Mémoires de la Société des Sciences Naturelles de Strasbourg. Strasbourg.
- 1830—70. B.M.; Dub.R.I.A.i.; Dub.T.C.i.; N.H.M.
- Strasb. S. Sc. N. Mm.** ... Nouveaux Mémoires de la Société des Sciences, Agriculture, et Arts du Département du Bas-Rhin. Strasbourg.
- 1832—42; 1859—68. Camb.U.i.; N.H.M.; Oxon.B.; R.S.i.
- Svea** ..... Svea. Tijdskrift för Vetenskap och Konst. Upsala.
- 1818—31.
- Sym. Met. Mg.** ..... Symons's Monthly Meteorological Magazine. London.
- 1866— Camb.U.; P.O.; 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.; Linn.S.i.; N.H.M.; R.A.S.; R.S.
- 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.; Linn.S.i.; N.H.M.; Oxon.B.(R.); P.O.; R.A.S.i.; R.S.; U.C.L.
- Tel. E. J.** ..... Journal of the Society of Telegraph Engineers. London.
- 1872— B.M.; Camb.P.S.; Camb.U.i.; Dub.T.C.i.; Oxon.B.; Oxon.R.; P.O.; R.S.; U.C.L.
- Terr. Mag.** ..... Terrestrial Magnetism [and Atmospheric Electricity]. An International Quarterly Journal. Chicago, Cincinnati, Baltimore.
- 1896— Camb.U.i.; R.S.
- 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.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.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.S.; U.C.L.i.
- Thron. Skr.** ..... Det Kongelige Norske Videnskabsræds Skrifter i det 19de Aarhundrede. Kjøbenhavn og Thronhjelm.
- 1817— B.M.; Camb.U.i.; Dub.T.C.i.; Edinb.R.S.i.; N.H.M.; R.S.
- See **Norske Vd. Skr.**
- 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.; Glasg.P.S.; Glasg.U.i.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.A.S.; R.S.; U.C.L.
- Tōk. Coll. Sc. J.** ..... The Journal of the College of Science, Imperial University, Japan. Tōkio, Japan.
- 1887— B.M.; Camb.P.S.; Camb.U.; Chem.S.; Dub.T.C.; Edinb.R.S.; Edinb.U.i.; Glasg.P.S.i.; Linn.S.i.; Math.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.; R.S.; U.C.L.
- Tok. Un. Mm.**..... Memoirs of the Science Department, University of Tokio, Japan. Tokio, Japan.
- 1879—85. Camb.U.; Chem.S.i.; Dub.R.D.S.; Dub.R.I.A.; Edinb.R.S.i.; Glasg.P.S.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.; R.A.S.i.; R.S.; 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.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.; P.O.; R.A.S.; R.S.; 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.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.; P.O.i.; R.A.S.; R.S.; U.C.L.i.
- See **Tor. At. Ac. Sc.**
- See **Tor. Ac. Mm.**
- Tor. Ac. Sc. Mm.** ..... See **Tor. Ac. Mm.**

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- Tor. At. Ac. Sc.** ..... See **Tor. Ac. Sc. At.**
- Tor. Lav. Sc. Fis. Mt.** ... Notizia storica dei lavori fatti dalla Classe di Scienze Fisiche e Matematiche della R. Accademia delle Scienze negli anni 1864—65. Torino.  
1869. Linn.S.; R.A.S.; R.S.
- Tor. Mm. Ac.** ..... See **Tor. 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.; Math.S.i.; Oxon.B.(R.); R.S.; U.C.L.
- Toul. Ac. Sc. Bll.** ..... See **A. Mt.**  
Bulletin de l'Académie des Sciences, Inscriptions et Belles-lettres de Toulouse. Toulouse.  
1898—99. Dub.R.I.A.; Edinb.R.S.; N.H.M.; R.S.
- 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.
- Toul. Fac. Sc. A.** ..... See **Toul. Mm. Ac. and Toul. Mm. Ac. Sc.**  
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.** ..... }
- Toul. Obs. A.** ..... } Annales de l'Observatoire Astronomique, Magnétique et Météorologique de Toulouse. Paris.  
1880— B.M.; Edinb.R.S.; Math.S.i.; R.A.S.; R.S.
- Toul. S. H. Nt. Bll.** ..... Bulletin de la Société d'Histoire Naturelle de Toulouse. Toulouse.  
1867— N.H.M.
- Ts. Mth.** ..... Tidsskrift for Mathematik. Kjøbenhavn.  
1859—89. B.M.; Camb.U.; Math.S.i.; Oxon.B.
- Ts. Mt. Fys.** ..... Tidsskrift for Matematik och Fysik, tillegnad den Svenska Elementar-Undervisningen. Upsala.  
1868—74. B.M.; R.S.i.
- 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.; Linn.S.; Oxon.B.; P.O.; R.A.S.; R.S.; U.C.L.
- See **Tor. Ac. Mm.**
- Un. Serv. I. J.** ..... Journal of the Royal United Service Institution. London.  
1858— B.M.; Camb.U.; Dub.N.L.I.i.; Edinb.U.; Oxon.B.i.; P.O.; R.S.
- 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. N. Acta S. Sc.** ..... } Nova Acta Regiæ Societatis Scientiarum Upsaliensis. Upsaliæ.  
**Ups. S. Sc. N. Acta** ..... } 1773— B.M.; Camb.U.; Dub.R.I.A.i.; Edinb.R.S.i.; Glasg.U.i.; Linn.S.; Math.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.; R.A.S.i.; R.S.i.; 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.; N.H.M.; 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.; N.H.M.; R.A.S.; R.S.; U.C.L.i.
- Utr. A. Ac.** ..... Annales Academiæ Rheno-Trajectinæ. Trajectiad Rhenum. (Utrecht).  
1815—37. B.M.; Camb.U.; N.H.M.; Oxon.B.; R.S.i.
- Utr. Aant. Prv. Gn.** ..... Aanteekeningen van het Verhandelnde in de Sectie-Vergaderingen van het Provinciaal Utrechtsch Genootschap van Kunsten en Wetenschappen. Utrecht.  
1846— Dub.R.D.S.; Edinb.R.S.; R.S.
- Vars. S. Nt. Tr. (C. R., Ps. C.)** ..... Travaux de la Société des Naturalistes de Varsovie. Comptes Rendus de la Section de physique et de chimie. Varsovie. [In Russian.]  
1889— Math.S.; N.H.M.
- Vars. S. Nt. Tr. (Mm.)** ... Travaux de la Société des Naturalistes de Varsovie. Mémoires. Varsovie. [In Russian.]  
1891—96. Math.S.; N.H.M.

## List of Serial Publications

- 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: Rivista mensile 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.  
**Ven. I. At.** ..... {1841— B.M.; Edinb.R.S.i.; Linn.S.i.; Math.S.i.; N.H.M.; R.S.i.
- Ven. Esercit. Aten.** ..... *See Ven. Aten. Esercit.*
- Ven. I. Mm.** ..... {Memorie del Reale Istituto Veneto di Scienze, Lettere, ed Arti.  
**Ven. Mm. I.** ..... {Venezia.  
1843— B.M.; Camb.U.; Dub.R.I.A.i.; Linn.S.i.; N.H.M.; Oxon.B.i.; R.S.
- Verona Mm. S. It.** ..... {Memorie di Matematica e di Fisica della Società Italiana delle  
**Verona S. It. Mm.** ..... {Scienze. Modena e Verona.  
1782— B.M.i.; Camb.P.S.; Camb.U.i.; Dub.R.I.A.; Edinb.R.S.i.; Linn.S.i.; Oxon.B.i.; R.A.S.i.; R.S.; U.C.L.i.  
*See Mod. Mm. S. It. and Rm. S. It. Mm.*
- 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.; Glasg.P.S.; N.H.M.; Oxon.B.; Oxon.R. P.O.; R.S.; 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.; Glasg.P.S.i.; Glasg.U.i.; Linn.S.i.; N.H.M.; Oxon.B.; Oxon.R.i.; P.O.; R.A.S.; R.S.  
*See Vict. T. R. S.*
- Vict. T. Ph. I.** ..... Transactions of the Philosophical Institute (afterwards Royal Society) of Victoria. Melbourne.  
1855—60. B.M.; Camb.U.i.; Dub.R.I.A.; Edinb.R.S.; Glasg. P.S.i.; Linn.S.; N.H.M.; Oxon.B.; P.O.; R.A.S.; R.S.  
*See Vict. R. S. T.*
- Vict. T. R. S.** ..... *See Vict. R. S. T.*
- V. Nost. Eng. Mg.** ..... Van Nostrand's Engineering Magazine. New York.  
1869—85. B.M.; P.O.; R.S.i.
- Voigt Mg.**..... Magazine für den neuesten Zustand der Naturkunden, mit Rücksicht auf die dazu gehörigen Hülfswissenschaften; Voigt. Jena und Weimar.  
1797—1806. B.M.; Camb.U.; N.H.M.; R.S.
- Wash. Nat. Ac. Mm.**..... 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.; Math.S.i.; N.H.M.; Oxon.B.i.; Oxon.R.; P.O.; R.S.; 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.; Linn.S.; N.H.M.; Oxon.B.; P.O.; R.A.S.; R.S.
- W. Eng. J.** ..... The West of England Journal of Science and Literature. Bristol.  
1835—36. B.M.; Camb.U.; Edinb.R.S.; N.H.M.; Oxon.B.; P.O.
- Westf. Vr. Jbr.** ..... Jahres-Bericht des Westfälischen Provinzialvereins für Wissenschaft und Kunst. Münster.  
1873— N.H.M.
- Wet. Gs. Jbr.** ..... Jahresbericht der Wetterauschen Gesellschaft für die gesammte Naturkunde. Hanau.  
1843— Dub.R.I.A.; R.S.i.
- 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.; Linn.S.; N.H.M.; Oxon.B.(R); P.O.i.; R.A.S.; R.S.; U.C.L.i.  
*See Wien D.*

## List of Serial Publications

- 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.; Glasg.U.i.; Linn.S.; N.H.M.; Oxon.B.; Oxon.R.; P.O.i.; R.A.S.i.; R.S.; 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.; Oxon.B.; P.O.i.; R.A.S.i.; R.S.i.; U.C.L.i.
- Wien Az.** ..... Anzeiger der Kaiserlichen Akademie der Wissenschaften: Math.-Naturwiss. Classe. Wien. 1864— Camb.U.; Linn.S.; N.H.M.; Oxon B.; 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; Gustav Fallner. Wien. 1851— B.M.i.; P.O.i.
- Wien D.** ..... See **Wien Ak. D.**
- 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. Dub.R.D.S.; Edinb.R.S.; P.O.; R.S.
- Wien Mt. Gg. Gs.** ..... 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.S.
- Wien SB.** ..... } See **Wien Ak. Sb.**  
**Wien Sb.** ..... }
- 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.; N.H.M.; Oxon.R.i.; P.O.i.; 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.; Linn.S.i.; N.H.M.; R.S.
- Würtb. Ps. Md. Sb.** ..... Sitzungsberichte der Physikalisch-Medicinischen Gesellschaft zu Würzburg. Würzburg. 1859—62. 1881— Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.I.A.; Linn.S.i.; Oxon.R.i.; R.S.
- Würtb. Ps. Md. Vh.** ..... } Verhandlungen der Physikalisch-Medicinischen Gesellschaft. Würzburg.  
**Würtb. Vh.** ..... } 1850—60. 1868— B.M.i.; Camb.P.S.; Camb.U.; Chem.S.i.; Dub.R.I.A.; Linn.S.; N.H.M.; Oxon.R.; R.S.; 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. Bauw.** ..... Zeitschrift für Bauwesen; herausg. unter Mitwirkung der königl. technischen Bau-Deputation und des Architecten-Vereins zu Berlin. Berlin. 1851— B.M.; Camb.U.i.; P.O.
- 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.
- Z. Mth. Ps.** ..... Zeitschrift für Mathematik und Physik; Schlömilch. Leipzig. 1856— B.M.; Camb.U.; 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.; 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.

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- 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.
- See Halle Z. and Halle Z. Nw.*
- Z. Psychol.** ..... Zeitschrift für Psychologie und Physiologie der Sinnesorgane. Hamburg, Leipzig.
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# PURE MATHEMATICS

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Smallest number of entries necessary in a 7 figure log. table. *Steggall, J. E. A.* *Edinb. Mth. S. P.* 10 (1892) 35-.

Squares and cubes. *G., H.* *Nicholson J.* 8 (1804) 150-; 9 (1804) 123-.

— — —, calculation. *O., E.* *Nicholson J.* 9 (1804) 4-, 171-.

— — —, (Jahn), errors. *Kulik, J. P.* *Böhm. Gs. Ab.* 2 (1843) (Sect. B. 1841) 19-.

Sum or difference of two numbers whose logs. are given. *Gauss, C. F.* *Zach M. Cor.* 26 (1812) 498-.

## Addresses, Lectures, etc. 0040

Szyzgies, irreducible, of quantics. *Sylvester, J. J.* *Am. J. Mth.* 4 (1881) 41-.

Trigonometric functions of cyclic and hyperbolic sectors. *Gronau, J. F. M.* [1863-65] *Danzig Schr. 1* (1866) (Heft 1) viii+151 pp.; (Heft 2) 4 pp.

—, history question. *Prony, R. de.* *Par. Mm. de l'I.* 5 (1802) (H.) 67-.

—, new system. *Bouché, A. M.-et-L.* *Mm. S. Ac.* 8 (1860) 145-.

—, note. *Hill, C. J. D.* *Lund Phys. Sällsk. Ts.* 1 (1838) 283-; *Grunert Arch.* 1 (1841) 191-.

Trigonometry and astronomy, fundamental tables. *Sang, E.* *Edinb. R. S. P.* 16 (1890) 249-.

Two old tables. *Pendlebury, R.* *Mess. Mth.* 4 (1875) 8-.

Values of  $\Delta^{\infty} 0^m$ . *Herschel, J.* [attributed to *Lacroix* in (m)]. *N. A. Mth.* 13 (1854) 272-.

— —  $S_k = \sum_{n=1}^{\infty} n^{-k}$ . *Stieltjes, T. J.* *Acta Mth.* 10 (1887) 299-.

— — 1.2.4... $(x-1)/2.3.5...x$ , denominators being primes. *Glaisher, J. W. L.* *Mess. Mth.* 28 (1899) 1-.

Zonal harmonics. *Perry, J.* [1890] *L. Ps. S. P.* 11 (1892) 221-; *Ph. Mg.* 32 (1891) 512-.

## 0040 Addresses, Lectures, etc., of a general character.

American Mathematical Society, past and future. *McClintock, E.* [1894] *N. Y. Am. Mth. S. Bil.* 1 (1895) 85-.

Astronomy, geometry, and arithmetic, three discourses. *Garnier, J. G.* (VI *Adds.*) *Gand A. Ac.* (1817-18) 83 pp.

Chicago, inaugural address, Aug. 21, 1893. *Klein, F.* *N. Y. Mth. S. Bil.* 3 (1894) 1-.

Collaboration in mathematics. *Greenhill, A. G.* [1892] *L. Mth. S. P.* 24 (1893) 5-.

Combinatory analysis: a review. *MacMahon, P. A.* [1896] *L. Mth. S. P.* 28 (1897) 5-.

Confluences and bifurcations of certain theories. (Presidential address, 1888.) *Cockle, (Sir) J. L.* *Mth. S. P.* 20 (1889) 4-.

“Deutsche Naturforscher,” address at meeting, 1858. *Eisenlohr, W.* *Grunert Arch.* 32 (1859) 140-.

Differential equations and applied mathematics, historical sketch. *Naetsch, E.* *Civing.* 41 (1895) 655-.

General considerations. *Glaisher, J. W. L.* *B. A. Rp.* (1890) 719-.

Geometrical method. (Presidential address.) *Larmor, J.* *Mth. Gz.* 1 (1900) 1-.

— researches, comparative reflections on recent. *Klein, F.* *A. Mt.* 17 (1889-90) 307-.

Geometry applied to practical life. *Pearson, K.* *Nt.* 43 (1891) 273-.

Grassmann's “Ausdehnungslehre” applied to mechanics. *Schlegel, V.* *Civing.* 40 (1894) 59-.

Historiography of mathematics. *Cantor, —.* [1900] *N. Y. Am. Mth. S. Bil.* 7 (1901) 57-.

- History of mathematics and physics. (Anniversary address.) *Knibbs, G. H.* N. S. W. R. S. J. 33 (1899) 1-.
- Influence of applied, on the progress of pure, mathematics. (Presidential address.) *Walker, J. J.* [1890] L. Mth. S. P. 22 (1891) 4-.
- Invariants of motion, and elementary geometry. *Study, E.* Leip. Mth. Ps. B. 48 (1896) 649-.
- Lectures at École Normale. *La Place, P. S. (le marquis) de.* Par. Sé. Éc. Norm. 1 (1800) 16-, 268-, 381-; (pte. 2) 3-, 130-; 2 (1800) 116-, 302-; 3 (1800) 24-; 4 (1800) 32-, 223-; 5 (1800) 201-; 6 (1800) 32-.
- — — *Lagrange, J. L. de.* Par. Sé. Éc. Norm. 1 (1800) (pte. 2) 3-, 34-; 3 (1800) 227-, 276-, 463-; 4 (1800) 401-; 10 (1801) 5-.
- — — (elementary), 1795. *Lagrange, J. L. de.* Par. Éc. Pol. J. 2 (1812) (7<sup>e</sup> et 8<sup>e</sup> cah.) 173-.
- Mathematical problems. *Hilbert, D.* Gött. Nr. (1900) 253-.
- theories, etc. (Presidential address, 1883.) *Cayley, A. B. A. Rp.* (1883) 3-.
- tripos, the. (Presidential address.) *Glaisher, J. W. L.* L. Mth. S. P. 18 (1886-87) 4-.
- Mathematics. *Kempe, A. B.* [1894] L. Mth. S. P. 26 (1895) 5-.
- influence on physical science. *Bastarrica, J.* Chile A. Ün. (1852) 41-.
- and natural science, mutual relations. *Wild, J.* St Gal. B. (1885-86) 101-.
- Phys. Sect. Address, 1865. *Spottiswoode, W. B. A. Rp.* 35 (1865) (Sect.) 1-.
- — —, 1869. *Sylvester, J. J. B. A. Rp.* 39 (1869) (Sect.) 1-.
- — —, 1870. *Maxwell, J. C. B. A. Rp.* 40 (1870) (Sect.) 1-.
- — —, 1871. *Tait, P. G. B. A. Rp.* 41 (1871) (Sect.) 1-.
- — —, 1873. *Smith, H. J. S. B. A. Rp.* 43 (1873) (Sect.) 1-.
- — —, Presidential address, 1883. *Henrici, O. M. F. E. B. A. Rp.* (1883) 393-.
- — —, — — —, 1897. Pure mathematics. *Forsyth, A. R. B. A. Rp.* (1897) 541-.
- Mission of science, address. *Thurston, R. H.* Am. As. P. (1884) 227-.
- Modern function theory, development. *Krause, —.* Civing. 34 (1888) 639-.
- Moscow Math. Soc., Jubilee, address. *Bugaev, N. V.* [1894] Rec. Mth. (Moscou) 18 (1896) vi-.
- — — Presidential address, March 21st, 1900. *Bugaev, N. V.* Rec. Mth. (Moscou) 21 (1901) 537-.
- Purposes of Brit. Assn., and external aspects of mathematics. (Presidential address, 1878.) *Spottiswoode, W. B. A. Rp.* (1878) 1-.
- Riemann's surfaces. Hypergeometric function. Differential equations. Theory of numbers. (Lectures.) *Klein, F.* [1891-96] Mth. A. 45 (1894) 140-; 46 (1895) 77-; 48 (1897) 562-.
- Secondary needs and opportunities of English mathematicians. (Presidential address.) *Elliott, E. B.* [1898] L. Mth. S. P. 30 (1899) 5-.

- Universities and technical schools, address. *Klein, E.* D. Mth. Vr. Jbr. 7 (1889) (Heft 1) 39-.

## 0050 Pedagogy.

- Actuarial competence, requisites. *Sutton, W.* I. Act. J. 16 (\*1872) 434-.
- Actuaries, importance of mathematical studies. *Sprague, T. B.* I. Act. J. 18 (\*1875) 403-.
- , mathematical education. *Kiepert, L. D.* Nf. Vh. (1894) (Th. 2, Hälfte 1) 16-.
- , — —. *Fehr, H.* Ens. Mth. 1 (1899) 447-.
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- Algebra, the first chapter. *Anon.* Educ. Times 39 (1886) 326-.
- in schools. *Heppel, G.* Mth. Gz. No. 4 (1895) 25-.
- , teaching, in 1676. (Henrion's "Euclid.") *Mansion, —.* Brux. S. Sc. A. 19 (1895) (Pt. 1) 101-.
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- Analytical geometry, combination of planimetry and stereometry in teaching. *Rüpert, L.* As. Fr. C. B. (1900) (Pt. 2) 1036-.
- Application of mathematical and mechanical principles to technical problems. *Heun, K.* D. Mth. Vr. Jbr. 5 (1901) (Heft 1) 91-.
- Arithmetic and algebra, elementary teaching. *Recknagel, G. D.* Nf. Vh. (1899) (Th. 2, Hälfte 1) 279-.
- , the first stage. *Quick, (Rev.) R. H.* Educ. Times 41 (1888) 227-.
- , the five fundamental operations. *Kupffer, K.* Dorpat Sb. 10 (1895) 359-.
- , teaching. *Edinb. Mth. S. Comm.* Edinb. Mth. S. P. 6 (1888) 89-.
- , —, method. *Elowson, G.* Ts. Mt. Fys. 2 (1869) 40-.
- , —, —. *Moesta, C. W.* Chile A. Ün. (1852) 322-.
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- , —, lacuna in the teaching. *Tilly, (Maj.) de.* Brux. S. Sc. A. 9 (1885) (Pt. 2) 95-.
- Educational testimony concerning the calculus. *Meech, L. W.* Des Moines Anal. 1 (1874) 133-.
- Elliptic functions, teaching of theory. *Mansion, —.* Brux. S. Sc. A. 24 (1900) (Pt. 1) 54-.
- Equations, choice of examples in teaching. *Bretton [de Champ], P.* N. A. Mth. 2 (1843) 539-.
- Errors in mathematical text books. *Beyer, —.* Grunert Arch. 3 (1843) 113-.
- Euclid and teaching of geometry. *Magnus, P.* Educ. Times 33 (\*1880) 81-.

- Examination questions, composition. *Laisant, C. A.* Ens. Mth. 1 (1899) 120-.
- , solutions. *Sprague, T. B.* Assur. Mg. 10 (\*1863) 45-; 13 (\*1867) 253-; I. Act. J. 14 (\*1869) 147-.
- , — (a correction). *Adler, M. N.* I. Act. J. 14 (\*1869) 242.
- Examinations, judging in mathematical. *Bordoni, A.* [1841] Mil. Mm. I. Lomb. 1 (1843) 189-.
- , problems suitable. *Wittstein, T.* Grunert Arch. 7 (1846) 27-.
- Exposition of pure mathematics. *Delarue, D. M.* (xn) [1869] Rec. Mth. (Moscou) 4 (1869-70) (Pt. 2) 81-.
- Formulae, special application of mnemonics. *Hoffmann, L.* Förster Al. Bauzgt. 10 (1845) 362-.
- Geometrical drawing, teaching. *Henrici, O.* B. A. Rp. (1895) 608.
- teaching, reform. *Fiedler, W.* Zür. Vjschr. 22 (1877) 82-.
- , —, *Wittek, H. D.* Nf. Vh. (1894) (Th. 2, Hälfte 1) 317-.
- Geometry and analysis, higher, Naples University, 1870-71. *Bernardinis, G. de, & Fuortes, T. G.* Mt. 9 (1871) 233-.
- , elementary, new trend in. *Ciambertini, C.* Rv. Sc.-Ind. 30 (1898) 99-, 113-, 153-.
- , —, teaching. *Develey, —.* Bb. Un. 8 (1818) 257-.
- , —, —, *Barclay, A. J. G.* Edinb. Mth. S. P. 2 (1884) 24-.
- , —, —, *Diekmann, —.* D. Nf. Tbl. (1888) 342-.
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- , first teaching. *Laisant, C. A.* Ens. Mth. 1 (1899) 339-.
- , higher, teaching. *Chasles, M.* Liouv. J. Mth. 12 (1847) 1-.
- , natural. *Mault, A.* Tasm. R. S. P. (1886) 103-.
- , practical, development. (Graphics.) *Anon.* Elect. 28 (1892) 293-.
- , —, —, —, —, *Thompson, S. P.* Elect. 28 (1892) 332-.
- , — solid, teaching in higher schools. *Hildebrandt, C. D.* Nf. Vh. (1897) (Th. 2, Hälfte 1) 34-.
- , —, —, at Strassburg. *Krazer, A. D.* Mth. Vr. Jbr. 8 (1900) (Heft 1) 119-.
- in schools. *Heppel, G.* Educ. Times 50 (1897) 181-.
- , teaching. *Dallas, R. J.* Nt. 59 (1898-99) 416.
- , —, *Reinhardt, N. V.* Kazan S. Ps.-Mth. Bll. 8 (1899) (Prot.) 19-.
- versus Euclid. *Minchin, G. M.* Nt. 59 (1898-99) 369-.
- Graduated system of teaching, especially in geometry. *Bazala, J. D.* Nf. Vh. (1894) (Th. 2, Hälfte 1) 313-.
- Higher mathematics at Italian Universities, teaching. *Pascal, E.* Rv. Mt. 3 (1893) 170-.
- Hyperbolic functions in teaching. *Barbarin, P.* Ens. Mth. 2 (1900) 443-.
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- Infinitesimal calculus, course. *Obrecht, A.* Santiago de Chile Un. A. 87 (1894) 533-, 657-, 715-; 88 (1894) 39-; 90 (1895) 45-; 91 (1895) 677-; 93 (1896) 105-, 241-; 103 (1899) 699-, 887-; 104 (1899) 39-, 201-, 359-, 747-, 1061-; 106 (1900) 79-, 375-, 545-, 949-, 1097-.
- Infinity in elementary mathematics. *Lamarle, E.* [1851] Brux. Ac. Sc. Mm. 27 (1853) 31 pp.
- Inverted problems (an old arithmetic book). *C., H. A.* Educ. Times 48 (1895) 29-.
- Languages and mathematics in state schools of modern Germany. *Baumann, H.* Educ. Times 37 (1884) 98-.
- Leibnitz, calculus of, and its teaching. *Arnoux, R.* As. Fr. C. R. (1900) (Pt. 2) 1089-.
- Mathematical history, 8 years of teaching. *Favaro, A.* Bb. Mth. (1887) 49-.
- , lectures in Moscow University, programme of course. *Bobynin, V. V.* Fsch. Mth. (1890) 87; Bb. Mth. (1891) 79-.
- , — at Munich. *Steinschneider, M.* Bb. Mth. (1897) 113-.
- , university course. *Eneström, G.* Bb. Mth. (1890) 1-.
- instruction in France. *Pierpont, J.* N. Y. Am. Mth. S. Bll. 6 (1900) 225-.
- problems, and the development of mathematics. *Hilbert, D.* Ens. Mth. 2 (1900) 349-.
- teaching. *Hudson, W. H. H.* Educ. Times 46 (1893) 135-.
- , —, *Biraben, F.* Arg. S. Ci. A. 48 (1899) 106-, 156-.
- , —, *Duclaux, E.* Rv. Sc. 11 (1899) 353-.
- , —, *Garcia de Galdeano, Z.* As. Fr. C. R. (1900) (Pt. 2) 1052-.
- , —, *Perry, J.* Nt. 62 (1900) 317-.
- , —, *Heaviside, O.* Nt. 62 (1900) 548-.
- , —, changes. *Piola, G.* (vm) [1840] Bb. It. 2 (1841) 159-.
- , —, curiosities in early English. *Heppel, G.* Educ. Times 38 (1885) 145-.
- , —, elementary. *Laisant, —.* Rv. Sc. 11 (1899) 358-.
- , —, general principles. *Galdeano, Z. G. de.* Ens. Mth. 1 (1899) 195-.
- , — at German Universities, especially Göttingen. *Fano, G.* Rv. Mt. 4 (1894) 170-.
- , — in Germany, history. *Günther, S.* Ens. Mth. 2 (1900) 237-.
- , — in higher grade schools (gymnasiums and lycéums). *Catania, S.* Rv. Mt. 5 (1895) 33-.
- , — Holland. *Cardinaal, J.* Ens. Mth. 2 (1900) 317-.
- , —, methods. *Grunert, J. A.* Arch. Mth. Ps. 42 (1864) 348-.
- , — in preparation for the "École Polytechnique." *Laurent, H.* Ens. Mth. 1 (1899) 38-.

- Mathematical teaching, reform. *Mair, D.* Nt. 62 (1900) 389.
- , —, *Woollen, H.* Nt. 62 (1900) 436.
- , —, *Beard, W. F.* Nt. 62 (1900) 466.
- , —, *Stromeyer, C. E.* Nt. 62 (1900) 523.
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- — schools. *Lie, S.* Christiania F. (1884) No. 16, 8 pp.; (1885) No. 11, 10 pp.
- —. *Tafelmacher, A.* Santiago de Chile Un. A. 85 (1893) 35-.
- , simplification of elementary. *Heppel, G.* Educ. Times 44 (1891) 463-.
- in United States. *Safford, T. H.* N. Y. Mth. S. Bll. 3 (1894) 4-.
- — universities in 1894. *Galdeano, Z. G. de.* Fsch. Mth. (1893-94) 118.
- — —, problems and methods. *Klein, F. D.* Mth. Vr. Jbr. 7 (1899) (Heft 1) 126-.
- , use of history. *Heppel, G.* Nt. 48 (1893) 16-.
- , — — practical applications. *Bettazzi, R.* Ens. Mth. 2 (1900) 14-.
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- at certain German Universities. *Dillner, G.* Ups. Årsk. (1876) 37 pp.
- , elementary, economy of thought. *Meyer, W. F. D.* Mth. Vr. Jbr. 7 (1899) (Heft 1) 147-.
- in girls' schools. *Bryant, (Mrs.)* —. Educ. Times 31 (\*1878) 145-.
- , how to study. *Degen, C. F.* Kiob. Dn. Vd. Selsk. Skr. 2 (1801-2) 75-.
- , relations between university and high school in domain of. *Schotten, H.* D. Nf. Vh. (1898) (Th. 2, Hälfte 1) 20-.
- in Russia, history of study. *Bobylin, V.* Bb. Mth. (1888) 103-.
- — schools. *Heppel, G.* Educ. Times 39 (1886) 385-.
- as a scientific and pedagogic aid. *Bugaev, N. V.* (xii) [1869] Rec. Mth. (Moscou) 3 (1868) (Pt. 2) 183-.
- in Spain. *Galdeano, Z. G. de.* Ens. Mth. 1 (1899) 6-.
- — in 1893-94. *Galdeano, Z. G. de.* Fsch. Mth. (1893-94) 117.
- — teaching of physics, importance. *Calzecchi, T.* Rv. Sc.-Ind. 30 (1898) 65-.
- Mensuration, note. *Lefevre, A.* Texas Ac. Sc. T. 2 (No. 2) (1899) 39-.
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- Notion of the infinite in teaching elementary geometry. *Ripert, L.* Ens. Mth. 2 (1900) 127-.
- — — — —. (Correction of error in Ripert's paper, p. 129.) *Niewenglowski, B.* Ens. Mth. 2 (1900) 219.
- — a limit in teaching. *Clasen, —.* Braunsch. Vr. Nt. Jbr. (11) (1899) 159-.
- on number and limit in teaching. *Pringsheim, A.* D. Mth. Vr. Jbr. 6 (1899) (Heft 1) 73-.
- Problem solving as a discipline. *Hall, A.* Wash. Ph. S. Bll. 11 (1892) 598-.
- Pure mathematics for engineering students. *Hathaway, A. S.* [1900] N. Y. Am. Mth. S. Bll. 7 (1901) 266-.
- Quadratic equation, theory. *Macfarlane, A.* Ens. Mth. 2 (1900) 363-.
- equations, solution. *Mathews, G. B.* Nt. 57 (1897-98) 463-.
- Reducing results of measurement. *Rudel, K.* D. Nf. Vh. (1893) (Th. 2, Hälfte 1) 217-.
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- Smith's-Prize papers. *Cayley, A.* Mess. Mth. 3 (1874) 165-; 4 (1875) 6-; 6 (1877) 173-.
- Statutes for testing teachers, and Mathematical course. *Hauck, G.* D. Nf. Vh. (1899) (Th. 2, Hälfte 1) 17-.
- — — — (Prussian.) *Weber, H.* D. Nf. Vh. (1899) (Th. 2, Hälfte 1) 9-.
- — — —. (—) *Schotten, H.* D. Nf. Vh. (1899) (Th. 2, Hälfte 1) 26-.
- Statutory tests for teachers in Bavaria. *Rudel, K.* D. Nf. Vh. (1899) (Th. 2, Hälfte 1) 29-.
- Synthetic and projective geometry, need of, in analytical geometry. *Davidescu, D. A.* Bucarest S. Sc. Bll. (1900) 19-.
- Systematisation of mathematics. *Ellis, A. J.* R. S. P. 10 (1859-60) 85-.
- Technical High Schools in America. *Engels, H.* Civing. 40 (1894) 13-.
- instruction, especially its geometry. *Paganini, C.* Mil. G. I. Lomb. 1 (1841) 291-.
- teaching in Chili. *Nogués, A. F.* [1893-94] Santiago de Chile Un. A. 85 (1893) 277-, 345-, 515-.
- Training of teachers of science in higher schools, in view of modern requirements. *Schwalbe, B.* D. Nf. Vh. (1896) (Th. 2, Hälfte 1) 15-.
- Trigonometry, teaching. *Aragón, A.* Méx. S. "Alzate" Mm. 5 (1891) 69-.
- , — of elements. *Fehr, H.* Ens. Mth. 1 (1899) 45-.
- 'Unitary' method in teaching proportion. *Beta.* Educ. Times 32 (\*1879) 259-.
- Universities and technical schools, address. *Klein, F. D.* Mth. Vr. Jbr. 7 (1899) (Heft 1) 39-.
- University lectures on infinitesimal calculus. *Pringsheim, A.* D. Mth. Vr. Jbr. 7 (1899) (Heft 1) 138-.
- Vector theory, teaching. *Fontené, G.* Ens. Mth. 1 (1899) 50-.

## 0060 Institutions.

Franklin Institute during 75 years. *Thurston, R. H.* Franklin I. J. 149 (1900) 81-.



## 0070 Nomenclature.

- "Al-djebr," exact meaning of word. *Vaux, C. de.* Bb. Mth. (1897) 1-.
- Algorithm, meaning of term. *Hunrath, K.* Bb. Mth. (1887) 70.
- Antiparallels. *Langley, E. M.* Nt. 40 (1889) 460-.
- "Autotomic" curves. *Basset, A. B.* Nt. 62 (1900) 572.
- — — — — *Orchard, H. L.* [1900] Nt. 63 (1900-01) 7.
- — — — — *Thorn, A. S.* [1900] Nt. 63 (1900-01) 7.
- — — — — *Basset, A. B.* [1900] Nt. 63 (1900-01) 82.
- Chinese arithmetical notation. *Edkins, —.* Nt. 37 (1888) 65.
- "Conjugate angles," new geometrical term. *Worthington, A. M.* Nt. 47 (1892-93) 8.
- Cuneiform numerical signs, transmission. *Bobyntin, V.* Bb. Mth. (1893) 18-.
- Curves without double points. *Richmond, H.* [1900] Nt. 63 (1900-01) 58.
- Decimal division of circle (i.e. of right angle). *Hatzfeld, A.* Rv. Sc. 48 (1891) 655-.
- Determinant notation. *Nanson, E. J.* Ph. Mg. 44 (1897) 396-.
- Differential notation and teaching. *Poincaré, H.* Ens. Mth. 1 (1899) 106-.
- Duodecimal system. *Heaviside, O.* Elect. 37 (1896) 489.
- Functions, growth of notation for. *Eneström, G.* Bb. Mth. (1891) 89-.
- General and logico-mathematical notation. *Oliver, J. E. A.* Mth. 4 (1888) 186-.
- Geometrical square, nomenclature. *Weissenborn, H.* Bb. Mth. (1888) 37.
- Geometrography or systematic notation for geometric constructions. *Lemoine, E. G.* Teix. J. Sc. 12 (1895) 114-.
- Gnomon theorem (Euc. I. 43). *Allman, G. J.* Bb. Mth. (1887) 22.
- Kardaga. *Steinschneider, M.* Bb. Mth. (1891) 114.
- Language, mathematical and scientific. *Anon.* (vi 543). *Gergonne A.* Mth. 12 (1821-22) 322-.
- Logarithms, notation. *Draenert, —.* D. Nf. Tbl. (\* 1876) (Suppl.) 173-.
- Nomenclature. *Dantas Pereira, J. M.* Lisb. Mm. Ac. Sc. 10 (1830) (pte. 2) 197-.
- , geometrical. *Fontené, G.* Ens. Mth. 2 (1900) 134-.
- of metric system. *Rautenfeld-Lindenruh, H. von.* Riga Cor.-Bl. 38 (1895) 85.
- Notation. *Lubbock, J. W.* [1829] As. S. Mm. 4 (1831) 471-.
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- , polar. *Amsler, J.* Dingler 140 (1856) 321-; 141 (1856) 326-.
- , —, *Amsler's. Decher, G.* Dingler 141 (1856) 330-.
- , —, —, *Schinz, E.* Bern Mt. (1857) 152-.
- , —, —, *Nehls, C.* Civing. 20 (1874) 71-.
- , —, results. *Hartogh Heys van Zou-teen, H.* Arch. Néerl. 5 (1870) 440-.
- Planimeter, polar, determination of constant. *Schell, A.* Wien SB. 56 (1867) (*Ab. 2*) 325-.
- , —, general theory. *Schell, A.* Wien SB. 58 (1868) (*Ab. 2*) 189-; Carl Rpm. 11 (1875) 406-.
- , —, note. *Resal, H.* C. R. 77 (1873) 509-.
- , —, *Richard. ? Anon.* Sc. Abs. 1 (1898) 635.
- , rolling, theory. *Fenner, P.* Cztg. Opt. 7 (1886) 133-.
- , solutions of electric problems. *Atkinson, L. B.* Elect. 22 (1889) 702-; 23 (1889) 29-.
- , Trunk's. *Hübner, A.* Arch. Mth. Ps. 44 (1865) 337-.
- , *Wetli's. Stampfer, S.* Wien SB. (1850) (*Ab. 1*) 134-.
- Planimeters. *Moberg, A.* (VIII) [1859] Helsingf. Öfv. 5 (1863) 53-.
- , *Beck, A.* Riga Cor.-Bl. 40 (1898) 99-.
- , free. *Bouniakowsky, V.* St Pét. Ac. Sc. Bil. 2 (1860) 567-.
- , and similar instruments. *Kohlmorgen, O.* Westf. Vr. Jbr. (1890) 126-.
- , of *Wetli, Decher, and Amsler. Miller, W. H.* Ph. Mg. 16 (1858) 230-.
- Problems of 3rd degree, instrument for solution. *Simon, C.* Les Mondes 4 (1864) 547-.
- Proportion-table, equivalent to sliding-rule 13' 4" long. *Everett, J. D.* Ph. Mg. 32 (1866) 350-.
- Protractor, semicircular, improved form. *Stewart, J. N. Z. I. T.* 3 (1870) 316-.
- , for trisecting angles. *Alexander, J. H.* Silliman J. 7 (1849) 243-.
- Quadrature, instrument for. *Boileau, P. C. R.* 15 (1842) 594-.
- Refraction through prism; apparatus to illustrate deviation of ray. *Marcucci, S.* Rv. Sc.-Ind. 27 (1895) 101-.
- Scale, accuracy of, and limit of perception. *Neovius, E.* Helsingf. Öfv. 23 (1881) 71-.
- "Scoliograph, unicursal," for drawing algebraic curves. *Boguslavsky, A.* [1881] Mosc. S. Nt. Bil. 57 (1882) (*Pt. 2*) 72-.
- Screw, use in mathematical instruments. *Carl, P.* Carl Rpm. 2 (1867) 37-.
- Sectograph (for dividing lines and angles, &c.). *Jones, T.* Tilloch Ph. Mg. 42 (1813) 401-.
- Sine and cosine quadrant. *Schreiber, C.* Cztg. Opt. 7 (1886) 38-.
- Spherical integrator, modification of a form of. *Smith, F. J.* Ph. Mg. 22 (1886) 147-.
- , triangles, instrument for determining, by mechanical action. *Penrose, F. C.* As. S. M. Not. 36 (1876) 281-.
- Spherometer. *Mayer, A. M.* Am. J. Sc. 32 (1886) 61-.
- , new. *Krüss, H.* Cztg. Opt. 12 (1891) 63-.
- Spirals, Johnson's volutor for drawing. *Booth, J. B. A. Rp.* (1860) (*Pt. 2*) 60-.
- Square with parallel lines. *Chausse-not, (l'Ainé).* Par. Bil. S. Encour. 43 (1844) 4-.
- Stanhope logical and arithmetical machine. *Harley, (Rev.) R.* N. S. W. R. S. J. 24 (1890) 121-.

- Stereoscopic drawing apparatus. *Jensen, J.* [1870] Arch. f. Ap. 4 (1871) 233-.
- Straight line apparatus, Hart's. *Darboux, G.* Bull. Sc. Mth. As. 3 (1879) 144-.
- Stuppakoff's comparometer. *Basford, G. M.* Am. Eng. & Railroad J. 73 (1899) 59, 169.
- Tachymeter, Cairo's. *Puissant, L. C. R.* 3 (1836) 140, 200, 245-, 384.
- Tractograph (instrument for describing curves of "tractory" nature). *Kleritj, L.* Dingler 305 (1897) 234-, 260-.
- of Kleritj, and rod-planimeter. *Korselt, A. Z. Mth. Ps.* 43 (1898) 312-.
- Trigonometer, instrument for solving spherical triangles. *Braun, K. (XII)* Mth. Term. Éts. 1 (1883) 313-; Mth. Nt. B. Ung. 1 (1882-83) 283-.
- , Savy's. *Le Grand, G.* Aube Mm. S. Ag. 5 (1854) 235-.
- Trisection of angle, instrument for. *Burt, T. S.* Beng. As. S. J. 1 (1832) 499-.
- — — —. *Tate, T.* Ph. Mg. 19 (1860) 261-.
- — — —. *Cassani, P.* Ven. Aten. At. 1 (1878) 163-.
- — — —. *Longchamps, G. de.* As. Fr. C. R. (1893) (Pt. 2) 190-.
- — — —, mechanical. *Russell, A. H.* Nt. 43 (1891) 547-.
- — angles, test. *Rönisch, A.* Czgt. Opt. 16 (1895) 253-.
- Vernier for line or curve with unequal divisions. *Artur, J. F.* Par. Bil. S. Encour. 50 (1851) 676-.
- , new form. *Ludlow, H. H. V.* Nost. Eng. Mg. 27 (1882) 196.
- or Nonius, priority. *Breusing, A.* [1879] As. Nr. 96 (1880) 129-.
- Verniers. *Matzka, W.* Grunert Arch. 34 (1860) 334-.
- Arithmometer, Thomas's, actuarial use. *Gray, P. I. Act. J.* 17 (\*1873) 249-; 18 (\*1875) 20-, 123-.
- , —, adaptation of assurance formulæ to. *Hannynngton, J.* Assur. Mg. 12 (\*1866) 184.
- , —, use. *Hannynngton, (Maj.-Gen.)* I. Act. J. 16 (\*1872) 244-.
- , use. *Hirn, G. A. A. Gén. Civ.* 2 (1863) (pte. 2) 113-, 153-.
- , —. *Hancock, W. J. I. Act. J.* 16 (\*1872) 265-.
- , — in constructing tables. *Carment, D. I. Act. J.* 22 (\*1881) 368-; 23 (\*1882) 232.
- Calculating apparatus, arithmetical puzzles. *Lucas, E.* Év. Sc. 45 (1890) 1-.
- — based on Napier's rods. *Bridge, J. Ph.* Mg. 9 (1880) 191-.
- circle. *Weiss, P. C. R.* 131 (1900) 1289-.
- instruments and machines. (2) Logarithmic scales. (3) Graphic processes. *Ocagne, M. d'. A. Cons. Arts et Mét.* 5 (1893) 231-, 323-; 6 (1894) 42-.
- machine. *Babbage, C.* Edinb. Ph. J. 8 (1823) 122-.
- —. *Olivier, T.* Par. Bil. S. Encour. 45 (1846) 153-.
- —. *Nystrom, J. W.* Franklin I. J. 21 (1851) 262-.
- —. *Selling, E. D. Nf. Tbl.* (1887) 234-; Würzb. Ps. Md. Sb. (1888) 148-; Czgt. Opt. 9 (1888) 3-.
- —. *Levänen, S.* Helsingf. Öfv. 38 (1896) 26-.
- —. *Siedentopf, H. N.-Vorp. Mt.* 30 (1899) xvii-.
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- — — —. *Thomas, —. Moigno Cosmos* 4 (1854) 72-, 186-.
- —, Babbage's. *Baily, F.* Tilloch Ph. Mg. 63 (1824) 355-.
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- — — —. *Brit. Ass. Comm.* B. A. Rp. (1878) 92-.
- — — —. *Menabrea, (le gén.) L. F.* C. R. 99 (1884) 179-.
- — — —, mechanical arrangements. *Babbage, (Maj.-Gen.) H. P.* B. A. Rp. (1888) 616-.
- — for definite integrals. *Moseley, H. B. A. Rp.* (1841) (Pt. 2) 35-.
- —, duplex. *Küttner, W.* Dingler 300 (1896) 199-.
- —, &c. *Ramsing, H. M.* Mth. Ts. 2 (1860) 65-.
- —, Fowler's. *De Morgan, A. R. S. P.* 4 (1840) 243-.
- —, Henri Genaille's. *Genaille, H.* As. Fr. C. R. (1894) (Pt. 2) 272-.
- —, new. *Lalanne, L. C. R.* 9 (1839) 319-.
- — — —. *Fowler, —. B. A. Rp.* (1841) (Pt. 2) 39-.
- — — —. *Grant, G. B.* Am. J. Sc. 8 (1874) 277-.

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- Addition machine. *Goss, J.* Tilloch Ph. Mg. 41 (1813) 166-.
- Arithmetical machine, Čebyšev's. *Bool, V. G. von.* Mosc. S. Sc. Bil. 91 (No. 1) (1894) 12-.
- with continuous motion. *Tchebitchef, P. L.* Rv. Sc. 4 (1882) 402-.
- —, supplementary explanation. *Čebyšev, P. L.* Mosc. S. Sc. Bil. 91 (No. 1) (1894) 22.
- machines, history. *Mehmke, R.* Prace Mt.-Fiz. 6 (1895) 177-.
- Arithmometer, Thomas's. *Ettingshausen, A. von.* Wien SB. 24 (1857) 16-.
- —. *Reuleaux, F.* Civing. 8 (1862) 182-.
- —. *Hirn, G. A.* Les Mondes 3 (1863) 433-.
- —. *Junge, A. Z. Mth. Ps.* 9 (1864) 198-.
- —. *Zillmer, —. I. Act. J.* 15 (\*1870) 25-.
- —. *Cavallero, A.* Cuyper Rv. Un. 8 (1880) 309-.

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Calculating machine, new. *Bollée, L. C.* R. 109 (1889) 737-.

—, —, *Strehl, K.* Cztg. Opt. 11 (1890) 242-.

—, —, old. *Cadell, W. A.* Thomson A. Ph. 3 (1814) 251-.

— for products, quotients, logs., and powers of numbers. *Moseley, H.* Ph. Mg. 30 (1847) 171-.

—, prospectus, &c. *Stonimsky, C. Z.* Crelle J. 28 (1844) 184-.

— for real roots of numerical equations. *Moth, F. X.* Wien D. 1 (1850) 105-.

—, report. *Wiberg, —.* C. R. 56 (1863) 330-.

—, Scheutz's. *Meidinger, H.* Dingler 156 (1860) 241-, 321-.

—, Selling's. *Poppe, A.* Dingler 271 (1889) 193-.

— machines. *Hélie, —.* Eure Rec. Tr. 2 (1842) 170-.

—, *Olivier, T.* Par. Bil. S. Encour. 42 (1843) 411-.

—, *Jomard, E. F.* Par. Bil. S. Encour. 42 (1843) 548-.

—, *Lauterburg, —.* Bern Mt. (1863) 20-.

—, *Warren, T. P. B.* Ph. Mg. 43 (1872) 396-.

—, *Edmondson, J.* [1885] L. Ps. S. P. 7 (1886) 81-; Ph. Mg. 20 (1885) 15-.

—, *Davis, H. S.* Pop. As. 4 (1897) 20-.

—, *Torres, L. C. R.* 130 (1900) 472-.

—, arithmograph. *Gayley, —.* Par. Bil. S. Encour. 15 (1816) 50-.

—, continuous. *Hele-Shaw, H. S.* Phil. Trans. 176 (1886) 367-.

—, history. *Mehmke, R. D.* Mth. Vr. Jbr. 3 (1894) 59-.

— and instruments. *Ocagne, M. d'. Brux.* S. Sc. A. 17 (1893) (Pt. 1) 84-.

— invented by Russians. *Bool, V. von.* Mosc. S. Sc. Bil. 92 (No. 1) (1896) 33-.

—, theory. *Stamm, E.* Mil. I. Lomb. Rd. 2 (1865) 360-.

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—, mechanical aids. *Sang, E.* I. Act. J. 16 (\*1872) 253-.

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Chinese-Japanese calculating machine, and Chinese Swan-Pan (calculating table). *Westphal, A.* (xii) D. Gs. Ostas. Mt. 1 (1873-76) (Heft 8) 27-, (Heft 9) 43-.

Efficiency, apparatus for calculating. *Boys, C. V.* (ix) [1882] L. Ps. S. P. 5 (1884) 28-; Ph. Mg. 13 (1882) 193-.

Logarithmic calculating rules, Lambert's. *Schweigger, J. S. C.* Schweigger J. 14 (1815) 115-.

Slide-rule. *Burg, A.* Wien Jb. Pol. I. 16 (1830) 101-.

—, *Burdon, —.* C. R. 58 (1864) 573-.

—, *Mackesy, W. H.* Medley I. Eng. 4 (1867) 349-.

—, *Schwind, F. von* [1873] Innsb. Nt. Md. B. 4 (1874) liv-.

## Models 0080

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—, employment. *Herrmann, E.* Oestr. Z. Brgw. 15 (1867) 193-.

—, —, *Charnoz, J.* Rv. Mar. et Col. 57 (1878) 493-.

—, English. *Sedlaczek, E.* Hammer-schmidt Al. Oestr. Z. (1846) 439-, 451-, 465-, 478-; (1847) 182-, 221-, 318-, 342-, 365-, 390-, 401-.

—, Fuller's. *Fenton, J. J.* Vict. R. S. T. 22 (1886) 57-.

— for gauging casks. *Young, (Dr) T.* QJ. Sc. 16 (1823) 357-.

—, gunner's. *Smith, John T.* Madras Eng. Rp. 2 (1846) 14-.

—, model. *Béghin, A.* As. Fr. C. R. (1900) (Pt. 1) 127-.

—, new. *Gallice, G. C. R.* 128 (1899) 163-.

—, —, *Puller, —.* Hann. Archt.-Vr. Z. 46 (1900) 203-.

—, —, calculating. *Fuller, G.* (xii) [1879] Belfast NH. S. P. (1878-80) 36-.

—, —, form of. *Béghin, A.* As. Fr. C. R. (1899) (Pt. 2) 142-.

—, proposed addition. *Schweth, W. D.* Nf. Vh. (1900) (Th. 2, Hälfte 1) 66-.

—, proposed forms. *Darwin, G. H. L.* Mth. S. P. 6 (1875) 113.

—, radial cursor. *Lanchester, F. W.* [1895] L. Ps. S. P. 14 (1896) 8-; Ph. Mg. 41 (1896) 52-.

—, solution of equations in three variables. *San Roberto, P. di.* [1867] Tor. Mm. Ac. 25 (1871) 53-.

—, treatment of equation in two variables. *San Roberto, P. di.* Tor. At. Ac. Sc. 2 (1866-67) 454-.

—, use. *Boys, C. V.* V. Nost. Eng. Mg. 33 (1885) 512-.

— rules, Everett's proportion-table. *Everett, J. D.* Ph. Mg. 32 (1866) 350-.

—, Fuller's calculating helix, and historical notes on calculating instruments with logarithmic divisions. *Favaro, A.* Ven. I. At. 5 (1879) 495-.

—, logarithmic. *Sedlaczek, E.* Hammer-schmidt Al. Oestr. Z. (1847) 493-, 507-, 521-, 531-.

—, modified. *Mannheim, A.* N. A. Mth. 12 (1853) 327-.

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—, —, —, *Blythe, W. H.* Camb. Ph. S. P. 8 (1895) 241-.

—, —, —, *Taylor, H. M.* Camb. Ph. S. T. 18 (1900) 375-.

—, —, —, Wiener's model. *Cayley, A.* [1871] Camb. Ph. S. T. 12 (1879) 366-.

— surfaces, construction of models. *Blythe, W. H.* QJ. Mth. 29 (1898) 206-.

—, model by Rodenburg. *Korteweg, D. J.* N. Arch. Wisk. 20 (1893) 63-; Fsch. Mth. (1893-94) 83.

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- Descriptive geometry, models. *Didier*, —, & *Evrard*, —. Par. S. Phlm. Bll. (1833) 177-.
- Ellipsoid, model of the centro-surface. *Kummer*, *E. E.* Berl. Mb. (1862) 426-.
- Goniometrical instruction. *Hoza*, *F.* Arch. Mth. Ps. 61 (1877) 108-.
- Kinematic models, epicycloids, linkwork. *Schilling*, *F. D.* Nf. Vh. (1898) (Th. 2, Hälfte 1) 6-.
- Mathematical models, use. *Emch*, *A.* Kan. Ac. Sc. T. 14 (1896) 90-.
- Minimal surface, model in plaster. *Schwarz*, *H. A.* Berl. Mb. (1872) 122-.
- Paraboloids, hyperbolic, model. *Olivier*, *T.* Par. S. Phlm. N. Bll. (1832) 184-.
- Pencils, thin, models. *Kummer*, *E. E.* Berl. Mb. (1860) 469-.
- Ronayne's cubes. *Hennessy*, *H.* Ph. Mg. 39 (1895) 183-.
- Ruled surface, 3rd order. *La Gournerie*, *J. de.* Par. A. Cons. 6 (1866) 90-.
- Sections of quadric surfaces. *Wiener*, —. Karlsruhe Nt. Vr. Vh. 10 (1888) (Sb.) 50-.
- Stereographic equatorial projection of a sphere, transformation by means of a form of the Peaucellier cell. *Phillips*, *A. W.* B. A. Rp. (1884) 649.
- Subdivision of an arbitrary angle by models. *Strauss*, *A.* Arch. Mth. Ps. 12 (1894) 177-.
- Thread models of developable surfaces. *Schoute*, *P. H.* Amst. Ak. Vs. [2] (1894) 8-.
- Delanoy*, —. As. Fr. C. R. (1886) (Pt. 2) 183-.
- Circle divider, description. *Laussedat*, (*le col.*) —. As. Fr. C. R. (1885) (Pt. 1) 97-.
- , division, &c., graphic solution. *Péreaux*, *E.* A. Gén. Civ. 17 (1870-71) 735-.
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- Coefficients of algebraic equations, representation. *Nehls*, *C.* [1893] Hamb. Mth. Gs. Mt. 3 (1900) 139-.
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- , —, —, —, —. *Lovibond*, *J. W.* Nt. 52 (1895) 547, 577.
- , —, —, —, —. *Cattell*, *J. McK.* Nt. 52 (1895) 547.
- Complex numbers, representation. *Broch*, *O. J.* As. Fr. C. R. 3 (1874) 1174-.
- "Compteurs logarithmiques." *Cauchy*, *A. L.* C. R. 40 (1855) 1009-; 44 (1857) 257-.
- Construction of surfaces by plane sections. *Cardinaal*, *J.* Amst. Ak. Vs. M. 6 (1889) 198-; *Fschr. Mth.* (1889) 665-.
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- , —, graphic approximation. *Gergonne*, *J. D.* Gergonne A. Mth. 10 (1819-20) 242-.
- , —, by means of parabola. *Longchamps*, *G. de.* Mathesis 16 (1896) 245-.
- , —, mechanical construction of curves for. *Matthiessen*, *L.* Arch. Mth. Ps. 48 (1868) 229-.
- , roots, geometrical construction. *Montucci*, *H.* C. R. 44 (1857) 773-.
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- Curves, graphical treatment of experimental. *Lehfeldt*, *R. A.* [1900] L. Ps. S. P. 17 (1901) 605-.
- Deduction of differential equations from graphs. *Warder*, *R. B.* Science 4 (1896) 345.
- Development of arc of circumference of given radius, tables for calculations. *Prat*, —, & *Bancarel*, —. (viii) A. Cond. Pon. Chaus. 6 (1862) 49-.
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- , —, —, —, —. *McCull*, *H.* Ph. Mg. 10 (1880) 168-.
- Diagrams for ascertaining percentage relation. *Smith*, *W.* B. A. Rp. (1890) 982-.
- , employment for representation of logical propositions. *Venn*, *J.* [1880] Camb. Ph. S. P. 4 (1883) 47-.
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- Ellipse, graphic rectification. *Somoff*, *J.* [1850] St Pét. Ac. Sc. Bll. 9 (1851) 97-.
- , spacing the. *Grant*, *G. B.* Franklin I. J. 127 (1889) 280-.

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- , *Duporcq*, *E.* C. R. 127 (1898) 265-.
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- Archimedes' screw, applications in graphical calculation. *Sayno*, *A.* Mil. I. Lomb. Rd. 7 (1874) 163-.
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- Chess-board, use, for arithmetical problems.



- Ellipses, method of describing. *Williams-Ellis, J. C.* [1870] *Camb. Ph. S. P.* 2 (1876) 197-.
- Empirical formulæ, calculation. *Hopkinson, J.* *Mess. Mth.* 2 (1873) 65-.
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- of several variables, graphical evaluation. *Adler, A.* *Wien Ak. Sb.* 94 (1887) (Ab. 2) 404-.
- Graphic arithmetic, applications to theory of numbers. *Arnoux, G., & Laisant, C. A.* *As. Fr. C. R.* (1900) (Pt. 2) 36-.
- calculation, 1st operations. *Favaro, A.* *Ven. At.* 1 (1871-73) 1391-.
- calculus, note on question. *Florov, P. S.* (xii) *Kharkov Mth. S. Com.* (1880) 36-.
- integration. *Šolín, J. M.* *Prag Ab.* 5 (1872) 10 pp.
- —. *Pickering, E. C.* *Am. Ac. P.* 10 (1875) 79-.
- —. *Šolín, J. M.* *Prag Sb.* (1879) 195-.
- —, and application to statics of external forces on a beam. *Baldermann, O.* *Förster Al. Bauztg.* 46 (1881) 24-, 33-, 49-, 97.
- —, — applications. *Massau, J.* *Rv. Un. Mines* 16 (1884) 243-, 579-; 17 (1885) 1-; 20 (1886) 1-, 475-; 21 (1887) 85-, 308-, 572-; 22 (1887) 1-.
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- — differential equations. *Petrovitch, M.* *C. R.* 124 (1897) 1081-.
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- — and integration. *Darwin, G. H.* *B. A. Rp.* (1876) (Sect.) 13; *Mess. Mth.* 6 (1877) 134-.
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- — — mechanical science. *Hele-Shaw, H. S. B. A. Bp.* (1892) 373-; (1893) 573-.
- — research. *Gilbert, G. K.* *Smiths. Misc. Col.* 33 (1888) *Art.* 4, 4 (bis)-; (*Wash. Ph. S. Bil.* 10 (1888).)
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- $$x^{n-r} \frac{d^n}{dx^n} x^r \cdot u = \left( \frac{d}{d\theta} + r \right) \left( \frac{d}{d\theta} + r - 1 \right) \dots \left( \frac{d}{d\theta} + r - n + 1 \right) u.$$
- &c. *Johnson, W. W.* Mess. Mth. 11 (1882) 191-.
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- elements in analytical geometry, significance. *Stolz, O.* Mth. A. 4 (1871) 416-.
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- , —, analysis. *Denzler, W.* Zür. Mt. 3 (1853-55) 560-.
- , —, with application to equation  $x^{\lambda} + y^{\lambda} = z^{\lambda}$ . *Kummer, E. E.* Berl. Ab. (1857) (Mth.) 41-.
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- , —, elementary theory. *Hoiël, J.* Bordeaux Mm. S. Sc. 5 (1867) 1-; 6 (1868) 1-; 8 (1870) 97-; 1 (1876) 1-.
- , —, formed from roots of unity. *Kummer, E. E.* Liouv. J. Mth. 12 (1847) 185-; 16 (1851) 377-; Berl. Mb. (1861) 1051-; (1863) 21-.
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- , —, multiplication, geometric significance. *Orelli, J.* Zür. Vjschr. 20 (1875) 443-.
- , —, new method for graphical representation. *Brill, J.* Mess. Mth. 17 (1888) 80-.
- , —, and their functions, theory. *Hertz, K., & Dickstein, S.* Par. T. Nauk Sc. Pam. 7 (\*1875) Art. 3, 60 pp.
- , —, theorem of Dedekind, proof. *Study, E.* Gött. Nr. (1898) 1-.
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- , —. *Français, J. F.* Gergonne A. Mth. 4 (1813-14) 222-, 364-.
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- , —, fundamental. *Schultén, N. G. af (fil).* [1839] Helsingf. Acta 1 (1840) 31-.
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$$\sum_{n=1}^n (a+n-1)^a h^{n-1}, \quad \sum_{n=1}^n [a+n-1]^a h^{n-1}.$$

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$$\sum_{r=1}^{r=n} (r)^a. \quad \text{Dostor, G. N. A. Mth. 18 (1879) 459-, 513-}$$

$$\sum_1^n (2r^{2m}) \text{ and } \sum_1^n (2r-1^{2m}). \quad \text{Glaisner, J. W. L. Mess. Mth. 20 (1891) 172-}$$

$$\sum_1^n (r^{2m}). \quad \text{Glaisner, J. W. L. Mess. Mth. 20 (1891) 120-; 28 (1899) 29-}$$

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 — —, criterion. *Christie, R. W. D.* Nt. 40 (1889) 247.  
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- Stern, M. A.* [1829-31] *Crelle J.* 8 (1832) 192-; *Quetelet Cor. Mth.* 7 (1832) 36-.
- Möbius, A. F.* *Crelle J.* 6 (1830) 215-.
- Ampère, A. M.* *Quetelet Cor. Mth.* 9 (1837) 144-.
- Stern, M. A.* *Crelle J.* 18 (1838) 69-.
- Gerono, G. C.* N. A. Mth. 1 (1842) 1-.
- Catalan, E. C.* N. A. Mth. 4 (1845) 257-, 405-.
- Frost, P.* *Camb. Mth. J.* 4 (1845) 237-.
- Schultén, N. G. af (fil.)* [1845] *Helsingf. Acta* 2 (1847) 861-.
- Cerquero, J. S.* *Cadiz Period. M. Ci.* 1 (1848) 1-.
- Terquem, O.* N. A. Mth. 8 (1849) 48-.
- Catalan, E. C.* N. A. Mth. 8 (1849) 154-, 294-.
- Vincent, A. J. H.* N. A. Mth. 8 (1849) 292-.
- Eisenstein, G.* N. A. Mth. 8 (1849) 341-.
- Bourgoin, L.* *Liouv. J. Mth.* 15 (1850) 71-.
- Schlämilch, O.* *Grunert Arch.* 18 (1852) 416-.
- Györy, S.* (xii) *Mag. Ak. Éts.* (1854) 220-.
- Tchebicheff, P.* [1855] *Liouv. J. Mth.* 3 (1858) 289-.
- Heine, H. E.* *Crelle J.* 53 (1857) 284-.
- König, J. F.* *Grunert Arch.* 33 (1859) 369-.
- Heine, E.* *Berl. Mb.* (1866) 436-.
- Laurent, H.* N. A. Mth. 5 (1866) 540-.
- Thiele, T. N.* (xii) *Ts. Mth.* 5 (1869) 144-; 6 (1870) 145-.
- Eugenio, V.* *G. Mt.* 9 (1871) 358-.
- Günther, S.* *Arch. Mth. Ps.* 55 (1873) 392-.
- Christoffel, E. B.* [1874] *A. Mt.* 6 (1875) 148-.
- Smith, H. J. S.* [1875] *Mess. Mth.* 6 (1877) 1-.
- Glaisher, J. W. L.* [1877] *Mess. Mth.* 7 (1878) 67-.
- Gegenbauer, L.* [1879] *Wien Ak. Sb.* 80 (1880) (Ab. 2) 763-.
- Hoffmann, K. E.* [1882] *Arch. Mth. Ps.* 69 (1883) 205-.
- Bruno, G.* *Tor. Ac. Sc. At.* 21 (1885) 273-.
- Hermite, —.* *Bl. Sc. Mth.* 9 (1885) 11-.
- Cesàro, E.* N. A. Mth. 6 (1887) 29-.

- Koppe*, —. Mth. A. 29 (1887) 187-.
- Veltmann*, *W.* Z. Mth. Ps. 32 (1887) 193-.
- Gambioli*, *D.* [1889] Bologna Rd. (1889-90) 33-.
- Hurwitz*, *A.* Acta Mth. 12 (1889) 367-.
- Pincherle*, *S.* Rm. R. Ac. Linc. Rd. 5 (1889) (Sem. 1) 640-; 7 (1891) (Sem. 1) 604-.
- Gegenbauer*, *L.* Wien Ak. Sb. 98 (1890) (Ab. 2a) 673-; 100 (1891) (Ab. 2a) 635-.
- Amicis*, *E. de.* G. Mt. 30 (1892) 217-.
- Markoff*, *A.* [1894] St Pét. Ac. Sc. Bil. 2 (1895) 9-.
- Stieltjes*, *T. J.* Toul. Fac. Sc. A. 8 (1894) J, 122 pp.; 9 (1895) A, 47 pp.
- Klein*, *F.* [1895] D. Mth. Vr. Jbr. 4 (1897) 153-.
- Koch*, *H. von.* Stockh. Öfv. (1895) 101-.
- Lehmer*, *D. N.* A. Mth. 11 (1896-97) 64.
- Saalschütz*, —. Königsb. Schr. 38 (1897) [37]-.
- Candiotti*, *M. R.* Arg. S. Ci. A. 46 (1898) 149-.
- Muirhead*, *R. F.* Edinb. Mth. S. P. 17 (1899) 39-.
- Lewicki*, *W.* Wiad. Mt. 4 (1900) 52-; Fschr. Mth. (1900) 215.
- Padé*, —. Nt. 62 (1900) 419.
- Steggall*, —. Mth. Gz. 1 (1900) 39.
- Macaulay*, *F. S.* Mth. Gz. 1 (1900) 39-.
- algebraic. *Borchardt*, *C. W.* N. A. Mth. 13 (1854) 157.
- . *Tchébicheff*, *P. de.* Liouv. J. Mth. 10 (1865) 353-.
- . *Pincherle*, *S.* Par. Ec. Norm. A. 6 (1889) 145-.
- , application. *Pincherle*, *S.* C. R. 108 (1889) 888-.
- , convergence. *Halphen*, *G. H.* C. R. 100 (1885) 1451-; 106 (1888) 1326-.
- , —. *Bortolotti*, *E.* Rm. R. Ac. Linc. Rd. 8 (1899) (Sem. 1) 28-.
- , generalisation. *Humbert*, *G.* Par. S. Mth. Bil. 8 (1880) 191-; 9 (1881) 24-.
- , —. *Pincherle*, *S.* Bologna Ac. Sc. Mm. 10 (1889) 513-; 4 (1894) 297-; A. Mt. 19 (1891-92) 75-.
- , —. *Hermite*, *C.* A. Mt. 21 (1893) 289-.
- , —. *Padé*, *H.* Liouv. J. Mth. 10 (1894) 291-.
- , generalised. *Cordone*, *G.* Palermo Cir. Mt. Rd. 12 (1898) 240-.
- algorithm, Euler's, development. *Klug*, *L.* [1881] Arch. Mth. Ps. 67 (1882) 337-.
- , extension. *Pincherle*, *S.* Mil. I. Lomb. Rd. 22 (1889) 555-.
- , fundamental rule. *Sylvester*, *J. J.* Ph. Mg. 6 (1853) 297-.
- and anakolouthic sums. *Sylvester*, *J. J.* Ph. Mg. 8 (1854) 187-.
- for analytic functions. *Slešinskij*, *I. N.* Rs. S. Nt. Mm. (Mth.) 7 (1886) 33-; Fschr. Mth. (1886) 160-.
- application. *Stern*, *M. A.* Crelle J. 10 (1833) 1-, 154-, 241-, 364-; 11 (1834) 33-, 142-, 277-, 311-.
- . *Lieblein*, *J.* Z. Mth. Ps. 13 (1868) 63-.
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- application to change wheels. *Glörfeld*, *A.* Cztg. Opt. 19 (1898) 31-.
- equations. *Oettinger*, *L.* [1851] Crelle J. 49 (1855) 66-, 95-.
- applications. *Studnička*, *F. J.* Časopis 1 (\*1872) 32-; Fschr. Mth. (\*1872) 82.
- , —. *Seiliger*, *D. N.* Kazan S. Ps.-Mth. Bil. 2 (1893) (Prot.) 54-.
- , new. *Markoff*, *A.* Mth. A. 47 (1896) 579-.
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- . *Čžuber* (or *Čuber*), *E.* Arch. Mth. Ps. 60 (1877) 265-.
- . *Gerevich*, *E.* Orv.-Termt. Ets. (Termt. Szak) (1889) 107-, 187-.
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- for binomial powers (Lagrange). *Euler*, *L.* [1780] St Pét. Ac. Sc. Mm. 6 (1818) 3-.
- calculation of  $E \frac{2p}{q} + E \frac{4q}{p} + \dots + E \frac{(p-1)q}{p}$  by *Tatarinov*, *I.* Rec. Mth. (Moscou) 14 (1890) 668-.
- Čebyšev's extension. *Hermite*, *C.* [1879] Crelle J. Mth. 88 (1880) 10-.
- and certain series. *Catalan*, *E. C.* [1883] Brux. Ac. Mm. 45 (1884) (No. 6) 82 pp. class. *Osegu*, *G.* Tortolini A. 2 (1851) 317-.
- of functions. *Humbert*, *G.* Par. S. Mth. Bil. 8 (1880) 182-.
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- for complex quadratic surds. *Mathews*, *G. B.* L. Mth. S. P. 20 (1889) 237-.
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- with constant quotients. *Studnička*, *F. J.* Časopis 17 (1888) 200-; Fschr. Mth. (1888) 200.
- for continued products. *Glaisher*, *J. W. L.* (x) L. Mth. S. P. 5 (1873-74) 78-.
- convergence. *Schultén*, *N. G.* af (jil.) [1846] Helsingf. Acta 3 (1852) 397-.
- . *Malmsten*, *C. J.* Stockh. Ak. Hndl. (1848) 91-; Camb. and Dubl. Mth. J. 5 (1850) 282-.
- . *Stern*, *M. A.* Crelle J. 37 (1848) 255-; Gött. Nr. (1863) 136-.
- . *Falk*, *M.* Ts. Mt. Fys. 3 (1870) 197-.
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- . *Markov*, *A. A.* Kharkov Mth. S. Com. (1885) 29-; Fschr. Mth. (1885) 171.
- . *Scheibner*, *W.* Leip. Mth. Ps. B. 40 (1888) 7-.
- . *Slešinskij*, *I. N.* Rs. S. Nt. Mm. (Mth.) 8 (1888) 97-; 10 (1889) 201-; Rec. Mth. (Moscou) 14 (1890) 337-, 436-; Fschr. Mth. (1888) 200; (1889) 186; (1890) 220.
- . *Markoff*, *A.* Acta Mth. 19 (1894) 93-.
- . *Saalschütz*, —. Königsb. Schr. 40 (1899) [8]-.
- . *Pringsheim*, *A.* Münch. Ak. Sb. 29 (1900) 261-.
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— *Heine, H. E.* Crelle J. 57 (1860) 231-.

— *Christoffel, E. B.* Crelle J. 58 (1860) 90-.

— *Muir, T. B. A. Rp.* (1876) (Sect.) 27-.

— *Vahlen, K. T.* Crelle J. Mth. 115 (1895) 221-.

—, abnormal, of a function, distribution. *Padé, H. C. R.* 130 (1900) 102-.

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—, errors of principal and subsidiary. *Hargreaves, R.* Mess. Mth. 27 (1898) 152-.

—, generalisation. *Barbier, E. C. R.* 98 (1884) 1531-.

—, law of formation. *Minding, E. F. A. St Pét. Ac. Sc. Bl.* 13 (1869) 524-.

—, —, Euler's. *Schlegel, S. F. V. Z. Mth. Ps.* 22 (1877) 402-.

—, resultants. *Gegenbauer, L.* Amst. Ak. Vs. 5 (1897) 289-.

and convergents, relation. *Seidel, L.* Münch. Ab. 7 (1855) 559-.

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— fractions and converging multiples. *Heawood, P. J.* Mess. Mth. 26 (1897) 79-.

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— —. *Cordone, G. G. Mt.* 32 (1894) 183-.

— definite integral  $\int_{-1}^{+1} F(x) dx$ . *Stieltjes, —.* C. R. 99 (1884) 508-.

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— descending power series. *Stieltjes, T. J.* Toul. Fac. Sc. A. 3 (1889) H, 17 pp.

— — —. *Čebyšev, P.* [1892] St Pet. Ac. Sc. Mm. (Rs.) 71 (1893) (Suppl.) No. 3, 73 pp.; Fsehr. Mth. (1892) 192-.

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—, geometrical view. *Klein, F.* Gött. Nr. (1895) 357-.

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—, convergence. *Pringsheim, A.* Münch. Ak. Sb. 28 (1899) 295-; 30 (1901) 233.

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—  $\int_x^\infty e^{-x^2} dx$ . *Jacobi, C. G. J.* Crelle J. 12 (1834) 346-.

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- , *Stern, M. A.* [1854] *Crelle J.* 53 (1857) 1-.
- , *Simon, O. E.* *Grunert Arch.* 33 (1859) 448-.
- , *Günther, S.* *Z. Mth. Ps.* 22 (1877) 31-.
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- , *Landsberg, G.* *Crelle J. Mth.* 109 (1892) 231-.
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- , —, generalisation. *Bortolotti, E.* *Palermo Cir. Mt. Rd.* 6 (1892) 1-.
- , arithmetical theorem. *Sylvester, J. J.* *Mess. Mth.* 19 (1890) 63-.
- , calculation. *Anon.* (vi 552) *Gergonne A. Mth.* 14 (1823-24) 337-.
- , closed form. *Hoffmann, K. E.* *Arch. Mth. Ps.* 62 (1878) 310-.
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- , convergence. *Thiele, T. N.* (xii) *Ts. Mth.* 3 (1879) 70-.
- , —, *Stolz, —.* *Innsb. Nt. Md. B.* 15 (1886) xxi-; 17 (1887) xviii-.
- , —, *Pringsheim, A.* [1900] *Münch. Ak. Sb.* 30 (1901) 463-.
- , convergents. *Oettinger, L.* *Arch. Mth. Ps.* 43 (1865) 301-.
- , — (Oettinger). *Strehlke, F.* *Arch. Mth. Ps.* 48 (1868) 1-.
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- , identities between convergents. *Jonquières, E. de.* *C. R.* 96 (1883) 1351-, 1420-, 1490-, 1571-, 1721-.
- and indeterminate analysis. *Tédénat, —.* *Gard Not. Tr. Ac.* (1811) 254-.
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- , —, —, *Hoffmann, K. E.* *Arch. Mth. Ps.* 64 (1879) 1-.
- , —, —, *Hansted, B. G. Teix. J. Sc.* 2 (1880) 154-.
- , —, —, *Sylvester, J. J.* *C. R.* 108 (1889) 1037-, 1084-.
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- , —, —, convergence. *Falk, M.* *Ts. Mt. Fys.* 4 (1871) 249-.
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- , —, —, —, *Charves, —.* *Bll. Sc. Mth. As.* 1 (1877) 41-.
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— — —, coefficients analogous to. *Glaisher, J. W. L.* L. Mth. S. P. 31 (1900) 216-.

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- $\Psi_n(k, h) = \sum \left(\frac{s}{h}\right)^s e^{\frac{2k\pi i}{h}}$ . *Séguier, P. de.* *Liouv. J. Mth.* 5 (1899) 55-.

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- Transcendental numbers deduced from probabilities. *Bouniakowski, V.* *St Pét. Ac. Sc. Bll.* 1 (1836) 177; *St Pét. Ac. Sc. Mm.* 3 (1838) 457-, 517-.
- — —, two theorems. *Grönwall, H.* *Stockh. Öfv.* (1897) 623-; (1898) 153-.
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- , —. *Brioschi, F.* *C. R.* 56 (1863) 659-.
- , simplification. *Eyres, E. S.* *Tilloch Ph. Mg.* 43 (1814) 177-.
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- — —. *Gergonne, J. D.* *Gergonne A. Mth.* 7 (1816-17) 345-.
- — —. *Franceschinis, F. M.* *Padova N. Sag.* 1 (1817) 317-.
- — —. *Zinelli, F. M.* *Poligrafo* 12 (1832) 468-.
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- , transcendental. *Galois, É.* *Gergonne A. Mth.* 21 (1830-31) 182-.
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- Polynomials, two, approximate linear expressions.* *Tchebitchef, P. L.* *Bll. Sc. Mth. As.* 1 (1877) (*Pt.* 1) 289-.
- Pure mathematics, analysis, synthesis, definitions, bibliography.* *Bellavitis, G.* (*ix*) *Ven. I. Mm.* 15 (1870) 375-; *Ven. I. At.* 5 (1879) 673-.
- Series, etc.* *Catalan, E. C.* [1877-89] *Brux. Ac. Sc. Mm.* 42 (1878) (*No.* 3) 32 pp.; 48 (1892) (*No.* 1) 98 pp.
- Synthesis, algebraic.* *Cauchy, A. L.* *C. R.* 16 (1843) 867-, 967-, 1039-; 18 (1844) 803-.
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- Analysis, Lagrange's elementary course.* *Prony, R. de.* *Par. Éc. Pol. J.* 1 (1794) (*2<sup>o</sup> cah.*) 206-.
- , pure and applied. *Prony, R. de.* *Par. Éc. Pol. J.* 2 (1795) (*6<sup>o</sup> cah.*) 213-.
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- Function*  $y = \frac{1}{e^x - 1}$ . *Catalan, E. C.* *Liège S. Sc. Mm.* 15 (1888) *No.* 1, 230-.
- Functional systems, characteristics.* *Kronecker, L.* *Berl. Ak. Mb.* (1878) 145-.
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- Functions, transcendental, Liouville's classification. *Königsberger, L.* Mth. A. 28 (1887) 483-.
- which vanish with their variables. *Hamilton, (Sir) W. R.* Ir. Ac. T. 16 (Pt. 1) (1830) 63-; 16 (Pt. 2) (1831) 129-.
- — — — — *Moore, A. A.* [1837] Camb. Ph. S. T. 6 (1838) 317-.
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- Leibnitz's calculus. *Arnoux, R.* As. Fr. C. R. (1900) (Pt. 2) 1089-.
- Limiting values, generalisation and application to curves. *Schwarz, C. H. A.* A. Mt. 10 (1880-82) 129-.
- Line functions. *Arzé, C.* Rm. R. Ac. Linc. Rd. 5 (1889) (Sem. 1) 342-.
- Powers, theory. *Crelle, A. L.* Berl. Ab. (1829) 13-.
- Principles. *Lutter, N.* [1860] (xii) Mag. Ak. Éts. (Mth. Term.) 2 (1861-62) 3-.
- , fundamental. *Mansion, P.* (xii) Brux. S. Sc. A. 3 (1879) (Pt. 2) 259-.
- Products and functions, symbolic. *Cauchy, A. L.* C. R. 43 (1856) 169-.
- Quantity, idea of, successive generalisation. *Hoüel, J.* [1882] Bordeaux S. Sc. Mm. 5 (1883) 149-.
- Theorem on product  $\prod (x + a^i z)$ . *Gruson, J. P.* Berl. Ab. (1814-15) (Mth.) 36-.
- Theories, various, from one principle. *Steen, A.* Mth. Ts. 1 (1859) 145-.
- Transcendental analysis, principles. *Lamarle, E.* Liège Mm. S. Sc. 2 (1845-46) 221-.

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- Cauchy, A. L.* C. R. 43 (1856) 69-.
- Bing, F.* Mth. Ts. 4 (1862) 129-, 154-, 171-.
- Schndel, L.* Crelle J. Mth. 84 (1878) 80-.
- Baire, R.* C. R. 125 (1897) 691-; A. Mt. 3 (1899) 1-.
- Stefano, A. de.* G. Mt. 38 (1900) 178-.
- Analytic functions. *Lagrange, J. L.* Par. Ec. Pol. J. 2 (1798) 232-; 3 (1800) Suppl., 277 pp.
- , development for real value of the variables. *Painlevé, —.* C. R. 126 (1898) 385-.
- , principles and application. *Ferroni, P.* [1823] Mod. S. It. Mm. 20 (1828) 1-.
- , problem. *Collins, E.* [1827] St Pét. Ac. Sc. Mm. 1 (1831) 345-.
- , rational development. *Kummer, E. E.* Crelle J. 41 (1851) 368-.
- Approximation of functions. *Lebesgue, —.* Bll. Sc. Mth. 22 (1898) 278-.
- Ascending and descending functions. *Ceroni, G.* A. Sc. Lomb. Ven. 11 (1841) 149-, 197-; 12 (1842) 123-, 137-.
- Calculus of functions. *Lagrange, J. L.* [1799] Par. Sé. Éc. Norm. 10 (1801) 6-; Par. Éc. Pol. J. 7 (1808) (14<sup>e</sup> cah.) Suppl., 90 pp.
- — indices of functions. *Cauchy, A. L.* Par. Ec. Pol. J. 15 (1837) (25<sup>e</sup> cah.) 176-.
- Classification of functions. *Schmidten, H. G.* Klob. Ov. (1827-28) 2-.
- Coefficients, limiting or restricting (which reduce to unity when certain conditions are fulfilled, and to zero when not). *Cauchy, A. L.* C. R. 37 (1853) 150-.
- Constants of expression, conditions for independence. *Marimovitch, W. de.* Liouv. J. Mth. 6 (1880) 167-.
- Continuity. *Lüroth, J.* [1872] Mth. A. 6 (1873) 319-.
- *Lamb, H.* Manch. Lt. Ph. S. Mm. & P. 41 (1897) No. 10, 9 pp.
- and discontinuity, distribution of points in pointwise discontinuous functions of a real variable. *Schöpfung, A.* Gött. Nr. (1899) 187-.
- of functions. *Schlömilch, O.* Grunert Arch. 12 (1849) 430-.
- —, criterion. *Stringham, I.* As. S. Pac. Pb. 2 (1890) 100-; 3 (1891) 112.
- — —, method of defining. *Ruffini, F. P.* (xi) Mod. Ac. Sc. Mm. 12 (1871) 3-.
- — —, theorem. *Darboux, G.* Bll. Sc. Mth. As. 3 (1872) 307-.
- principle, application. *Young, J. R.* Camb. Ph. S. T. 8 (1849) 429-.
- Continuous and discontinuous functions, differentiation and representation. *Cauchy, A. L.* C. R. 40 (1855) 382-.
- — discrete quantities, difference. *Toschi, A.* Palomba Rac. 3 (1847) 216-.
- function with discontinuous differential coefficient. *Lerch, M. G.* Teix. J. Sc. 9 (1889) 97-.
- — not admitting of differentiation, a. *Schwarz, H. A.* Arch. Sc. Ps. Nt. 48 (1873) 33-, 242; Sch. Nf. Gs. Vh. 56 (1873) 252-.
- — with oscillations in every interval. *Köpcke, A.* Mth. A. 34 (1889) 161; 35 (1890) 104-.
- functions. *Cauchy, A. L.* C. R. 18 (1844) 116-; 20 (1845) 375-.
- — with extreme values in every interval. *König, J.* Mh. Mth. Ps. 1 (1890) 7-.
- — of one real variable. *Scheeffler, L.* Acta Mth. 5 (1884) 183-, 279-.
- — — — —. *Broden, T.* Crelle J. Mth. 118 (1897) 1-.
- — — — —. *Kowalewski, G.* Leip. Mth. Ps. B. 52 (1900) 214-.
- — — two real variables. *Townsend, E. J.* [1900] N. Y. Am. Mth. S. Bll. 7 (1901) 244, 251-.
- — — — *n* variables. *Riquier, —.* Par. Ec. Norm. A. 7 (1890) 265-.
- Demonstration of a lemma. *Chavannes, F.* Laus. Bll. S. Vd. 2 (1846-48) 284-.
- Derived functions, class. *Formenti, C.* Mil. I. Lomb. Rd. 26 (1893) 330-, 382-, 482-.

- Discontinuity, curious examples. *Plateau, J. A. F.* *Brux. Ac. Ill.* 43 (1877) 84-, 255-.
- of functions, theorem. *Casorati, F.* *Mil. I. Lomb. Rd.* 1 (1868) 123-.
- Discontinuous function. *Lerch, M. G. Mt.* 26 (1888) 375-.
- functions. *Libri, G.* *Crelle J.* 7 (1831) 224-; 10 (1833) 303-.
- —. *Boole, G.* [1846] *Ir. Ac. T.* 21 (1848) 124-.
- —. *Cauchy, A. L. C. R.* 28 (1849) 277-.
- —. *Darboux, G.* [1874] *Par. Éc. Norm. A.* 4 (1875) 57-; 8 (1879) 195-.
- —, application to analytic formulæ. *Libri, G. C. R.* 15 (1842) 401-.
- — connected with continuous. *Baire, R. C. R.* 126 (1898) 1621-.
- — developable by continuous. *Baire, R. C. R.* 126 (1898) 884-.
- —, real, of real variable, analytical representation. *Severini, C. Tor. Ac. Sc. At.* 33 (1897) 762- or 1002-; 34 (1898) 199-, 374- or 325-, 518-.
- —, representation. *Rawson, R.* [1846] *Manch. Ph. S. Mm.* 8 (1848) 235-.
- —, sum, theorem of Abel's. *Catalan, E. C. Liège S. Sc. Mm.* 15 (1888) No. 1, 153-.
- —, theorem, proof. *Baire, R. Par. S. Mth. Ill.* 28 (1900) 173-.
- —, theory. *Piola, G.* [1830] *Mod. Mm. S. It.* 20 (1828) 573-.
- —, —. *Haan, D. Bierens de. Amst. Vh.* 7 (1859) 52 pp.
- —, —. *Baire, R. C. R.* 129 (1899) 1010-.
- and indeterminate functions. *Wead, C. K.* [1900] *Wash. Ph. S. Ill.* 14 (1906) 65-.
- punctuated functions. *Volterra, V. G. Mt.* 19 (1881) 76-.
- Double functions, changes. *Decher, G. Grunert Arch.* 21 (1853) 423-; 27 (1856) 471-.
- Elimination, a functional. *Russell, W. H. L. Mess. Mth.* 1 (1872) 102.
- Empiric curves, deduction of true function from. *Pucci, E. Rm. R. Ac. Linc. Mm.* 6 (1889) 316-.
- functions, differentiation. *Runge, C. Z. Mth. Ps.* 42 (1897) 205-.
- Evaluation of functions in indeterminate form. *Unferdinger, F. Grunert Arch.* 26 (1856) 224-.
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- Fluctuating functions. *Hamilton, (Sir) W. R.* [1840] *Ir. Ac. T.* 19 (1843) 264-.
- Fractional functions, decomposition and transformation. *Rangoni, L.* [non *Gabba, A.*] *Brescia Cm.* (1830) 150-.
- Function satisfying no algebraic functional equation. *Hölder, O. Gött. Nr.* (1887) 662-.
- Functional analysis with application to parallelogram of forces. *Anon.* (vi 553) *Gergonne A. Mth.* 14 (1823-24) 350-.
- indices. *Liventsov, A. I.* (xii) *Rec. Mth. (Moscou)* 8 (1876) (Pt. 1) 277-.
- Functional powers. *Collins, E.* [1835] *St Pét. Ac. So. Mm.* 3 (1838) 313-.
- problems. *Abel, N. H. Mg. Ntvd.* 1 (1823) 216-; *Crelle J.* 2 (1827) 386-.
- —. *Decsy, S.* (xii) *Mag. Tud. Ak. Ets.* 7 (No. 6) (1873) 80-.
- symbols. *Cayley, A.* *QJ. Mth.* 4 (1861) 225-.
- Functions analogous to sine and cosine. *Olivier, L. Crelle J.* 2 (1827) 243-.
- , application to pure geometry. *Holst, E.* [1879] *Par. S. Mth. Ill.* 8 (1880) 52-.
- , approximate representation, application of method of least squares. *Schlömilch, O. Schlömilch Z.* 3 (1858) 124-.
- dependent on lines. *Volterra, V. Rm. R. Ac. Linc. Rd.* 3 (1887) (Sem. 2) 225-, 274-.
- determined by certain addition theorem. *Zignago, I. Rm. N. Linc. At.* 53 (1900) 139-.
- , differentiable, with infinitely close (*dicht*) maxima and minima. *Brodén, T. Stockh. Öfv.* (1900) 423-, 743-.
- expressible rationally in terms of one another. *Woepcke, C. Liouv. J. Mth.* 4 (1859) 339-.
- , having differential coefficient at every point, and oscillating infinitely often in every interval. *Pereno, I. G. Mt.* 35 (1897) 132-.
- — no derivative throughout one interval. *Dini, U. A. Mt.* 8 (1877) 121-.
- not expressible by Taylor's theorem. *Pringsheim, A. Mth. A.* 44 (1894) 41-.
- oscillating infinitely often, and discontinuous functions. *Hankel, H. Mth. A.* 20 (1882) 63-.
- of real arguments, classification by changes in least intervals. *Du Bois-Reymond, P.* [1874] *Crelle J. Mth.* 79 (1875) 21-.
- — one real variable. *Burnside, W. Mess. Mth.* 23 (1894) 39-.
- — — —. *Somigliana, C. Rm. R. Ac. Linc. Rd.* 8 (1899) (Sem. 1) 4-, 618.
- — — —. *Straneo, P. Rm. R. Ac. Linc. Rd.* 8 (1899) (Sem. 1) 438-, 618.
- — — —, analytic representation. *Weierstrass, K. Berl. Ak. Sb.* (1885) 633-, 789-.
- — — —, —. *Mittag-Leffler, G. Palermo Cir. Mt. Rd.* 14 (1900) 217-.
- — — — with derivatives of every order. *Maurer, L. Mth. A.* 41 (1893) 377-.
- — — — and their differential coefficients. *Harnack, A. Mth. A.* 23 (1884) 244-; 24 (1884) 217-.
- — — —, discontinuities. *Bettazzi, R. Palermo Cir. Mt. Rd.* 6 (1892) 173-.
- — — —, geometric mean value. *Lemoine, G. G. Mt.* 16 (1878) 209-.
- — — —, special class. *Study, E. Mth. A.* 46 (1896) 298-.
- — — —, theory. *Echols, W. H. A. Mth.* 8 (1898-94) 65-.
- — two real variables. *Borel, É. Par. Ec. Norm. A.* 13 (1896) 79-.

- Functions of two real variables. *Biermann, O.* Mth. A. 48 (1897) 393-.
- — — — —, and the idea of arbitrary function. *Borel, É.* C. R. 121 (1895) 811-.
- — — — —, within a finite range. *Ascoli, G.* Mil. I. Lomb. Rd. 22 (1889) 317-, 438-, 686-, 804-.
- — — several real variables, differentiation and integration. *Bettazzi, R.* G. Mt. 22 (1884) 133-, 200.
- with recurring derivatives. *Sang, E.* [1866] Edinb. R. S. T. 24 (1867) 523-.
- , representation by a curve (strip). *Klein, F.* (viii) Erlang. Sb. Ps. Md. S. 6 (1874) 52-.
- Harmonic functions of two real variables and functions of a complex argument, oscillations in values. *Schottky, E.* Crelle J. Mth. 117 (1897) 225-.
- Homogeneous functions, extension of Euler's theorem. *Philip, W. E.* Edinb. Mth. S. P. 18 (1900) 101-.
- Implicit functions of a real variable. *Ingrami, G.* Bologna Rd. (1888-89) 108-.
- — —, transformation into explicit. *Cauchy, A. L.* C. R. 38 (1854) 944-.
- — —, — — — monodromic and monogenous. *Cauchy, A. L.* C. R. 40 (1855) 878-.
- Integral polynomials of one variable. *Hermite, C.* N. Ts. Mth. 5 (B) (1894) 1-.
- Invariability of form. *Maizière, — de.* Gergonne A. Mth. 1 (1810-11) 368-.
- Irrational functions. *Cauchy, A. L.* C. R. 32 (1851) 68-, 162-.
- Isobaric calculus. *Cesáro, E. N. A.* Mth. 3 (1884) 561-; 4 (1885) 59-, 578.
- Lagrange's "Théorie des Fonctions Analytiques," note. *Poisson, S. D.* Liouv. J. Mth. 2 (1837) 140-, 189-.
- — — — —, — — —, Poisson's. *Poinsot, L.* C. R. 4 (1837) 559-.
- Limits of functions. *Matzka, W.* Prag Sb. (1878) 262-.
- , superior, of functions, calculation. *Cauchy, A. L.* C. R. 15 (1842) 138-.
- Mean value, theorem. *Stringham, I.* As. S. Pac. Ph. 2 (1890) 100-; 3 (1891) 112.
- Ordered functions. *Somigliana, C.* Rm. R. Ac. Linc. Rd. 8 (1899) (Sem. 2) 125-.
- Principle, fundamental, elementary proof. *Mansion, P.* B. A. Rp. (1876) (Sect.) 26-.
- Properties, behaviour, etc. *Scheffler, H.* Grunert Arch. 28 (1857) 121-.
- , general. *Ruffini, P.* [1806] Mod. S. It. Mm. 13 (1807) 292-.
- Rational functions, approximate square roots. *Bugaev, N. V.* [1881] (xii) Rec. Mth. (Moscow) 10 (1882-83) (Pt. 1) 524-.
- — —, elements of a theory. *Kraus, L.* Časopis 14 (1885) 49-; Fsch. Mth. (1885) 369-.
- Real non-analytic functions, development. *Painlevé, P.* C. R. 126 (1898) 459-.
- Reciprocal functions. *Cauchy, A. L.* Par. S. Phlm. Bl. (1818) 178-.
- Reciprocal relation of functions. *Raabe, J. L.* [1852] Zür. Mt. 3 (1853-55) 198-.
- Simple functions, gradation. *Oettinger, L.* Crelle J. 11 (1834) 75-, 173-; 12 (1834) 295-; 13 (1835) 292-.
- Singularities, new general condensation principle. *Cantor, G.* Mth. A. 19 (1882) 588-.
- Summatorial functions, properties. *Hill, C. J. D.* Sk. Nf. F. 8 (1860) 518-.
- Sums. (Björling.) *Falk, M.* Ts. Mt. Fys. 4 (1871) 71-.
- Systems. *Ricci, G.* Rm. R. Ac. Linc. Rd. 5 (1889) (Sem. 1) 112-.
- , *Stäckel, P.* Crelle J. Mth. 112 (1893) 311-.
- , inversion. *Kneser, A.* Mth. A. 45 (1894) 446-.
- Theorem. *Grolous, J.* Par. S. Phlm. Bl. 12 (1875) 95-.
- , *Tonelli, A.* A. Mt. 9 (1878-79) 173-.
- , *Poincaré, H.* Par. S. Mth. Bl. 11 (1883) 112-.
- , applications. *Krey, H.* Z. Mth. Ps. 26 (1881) 357-.
- on determination of  $u, v$  to satisfy  $uf(x) + vF(x) = R$ . *Cauchy, A. L.* Baumgartner Z. 1 (1826) 88-.
- Theorems. *Prym, F. E.* Crelle J. 71 (1870) 223-.
- , *Thomae, C. J.* Gött. Nr. (1878) 466-.
- , two, of Tehebitcheff's, generalisation. *Minine, A.* Les Mondes 55 (1881) 185-.
- Transformation of functions. *Deflers, —.* Par. S. Phlm. Bl. (1819) 161-.
- — —, *Nicholson, P.* Tilloch Ph. Mg. 62 (1823) 168-, 244-, 348-, 433-.
- — —, *Buquoy, G. von.* Oken Isis (1827) 130-.
- — —, *Collins, E.* St Pét. Ac. Sc. Mm. 1 (1831) 583-.
- — —, *Novi, G.* Tortolini A. 1 (1850) 517-.
- — —, *Schlämilch, O.* Liouv. J. Mth. 8 (1863) 99-.
- — —, general. *Boole, G.* Camb. and Dubl. Mth. J. 3 (1848) 112-.
- — — into isotropic means. *Cauchy, A. L.* C. R. 34 (1852) 159-; 43 (1856) 261-.
- — — by substitution. *Collins, E.* [1826] St Pét. Ac. Sc. Mm. 1 (1831) 181-.
- and simplification, methods by interpolation. *Richelmy, P.* [1855] Tor. Mm. Ac. 17 (1858) 245-.
- Weierstrass's function,  $f(x) = \sum_0^{\infty} b^n \cos(a^n \pi x)$ . *Wiener, L. C.* Crelle J. Mth. 90 (1881) 221-.
- $z = f(x, y)$ , graphic representation. *Lalanne, L.* Par. S. Phlm. PV. (1843) 71-.
- $f(x)f(x+1) \dots f(x+h)$ , value. *Gasparis, A. de.* Nap. Rd. 1 (1852) 199-.
- $F(x, y)$ , when a function of  $\phi(x, y)$ , conditions. *Dienger, J.* Grunert Arch. 21 (1853) 219-.
- $f(x)$ , Wronski's expansion. *Echols, W. H.* N. Y. Mth. S. Bl. 2 (1893) 178-.

### 3220 Infinite series; infinite products and other infinite processes. (See also 5610, 5620.)

#### INFINITE SERIES.

- Fontana, G. Verona S. It. Mm. 2 (1784) 386-.
- Paoli, P. Verona S. It. Mm. 4 (1788) 429-.
- Parseval, M. A. [1799] Par. Mm. Sav. Étr. 1 (1806) 638-.
- Bianchi, G. [1844] Mod. Mm. S. It. 23 (1846) 239-.
- Malmsten, C. J. Crelle J. 38 (1849) 1-.
- Dienger, J. Crelle J. 38 (1849) 266-, 331-.
- Tremoil, —. N. A. Mth. 9 (1850) 66.
- Björling, E. G. Stockh. Öfv. 10 (1853) 147-.
- Schlämilch, O. Schlämilch Z. 1 (1856) 180-; 5 (1860) 132-.
- Kinkelin, H. Bern Mt. (1858) 88-.
- Greer, H. R. QJ. Mth. 3 (1860) 262-, 370-.
- Isely, M. Neuch. Bl. 6 (1861-63) 356-.
- Cockle, Jas. [1863] (ii) Mess. Mth. 2 (1864) 196-.
- Lindman, C. F. Arch. Mth. Ps. 50 (1869) 219-.
- Enneper, A. Z. Mth. Ps. 15 (1870) 47-.
- Schlämilch, O. X. Leip. Mth. Ps. B. 29 (1877) 101-.
- Barbour, L. G. Des Moines Anal. 8 (1881) 191-.
- West, É. Liouv. J. Mth. 7 (1881) 111-.
- Catalan, E. C. Liège S. Sc. Mm. 12 (1885) No. 2, 148-, 152-, 206-, 282-, 294-.
- Cesáro, E. G. Teix. J. Sc. 7 (1886) 171-; 8 (1887) 15-.
- Biehler, C. N. A. Mth. 6 (1887) 243-.
- Gutzmer, A. G. Teix. J. Sc. 8 (1887) 81-.
- Studnička, F. J. Časopis 16 (1887) 81-; Fsch. Mth. (1887) 227.
- Weyr, E. G. Teix. J. Sc. 8 (1887) 97-.
- Catalan, E. Brux. Ac. Bil. 18 (1889) 41-.
- Tauber, A. Mh. Mth. Ps. 8 (1897) 273-.
- Absolutely summable series, series (M) and analytical continuation. Borel, É. C. R. 131 (1900) 830-.
- Algebraic series. Sidler, G. Zür. Vjschr. 1 (1856) 180-; Bern Mt. (1899) 13-.
- , new. Wallace, J. Silliman J. 7 (1824) 278-; 9 (1825) 98-.
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$$\int_0^{\infty} \int_0^{\infty} \phi(ax^m \pm by^n) x^{p-1} y^{q-1} dx dy,$$

$$\int_{-\infty}^{+\infty} \int_{-\infty}^{+\infty} \phi(ax^m \pm by^n) x^{p-1} y^{q-1} dx dy.$$

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$$\int_b^c \int_0^b \frac{\log(\mu^2 - v^2) d\mu dv}{\sqrt{(c^2 - \mu^2)(\mu^2 - b^2)(c^2 - v^2)(b^2 - v^2)}}.$$

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- $\theta$  functions of 3 variables, partial differential equations. *Wiltheiss, E.* Gött. Nr. (1889) 351-; Mth. A. 38 (1891) 1-.
- integrals, reduction. *Poincaré, H.* C. R. 102 (1886) 915-.
- Algebraic surfaces, class. *Humbert, G.* [1889] Palermo Cir. Mt. Rd. 4 (1890) 54-.
- Characteristics,  $p$ -rowed, theorem. *Moore, E. H.* N. Y. Am. Mth. S. Bl. 1 (1895) 252-.
- Convergence of Jacobi's  $\theta$  series with Riemann's moduli. *Christoffel, E. B.* Zür. Vjschr. 41 (1896) (Festschr., Th. 2) 3-.
- Differential equations, integrals of which are Abelian functions of 1st kind, two systems. *Caspary, F.* C. R. 112 (1891) 1305-.
- of theta functions, formation. *Caspary, F.* C. R. 112 (1891) 1120-.
- Doubly periodic functions, uniform, behaviour at essential singularities. *Appell, P.* C. R. 94 (1882) 936-.
- Elliptic Abelian functions of 4 variables. *Schottky, F.* Crelle J. Mth. 108 (1891) 147-, 193-.
- Function, single-valued, of  $n$  variables cannot have more than  $2n$  periods. *Riemann, [G. F.] B.* Crelle J. 71 (1870) 197-.
- Functions of 3rd kind. *Tichomandrckij, M. A.* Kharkov Mth. S. Com. 5 (1896?) 182-; Ftschr. Mth. (1896) 360.
- with 4 pairs of periods. *Humbert, G.* C. R. 130 (1900) 483-.
- 2 real periods, class. *Staupe, O.* Mth. A. 29 (1887) 468-.
- of 2 variables analogous to modular functions. *Picard, É.* Acta Mth. 2 (1883) 114-.
- — — — — Weierstrass's elliptic functions. *Pokrovskij, P. M.* Rec. Mth. (Moscou) 18 (1896) 598-; Ftschr. Mth. (1896) 360.
- — — — — with 3 or 4 pairs of periods. *Appell, P.* C. R. 90 (1886) 174-.
- — — — — several pairs of periods. *Appell, P.* C. R. 110 (1890) 181-.
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- Functions of  $n$  variables admitting  $2n$  systems of periods, Riemann's theorem. *Picard, É., & Poincaré, H.* C. R. 97 (1883) 1284-.
- Hyperabelian functions and surfaces representable by them. *Humbert, G.* C. R. 129 (1899) 667-.
- Inversion problem. *Elliot, Z.* C. R. 90 (1880) 1466-.
- — — — —, Jacobi's. *Noether, M.* Erlang. Ps. Md. S. Sb. 16 (1884) 88-.
- Jacobian functions of  $k$ th order of 2 variables. *Witting, A.* Mth. A. 29 (1887) 157-.
- — — — — 3 variables. *Frobenius, G.* Crelle J. Mth. 105 (1889) 35-.
- — — — — several variables. *Weierstrass, C. T.* W. Bil. Sc. Mth. As. 6 (1882) (Pt. 1) 136-.
- Lamé's differential equation, generalisation. *Grönwall, H.* Stockh. Öfv. (1898) 357-.
- Linear equations integrable with the help of  $\chi_m(x, y)$ . *Appell, P.* Par. Éc. Norm. A. 5 (1888) 211-.
- Periodic functions,  $2n$ -ply. *Wirtinger, W.* Mh. Mth. Ps. 6 (1895) 69-; 7 (1896) 1-.
- — — — —, application to total differential equations. *Grönwall, H.* Stockh. Öfv. (1896) 295-; Ftschr. Mth. (1896) 285-.
- — — — —, of  $r$  variables. *Weierstrass, C. T.* W. Crelle J. Mth. 89 (1880) 1-.
- — — — —, special 4-ply. *Roch, G.* Z. Mth. Ps. 11 (1866) 463-.
- — — — — of 2 variables. *Appell, P.* C. R. 111 (1890) 636-; Liouv. J. Mth. 7 (1891) 157-.
- — — — —,  $n$  variables. *Puiseux, V.* C. R. 43 (1856) 321-.
- — — — —, demonstration of a leading theorem. *Weierstrass, C. T. W.* Berl. Ak. Mb. (1876) 680-.
- — — — —, most general uniform and  $2n$ -ply. *Weierstrass, C.* Berl. Mb. (1869) 853-.
- Periodicity, general, theory. *Rausenberger, O.* Mth. A. 18 (1881) 579-.
- Periods of double integrals. *Picard, É.* C. R. 102 (1886) 349-.
- — — — —. *Poincaré, H.* C. R. 125 (1897) 995-.
- — — — — of algebraic functions. *Picard, É.* C. R. 125 (1897) 1068-.
- — — — —, calculation. *Picard, É.* C. R. 102 (1886) 410-.
- — — — — and two-dimensional cycles on algebraic surfaces. *Picard, É.* C. R. 126 (1898) 1457-.
- — — — — uniform  $2n$ -ply periodic functions. *Hurwitz, A.* [1882] Crelle J. Mth. 94 (1883) 1-.
- Potential, properties; and Abelian functions. *Poincaré, H.* Acta Mth. 22 (1899) 89-.
- Quadruply periodic expressions. *Picard, É.* Par. S. Mth. Bl. 17 (1889) 131-.
- — — — — depending on 2 variables. *Picard, É.* C. R. 108 (1889) 557-.
- — — — —. *Appell, P.* C. R. 108 (1889) 607-.
- — — — — functions of 2nd kind, systems of differential equations satisfied by. *Krause, M.* C. R. 126 (1898) 1086-, 1489-, 1618-; 127 (1898) 91-; A. Mt. 1 (1898) 265-.



- Quadruply periodic functions of 2nd and 3rd kinds. *Krause, M.* Liouv. J. Mth. 3 (1887) 87-.
- — — satisfying systems of differential equations. *Krause, M.* N. Y. Am. Mth. S. T. 1 (1900) 287-.
- — — of 2 variables. *Picard, É.* C. R. 124 (1897) 1490-.
- — — —, of 3rd kind. *Appell, P.* Par. Éc. Norm. A. 7 (1890) 143-.
- — series. *Picard, É.* C. R. 108 (1889) 659-.
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- Theta characteristics. *Noether, M.* Erlang. Ps. Md. S. Sb. 11 (1879) 198-.
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- —, equations for  $\theta(0, 0, \dots, 0)$ . *Fuchs, L.* Crelle J. 73 (1871) 324-.
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- Theta functions with multiple arguments. *Roch, G.* Crelle J. 66 (1866) 177-.
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- —, multiplication of four, formula. *Smith, H. J. S. L.* Mth. S. P. 1 (1866) No. 8, 14 pp.
- —, particularly those of 2 variables. *Forsyth, A. R.* [1881] Phil. Trans. 173 (1883) 783-.
- —, quadruple. *Craig, T.* Am. J. Mth. 6 (1884) 14-, 183-.
- —, single and double. *Cayley, A.* [1879] Phil. Trans. 171 (1880) 897-.
- —, theorems, generalisation of two. *Elliot, Z. C. R.* 90 (1880) 352-.
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- — — —. *Darboux, G.* C. R. 92 (1881) 685-, 1493-.
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- — — —, — systems for derivatives. *Jahnke, E.* C. R. 125 (1897) 486-.
- — — —, reduction to theta functions of one variable. *Appell, P.* C. R. 94 (1882) 421-.
- — — —, relations. *Staudé, O.* Mth. A. 24 (1884) 281-.
- — — —, —. *Igel, B.* Mh. Mth. Ps. 2 (1891) 157-.
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- Theta functions of 3 variables. *Borchardt*, *C. W.* [1878] *Crelle J. Mth.* 87 (1879) 169-.
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- , algebraic investigations. *Schottky*, *F.* *Crelle J. Mth.* 105 (1889) 269-.
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- *p* variables. *Dalwigk*, *F. von.* *Ac. Nt. C. N. Acta* 57 (1892) 221-.
- , vanishing. *Stahl*, *H.* *Crelle J. Mth.* 88 (1880) 117-.
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- $d \log \theta (0, 0, \dots, 0)$ , determination by class-moduli. *Thomae*, *J.* [1865] *Crelle J.* 66 (1866) 92-.
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- , Raabe's monograph. *Saalschütz*, *L. Z. Mth. Ps.* 42 (1897) 1-.
- , and its use in semi-convergent series. *Schlömilch*, *O.* *Schlömilch Z.* 1 (1856) 193-.
- functions. *Imshenetsky*, *V. G. G. Mt.* 9 (1871) 87-.
- , *Schröder*, —. *D. Nf. Vh.* (1890) (*Th.* 2) 5-.
- , application to series. *Berger*, *A.* *Stockh. Öfv.* (1891) 523-; *Fschr. Mth.* (1891) 274-.
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- , class of functions related to. *Beaupain*, *J.* *Brux. Mm. Cour.* 4<sup>o</sup>, 59 (1901) (*Pt.* 1) 33 pp.
- , connection with Riemann's surface. *Jonquière*, *A.* [1890] *Stockh. Ak. Hndl. Bh.* 16 (*Afd.* 1) (1891) *No.* 6, 28 pp.
- , definitions. *Renfer*, *H.* *Bern Mt.* (1900) 1-.
- , expansion in. *Rogel*, *F.* *Arch. Mth. Ps.* 17 (1900) 129-.
- , generalisation. *Imshenetsky*, *V. G.* *St. Pét. Ac. Sc. Mm.* 31 (1883) *No.* 11, 58 pp.
- and numbers. *Berger*, *A.* *Stockh. Ak. Hndl. Bh.* 13 (*Afd.* 1) (1888) *No.* 9, 43 pp.; *Stockh. Öfv.* (1888) 433-; *Acta Mth.* 14 (1890-91) 249-.
- , resolution into partial fractions. *Worpietzky*, *J.* *Z. Mth. Ps.* 29 (1884) 45-.
- polynomial. *Platner*, *G.* *Mil. I. Lomb. Rd.* 25 (1892) 1179-.
- polynomials. *Sonin*, —, & *Hermite*, —. *Crelle J. Mth.* 116 (1896) 133-.
- , approximate values. *Appell*, *P.* *N. A. Mth.* 6 (1887) 547-.
- and numbers. *Pietrocola*, *C. G. Mt.* 34 (1896) 48-.
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- , *Poincaré*, *H.* *Am. J. Mth.* 14 (1892) 201-.
- , *Cayley*, —. *QJ. Mth.* 26 (1893) 279-.
- , *Krygowski*, *Z.* *Par. S. Mth. Bll.* 25 (1897) 240-; *Prace Mt.-Fiz.* 9 (1898) 213-; *Fschr. Mth.* (1898) 352.
- , *Pscheborsky*, *A. P.* *Fschr. Mth.* (1897) 357.
- , case. *Goursat*, *É.* *Bll. Sc. Mth.* 17 (1893) 247-.
- , Goursat's theorem. *Pscheborsky*, *A. P.* *Fschr. Mth.* (1897) 356-.
- lacunary circle. *Gomes Teixeira*, *F.* *Bll. Sc. Mth.* 17 (1893) 29-.

## Other special functions.

## 4400 General.

- Bernoullians, Raabe's. *Dickson*, *J. D. H.* [1888] *L. Mth. S. P.* 20 (1889) 14-.
- Bernoulli's function. *Hermite*, *C.* [1874] *Crelle J. Mth.* 79 (1875) 339-.

Functions representable by Heine's series. *Thomae, J.* [1868] *Crelle J.* 70 (1869) 258-.

— of real variables possessing distributive property. *Volpi, R.* *G. Mt.* 35 (1897) 104-.

— 2 variables arising from inversion of integrals of two given functions. *Fuchs, L.* *Gött. Ab.* 27 (1881) 39 pp.

Higher sines of 4th order

$$\left[ \frac{z^\mu}{\mu!} \pm \frac{z^{\mu+n}}{\mu+n!} + \frac{z^{\mu+2n}}{\mu+2n!} \pm \dots (n=4) \right].$$

*Kapteyn, J. C., & Kapteyn, W.* *Amst. Ak. Vh.* 24 (1886) 98 pp.

— — — *n*th order. *Kapteyn, J. C., & Kapteyn, W.* *Wien Ak. Sb.* 93 (1886) (*Ab.* 2) 807-.

Infinite group of rational integral functions

$$\left[ R_n x = (-1)^n e^x \frac{d^n}{dx^n} (e^{-x} \cdot x^n) \right].$$

*Berger, A.* *Stockh. Öfv.* (1899) 175-.

Integral derived from continued fraction, theorem of Hermite. *Gegenbauer, L.* *Wien Ak. Sb.* 92 (1886) (*Ab.* 2) 995-.

— transcendental functions, distribution of roots of class. *Bukreev, B. Ja.* [1893] *Rec. Mth.* (Moscou) 17 (1895) 217-; *Fschr. Mth.* (1893-94) 678.

Iterative functions. *Farkas, J.* *Liouv. J. Mth.* 10 (1884) 101-.

— — — *Netto, E.* *Mth. A.* 29 (1887) 148-.

— — — differential coefficients, at limiting point. *Lémeray, —.* *Par. S. Mth. Bil.* 25 (1897) 51-.

— — — theorem. *Lémeray, —.* *Par. S. Mth. Bil.* 23 (1895) 255-.

— — — in theory of integral transcendental functions. *Hill, C. J. D.* *Crelle J.* 11 (1834) 193-.

*Prym's* function, generalisation. *Nielsen, N. N. Ts.* *Mth.* 11 (B) (1900) 73-; *Fschr. Mth.* (1900) 440-.

Pseudo- and hyper-Bernoullian functions and their applications. *Longchamps, G. de.* *Brux. Mm. Cour.* 4<sup>o</sup>, 52 (1890-93) No. 1, 41 pp.

Recurring function  $c_n = \sum_{\nu=0}^n (-1)^\nu \binom{n}{\nu} c_\nu$ .

*Lerch, M.* *Časopis* 22 (1893) 31-; *Fschr. Mth.* (1893-94) 409-.

Repeated exponentials. *Gravé, D.* *N. A. Mth.* 17 (1898) 80-.

Riemann's  $\zeta(s)$  function, generalisation. *Mellin, H.* *Helsingf. Acta* 24 (1899) No. 10, 50 pp.

— — — for odd values of argument. *Lerch, M.* *G. Teix. J. Sc.* 14 (1900) 65-.

Theorem of Stieltjes, and functions defined by continued fractions. *Koch, H. von.* *Par. S. Mth. Bil.* 23 (1895) 33-.

Transcendental function, new. *Soldner, J.* *Zach M. Cor.* 23 (1811) 182-.

— — —, in relation with functions  $\Gamma$  and  $Z$ . *Blaserna, P.* *Rm. R. Ac. Linc. Mm.* 1 (1894) 499-.

— functions. *Broch, O. J.* *Crelle J.* 20 (1840) 178-; *N. Mg. Ntvd.* 2 (1840) 297-.

— — — with algebraic differentials. *Hermite, C.* *C. R.* 18 (1844) 1133-.

Transcendental functions, arithmetical property. *Hurwitz, A.* *Mth. A.* 32 (1888) 583-.

— — —, case. *Hölder, O.* *Gött. Nr.* (1886) 514-.

— — —, classification; and general theory of integration. *Drach, J.* *Par. Éc. Norm. A.* 15 (1898) 243-.

— — —, comparison. *Boole, G.* *Phil. Trans.* (1857) 745-.

— — —, theorem of Sturm. *Liouville, J.* *Liouv. J. Mth.* 1 (1836) 269-.

— — —,  $Z'(a)$  and  $G_a$ , and calculation of their values for several values of  $a$ . *Lindman, C. F.* [1863] *Stockh. Ak. Hndl.* 5 (1866) No. 2, 18 pp.

— quantities. *Liouville, J.* *Liouv. J. Mth.* 16 (1851) 133-.

Transcendently transcendental functions. *Moore, E. H.* *Mth. A.* 48 (1897) 49-.

Trigonometric null-representations, special class. *Rogel, F.* *Arch. Mth. Ps.* 15 (1897) 431-.

$\int x^{s-\gamma p-1} F(x^p) (R(x^p))^{\frac{s}{rp}} dx$ . *Broch, O. J.* *Crelle J.* 23 (1842) 145-, 201-.

$aa'$ ; development. *Eisenstein, G.* *Crelle J.* 28 (1844) 49-.

— and corresponding inverse functions. *Woeypcke, F.* *Crelle J.* 42 (1851) 83-.

$x^x$ . *Le Cointe, J. L. A.* (viii) *A. Mt.* 5 (1863) 106-.

$\sum e^{2k\pi i x} / (w+k)^s, k=0$  to  $\infty$ . *Lerch, M.* *Acta Mth.* 11 (1887-88) 19-.

$C_n''(x)$ . *Gegenbauer, L.* *Wien Ak. Sb.* 97 (1889) (*Ab.* 2a) 259-.

— — —, addition theorem. *Gegenbauer, L.* *Wien Ak. Sb.* 102 (1893) (*Ab.* 2a) 942-.

$y$  defined by  $\sum a_r x^r y^s = 0$ . *Melander, K.* *Fschr. Mth.* (1890) 409.

$\Sigma \left( \frac{w^{n\sigma}}{\sin n\sigma\pi} + (-w)^n \frac{1}{\sigma} \cot \frac{m\pi}{\sigma} \right)$ , new form of analytical expression. *Lerch, M.* *Prag České Ak. Fr. Jos. Rz.* (*Trída* 2) 9 (1900) *Art.* 6, 17 pp.; *Fschr. Mth.* (1900) 401-.

### 4410 Eulerian functions.

*Bourguet, L.* *C. R.* 96 (1883) 1307-.

Analogues to Eulerian functions. *Appell, P.* [1879-81] *C. R.* 86 (1878) 953-; 89 (1879) 841-, 1031-; *Mth. A.* 19 (1882) 84-.

— — — — —. *Ciani, V.* *G. Mt.* 29 (1891) 68-.

Analytic factorials, coefficients. *Gambardella, F.* *G. Mt.* 11 (1873) 49-, 86-.

Approximate value of  $n!$  *Malfatti, G. F.* *Verona S. It. Mm.* 4 (1788) 206-.

Asymptotic value of  $\sqrt[n]{a}$  when  $a$  is great. *Hermite, —.* *Am. J. Mth.* 17 (1895) 6-.

Bernoulli's theorem, gamma-function and Laplace's integral. *Eggenberger, J.* *Bern Mt.* (1893) 110-, 236.

Binet's formula. *Genocchi, A.* *Brux. Ac. Bil.* 20 (1853) (*pte.* 2) 392-; *Tortolini A.* 5 (1854) 150-.

— — — for  $\omega(\mu)$ , generalisation. *Tilly, J. M. de.* *Brux. Ac. Bil.* 38 (1874) 67-.

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$$0 = F'(-2m-1, -n, -2n, 2)$$

$$(-1)^m = \frac{n_m}{(2n)_{2m}} = F(-2m, -n, -2n, 2).$$

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$T \frac{dy}{dx} + U = 0$ , where  $P, Q$ , etc. are functions of  $x$  and  $y$ . *Tychsen, C. Mth. Ts. 6 (1864) 145-.*

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$$\frac{d^2y}{dx^2} + \left[ 2\nu \frac{k^2 \sin x \cos x}{\sin x} + 2\nu_1 \frac{\sin x \, dx}{\cos x} \right.$$

$\left. - 2\nu_2 \frac{\cos x \, dx}{\sin x} \right] \frac{dy}{dx} = \text{etc. } \textit{Sparre (le comte)}$

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- $a_2y'' + (a_1 + b_1x)y' + b_0xy = 0$ . *Spitzer, S.* Grunert Arch. 38 (1862) 462-.
- $(a_n + b_nx)y^{(n)} + (a_{n-1} + b_{n-1}x)y^{(n-1)} + \dots + (a_1 + b_1x)y' + (a_0 + b_0x)y = 0$ . *Spitzer, S.* Schlömilch Z. 7 (1862) 264-.
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- of  $(c_2x^2 + b_2x + a_2)y'' + (b_1x + a_1)y' + a_0y = 0$ , application of Žmurko's improvement of Laplace's method. *Rajewski, J.* *Krk. Ak. (Mt.-Prz.)* Pam. 9 (1884) 120-; *Fschr. Mth.* (1884) 287-.
- $\Sigma (a_n + b_n x) \frac{d^2y}{dx^2} = 0$ . *Nekrasov, P. A.* [1889] *Rec. Mth. (Moscou)* 14 (1890) 344-; *Fschr. Mth.* (1889) 334.
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- Hargreave, C. J.* [1847] *Phil. Trans.* (1848) 31-.
- De Morgan, A.* *Camb. and Dubl. Mth. J.* 4 (1849) 137-.
- Brownin, B.* [1850] *Phil. Trans.* (1851) 461-.
- Graves, C.* *Ir. Ac. P.* 6 (1853-54) 1-.
- Jordan, C.* *C. R.* 73 (1871) 787-.
- analogous to Riccati's, of equations of form  $\frac{d^2y}{dx^2} = xmy$ . *Fields, J. C.* [1886] *J. H. Un. Cir.* [6] (1886-87) 29-.
- application of calculus of finite differences. *Russell, W. H. L.* *QJ. Mth.* 1 (1857) 23-.
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- depending on multiple types. *Routh, E. J.* *L. Mth. S. P.* 14 (1882-83) 144-.



$\frac{d^2y}{dx^2} + F(x) \cdot y = 0$ , and other equations. *Bras-*  
*sinne, E.* Toul. Mm. Ac. 2 (1846) 326-;  
3 (1847) 204-; 1 (1863) 483-.

$$x^{n-1}(a_n + b_n x)y^{(n)} + x^{n-2}(a_{n-1} + b_{n-1}x)y^{(n-1)} + \dots + (a_1 + b_1x)y' + b_0y = 0.$$

*Malmsten, C. J.* Crelle J. 39 (1850) 99-.

$$y''_x + \frac{y'_x}{x} + Ax^m y = 0. \text{ Malmsten, C. J. Crelle J. 39 (1850) 108-}$$

$$\sum_{r=0}^{r=m} (a_r + b_r x^p) x^{(m-r)} y^{(m-r)} = \sum_{r=0}^{r=p} c_r x^r p. \text{ Most, R. Z. Mth. Ps. 15 (1870) 427-}$$

$$xy'' + ky' - y = 0. \text{ Le Paige, C. M. M. H. H. Brux. Ac. Bll. 41 (1876) 1011-}$$

$$x(1-x)\frac{d^2y}{dx^2} + \left(\frac{2}{3} - \frac{7}{6}x\right)\frac{dy}{dx} + \frac{1}{48}y = 0, \text{ solution.}$$

*Cockle, (Sir) Jas.* QJ. Mth. 17 (1881) 293-.

$$x\frac{d^2y}{dx^2} + \frac{dy}{dx} + y(x+A) = 0, \text{ from theory of reflection of sound. Sharpe, H. J. Mess. Mth. 10 (1881) 174-}$$

$$x\frac{d^2y}{dx^2} + \frac{dy}{dx} + y(x-A) = \frac{d}{dx} \cdot \frac{\cos(x+l)}{x+l}, \text{ from theory of sound. Sharpe, H. J. [1881] Mess. Mth. 11 (1882) 41-}$$

$$\frac{d^2y}{dx^2} - (ae^x + 2)\frac{dy}{dx} + y = 0. \text{ Florov, P. S. (XII) Kharkov Mth. S. Com. (1883) 127-; Fsch. Mth. (1884) 288.}$$

$$(a + bx + cx^2)\frac{d^2v}{dx^2} + (a + bx + cx^2)(a_1 + b_1x)\frac{dv}{dx} + (a_0 + b_0x + c_0x^2)v = 0.$$

*Heymann, W.* Z. Mth. Ps. 28 (1883) 241-.

$$\frac{d^n u}{dx^n} = x^m u. \text{ Florov, P. S. Kharkov Mth. S. Com. (1885) 131-; Fsch. Mth. (1886) 302.}$$

$$\frac{d^n \omega}{dx^n} = e^k \omega. \text{ Florov, P. S. Kharkov Mth. S. Com. (1887) 81-; Fsch. Mth. (1887) 337-}$$

## 4860 Integration of ordinary linear equations by definite integrals. (See also 4430.)

*Mainardi, G.* A. Sc. Lomb. Ven. 7 (1837) 185-.

*Wantzel, L.* C. R. 17 (1843) 1191-.  
*Spitzer, S.* Schölmilch Z. 3 (1858) 224-; 4 (1859) 37-.

*Steen, A.* [1868-80] Sk. Nf. F. 10 (1869) 101-; Kjöv. Ov. (1880) 237-.

*Pincherle, S.* Bologna Ac. Sc. Mm. 2 (1891) 523-.

*Schlesinger, L.* C. R. 120 (1895) 1396-.  
Bilinear relations between hypergeometric integrals. *Hirsch, A.* Mth. A. 52 (1899) 130-.

Cases. *Lobatto, R.* Crelle J. 17 (1837) 363-.

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Equation, 2nd order. *Hoppe, R.* Grunert Arch. 27 (1856) 55-.

—, —, with linear coefficients. *Thomae, J.* Z. Mth. Ps. 14 (1869) 349-.

— with rational coefficients, relations due to definite integrals. *Mellin, H.* Helsingf. Acta 21 (1896) No. 6, 57 pp.

Hypergeometric equation. *Lětnikov, A. V.* Rec. Mth. (Moscou) 11 (\*1883-84) 327-; Fsch. Mth. (1884) 273-.

Integrable equations. *Nekrasov, P. A.* Rec. Mth. (Moscou) 15 (1891) 277-, 608-; Mth. A. 38 (1891) 509-.

Integral, general, of

$$x^n \frac{d^n y}{dx^n} + A_1 x^{n-1} \frac{d^{n-1} y}{dx^{n-1}} + A_2 x^{n-2} \frac{d^{n-2} y}{dx^{n-2}} + \dots + A_n y = f(x),$$

formula for, by multiple definite integral.

*Aoust, —.* C. R. 96 (1883) 775-.

Integration by definite integrals of product of 2 arbitrary functions, cases. *Boussinesq, J.* C. R. 94 (1882) 33-.

—, method. *Petzval, J.* Haidinger Ab. 1 (1847) 177-.

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Spitzer's priority claims. *Petzval, J.* [1857] Wien SB. 28 (1858) 253-.

Tissot's equation. *Pochhammer, L.* Mth. A. 37 (1890) 512-.

Total differential equations. *Du Bois-Rey-*  
*mond, P.* [1868] Crelle J. 70 (1869) 299-.

$$\frac{d^n y}{dx^n} = x^m y. \text{ Kummer, E. E. Crelle J. 19 (1839) 286-}$$

$$xy'' + (r+qx)y' + (p+nx+mx^2)y = 0. \text{ Spitzer, S. Grunert Arch. 23 (1854) 121-}$$

$$x^m \frac{d^n y}{dx^n} = \pm y. \text{ Spitzer, S. C. R. 48 (1859) 746-; Crelle J. 57 (1860) 82-}$$

$$x^m \frac{d^n y}{dx^n} = ay. \text{ Spitzer, S. C. R. 48 (1859) 995-}$$

$$y''' = xy' - ny. \text{ Spitzer, S. Schölmilch Z. 7 (1862) 113-}$$

$$x^2 y''' = y. \text{ Spitzer, S. Schölmilch Z. 8 (1863) 292-}$$

$$y^{(n)} = Ax^2 y'' + Bxy' + Cy. \text{ Spitzer, S. [1870] Mth. A. 3 (1871) 453-}$$

### 4870 General theory of ordinary equations, not linear, of the first order.

- Bugaev, N. V.* (xii) *Rec. Mth.* (Moscou) 3 (1868) (Pt. 1) 249-.
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- — — — — non-integrable group of projective automorphic transformations. *Fano*, G. Tor. Ac. Sc. Mm. 46 (1896) 187-.
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- Infinitesimal transformations of plane curve with corresponding differential invariants. *Arvay, W., & Komperda, H.* Prace Mt.-Fiz. 10 (1899-1900) 113-; Fsch. Mth. (1899) 540.
- Integral invariant of Poincaré. *Picart, L.* Bordeaux S. Sc. PV. (1898-99) 124-.
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- , application to reduction of differential equations to canonical type. *Koenigs, G. C. R.* 121 (1895) 875-.
- of continuous transformation groups. *Żorawski, K.* Krk. Ak. (Mt.-Prz.) Rz. 8 (1895) 232-; Crc. Ac. Sc. Bil. (1895) 127-.
- , theory, corollary of theory of differential invariants. *Lie, S.* Leip. Mth. Ps. B. 49 (1897) 342-.
- , and their use in theory of differential equations. *Lie, S.* Leip. Mth. Ps. B. 49 (1897) 369-.
- Invariant differential expressions. *Hazzidakis, J. N.* Crelle J. Mth. 104 (1889) 102-.
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*Page, J. M.* A. Mth. 12 (1898-99) 182-.
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- of class of equations of 1st order. *Elliot, Z. C. R.* 110 (1890) 629-.
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- — transformation groups. *Tresse, A.* Acta Mth. 18 (1894) 1-.
- , covariants and quotient-derivatives associated with differential equations. *Forsyth, A. R.* [1888] Phil. Trans. (A.) 179 (1889) 377-.
- of differential quadratics. *Maschke, H.* N. Y. Am. Mth. S. T. 1 (1900) 197-, 508.
- , form. *Medolaghi, P.* Rm. R. Ac. Linc. Rd. 7 (1898) (Sem. 1) 145-.
- , — with reference to certain groups. *Cotton, É.* C. R. 128 (1899) 495-.
- in general theory of surfaces. *Żorawski, K.* Krk. Ak. (Mt.-Prz.) Rz. 8 (1895) 1-; Crc. Ac. Sc. Bil. (1895) 91-.
- of Goursat and Painlevé. *Lovett, E. O.* Am. J. Mth. 22 (1900) 40-.
- — infinite continuous transformation group. *Żorawski, K.* Krk. Ak. (Mt.-Prz.) Rz. 4 (1893) 41-; Fsch. Mth. (1893-94) 635-.
- linear differential equations. *Laguerre, E. C. R.* 88 (1879) 224-.
- — — — *Rivereau, —.* Toul. Fac. Sc. A. 4 (1890) M, 5 pp.
- — homogeneous differential equation. *Mittag-Leffler, G.* C. R. 109 (1889) 637-; Stockh. Öfv. (1889) 427-.
- — partial equations. *Le Roux, J. C.* R. 126 (1898) 721-.
- — — — *Cotton, É.* Par. Éc. Norm. A. 17 (1900) 211-.
- , Malet's, identification with Sir James Cockle's criticooids. *Harley, (Rev.) R. R. S. P.* 38 (1885) 45-.
- Invariants, Malet's, identification with Sir James Cockle's criticooids. *Malet, J. C. R. S. P.* 38 (1885) 211-.
- of motion of continuous material system. *Żorawski, K.* [1900] Krk. Ak. (Mt.-Prz.) Rz. 18 (1901) 353-; Crc. Ac. Sc. Bil. (1900) 367-.
- of skew curves. *Halphen, G. H.* Par. Éc. Pol. J. Cah. 47 (1880) 1-.
- — surface with reference to conformal transformations of space. *Tresse, A. C. R.* 114 (1892) 948-.
- — system of  $m$  points by projective transformation. *Lovett, E. O.* Am. J. Mth. 21 (1899) 168-; 22 (1900) 46-.
- — — —  $m+1$  points with reference to projective transformations. *Lovett, E. O. C. R.* 127 (1898) 346-.
- — transformation groups, extension of concept. *Killing, W.* Mth. A. 35 (1890) 423-.
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- Multilinear partial differential operator. *Mac Mahon, P. A. L. Mth. S. P.* 18 (1886-87) 61-.
- Pfaff-invariants. *Cayley, —.* QJ. Mth. 26 (1893) 195-.
- Point invariants of ordinary differential equation, 2nd order. *Tresse, A. C. R.* 120 (1895) 429-; Leip. Jablon. Preisschr. 32 (1896) 87 pp.
- — — — partial differential equations, 2nd order. *Medolaghi, P.* Rm. R. Ac. Linc. Rd. 6 (1897) (Sem. 2) 247-, 313-.
- Primary forms of linear differential equations, 2nd order. *Schlesinger, L. C. R.* 115 (1892) 32-.
- Projective cyclic concomitants. *Elliott, E. B. L. Mth. S. P.* 20 (1889) 131-.
- invariants for curves of hyperspace. *Berzolari, L. A. M.* 26 (1897) 1-.
- Quantoids. *Cockle (Sir) Jas. Ph. Mg.* 30 (1865) 347-.
- Reciprocants. *Sylvester, J. J.* Mess. Mth. 15 (1886) 88-.
- , homographic and circular. *Rogers, L. J. L. Mth. S. P.* 17 (1887) 220-, 344-; 18 (1886-87) 130-.
- , integrable, class. *Hammond, J. L.* Mth. S. P. 17 (1887) 128-.
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- , method, as containing an exhaustive theory of singularities of curves. *Sylvester, J. J.* Nt. 33 (1886) 222-, 331-.
- , perpetuant. *MacMahon, P. A. L. Mth. S. P.* 17 (1887) 139-.
- , pure irreducible, of 4th order. *Sylvester, J. J. C. R.* 102 (1886) 152-.
- , —, tables to weight 8. *Cayley, A.* Am. J. Mth. 15 (1893) 75-.
- , ternary, and allied functions. *Elliott, E. B. L. Mth. S. P.* 19 (1889) 6-.
- , —, differential equations. *Elliott, E. B.* [1886] L. Mth. S. P. 18 (1886-87) 142-.
- , simultaneous. *Berry, A.* QJ. Mth. 23 (1889) 260-.

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- , — and  $n$ -ary. *Elliott, E. B.* *L. Mth. S. P.* 17 (1887) 172-.
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- , —, results connected with. *Leudesdorf, C.* *L. Mth. S. P.* 17 (1887) 197-.
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- Singularities of partial differential equations, 1st order. *Marotte, F. C. R.* 123 (1896) 933-.
- Ternary quadratic forms. *Ricci, G.* *Rm. R. Ac. Linc. Rd.* 5 (1889) (*Sem.* 1) 643-.
- Transformations with differential invariant. *Haton de la Goupillière, J. N.* *Liouv. J. Mth.* 2 (1876) 241-.

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- Applied mathematics. *Franceschinis, F. M.* *Mil. G. S. Inc.* 4 (1808) 1-.
- —. *Runge, C.* *Mth. A.* 44 (1894) 437-.
- Calculus, application to interpretation of natural phenomena and discovery of their laws. *Pérard, L.* *Brux. A. Un.* (1849-50) 469-.
- of residues, application to mathematical physics. *Cauchy, A. L.* *Par. Mm. Ac. Sc.* 7 (1827) 463-.
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- Dirichlet's integral. *Broden, T.* *Mth. A.* 52 (1899) 177-.
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- — of transformation applied to
- $$\frac{\partial X}{\partial x} + \frac{\partial Y}{\partial y} + \frac{\partial Z}{\partial z}.$$
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- Expansion of arbitrary functions of 1 variable in trigonometric series, history. *Sachse, A.* *Z. Mth. Ps.* 25 (1880) (*Suppl.*) 229-.
- — functions in series of continuous functions with varying parameter. *Pagani, G. M.* [1828] *Brux. Ac. Sc. Mm.* 5 (1829) 5-.
- — — — — periodic quantities, with applications. *Poisson, S. D.* *Par. Éc. Pol. J.* 18<sup>e</sup> cah. (1820) 417-.
- — — — — terms of which satisfy same differential equation of 2nd order with variable parameter. *Liouville, J.* [1835-37] *Liouv. J. Mth.* 1 (1836) 253-; 2 (1837) 16-, 418-.
- — — — — linear differential equation with variable parameter. *Liouville, J., & Sturm, C.* *Liouv. J. Mth.* 2 (1837) 220-.
- Green's function, existence in plane simply connected region. *Osgood, W. F.* *N. Y. Am. Mth. S. T.* 1 (1900) 310-.

- Harmonic functions. *Harris, R. A.* [1898] *N. Y. Am. Mth. S. Bl.* 5 (1899) 89, 96-.
- —, class analogous to. *Liouville, J.* *Liouv. J. Mth.* 10 (1845) 327-.
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- Line and surface integrals, generalisation of Stokes's theorem. *Gilbert, —.* *Brux. S. Sc. A.* 16 (1892) (*Pt.* 1) 2-.
- Mathematical expressions for physical quantities, permanence of form. *Gwyther, R. F.* *Manch. Lt. Ph. S. Mm. & P.* 9 (1895) 119-.
- physics, application of linear systems. *Larose, H. A. Tél.* 23 (1896-97) 259-.
- — and pure analysis, relations. *Poincaré, H.* *Acta Mth.* 21 (1897) 331-.
- Mathematics, application to natural science. *Petzval, J.* *Wien Alm. (Anh.)* (1858) 187-.
- — — physics. *Liebermeister, C.* *Erdm. J. Pr. C.* 84 (1861) 416-.
- — — influence on physics. *Collins, E.* *St Pét. Ac. Sc. Rec.* (1837) 179-.
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- Operators in physical mathematics. *Heaviside, O.* *R. S. P.* 52 (1893) 504-; 54 (1894) 105-.
- Periodic series. *Meyer, A.* [1850] *Crelle J.* 43 (1852) 60-.
- Physical data applicable to mathematics. *Rawson, R.* [1847] *Manch. Ph. S. Mm.* 8 (1848) 329-.
- Physics, principles of algebra of. *Macfarlane, A.* *Am. As. P.* (1891) 65-.
- Solution, general, of Maxwell's equations. *Birkeland, K.* *Arch. Sc. Ps. Nt.* 34 (1895) 5-.
- of problems of electricity by transformation of conjugate functions. *Maxwell, J. C.* [1871] (*viii*) *Camb. Ph. S. P.* 2 (1876) 242-.
- Theory of matrices, application to linear differential equations. *Brill, J.* *Camb. Ph. S. P.* 8 (1895) 201-.
- Transformation of coordinates in heat problems. *Bertrand, J.* *Liouv. J. Mth.* 14 (1849) 1-.
- Use of Riemann surface in applied mathematics. *Carlsaw, H. S. B. A. Rp.* (1900) 644-.
- Vector functions. *Burkhardt, H.* *Mth. A.* 43 (1893) 197-.
- — and their applications to physics. *Élie, B.* *Bordeaux S. Sc. Mm.* 3 (1893) 1-.

5610 Harmonic analysis; Fourier's series. (See also 3220.)

FOURIER'S SERIES.

- (Conduction of heat.) *Fourier, J. B. J.* [1807-11] *Par. S. Phlm. N. Bl.* 1 (1807) 112-; *Par. Mm. Ac. Sc.* 4 (1824) 185-; 5 (1826) 153-.
- Thomae, J.* *Z. Mth. Ps.* 17 (1872) 78-.
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- Ascoli, G.* [1873-78] *A. Mt.* 6 (1875) 21-, 298-; *Rm. R. Ac. Linc. Mm.* 2 (1878) 584-.
- Jordan, C. C. R.* 92 (1881) 228-.
- Halphen, G. H. C. R.* 95 (1882) 1217-.
- Veltmann, W.* *Z. Mth. Ps.* 27 (1882) 193-.



- Gilbert*, P. *Brux. S. Sc. A.* 8 (1884) (Pt. 2) 1-.
- Hermite*, C. *Am. J. Mth.* 9 (1887) 381-.
- Michelson*, A. A. *Nt.* 58 (1898) 544-.
- Love*, A. E. H. *Nt.* 58 (1898) 569-.
- Gibbs*, J. W. [1898] *Nt.* 59 (1898-99) 200.
- Michelson*, A. A. [1898] *Nt.* 59 (1898-99) 200.
- Love*, A. E. H. [1898] *Nt.* 59 (1898-99) 200-.
- Hayward*, R. B. *Nt.* 59 (1898-99) 271.
- Baker*, H. F. *Nt.* 59 (1898-99) 319-.
- Gibbs*, J. W. *Nt.* 59 (1898-99) 606.
- Poincaré*, —. *Nt.* 60 (1899) 52.
- Love*, A. E. H. *Nt.* 60 (1899) 100-.
- Lerch*, —. *Bil. Sc. Mth.* 24 (1900) 102-.
- Application in optics. *Wind*, C. H. [1900] *Ps. Z.* 2 (1901) 189-.
- to theory of functions of complex variable. *Harnack*, A. [1882] *Mth. A.* 21 (1883) 305-.
- Approximate representation by. *Picard*, E. *C. R.* 112 (1891) 183-.
- Behaviour at discontinuities. *Lindemann*, C. L. F. [1881] *Mth. A.* 19 (1882) 517-.
- Calculation of Fourier and Bessel series. *Dechevrens*, M. *Rm. N. Linc. Mm.* 16 (1899) 149-; 17 (1900) 47-.
- Case. *Porëckij*, P. S. *Kazan S. Nt. (Ps.-Mth.)* 6 (1888) 330-.
- Coefficients. *Bruno de Cabedo*, J. G. *Teix. J. Sc.* 12 (1895) 81-; *Fschr. Mth.* (1893-94) 395.
- , calculation. *Macé de Lépinay*, J. J. *de Ps.* 8 (1899) 137-.
- , harmonic analysis for graphic determination. *Bervy*, N. *Mosc. Obs. A.* 3 (Pt. 2) (1896) 109-.
- Conduction of heat: imaginary roots of certain transcendental equations. *Fourier*, J. B. J. [1826] *Par. Mm. Ac. Sc.* 7 (1827) 605-.
- — —, mathematical theory, additions 1811-89. *Gibson*, G. A. *Edinb. Mth. S.* P. 7 (1889) 5-.
- — — in solid, series connected with. *Poisson*, S. D. *Crelle J.* 16 (1837) 39.
- — — — —. *Liouville*, J. *Crelle J.* 16 (1837) 41-.
- Convergence. *Gibson*, G. A. *Edinb. Mth. S.* P. 12 (1894) 39-.
- *Williams*, W. *Ph. Mg.* 42 (1896) 125-.
- *Ford*, W. B. [1900] *N. Y. Am. Mth. S. Bil.* 7 (1901) 227-.
- , Cauchy's second proof. *Harnack*, A. *Mth. A.* 32 (1888) 175-.
- and divergence. *Du Bois-Reymond*, P. *Münch. Ak. Ab.* 12 (1876) (2<sup>de</sup> Ab.) 1-; *Mth. A.* 10 (1876) 431-.
- Expansion of discontinuous functions. *Berger*, A. *Ups. S. Sc. N. Acta* 15 (1895) No. 13, 33 pp.
- doubly periodic functions. *Charlier*, C. V. L. *Stockh. Ak. Hndl. Bh.* 12 (*Afd.* 1) (1887) No. 9, 24 pp.; *Fschr. Mth.* (1887) 448.
- , graphic. *Perry*, J. *Elect.* 35 (1895) 285-.
- of uniform finite function of an angle by. *Voigt*, W. *Rm. R. Ac. Linc. Rd.* 8 (1899) (*Sem.* 1) 93-.
- Extensions of Fourier's trigonometric series. *Alexander*, P. *Mess. Mth.* 16 (1887) 42-.
- Finite and continuous functions not developable in Fourier's series at point  $x=0$ . *Marolli*, B. *G. Mt.* 37 (1899) 80-.
- General form and application. *Dienger*, J. *Grunert Arch.* 39 (1862) 303-.
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- Machine for expansion of any function in. *Sommerfeld*, A. *Königsb. Schr.* 32 (1891) (*Sb.*) 28-.
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- Representation of functions by, sufficient condition for. *Hölder*, O. *Berl. Ak. Sb.* (1885) 419-.
- — — of 1 variable by Fourier's series and in other ways. *Hermite*, C. *C. R.* 91 (1880) 1018-.
- Theorem, proof. *Johnson*, A. R. *Mess. Mth.* 16 (1887) 90-.
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- *Mansion*, P. *Brux. Ac. Mm.* 45 (1884) (*No. 5*) 20 pp.
- *Lerch*, M. *Prag. České Ak. Fr. Jos. Rz. (Trída 2)* 9 (1900) *Art.* 7, 15 pp.
- Uniqueness. *Cantor*, G. *Crelle J.* 72 (1870) 139-; 73 (1871) 294-.
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- — — of  $\sin \theta$  and  $\cos \theta$  in terms of sines and cosines of multiples of  $\theta$ . *Cauchy*, A. L. *C. R.* 12 (1841) 323-.
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- in series of multiple sines and cosines. *Cayley, A.* Camb. Mth. J. 3 (1843) 162-.
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- , trigonometric. *Lerch, —.* Toul. Fac. Sc. A. 3 (1889) C, 11 pp.
- , —, of periodic solutions of  $\nabla^2 F = 0$ . *Appell, P.* C. R. 102 (1886) 1439-; Liouv. J. Mth. 3 (1887) 5-.
- Fourier's double integral theorem. *Glaisher, J. W. L.* Mess. Mth. 2 (1873) 20-.
- — —, Boole's and other proofs. *Alexander, P.* Edinb. Mth. S. P. 3 (1885) 45-.
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- integrals, more general theorem. *Grünwald, F. K.* Z. Mth. Ps. 9 (1864) 131-.
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- — — transcendent functions. *Krygowski, Z.* Prace Mt.-Fiz. 5 (1894) 70-.
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- — —. *Cesáro, E.* (xii) Mathesis 1 (1881) 51-, 80, 143-.
- Integral formulæ representing arbitrary functions, range of application. *Du Bois-Reymond, P.* [1874] Crelle J. Mth. 79 (1875) 38-.
- Neumann's potential function  $\Sigma \frac{Ae^{-ar}}{r}$ . *Beltrami, E.* Rm. R. Ac. Linc. Rd. 4 (1895) (Sem. 2) 177-.
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- —  $A_0 + A_1 \cos \phi + B_1 \sin \phi \dots + A_n \cos n\phi + B_n \sin n\phi$ , transformation. *Stieltjes, T. J.* (jun.) N. Arch. Wisk. 9 (\*1882) 111-.
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- , lunar and solar, of earthquakes. *Schuster, A.* Nt. 56 (1897) 321.
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- Phases of function, calculation. *Cabreira, A.* [1900] Lisb. J. Sc. Mth. 6 (1902) 55-.
- Series of sines and cosines of multiple angles, numerical values of coefficients. *Lubbock, J. W.* Ph. Mg. 33 (1848) 106-.
- Summation of periodic functions. *Gylden, J. A. H.* (x) Stockh. Ak. Hndl. 11 (1872) No. 1, 15 pp.; Par. Ec. Norm. A. 8 (1879) 203-.
- Trigonometric series, convergence for arbitrary function between given limits. *Lejeune-Dirichlet, G.* Crelle J. 4 (1829) 157-; 17 (1837) 35-.
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Arc of very large radius, construction by two given tangents. *Breton*, Ph. *Les Mondes* (1880) 73-.

Arcs, wide, parabolic or circular, tracing. *Leclert*, É. *Les Mondes* 25 (1871) 18-.

Bisection, repeated. *Bouniakowsky*, V. [1866] *St Pét. Ac. Sc. Bll.* 11 (1867) 97-.

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*Crelle*, A. L. *Crelle J.* 14 (1835) 66-.

*Mehmke*, R. *Z. Mth. Ps.* 24 (1879) 257-.

*Bessell*, F. *Arch. Mth. Ps.* 67 (1882) 44-.

*Tarry*, G. *As. Fr. C. R.* (1891) (Pt. 2) 90-.

Approximations, rational. *Rankine*, W. J. M. *Ph. Mg.* 29 (1865) 421-.

Arc of given length, construction. *Rankine*, W. J. M. [1864-67] *Ph. Mg.* 29 (1865) 22-; 34 (1867) 284-.

—, rectification. *Dostor*, G. J. N. A. *Mth.* 6 (1847) 287-.

—, resolution. *Fuss*, N. [1804] *St Pét. Ac. Sc. Mm.* 2 (1810) 45-.

— whose tangent is rational. *Prouhet*, E. *Liouv. J. Mth.* 1 (1856) 215-.

Arcs, connecting two pairs of straight lines. *Breton*, Ph. *Par. A. Pon. Chauss.* 20 (1860) 135-.

Area of segments. *Grunert*, J. A. *Grunert Arch.* 27 (1856) 94-.

Chasles's circles. *Barisien*, E. N. *Mathesis* 15 (1895) 129-, 158-, 241-; 16 (1896) 265-.

—, *Droz Farny*, A. *Mathesis* 16 (1896) 193-.

—, properties. *Brocard*, H. *Mathesis* 18 (1898) 61-.

Chords through given point. *Büchner*, (Dr) —. *Grunert Arch.* 3 (1843) 388-.

Circle cutting 2 given circles at given angles. *Ponte Horta*, F. da. *G. Teix. J. Sc.* 1 (1878) 180-; 2 (1880) 7-.

— — — — —. [*Schiappa*] *Monteiro*, A. *G. Teix. J. Sc.* 2 (1880) 54-, 130-, 174-; 5 (\*1883) 143-; 6 (1885) 103-.

— 3 circles at equal angles. *Mannheim*, A. N. A. *Mth.* 12 (1853) 113-.





- Circumference, descriptive, segmentary, or metrical properties. *Mouchot*, —. C. R. 105 (1887) 602-.
- Circum-quadrilateral. *Steiner*, *J.* Crelle J. 32 (1846) 305-.
- Coaxial circles. *Casey*, *J.* [1860] QJ. Mth. 5 (1862) 43-, 118-.
- , —, *Schober*, *K.* Mh. Mth. Ps. 5 (1894) 104-.
- , —, locus connected with. *Holgate*, *T. F.* N. Y. Am. Mth. S. Bll. 4 (1898) 63-; 5 (1899) 135-.
- , —, radical axes. *Quidde*, *A.* Grunert Arch. 23 (1854) 130-.
- , —, —, *Hopkins*, *G. H.* [1865] Mess. Mth. 3 (1866) 122.
- , —, —, of certain circles in triangle. *Tucker*, *R.* [1892] Edinb. Mth. S. P. 11 (1893) 57-.
- , —, —, circle involved in extended definition of. *Mack*, *L.* Arch. Mth. Ps. 62 (1878) 405-.
- , —, —, line parallel to. *Kösters*, —. Grunert Arch. 19 (1852) 1-.
- , —, systems. *Lachlan*, *R.* QJ. Mth. 26 (1893) 129-.
- Concentric circles, two sets of three, having same common difference of radii. *Tait*, *P. G.* Edinb. R. S. P. 9 (1878) 533-.
- , —, systems, property. *Brocard*, *H.* Mathesis 4 (1884) 219-.
- Condition that three circles should meet in a point. *Emeuper*, *A.* Z. Mth. Ps. 16 (1871) 257-.
- Conjugate circles. *Möbius*, *A. F.* Leip. B. 10 (1858) 1-.
- , —, groups. *Cunningham*, (*Lt.-Col.*) *A.* B. A. Rp. (1892) 647.
- Constant ratio circle. *Rump*, *F. H.* Grunert Arch. 27 (1856) 30-.
- Contacts. *Paucker*, *M. G. von.* [1827] St. Pét. Mm. Sav. Étr. 1 (1831) 503-.
- and intersections. *Steiner*, *J.* Crelle J. 1 (1826) 161-, 252-.
- , —, —, *Plücker*, *J.* Gergonne A. Mth. 18 (1827-28) 29-.
- of systems of circles. *Larmor*, *A.* L. Mth. S. P. 23 (1892) 135-.
- Contraction caused by arranging circles of different diameters in rows. *Kleiber*, *J. A.* Fsch. Ps. (1890) (*Ab.* 1) 461-.
- Coplanar circles, properties of triangle formed by. *Lachlan*, *R.* QJ. Mth. 21 (1886) 1-.
- Diameter, to calculate from three contiguous chords. *Voll*, *W.* Oken Isis (1826) 670.
- Division. *Gauss*, *C. F.* Par. S. Phlm. Bll. 3 (1802) 102-.
- , *Utenhove*, *J. M. C. van.* Amst. Vh. 4 (1818) 92-.
- , *Valat*, —. Bordeaux Act. Ac. Sc. (1839) 433-.
- , *Eisenstein*, *G.* Crelle J. 27 (1844) 269-.
- , *Rammelman-Elsevier*, *W. J. C.* (viii) Amst. N. Ws. Ntk. Vh. 1 (1844) 127-.
- , *Küpper*, *C.* Grunert Arch. 27 (1856) 62-.
- , *Wenckebach*, *E.* Gravenh. I. Ing. Ts. (1870-71) 79-.
- , *Carey*, *F. S.* QJ. Mth. 26 (1893) 322-.
- Division into areas of given ratio and same perimeter. *Gergonne*, *J. D.* Gergonne A. Mth. 6 (1815-16) 57-.
- by compasses. *Pfeil*, *L. von.* Arch. Mth. Ps. 41 (1864) 153-.
- , —, —, [*Schiappa*] *Monteiro*, *A.* G. Teix. J. Sc. 4 (1883) 39-.
- , Gauss's theorems. *Jung*, *G.* G. Mt. 6 (1868) 67-.
- , irreducible equation. *Arndt*, *F.* Crelle J. 56 (1859) 178-.
- , new method. *Pellet*, *A. E.* C. R. 93 (1881) 838-.
- , practical. *Housel*, —. N. A. Mth. 12 (1853) 77-.
- , —, *Tempier*, —. N. A. Mth. 12 (1853) 345-; 13 (1854) 295.
- , problem. *Arndt*, *F.* Grunert Arch. 18 (1852) 461-.
- , series for. *Huguenin*, *U.* Amst. Vh. 5 (1820) 43-.
- into 5 equal parts. *Barbour*, *L. G.* Des Moines Anal. 5 (1878) 180-.
- — 17 parts. *A. B.* (vi *Adds.*) Tilloch Ph. Mg. 57 (1821) 172-.
- — —, etc. *Gruson*, *J. P.* Berl. Ab. (1812-13) (*Mth.*) 15-.
- — 66537 equal parts. *Hermes*, *J.* Gött. Nr. (1894) 170-.
- Equations. *Casey*, *J.* [1878] R. S. P. 27 (1878) 417-; Ir. Ac. T. 26 (1879) 527-.
- Faisceaux. *Ribaucour*, *A.* C. R. 76 (1873) 830-.
- Figures composed of circles, examination with a special system of coordinates. *Crope*, *C.* (xii) Ts. Mth. 6 (1876) 97-.
- Grazing of two circles, best value of radii. *Fontès*, —. Toul. Ac. Sc. Mm. 4 (1892) 375-.
- Groups of circles, certain. *Vries*, *J. de.* Amst. Ak. Vs. 6 (1898) 418-.
- Homocyclic points and circles in collineation, etc. *Serret*, *P.* C. R. 123 (1896) 396-.
- Imaginary circles. *Möbius*, *A. F.* Leip. B. 9 (1857) 38-.
- Intersections. *Gufflet*, *G.* N. A. Mth. 5 (1846) 352-.
- Inversion, point and tangential. *Coelingh*, *D.* N. Arch. Wisk. 16 (1889) 116-; Fsch. Mth. (1889) 614-.
- Joachimsthal's circle. *Longchamps*, *G. de.* Mathesis 9 (1889) 153-.
- Minimum circle enclosing *n* given points. *Crystal*, *G.* Edinb. Mth. S. P. 3 (1885) 30-.
- Orthocentroidal circle. *Prime*, (*Mme.*) —. Mathesis 13 (1893) 33-.
- Orthogonal systems. *Lachlan*, *R.* Mess. Mth. 16 (1887) 98-.
- trajectories of certain systems. *Roberts*, *R. A.* Mess. Mth. 14 (1885) 134-.
- Plane system, coordinate. *Schoute*, *P. H.* Wien Ak. Sb. 94 (1887) (*Ab.* 2) 786-.
- , and its representation in space. *Thomae*, *J.* Z. Mth. Ps. 29 (1884) 284-.
- Polar system for circles. *Meyer*, *T.* Arch. Mth. Ps. 9 (1890) 18-, vii-.
- theorems, demonstrations. *Zeuthen*, *H. G.* (xii) Ts. Mth. 6 (1882) 75-.

- Polars of points with respect to two circles, theorem. *Ploix, É.* N. A. Mth. 8 (1849) 152-.
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- , *Grunert, J. A.* Arch. Mth. Ps. 44 (1865) 184-.
- , *Láska, V.* Prag Sb. (1895) (Mth.-Nt.) No. 17, 5 pp.
- , algebraic aspect. *Schlömilch, O.* Z. Mth. Ps. 9 (1864) 433-.
- , analytical solution. *Grunert, J. A.* Grunert Arch. 1 (1841) 446-.
- , ---, *Fellini, D.* Tor. Ac. Sc. At. 32 (1896) 214- or 320-.
- , theory of errors in. *Andrae*, ---. As. Nr. 47 (1858) 193-.
- Properties. *Babbage, C.* QJ. Sc. 1 (1816) 6-.
- , *Laquerre, E.* N. A. Mth. 2 (1883) 65-.
- , Grassmann's "Ausdehnungslehre" applied to. *Cox, H.* QJ. Mth. 25 (1891) 1-.
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- (Grunert). *Göpel, A.* Grunert Arch. 3 (1843) 403-.
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- , converse. *Gerwien*, ---. Crelle J. 11 (1834) 264-.
- , demonstration. *Schnell, (Dr.)* ---. Arch. Mth. Ps. 67 (1882) 225-.
- , inversion. *Förstemann, W. A.* Crelle J. 13 (1835) 233-.
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- leads to Wallis's and others. *Fergola, N.* Nap. At. Ac. 1 (1819) 205-.

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- Delanges, P.* At. Ac. It. 1 (1810) 157-.
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- Biticz, L.* Evk. 2 (1832) 151-.
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- Pelnič, M.* Časopis 6 (\*1877) 89-; Fsch. Mth. (\*1877) 406-.
- approximate construction. *Boswell, J. W.* Nicholson J. 10 (1805) 151-; 13 (1806) 174-.
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- , *Willich, C. M.* R. S. P. 7 (1854-55) 379.

- approximate method. *Anon.* (vi 312) Crelle J. 32 (1846) 91-.
- approximations. *Anon.* (vi 275) Camb. and Dubl. Mth. J. 7 (1852) App. 1-.
- , *Chase, P. E.* Franklin I. J. 78 (1879) 45, 105; 79 (1880) 409-; 81 (1881) 379.
- arithmetical. *Hill, C. J. D.* Stockh. Ak. Hndl. (1854) 405-.
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- historical notes, and proof of impossibility. *Studnická, F. J.* Casopis 1 (\*1872) 35-; Fsch. Mth. (\*1872) 254.
- , ---, ---, *Rudio, F.* Zür. Vjschr. 35 (1890) 1-.
- impossibility. *Caluso, (Vabbé) T. V. de.* [1801] Mod. Mm. S. It. 9 (1802) 558-.
- , *Rouché, E.* N. A. Mth. 2 (1883) 5-.
- and rectification. *Ruffini, P.* [1801] Mod. S. It. Mm. 9 (1802) 527-.
- , *Grunert, J. A.* Grunert Arch. 6 (1845) 90-.
- , approximate. *Specht, C. G.* Crelle J. 3 (1828) 83, 405-; N. A. Mth. 4 (1845) 495-.
- , graphic method. *Schramm, A.* Dingler 226 (1877) 17-.
- impossible. *Snart, J.* Tilloch Ph. Mg. 62 (1823) 338-.
- Viète (François) and his work. *Ritter, F.* As. Fr. C. R. (1879) 143-.

- Radical and anti-radical circles. *Durán Loriga, J. J. G.* Teix. J. Sc. 13 (1897) 33-; Fsch. Mth. (1896) 398.
- circles. *Durán Loriga, J. J. G.* Teix. J. Sc. 12 (1895) 97-; Mathesis 16 (1896) 105-; Arch. Mth. Ps. 15 (1897) 117-, 232-.

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(See also 2920.)

- Lefaucheux*, ---. [1811] Le Mans S. R. Tr. (1820) 19-.
- Gergonne, J. D.* Gergonne A. Mth. 6 (1815-16) 192-; 17 (1826-27) 148-.
- Léger, É.* Quetelet Cor. Mth. 9 (1837) 479-.
- Lehmann, J. W. H.* Grunert Arch. 21 (1853) 121-.
- Didion, [(le gén.) I.]*. C. R. 74 (1872) 36-; (xii) Metz Ac. Mm. 53 (1873) 257-.
- (Didion.) *Catalan, E. C.* C. R. 74 (1872) 177.
- Lindemann, C. L. F.* C. R. 95 (1882) 72-.
- Sang, E.* Edinb. R. S. P. 15 (1889) 348-.
- Approximate construction. *Grassmann, H.* Arch. Mth. Ps. 49 (1869) 1-.
- Approximation. *Merrifield, C. W.* Mess. Mth. 3 (1866) 105.
- Calculation, and circular series. *Mazzola, G.* G. Mt. 2 (1864) 92-, 110-.
- to 8 decimal places. *Drach, S. M.* Ph. Mg. 27 (1864) 318-.
- 200 ---. *Dahse [or Dase], Z.* Crelle J. 27 (1844) 198; N. A. Mth. 9 (1850) 12-; 10 (1851) 198.

- Calculation to 200 decimal places (Dase).  
*Schulz von Strasznički, L. C.* Crelle J. 27 (1844) 198.  
 — 250 ——. *Clausen, T.* As. Nr. 25 (1847) 207-.  
 — 350 ——. *Rutherford, W.* N. A. Mth. 14 (1855) 209-.  
 — 400 ——. *Richter, (Prof.)* —. Grunert Arch. 22 (1854) 473.  
 — ——. *Strehlke, F.* Grunert Arch. 23 (1854) 475-; 24 (1855) 472.  
 — 500 ——. *Richter, (Prof.)* —. Grunert Arch. 25 (1855) 471-.  
 — 707 ——. *Shanks, W.* R. S. P. 21 (1873) 318-.  
 —, elementary. *Grunert, J. A.* Arch. Mth. Ps. 46 (1866) 345-.  
 —, —, description. *Matzka, W.* Grunert Arch. 9 (1847) 74-.  
 — by logarithms. *Chevillier, I.* N. A. Mth. 15 (1856) 261-.  
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 —, experimental. *Hall, A.* [1872] Mess. Mth. 2 (1873) 113-.  
 — by isoperimeters. *Jubé, E.* N. A. Mth. 5 (1846) 42-.  
 — ——. *André, D.* N. A. Mth. 13 (1874) 128-.  
 —, numerical. *Girault, —.* Rouen Tr. Ac. (1850-51) 63-.  
 — by perimeters. *Huet, —.* N. A. Mth. 4 (1845) 156-.  
 — ——. *Fouché, M.* Par. S. Mth. Bll. 18 (1890) 135-.  
 —, Ptolemy's method. *Terquem, O.* N. A. Mth. 13 (1854) 253-.  
 Dirichlet's formula, proof, etc. *Lebesgue, V. A.* Liouv. J. Mth. 11 (1846) 76-.  
 Discrepancies in published value of  $\pi$ . *Shanks, W.* [1873] R. S. P. 22 (1873-74) 45-.  
 Expression by rapidly convergent series. *Lucas, F.* C. R. 112 (1891) 1050-.  
 Numerical values of first 12 powers and their reciprocals, etc. *Glaisher, J. W. L.* L. Mth. S. P. 8 (1876-77) 140-.  
 Powers of  $\pi$ . *Broch, O. J.* Sk. Nf. F. 8 (1860) 571-.  
 Reciprocal of  $\pi$ , calculation to 208 decimal places. *Rutherford, W.* Phil. Trans. (1841) 281-.  
 Series for  $\pi$ , and general theorem. *Gasparis, A. de.* Nap. Rd. 7 (1848) 269-.  
 — —, new. *Thomson, (Prof.) James.* [1836-38] R. S. P. 3 (1836) 417-; Edinb. R. S. T. 14 (1840) 217-.  
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 — formula. *Collignon, É.* Par. Éc. Pol. J. 47<sup>e</sup> cah. (1880) 103-.  
 — for  $\pi$ , and the area of the curve  $y = \sin^k x$ . *Mansion, P.* Mathesis 20 (1900) 183-.
- Wallis's fractions, analysis. *Kramp, C.* Erfurt N. Acta 1 (1799) 257-.
- Rectification, approximate. *Gergonne, J. D.* Gergonne A. Mth. 8 (1817-18) 245-.  
 —, new method. *Šrútek, J.* Časopis 21 (1892) 83-; Fsch. Mth. (1892) 530-.  
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 — containing given angle, instrument for describing. *Rollet de l'Isle, —.* Rv. Mar. et Col. 128 (1896) 90-.
- Segments, Greek approximate formulæ (Hero). *Tannery, P.* Bordeaux S. Sc. Mm. 5 (1883) 347-.
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- Shoemaker's knife ( $\alpha\pi\beta\gamma\lambda\delta$ ). *Mackay, J. S.* Edinb. Mth. S. P. 3 (1885) 2-.
- Stewart's properties, demonstration. *Strong, T.* [1814] Conn. Mm. Ac. 1 (1816) 393-.
- Systems of circles. *Cayley, A.* QJ. Mth. 2 (1858) 83-.  
 — ——. *Gehrke, J.* N. Ts. Mth. 9 (B) (1898) 11-; Fsch. Mth. (1898) 436.  
 — —, with application to Dupin's cyclides. *Holst, E.* Christiania F. (1885) No. 15, 4 pp.; Fsch. Mth. (1885) 574-.  
 — —, new method of representation. *Fiedler, W.* As. Fr. C. R. 10 (1881) 127-.
- Tangent circles. *Guibal, —.* Nancy Mm. S. Sc. (1843) 67-.
- Tangents, trapeziums, etc. *Hey, R.* Phil. Trans. (1814) 348-.
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 — —, relative positions. *Zeuthen, H. G.* Mth. Ts. 5 (1863) 97-.
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 — of 2nd degree, aids to. *Adler, A.* Wien Ak. Sb. 99 (1891) (Ab. 2a) 846-.  
 — founded on the circle. *Study, —.* Bonn Niedr. Gs. Sb. (1897) 80-.  
 —, linear. *Kirkman, T. P.* Manch. Ph. S. Mm. 9 (1851) 279-.  
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 — in mensuration. *Bangma, O. S., & Keyser, J. F.* Amst. Mengelwerk 2 (1816) 1-.  
 — — plane and in space with the straight line only. *Tilly, J. de.* Mathesis 5 (1885) 124-.



- Minimum distance point. *Steiner, J.* Berl. B. (1837) 144-.
- — — *Woldstedt, F.* [1858] (viii) Helsingf. Acta 6 (1861) 33-.
- — — *Sturm, R.* Crelle J. Mth. 97 (1884) 49-.
- — — *Cinger, V. Ja.* [1891] Rec. Mth. (Moscou) 16 (1893) 317-.
- — — *Solozjev, N. M.* Mosc. S. Sc. Bil. 93 (No. 1) (1897) 27-; Fsch. Mth. (1897) 441-.
- — —, properties. *Seydewitz, F.* Grunert Arch. 8 (1846) 174-.
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- — —, description of new. *Fessenden, C.* Cn. I. P. 5 (1888) 27-.
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- — —, theorems deduced from analogous linear theorems. *Möbius, A. F.* Leip. B. (1852) 41-.
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- — —, two unknown, found from two known. *Clausen, T.* As. Nr. 18 (1841) 367-.

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$$0 = \sum_{i=1}^{2n-2} l_i T_i^n \equiv H_n,$$

$$0 = \sum_{i=1}^{2n-1} l_i T_i^n \equiv H_n + \lambda H_1'.$$

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### 8030 Groups of points on an algebraic curve; genus of curves; principle of correspondence. (See also 7610, 7630, 7660.)

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- , —, Noether's theorem, and the Riemann-Roch theorem. *Macaulay, F. S.* [1899] L. Mth. S. P. 31 (1900) 15-.
- Residues in canonical series of adjoint curves of degree  $m-3-a$ . *Amodeo, F.* Rm. R. Ac. Linc. Rd. 2 (1893) (Sem. 1) 528-.
- relative to asymptotes. Quadrature of curves dependent on genus. *Marie, M.* C. R. 76 (1873) 943-.
- Singular points. *Plücker, J.* [1836] Liouv. J. Mth. 2 (1837) 11-.
- — and tangents, influence on degree and class of plane curves. *Łazarowski, M.* Krk. Ak. (Mt.-Prz.) Rz. 15 (1887) 278-; Fsch. Mth. (1887) 607.
- Singularities of plane curves, higher. *Smith, H. J. S.* L. Mth. S. P. 6 (1874-75) 153-.
- — —, and new species of curve. *Brill, A.* [1879] Mth. A. 16 (1880) 348-.
- Skew curve, 4th degree, with double point, representation on conic. *Weyr, E. J.* [1878] Wien Ak. Sb. 78 (1879) (Ab. 2) 891-.
- , —, —, property of 9 points, etc. *Petot, A.* C. R. 98 (1884) 1245-.
- , —, 5th degree, genus 1. *Montesano, D.* Nap. Rd. 27 (1888) 181-.

- Skew curve, 6th degree, genus 1, arising from 2 trilinear relations. *London, F. Mth. A.* 45 (1894) 545-.
- curves. *Küpper, K. Prag Ab.* 4 (1892) No. 5, 16 pp., No. 7, 15 pp.
- , genus 0. *Tognoli, O. G. Mt.* 11 (1873) 180-.
- , —, —. *Saltel, L. C. R.* 80 (1875) 1324-.
- , —, —, double points. *Brill, A. Mth. A.* 3 (1871) 456-.
- of given degree, maximum genus. *Bobek, K. Wien Ak. Sb.* 93 (1886) (*Ab.* 2) 13-.
- , 5th degree, genus 1. *Weyr, E. Wien Ak. Sb.* 90 (1885) (*Ab.* 2) 206-; 92 (1886) (*Ab.* 2) 498-; 97 (1889) (*Ab.* 2a) 592-.
- , 6th degree, genus 1. *Weyr, E. Wien Ak. Sb.* 99 (1891) (*Ab.* 2a) 932-; 100 (1891) (*Ab.* 2a) 457-.
- Steiner's polygons on curve of 3rd degree. *Küpper, C.* [1873-84] *Prag Ab.* 6 (1874) 39 pp.; *Mth. A.* 24 (1884) 1-.
- — — — —. *Martinetti, V. Palermo Cir. Mt. Rd.* 5 (1891) 109-.
- porismatic polygons determined by (2, 2) relationship. *Weyr, E.* [1869] *Crelle J.* 71 (1870) 18-; 73 (1871) 87-.
- System of 3 doubly quadratic relations between 3 variables. *Fontené, G., & Bricard, R. N. A. Mth.* 18 (1899) 437-.
- Transformation of curve to one without multiple points. *Pieri, M. Rv. Mt.* 4 (1894) 40-.
- — — — —. *Levi, B. Rm. R. Ac. Linc. Rd.* 7 (1898) (*Sem.* 1) 111-.
- — systems in plane, uniform periodic. *Kantor, S. Acta Mth.* 19 (1895) 115-.
- method, reduction of singularities. *Vessiot, E. Par. S. Mth. Bll.* 22 (1894) 208-.
- of plane curves, uniform. *Voss, (Dr) A. Gött. Nr.* (1873) 414-.
- Transformations of curves, birational. *Poincaré, H. C. R.* 117 (1893) 18-.
- in plane, birational, finite groups. *Wiman, A. Mth. A.* 48 (1897) 195-.
- , uniform automorphic, curves admitting. *Noether, M. Mth. A.* 20 (1882) 59-; 21 (1883) 138-.
- , — periodic, foundations for theory. *Kantor, S. Nap. Ac. At.* 1 (1888) No. 7, 264 pp.; 4 (1891) No. 2, 74 pp.
- Trigonal curves. *Cavazzoni, L. Mil. I. Lomb. Rd.* 32 (1899) 777-.
- Triplets of points on cissoid. *Zahradník, K. Casopis* 12 (\*1883) 105-; *Arch. Mth. Ps.* 6 (1888) 392-.
- Uniform functions connected by an algebraic relation, property. *Picard, É. Bll. Sc. Mth. As.* 4 (1880) (*Pt.* 1) 416-.
- Weierstrass's points on algebraic curve. *Haure, M. Par. Ec. Norm. A.* 13 (1896) 115-.
- — — — —. *Segre, C. Rm. R. Ac. Linc. Rd.* 8 (1899) (*Sem.* 2) 89-.
- 8040 Groups of curves and points on an algebraic surface; genus of surfaces. (See also 7640.)**
- Castelnuovo, G. Mil. I. Lomb. Rd.* 24 (1891) 127-, 307-.
- Enriques, F.* [1893-96] *Tor. Ac. Sc. Mm.* 44 (1894) 171-; *Rm. S. It. Mm.* 10 (1896) 1-.
- Castelnuovo, G., & Enriques, F. Mth. A.* 48 (1897) 241-.
- Asymptotic curves on skew surfaces. *Jung, V. Casopis* 20 (1891) 294-; *Fschr. Mth.* (1891) 824.
- Class of surfaces. *Humbert, G. Palermo Cir. Mt. Rd.* 3 (1889) 277-; 4 (1890) 54-, 71, 72.
- — — (Humbert). *Castelnuovo, G. Palermo Cir. Mt. Rd.* 4 (1890) 69-, 71-, 195-.
- — — (Castelnuovo). *Guccia, —. Palermo Cir. Mt. Rd.* 4 (1890) 71.
- — —. *Noether, M. Palermo Cir. Mt. Rd.* 4 (1890) 299-.
- Collineation groups on Kummer's surfaces. *Kantor, S. Am. J. Mth.* 19 (1897) 86-.
- Continuous series of curves on regular surface. *Enriques, F. Palermo Cir. Mt. Rd.* 13 (1899) 95-.
- Correspondence, point to point, class of surfaces representable on plane by. *Brambilla, A. Mil. I. Lomb. Rd.* 21 (1888) 334-, 511-.
- between points of plane and those of elliptic paraboloid. *Ciamberlini, C. G. Mt.* 32 (1894) 69-.
- , projective, between forms of 2 dimensions. *Paolis, R. de. Rm. R. Ac. Linc. Rd.* 3 (1894) (*Sem.* 2) 225-.
- , uniform, of algebraic configurations. *Noether, M. Mth. A.* 2 (1870) 293-; 8 (1875) 495-.
- , —, — surfaces, 2 criteria. *Nöther, M. Gött. Nr.* (1873) 248-.
- , —, —, and differential equations, 2nd order, with fixed critical points. *Painlevé, P. C. R.* 117 (1893) 611-.
- Correspondences, uniform, curves and surfaces admitting. *Kantor, S. C. R.* 100 (1885) 343-.
- (1, 4) between points on curves of surfaces of 3rd degree. *Waelsch, G.* [1894] *D. Mth. Vr. Jbr.* 4 (1897) 113-.
- Curve of 4-point contact on surface. *Voss, A. E. Mth. A.* 9 (1876) 483-.
- Curves on cones, genus. *Sturm, R. Mth. A.* 19 (1882) 487-.
- surfaces. *Brunel, —. Bordeaux S. Sc. Mm.* 3 (1893) iv.
- and surfaces, points in theory. *Humbert, G. Liouv. J. Mth.* 10 (1894) 169-.
- — — — — (Humbert). *Painlevé, P. Liouv. J. Mth.* 10 (1894) 203-.
- Developables, curves on. *Künzler, G. Sch. Nf. Ges. Vh.* (1898) 47.
- Double planes of genus 1. *Enriques, F. Rm. S. It. Mm.* 10 (1896) 201-.
- Envelope with  $n$  parameters connected by  $n-2$  relations, degree. *Saltel, L. C. R.* 83 (1876) 894-; *Brux. Ac. Bll.* 43 (1877) 24-, 31-.
- Genus of certain surfaces. *Cayley, A. Mth. A.* 3 (1871) 526-.

- Groups of points in involution marked on surface. *Le Paige, C. M. M. H. H. C. R.* 99 (1884) 537-.
- — — plane, and effect in determining curves. *Macaulay, F. S. L. Mth. S. P.* 29 (1898) 673-.
- — — on surface, impossibility of some series. *Picard, É. C. R.* 126 (1898) 1383-.
- — — straight lines on surfaces of higher degree. *Affolter, F. G. Mth. A.* 27 (1886) 277-; 29 (1887) 1-.
- Homaloidal surfaces containing groups of conics. *Montesano, D. Mil. I. Lomb. Rd.* 24 (1891) 889-.
- — — 4th and 5th degrees, with no multiple lines. *Montesano, D. Nap. Rd.* 39 (1900) 158-.
- Hyperelliptic curves, surfaces containing net of. *Castelnuovo, G. Rm. R. Ac. Linc. Rd.* 3 (1894) (Sem. 1) 473-.
- surfaces, curves on. *Humbert, G. Liouv. J. Mth.* 9 (1893) 29-, 361-.
- Intersection of 3 surfaces in a singular point. *Guccia, G. B. Rm. R. Ac. Linc. Rd.* 5 (1889) (Sem. 1) 456-.
- Intersections of 3 surfaces. *Berzolari, L. A. Mt.* 24 (1896) 165-.
- Invariant number in theory of surfaces. *Picard, É. C. R.* 116 (1893) 285-.
- numbers in theory of surfaces. *Picard, É. C. R.* 119 (1894) 1169-; 122 (1896) 101-.
- Involution, generalised. *Cayley, A. Camb. and Dubl. Mth. J.* 2 (1847) 52-.
- of higher dimensions. *Vaněček, J. S., & Vaněček, M. N. C. R.* 99 (1884) 742-, 856-, 909-.
- and rational homography, theory. *Deruyts, F. Liège S. Sc. Mm.* 17 (1892) No. 3, 208 pp.
- Involutions, plane. *Chizzoni, F. Rm. R. Ac. Linc. Mm.* 19 (1884) 301-.
- — —, rationality. *Castelnuovo, G. Rm. R. Ac. Linc. Rd.* 2 (1893) (Sem. 2) 205-; *Mth. A.* 44 (1894) 125-.
- Involutory transformations, groups. *Montesano, D. Ven. I. At.* (1887-88) 1425-.
- Linear genus of surface and classification to which it leads. *Castelnuovo, G. Rm. R. Ac. Linc. Rd.* 6 (1897) (Sem. 1) 372-, 406-.
- systems of curves on surface. *Castelnuovo, G. Rm. S. It. Mm.* 10 (1896) 82-; *A. Mt.* 25 (1897) 235-.
- — — lines on surface. *Picard, É. Palermo Cir. Mt. Rd.* 13 (1899) 344-.
- Moduli of class of surfaces, number. *Noether, M. Berl. Ak. Sb.* (1888) 123-.
- Multiple curves and developables of certain surface. *Lazzari, G. Ven. I. At.* (1887-88) 171-.
- — — of surfaces. *Nöther, M.* [1871] *A. Mt.* 5 (1871-73) 163-.
- Rational curves, surfaces with systems. *Nöther, M.* [1870] *Mth. A.* 3 (1871) 161-.
- Reciprocal of surface, degree. *Salmon, G.* [1847-55] *Camb. and Dubl. Mth. J.* 2 (1847) 65-; *Ir. Ac. T.* 23 (1859) 461-.
- surfaces. *Cayley, A. Ir. Ac. P.* 7 (1858) 20-; *Phil. Trans.* 159 (1869) 201-; 162 (1872) 83-.
- Reciprocal surfaces. *Zeuthen, H. G. Mth. A.* 4 (1871) 633-.
- Riemann-Roch theorem extended to surfaces. *Noether, M. C. R.* 103 (1886) 734-.
- Ruled surfaces, double curve on. *Wiman, A. Acta Mth.* 19 (1895) 63-.
- — — of any genus. *Segre, C. Tor. Ac. Sc. At.* 22 (1886-87) 362-.
- — — with rational double curves. *Weyr, E. J.* [1881] *Wien Ak. Sb.* 84 (1882) (Ab. 2) 691-.
- — —, 4th degree, curves on. *Williams, F. B.* [1900] *Am. Ac. P.* 36 (1901) 17-.
- — —, 5th degree. *Schwarz, H. A.* [1866] *Crelle J.* 67 (1867) 23-.
- Singular lines of surfaces, generic points. *Levi, B. A. Mt.* 2 (1899) 127-.
- points. *Guccia, G. B. C. R.* 105 (1887) 741-.
- — —. *Del Pezzo, P. Palermo Cir. Mt. Rd.* 6 (1892) 139-.
- — —, decomposition. *Segre, C. Tor. Ac. Sc. At.* 32 (1896) 521- or 781-; 33 (1897) 19-; *A. Mt.* 25 (1897) 1-.
- — —, — (Segre). *Del Pezzo, P. Nap. Ac. Pont. At.* 27 (1897) No. 4, 13 pp., No. 10, 7 pp.
- — —, resolution. *Levi, B. Tor. Ac. Sc. At.* 33 (1897) 56- or 66-.
- Singularities, reduction by birational transformations of space. *Pannelli, M. A. Mt.* 25 (1897) 67-.
- Skew curve, 4th degree, automorphic transformation, and correlation with developable of osculating planes. *Del Re, A. Tor. Ac. Sc. At.* 22 (1886-87) 901-.
- — —, — — —, correlations changing into developable of bitangent planes. *Del Re, A. Nap. Rd.* 26 (1887) 167-.
- — —, — — —, developable quartics and sextics occurring in automorphic transformation of. *Del Re, A. Nap. Rd.* 27 (1888) 37-.
- curves on hyperboloid of one sheet. *Cremona, L. C. R.* 52 (1861) 1319-.
- — — — —. *Chasles, M. C. R.* 53 (1861) 1077-, 1203-.
- — — surface of 3rd degree. *Clebsch, R. F. A. C. R.* 62 (1866) 1114-.
- — — surfaces. *Jonquières, E. de.* [1862] (VIII) *A. Mt.* 5 (1863) 24-.
- — — of 3rd and 4th degrees. *Rohn, K. Leip. Mth. Ps. B.* 46 (1894) 84-; 49 (1897) 631-.
- surfaces of given degree, maximum genus. *Bobek, K. Wien Ak. Sb.* 96 (1888) (Ab. 2) 1024-.
- — —, 2nd degree, homographic systems of points on. *Townsend, R.* [1867] *QJ. Mth.* 9 (1868) 249-, 296-.
- Surface, 3rd degree, representation on plane. *Dumont, F. N. A. Mth.* 15 (1896) 318-.
- — —, 6th degree, genus -1. *Noether, M. Mth. A.* 21 (1883) 399-.
- — —, 8th degree, genus 0. Systems of straight lines passing through given straight line. *Aschieri, F. G. Mt.* 12 (1874) 129-.
- — —, (n-4)th degree, passing through double curve of surface, constancy of number of coefficients. *Clebsch, R. F. A. C. R.* 67 (1868) 1238-.

## 8040 Groups of Points

- Surface  $z^2=f(xy)$ , double planes with  $p^{(1)}=1$ .  
*Enriques, F.* Rm. R. Ac. Linc. Rd. 7 (1898) (Sem. 1) 234-, 253-.
- Surfaces admitting doubly infinite system of plane reducible sections. *Castelnuovo, G.* Rm. R. Ac. Linc. Rd. 3 (1894) (Sem. 1) 22-.
- and algebraic groups, theory. *Picard, É.* C. R. 120 (1895) 658-.
- containing curves of certain genus. *Castelnuovo, G., & Enriques, F.* C. R. 131 (1900) 739-.
- with double circular generation, determination. *Cosserat, E.* C. R. 130 (1900) 311-.
- on which families of conics lie. *Weiler, A.* Zür. Vjschr. 29 (1884) 223-.
- , genus 0. *Tognoli, O.* G. Mt. 11 (1873) 180-.
- , —. *Castelnuovo, G.* Rm. S. It. Mm. 10 (1896) 103-.
- , —, special configurations on. *Brunel, G.* [1899] Bordeaux S. Sc. PV. (1899-1900) 2-.
- ,  $p=0$ , representation on plane. *Armenante, A.* [1869] A. Mt. 4 (1870-71) 50-.
- , linear genus  $p^{(1)}=2$ . *Enriques, F.* Rm. R. Ac. Linc. Rd. 6 (1897) (Sem. 1) 139-.
- ,  $p^{(1)}=3$ . *Enriques, F.* Rm. R. Ac. Linc. Rd. 6 (1897) (Sem. 1) 169-.
- with plane sections elliptic curves. *Castelnuovo, G.* Rm. R. Ac. Linc. Rd. 3 (1894) (Sem. 1) 59-.
- — hyperelliptic curves. *Castelnuovo, G.* Palermo Cir. Mt. Rd. 4 (1890) 73-.
- — rational. *Picard, É.* Par. S. Phlm. Bil. 2 (1878) 127-; *Crelle J. Mth.* 100 (1887) 71-.
- —, *Guccia, G. B.* Palermo Cir. Mt. Rd. 1 (1887) 165-.
- — points corresponding, fundamental points of 2. *Zeuthen, H. G.* C. R. 70 (1870) 742-.
- —, properties. *Zeuthen, H. G.* Mth. A. 4 (1871) 21-.
- — rational generators, class. *Humbert, G.* C. R. 116 (1893) 1350-.
- , representation on plane. *Clebsch, R. F. A.* Gött. Nr. (1870) 253-.
- , 2nd degree, curves on. *Halphen, G. H.* [1872] (x) Par. S. Mth. Bil. 1 (1873) 19-.
- —, —. *Schoute, P. H.* As. Fr. C. R. (1879) 180-.
- , —, —, application of binary forms. *Laquerre, E.* [1872] (x) Par. S. Mth. Bil. 1 (1873) 31-.
- , —, —, hyperboloidal coordinates. *Cayley, A.* Ph. Mg. 22 (1861) 35-.
- , 3rd degree. *Clebsch, R. F. A.* [1865-69] *Crelle J.* 65 (1866) 359-; *Mth. A.* 1 (1869) 634-.
- —, curves on. *Sturm, R.* Mth. A. 21 (1883) 457-.
- , 3rd and 4th degrees, Steiner's surface. *Küpper, K.* Prag Ab. 2 (1888) No. 10, 11 pp.
- Tacnodal points. *Korteweg, D. J.* Wien Ak. Sb. 98 (1890) (Ab. 2a) 1154-.
- Transformation of figures in space, method. *Vaněček, J. S.* C. R. 94 (1882) 1463-, 1583-.

## Transcendental Functions 8050

- Transformation of figures in space, method. *Vaněček, J. S., & Vaněček, M. N.* C. R. 95 (1882) 1049-, 1146-; 96 (1883) 1714-, 1773-.
- — rational surfaces. *Cayley, A.* [1870] *Mth. A.* 3 (1871) 469-.
- — surfaces, automorphic. *Picard, É.* C. R. 103 (1886) 517-.
- —, —, and a fundamental number in theory of surfaces. *Picard, É.* C. R. 103 (1886) 549-.
- —, and a class of differential equations. *Picard, É.* C. R. 103 (1886) 635-.
- Transformations, birational automorphic, surfaces with continuous group of. *Castelnuovo, G., & Enriques, F.* C. R. 121 (1895) 242-.
- —, —, —. *Painlevé, P.* C. R. 121 (1895) 318-.
- , —, surfaces admitting double infinity. *Picard, É.* C. R. 103 (1886) 730-.
- , bi-uniform, of surfaces. *Painlevé, P.* C. R. 122 (1896) 874-.
- , rational, of space, determined by general surface of 3rd degree. *Loria, G.* Tor. Ac. Sc. At. 26 (1891) 275-.
- Uniform functions of 2 points, invariant by rational transformations. *Appell, P.* C. R. 96 (1883) 1643-.

## 8050 Application of transcendental functions to algebraic curves. (See also 4040, 4060, 7660.)

- Abelian functions and curves of any genus. *Buchheim, A.* L. Mth. S. P. 13 (1882) 180-.
- —, genus 3. *Amstein, H.* Laus. S. Vd. Bil. 24 (1889) 99-.
- — integrals and curves of 4th degree with 1 double point. *Roberts, W. R. W.* L. Mth. S. P. 25 (1894) 151-.
- —, genus  $p=2$ , periods. *Kępiński, S.* Prace Mt.-Fiz. 9 (1898) 139-; *Fschr. Mth.* (1898) 392.
- — and plane curves. *Lindemann, C. L. F.* [1877] *Örelle J. Mth.* 84 (1878) 294-, 300-.
- —, 1st species, plane curves rectifiable by. *Brodén, T.* Stockh. Ak. Hndl. Bh. 15 (Afd. 1) (1890) No. 5, 26 pp.
- — and uniform correspondences on elliptic curves. *Patrassi, P.* G. Mt. 34 (1896) 195-.
- Abel's theorem, applications. *Michel, C.* C. R. 130 (1900) 885-.
- —, — to conics. *Léauté, H.* C. R. 79 (1874) 93-, 602-; *Toul. Ac. Sc. Mm.* 8 (1876) 139-.
- —, extension to skew curve. *Poincaré, H.* C. R. 100 (1885) 40-.
- Conchalic curves, trajectories and cissoids of 4th degree. *Huber, G.* Mh. Mth. Ps. 6 (1895) 157-.
- Conics, porism of 2. *Gundelfinger, S.* *Crelle J. Mth.* 83 (1877) 171-.
- Curves whose corresponding Abelian functions are of class  $p=2$ . *Clebsch, R. F. A.* [1863] *Mth. A.* 1 (1869) 170-.



Curves, 2nd and 3rd degrees, parametric determination of points. *Juel, C.* Mth. A. 47 (1896) 72-.

—, 3rd degree, intersections with straight lines. *Laguerre, E.* [1875] Par. S. Mth. Bil. 4 (1876) 110-.

—, —, and their representation on circle. *Durège, H.* Z. Mth. Ps. 17 (1872) 433-.

—, 6th degree, cases. *Roberts, R. A.* Mess. Mth. 15 (1886) 26-.

Elliptic curves, equation giving points of inflexion. *Brioschi, F.* Mil. I. Lomb. Rd. 2 (1869) 559-.

—, plane. *Schlesinger, O.* Mth. A. 33 (1889) 444-; 34 (1889) 463-.

—, reduction of linear systems, and general theorem on curves of genus  $p$ . *Guccia, G. B.* Palermo Cir. Mt. Rd. 1 (1887) 169-.

— function, 1st species, with any modulus, skew curves with arcs representing. *Molins, H.* Liouv. J. Mth. 4 (1878) 187-.

— functions. *Hurwitz, A.* [1881] Mth. A. 19 (1882) 56-.

—, cubic transformation, and skew curves of 3rd degree. *Dixon, A. C.* Mess. Mth. 23 (1894) 94-.

— and curves of 3rd degree. *Harnack, A.* (vii) Erlang. Sb. Ps. Md. S. 6 (1874) 163-; (x) Mth. A. 9 (1876) 1-.

— — — — — *Bobek, K.* Casopis 12 (\*1883) 1-; Fsch. Mth. (\*1883) 407.

— — — — — *Pick, G.* Wien Ak. Sb. 97 (1889) (Ab. 2a) 711-.

— — — — — *Kötter, E.* Crelle J. Mth. 114 (1895) 170-.

— — — — — 4th degree. *Siebeck, H.* Crelle J. 57 (1860) 359-; 59 (1861) 173-.

— — of one parameter, curves with coordinates representable as. *Clebsch, R. F. A.* [1864] Crelle J. 64 (1865) 210-.

— — — — — (Clebsch's curves). *Humbert, G.* Par. S. Mth. Bil. 9 (1881) 166-.

— — — — —, expression of coordinates of bi-nodal quartic curve as functions of. *Davis, E. W.* Am. J. Mth. 5 (1882) 331-.

— — and skew curves of 4th degree, 1st kind. *Pick, G.* Wien Ak. Sb. 98 (1890) (Ab. 2a) 536-.

— —, trisection, applied to points of inflexion of cubic. *Heinze, L.* Arch. Mth. Ps. 70 (1884) 1-.

— and hyperelliptic integrals, application to rational curves. *Laguerre, E.* C. R. 96 (1883) 769-.

Equation  $y^2 = x(x^2 - 1)$ . *Burnside, W.* [1892] L. Mth. S. P. 24 (1893) 17-.

Eulerian integrals and sinusoid spirals

$$\left[ \rho^n = \frac{(2a)^n}{2} \cos n\phi \right].$$

*Loria, G.* Prag Sb. (1897) (Mth.-Nt.) No. 18, 6 pp.

Fuchsian functions. *Humbert, G.* Liouv. J. Mth. 2 (1886) 239-.

— — of one parameter, expression of coordinates of curve by. *Picard, É.* C. R. 92 (1881) 1332-.

Functional and invariant theory of binomial curves. *Wellstein, J.* Ac. Nt. C. N. Acta 74 (1899) 279-.

Hyperelliptic curves. *Bobek, K.* Prag Ab. 1 (1886) No. 1, 27-; Wien Ak. Sb. 93 (1886) (Ab. 2) 601-; 94 (1887) (Ab. 2) 861-; 95 (1887) (Ab. 2) 31-; Mth. A. 29 (1887) 386-.

— — — — — *Valentiner, H.* N. Ts. Mth. 10 (B) (1899) 51-; Fsch. Mth. (1900) 572-.

— —, class of curves akin to. *Bobek, K.* Wien Ak. Sb. 98 (1890) (Ab. 2a) 141-.

— —, genus 3, allowing automorphic transformations. *Wiman, A.* Stockh. Ak. Hndl. Bh. 21 (Afd. 1) (1896) No. 1, 23 pp.

— —, special. *Weltzien, C.* Mth. A. 30 (1887) 535-.

— —, transformation. *Cremona, L.* Mil. I. Lomb. Rd. 2 (1869) 566-.

— —  $C^{3n}$ , genus arbitrary. *Küpper, C. J.* Prag Ab. 1 (1886) No. 1, 26 pp.

— —  $C^3$  with 13 given double points, system. *Küpper, C.* Prag Sb. (1898) (Mth.-Nt.) No. 1, 7 pp.

— — functions of one parameter, curves with coordinates representable as. *Brill, A.* [1865] Crelle J. 65 (1866) 269-.

Intersections of curves, coordinates. *Blazejevski, R.* N. A. Mth. 14 (1895) 49-.

Multiply tangential curves to algebraic curves. *Weiss, W.* Mh. Mth. Ps. 7 (1896) 370-.

Parameters, representation of curves by. *Enriques, F.* Palermo Cir. Mt. Rd. 10 (1896) 30-.

Rational, elliptic, and hyperelliptic curves, linear systems. *Kantor, S.* Mh. Mth. Ps. 10 (1899) 18-.

— transformations of curves. *Painlevé, P. C.* R. 105 (1887) 792-.

Riemann's integrals of 1st species, canonical form. *Christoffel, E. B. A.* Mt. 9 (1878-79) 240-.

Spherical curves, 2 systems representable by elliptic functions. *Lilienthal, R. von.* Crelle J. Mth. 93 (1882) 237-.

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- , —, —  $r$ -gon and  $r$ -ace. *Kirkman, T. P.* [1856] Phil. Trans. (1857) 217-.
- ,  $k$ -,  $j$ -nodal, of  $r$ -gon. *Kirkman, T. P.* Manch. Ph. S. P. 1 (1857-60) 113-.

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— and space, division, laws. *Steiner, J.* Crelle J. 1 (1826) 349-.

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Rotation composition and space partitioning. *Rohn, K.* Dresden Isis Sb. (1898) 9-.

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Coordinates, line, 6. *Cayley, A.* [1867] Camb. Ph. S. T. 11 (Pt. 2) (1869) 290-.

—, —, formulæ. *Ovidio, E. d'.* G. Mt. 10 (1872) 33-.

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— — —, *Plücker's. Dronke, A.* Z. Mth. Ps. 11 (1866) 46-; 12 (1867) 481-.

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— — — — (Sylvester). *Chasles, M.* C. R. 52 (1861) 745-.

— — 6 lines in space. *Sylvester, J. J.* C. R. 52 (1861) 815-.

— — — — (Sylvester). *Cayley, A. C.* R. 52 (1861) 1039-.

—, mechanical. *Sylvester, J. J.* Am. J. Mth. 4 (1881) 336-; (XII) J. H. Un. Cir. [1] (1882) 242-.

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*Thomson, (Sir) W. QJ. Mth.* 1 (1857) 316-.

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*Ostrogradsky, M. A. [1839] St Pét. Ac. Sc. Mm.* 4 (1841) 309-.

Poisson's integral. *Mukhopadhyay, A. [1888] Beng. As. S. J.* 57 (Pt. 2) (1890) 100-.

$$\int_0^{\frac{\pi}{2}} [f(\sin ax, \cos ax) - f(\sin \beta x, \cos \beta x)] \frac{dx}{x}$$

$$= \frac{1}{2} \log \left( \frac{\beta}{\alpha} \right) [f(\sin 0, \cos 0) - A_0].$$

*Schlömilch, O. Grunert Arch.* 5 (1844) 152-.

$$\int_0^{\infty} \frac{x^{m-1} - 1}{1 - x^2} dx = \frac{\pi}{2} \cot \frac{m\pi}{2} \text{ if } 2 > m > 0.$$

*Zehfuss, G. Grunert Arch.* 30 (1853) 465-.

$$\int_0^{\frac{\pi}{2}} (2 \cos x)^{a+b} \cos(a-b)x dx. \text{ Lipschitz, R. O. S. Bll. Sc. Mth. As. } 5 \text{ (1881) (Pt. 1) } 387-.$$

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Curves represented by

$$\frac{dx}{\sqrt{\{(1-x^2)(1-k^2x^2)\} \pm \sqrt{\{(1-y^2)(1-k^2y^2)\}}} = 0,$$

and their envelopes. *Turner, H. H. Mess. Mth.* 10 (1881) 21-.

Deformable frameworks. *Dixon, A. C. Mess. Mth.* 29 (1900) 1-.

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Conditionally periodic functions in mechanics. *Staude, O.* Crelle J. Mth. 105 (1889) 298-.

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$$I_k^h = \frac{1}{2\pi} \int_0^{2\pi} \cos h\epsilon \cdot \cos(k \sin \epsilon) d\epsilon.$$

*Anger, C. T.* Danzig N. Schr. 5 (1855) (Heft 2) vi+29 pp.

## 4440

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## Equations.

*Lie, M. S.* Christiania F. (1882) No. 21, 12 pp., No. 22, 6 pp.; (1883) No. 10, 4 pp., No. 18, 5 pp.

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Equation between two variables, systems of curves defined by. *Dyck, W.* Münch. Ak. Sb. 21 (1892) 23-; 22 (1893) 101-.

## 5200

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*P dx + Q dy + R dz = 0*, geometrical interpretation. *Voss, A. E.* Mth. A. 16 (1880) 556-.

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*Bottomley, J.* Manch. Lt. Ph. S. Mm. & P.  
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$\frac{1}{2}m\frac{d^2r^2}{dt^2} = mv^2 + (Xx + Yy + Zz)$ . *Mantel, W.*  
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## Rectification.

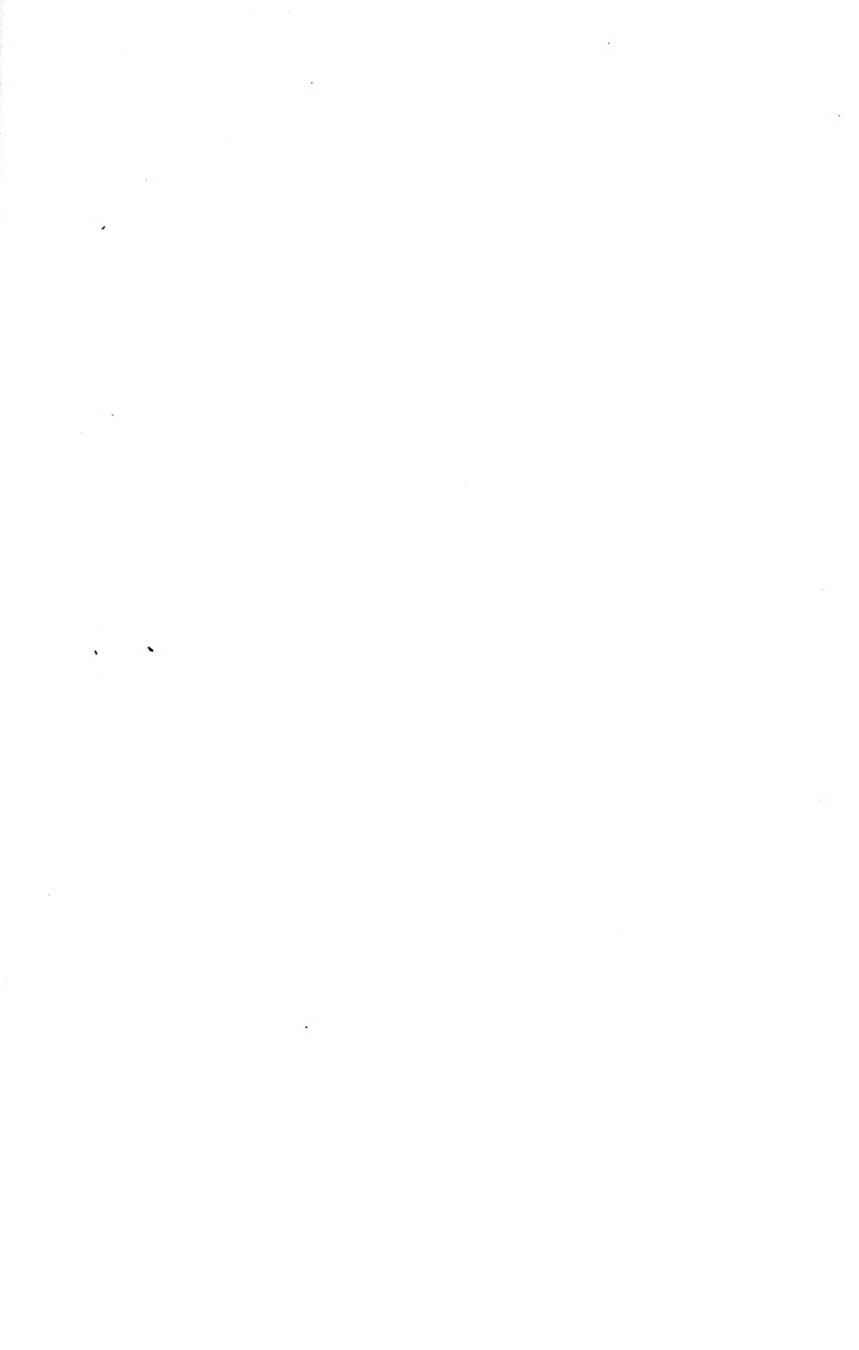
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- Class of fluid motions connected with minimal surfaces, and particular integrals of  $\nabla^2 V = 0$ . *Weingarten, J.* Gött. Nr. (1890) 313-.

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