ABSTRACTS

EDITED BY KENNETH O. MAY

The purpose of this department is to give sufficient information about the subject matter of each publication to enable readers to decide whether to read it. The indexing terms (in boldface capitals) refer only to aspects of the publication of interest to historians of mathematics, including some topics in general history of science and historiography, but not other topics unless there is a fairly close link with mathematics or its history.

Readers are invited to send reprints, autoabstracts, corrections, additions, and notices of publications that have been overlooked. Be sure to include complete bibliographic information. We need volunteers willing to cover one or more journals for this department.

MR 46 #3255 means that the item is numbered 3255 in volume 46 of Mathematical Reviews. *RZ 1973 #3A14 means that the item is numbered 3A14 in the third number of the 1973 volume of the* Referativny Zhurnal. *Z 50 4 means volume 50, page 4 of the* Zentralblatt.

The department is composed on the University of Toronto Computer text editing system (ATS/360), which allows easy correction, permanent availability for computer processing, right justification or variations in format of printout, and above all the quick automatic production of subject and author indices.

In order to facilitate reference and indexing, entries are given serial numbers (underlined for books) which appear at the end following the symbol # , and names are given surname first.

A name in parentheses at the end of an entry indicates the abstractor. In this issue there are abstracts by A. R. Amir-Moéz, E. J. Barbeau, J. L. Berggren, J. K. Bidwell, S. M. Eisenberg, Colin Fletcher, D. E. Kullman, A. C. Lewis, B. M. Schein, A. Schlissel, H. S. Tropp, and David E. Zitarelli. Other entries are by the editor.

BIRUNI & KENNEDY E S ed and transl 1976 The Exaustive Treatise on Shadows by Abu al-Rayhan 'Iuhammad b. Ahmad al-Biruni. Translation and Commentary by E. S. Kennedy. Vol. I: Translation 297 p. Vol. II: Commentary 240 p. Aleppo, Syria (Inst. for the Hist. of Arabic Science, Univ. of Aleppo). SHADOWS. OPTICS. TRIGONOMETRY. INSTRUMENTS. BIBLIOGRAPHY. General index. A primary source for the history of ANCIENT MATHEMATICS, MEDIEVAL MATHEMATICS, and the exact sciences. The commentary is an essential secondary source. #149.

YUSHKEVICH A P & CAZENAVE 'I transl & JAOUICHE K transl 1976 Les mathematiques arabes (VIII - XV siecles), par Adolf P. Youschkevitch. Preface de Rene Taton. (Collection d'histoire des sciences, 2 - C.N.R.S. Centre d'histoire des sciences et des doctrines). Paris (Lib. Phil. J. Vrin). 221 p. TRANSLATION of Part 3 on ARAB MATHEMATICS of the author's classic Mathematics in the Middle Ages (First edition in Russian 1961; German revised translation 1964 Leipzig (Teubner) with added notes by the author. BIBLIOGRAPHY (172 items). #150.

BEDINI SILVIO A 1975 Thinkers and Tinkers. Early American Men of Science. New York (Scribner's). 533p. MATHEMATICAL PRACTICIONERS. MATHEMATICAL INSTRUMENTS. COLONIAL AMERICA. USA. XIX. XVII. XVIII. PURE AND APPLIED MATHEMATICS. CARTOGRAPHY. SURVEYING. ALMANACS. NAVIGATION. MATHEMATICAL TECHNOLOGY. GLOSSARY. ILLUSTRATIONS (102 plates). See the index for references to mathematicians. #151.

SPRINGER VERLAG 1976 Mathematics Calendar 1977. Berlin-Heidelberg-New York (Springer Verlag). 22 p. Well worth the $4.90 now quoted, just for the fascinating materials visible on each double page spread. We hope a similar calendar will be avaible in good time for 1978. #152.

SZABO ISTVAN 1977 Geschichte der mechanischen Prinzipien und ihrer wichtigsten Anwendungen. Basel-Stuttgart (Birkhauser). 507 p. MECHANICS. FLUID MECHANICS. ELASTICITY. EXTREMAL PRINCIPLES. CALCULUS OF VARIATIONS. COLLISION THEORY. Many ILLUSTRATIONS (202) including 43 PORTRAITS among which some uncommon ones: CHLADNI E F F. KOENIG J S. LAGRANGE J L. CLAIRAUT A C. D'ALEMBERT J L R. SAINT-VENANT B. TAYLOR B. BOURNOULLI JAKOB II. GERMAIN SOPHIE. #153.

HASSE HEL'TUT & SCHOLZ HEINRICH & ZEUTHEN H G 1976 ZENO and the discovery of INCOMMENSURABLES in GREEK MATHEMATICS. New York (Arno Press). 156 p. In the series History of Ideas in Ancient Greece, edited by Gregory Vlastos. Facsimile REPRINTS of Hasse and Scholz 1928 Die Grundlagenkrisis der Griechischen Mathematik, Charlottenburg ('Ietzner), 72 p; Zeuthen 1910 Sur la constitution des livres arithmetiques des Elements d'Euclide et leur rapport a la question de l'irrationalite, Oversigt Kong. Danske Vid. Selsk. Forh. No. 5, 41 p; and Zeuthen 1913 Sur les connaissances geometriques des Grecs avant la reforme Platonicienne, ibidem, No. 5, 43 p. EUCLID. IRRATIONALS. GREEK GEOMETRY. #154.

IYANAGA SHOKICHI & KAWADA YUKIYOSI editors 1977 Enclopedic Dictionary of Mathematics (EDM). Translated by the 'Iathematical Society of Japan with the cooperation of the American Iathematical Society. Translation reviewed by Kenneth O. May. From the Iwanami Sugaku Ziten, written by 80 Japanese mathematicians for the M.S.J. from 1946, first published in 1954, revised and augmented edition 1960, second edition 1968. Boston, Mass. (MIT Press). 2 volumes, 1680 p. ENCYCLOPEDIAS. REFERENCE WORKS. The 436 articles from Abelian Groups to Zeta Functions, written at the post-graduate level and bringing their subjects up to about 1967, include definitions of terms and are well indexed. There are few historical or biographical articles, but the articles and their BIBLIOGRAPHIES contain an enormous amount of CURRENT HISTORY and background in the XIX and XX centuries. #155.

MATVIEVSKAYA G P 1976 Rene Dekart 1596-1650. 'Ioscow (Nauka). 271 p. A general biography of DESCARTES R, including a survey of his work in science and philosophy, with emphasis on mathematics. CHRONOLOGY. BIBLIOGRAPHY (496 titles, classified). #156.

ROZHANSKAYA M M 1976 Iekhanika na srednevekovom vostoke (MECHANICS in the medieval East). 'Ioscow (Nauka). 324 p. 'IEDIEVAL MATHEMATICS. MEDIEVAL MECHANICS. ARAB MATHEMATICS. ANCIENT MATHEMATICS. INDIAN MATHEMATICS. MIDDLE EAST. NEAR EAST. Nothing on China. BIBLIOGRAPHY (308 items). The author concludes that there was no

break between ancient and medieval mechanics and that the medieval period was one of development not merely transmission. #157.

ROZENFELD B A 1976 Istoriya neevklidovoi geometrii. Razvitie ponyatiya o geometricheskom prostranstve. (History of NON-EUCLIDEAN GEOMETRY. Development of the concept of geometric SPACE.) Moscow (Nauka). 412 p. Historical background (5 chapters sketching the development from ancient times to the early nineteenth century of SPHERICAL GEOMETRY, theory of PARALLEL LINES, GEOMETRIC TRANSFORMATIONS, GEOMETRIC ALGEBRA, and the prehistory of N-DIMENTIONSAL SPACE and philosophical analysis of space), LOBACHEVSKII GEOMETRY (one chapter including his discovery and development, immediate precursors, independent discoveries, the struggle for recognition, consistency proofs, interpretations, and acceptance), and further developments (N-DIMENSIONAL GEOMETRY, CURVED SPACES, TRANSFORMATION GROUPS), and related developments in algebra and PHILOSOPHY OF MATHEMATICS. BIBLIOGRAPHY (527 items). #158.

LOBACHEVSKII N I 1976 Nauchno-pedagogicheskoe nasledie. Rukovodstvo Kazanskim Universitetom. Fragmenty. Pisma. (Scientific-pedagogical heritage. Leadership of Kazan University. Fragments. LETTERS.) Moscow (Nauka). 661 p. Edited by a committee headed by P. C. Aleksandrov and B L Laptev. EDUCATION. SELECTED WORKS. Material from primary sources not in the COLLECTED WORKS (lectures, LETTERS (40), notes, and other MANUSCRIPTS) with commentary. ILLUSTRATIONS (28), including PORTRAIT (in colour), FACSIMILES, and PHOTOGRAPHS. #159.

ROLLER DUANE H D & GOODMAN MARCIA M 1976 The Catalogue of the History of Science Collections of the University of Oklahoma Libraries. London (Mansell). Two volumes. 1212 p. LIBRARIES. OKLAHOMA UNIVERSITY LIBRARY. BIBLIOGRAPHIES. Some 39,000 entries describing 50,000 volumes. #160.

BARTLETT, M S 1975 Probability, Statistics and Time. A Collection of Essays. London (Chapman and Hall)-New York (Wiley). 156 p. Includes REPRINTS of two of his papers on history, one on FISHER R A and CURRENT HISTORY (J Amer Stat Ass 60(1965), 395-409) and one on MULTIVARIATE ANALYSIS (Sankhya 36B (1974), 107-114). #161.

GEMINOS & AUJAC GERMAINE translator and editor 1975 Geminos. Introduction aux phenomenes. Texte etabli et traduit par Germaine Aujac. Paris (Soc. d'ed. Les Belles Lettres). 342 p. GREEK MATHEMATICS. GREEK ASTRONOMY. PTOLEMY. GEOGRAPHY. The Greek text of this only surviving work of Geminos (of Rhodes), with French translation on facing pages. Introduction (127 p) and notes (50 p) summarize the meager information on his life, analyze his work (mathematics pp. XVII-LXIV), manuscrints, BIBLIOGRAPHY, and historiographic problems. GLOSSARY of Greek technical terms(47 p), fold out illustrations and map of the sky as it appeared in that period. #162.

DYM H & MCKEAN H P 1976 GAUSSIAN PROCESSES, FUNCTION THEORY, and the INVERSE SPECTRAL PROBLEM. New York (Academic Press). 344 p. Not a history, but has historical references to the literature. #163.

FAGEN M D editor 1975 A History of Engineering and Science in the Bell System. The Early Years (1875-1925). (Bell Telephone Laboratories, Inc.). 1086 p. PROBABILITY. STATISTICS. INFORMATION THEORY. COMMUNICATION THEORY. HEAVISIDE O. FRY T C. Very little on these topics. The second volume promised to cover the period 1925-1975 should reflect the increased role of mathematics. #164.

CALINGER RONALD 1976 Gottfried Wilhelm Leibniz. With an essay by Leibniz on the German language, translated by Caryn and Bernhard Wunderlich. Troy, N.Y. (Renssalaer Polytechnic Institute). 104 p. POPULARIZATION addressed to a broad audience. PORTRAIT (pen and ink 1976 by A. N. Wyeth, showing LEIBNIZ G W surrounded by objects suggestive of his life and work), life (34 p), NATURAL PHILOSOPHY (i.e. PHILOSOPHY OF SCIENCE and work in particular sciences)(18 p), reputation (12 p), and first published translation of "Informal thoughts regarding the use and improvement of the German language." BIBLIOGRAPHY. #165.

GARCIADIEGO DANTAN ALEJANDRO R 1977 La teoria de conjuntos: sus origenes, desarrollo y consecuencias. Thesis, Universidad Nacional Autonoma de Mexico. 172 p. SET THEORY. Includes Spanish translation of Cantor's 1895 Contributions to the founding

of the theory of transfinite numbers (from the English translation) and considerable exposition of set theory from Cantor's work through well ordering, axiomatization, and Gödel's theorems. #166.

BRUSH STEPHEN G 1976 The Kind of Motion We Call HEAT. A History of the KINETIC THEORY OF GASES in the 19th Century. Book 1. Physics and the Atomists. Book 2. Statistical Physics and Irreversible Processes. (Studies in STATISTICAL MECHANICS, vol. VI). Amsterdam-New York-Oxford (North-Holland). 808 p. Introductory survey (about 100 p), personalities (about 200 p) (WATERSON JOHN JAMES. CLAUSIUS RUDOLPH. MAXWELL JAMES CLERK. BOLTZMAN LUDWIG. VAN DER WAALS J D. MACH ERNST.), "Problems" (abou t 400 p), and BIBLIOGRAPHY (65 p). Consists almost entirely of reprints of his own papers. #167.

HELLER ALEX & TIERNEY MYLES 1976 Algebra, Topology, and Category Theory. A Collection of Papers in Honor of Samuel Eilenberg. New York (Academic Press). 236 p. EILENBERG SAMUEL. Sixteen papers, some given at a conference 3-4 May 1974 in honor of Eilenberg's sixtieth birthday. BIBLIOGRAPHY OF 117 published works. No biography or history except a paper on the Eilenberg-MacLane collaboration by Maclane. PORTRAIT. #168.

O'NEIL W M 1975 TIME and the CALENDARS. Sydney (Sydney University Press). 148 p. Describes the astronomical and historical background of the current calendars and those of Egypt, Rome, Babylonia, ancient India, and China. #169.

HADAMARD JACQUES 1975 Essai sur la psychologie de l'invention dans le domaine mathematique. Paris (Gauthier-Villars). 134 p. REPRINT of the French translation by Jacqueline Hadamard, first published in 1959, of the original English (1945 Princeton U P). HEURISTIC. #170.

ABEL N H 1976 Memoire sur les equations algebriques ou on demontre l'impossibilite de la resolution de l'equation generale du cinquieme degre. Facsimile REPRINT of the original edition (1824, Christiania). Facsimila Scientia et Technica Norvegica 40, edited by Knut Thalberg. Trondheim. 9 p. Hansome printing on suitable paper appropriately bound. #171.

RENYI ALFRED 1976 Selected papers. Edited by Pal Turan. Three volumes. Budapest (Akademiai Kiado). 1931 p. SELECTED WORKS (156 of 350 papers), in facsimile in English, French, German original, and in English translation of original Hungarian, Russian, and Chinese. Brief biography and BIBLIOGRAPHY of his 355 publications at the beginning of each volume. The editor is to be congratulated particularly for having printed the papers in chronological order, so that it is possible to see the historical development. #172.

RAPHAEL BERTRAM 1976 The Thinking Computer. Mind Inside Matter. San Francisco (W. H. Freeman). 333 p. COMPUTERS. CURRENT HISTORY. ARTIFICIAL INTELLIGENCE. #173.

CAHEN M & FLATO M editors 1976 DIFFERENTIAL GEOMETRY and RELATIVITY. A volume in Honour of LICHNEROWICZ ANDRE on his 60th Birthday. Dortrecht-Boston (D. Reidel). 284 p. BIBLIOGRAPHY of his work, but unfortunately no biography and only one paper on his work (see #175). #174.

COUTY R & REVUZ A 1976 Thirty years of activity in the renovation of mathematical EDUCATION. In #174, 1-2. #175.

BAUMSLAG GILBERT editor 1973 Reviews on INFINITE GROUPS. Providence, RI (American Math. Soc.). 1062 p. Reprints of reviews that appeared in Math. Reviews 1940-1970. Merely saves the reader the trouble of going through individual volumes, where these reviews are grouped together. #176.

GORENSTEIN DANIEL 1973 Reviews on FINITE GROUPS. Providence, RI (American Math. Soc.). 706 p. See comment to above. #177.

BROWDER FELIX E editor 1976 Mathematical Developments arising from HILBERT PROBLEMS. Proceedings of a symposium at Northern Illinois University, 1974. Providence, RI (American Math. Soc.) 640 p. PORTRAITS of BERS LIPMAN, BOMBIERI ENRICO, BUSEMANN HERBERT, CONWAY J, DAVIS MARTIN, KATZ NICHOLAS M, KLEIMAN STEVEN L, KREISEL G,

LANGLANDS R P, LORENTZ G G, MARTIN DONALD A, MILNOR J, MONTGOMERY HUGH L, MUMFORD DAVID, O'MEARA O T, PFISTER ALBRECHT, ROBINSON JULIA, SERRIN JAMES, TATE J, TIJDEMAN R, WIGHTMAN A S, YANG C T. REPRINT of the English translation of Hilbert's original article (1902 Bull AMS). An article on current problems in mathematics, collected and edited by J. Dieudonne. Hilbert problems 1-15 and 17-21 are discussed briefly with BIBLIOGRAPHY. CURRENT HISTORY. #178.

SANTALO LUIS A 1976 INTEGRAL GEOMETRY and GEOMETRIC PROBABILITY. With a foreword by Mark Kac. Volume 1 of the Encyclopedia of Mathematics and Its Applications, edited by Gian-Carlo Rota and a large editorial board. This volume is part of the section on probability, edited by Mark Kac. Reading, Mass. (Addison-Wesley). 421 p. No explicit history, but some historical information in notes at the ends of chapters. BIBLIOGRAPHY (736 items). #179.

RUND HANNO & FORBES WILLIAM F 1976 Topics in DIFFERENTIAL GEOMETRY. In memory of DAVIES EVAN TOM. New York (Academic Press). 195 p. Obituary by R S Clark, reprinted from Bull. London Math. Soc. 6(1974), 370-376, with BIBLIOGRAPHY, and REMINISCENCES by E Bompiani. #180.

KOVANTSOV N I 1976 Matematika i romantika (Mathematics and romance). Kiev (Vishcha shkola). 95 p. POPULARIZATION. Anecdotal history and biography, meshed with exposition of selected topics both ancient (e.g. classic constructions) and modern (e.g. Galois theory). #181.

SCHAAF WILLIAM L 1976 The High School Mathematics Library. Reston, Virginia (National Council of Teachers of Math.) 79 p. Sixth updated edition (first edition 1960). Includes useful lists of paperbacks, journals, publishers, etc. BIBLIOGRAPHIES. #182.

VIRTANEN REINO 1975 L'imagerie scientifique de Paul Valery. Paris (Lib. Phil. J. Vrin). 153 p. VALERY PAUL. LITERATURE. POETRY. ANALOGY. FIGURES OF SPEECH. METAPHOR. #183.

MERLEAU-PONTY JACQUES 1974 Lecons sur la genese des theories physiques. Galilee, Ampere, Einstein. Paris (Lib. Phil. J. Vrin). 172 p. GALILEO. AMPERE A M. EINSTEIN A. MECHANICS. RELATIVITY. MATHEMATIZATION. #184.

KRUTETSKII V A & TELLER JOAN transl & KILPATRICK JEREMY ed & WIRSZUP IZAAK ed 1976 The Psychology of Mathematical Abilities in Schoolchildren. Chicago (Univ of Chicago P). 433 p. HEURISTIC. PSYCHOLOGY OF MATHEMATICS. EDUCATION. CREATIVITY. BIBLIOGRAPHY (747 items). Produced by the Survey of Recent East European Mathematical Literature, a project conducted by Izaak Wirszup, University of Chicago. #185

JAYAWARDENE S A 1976 The "Trattato d'abaco" of PIERO DELLA FRANCESCA. In Cultural Aspects of the Italian Renaissance, ed by Cecil H. Clough, Manchester Univ Press, 229-243. PACIOLI LUCA. PLAGIARISM. ARITHMETIC. ALGEBRA. RENAISSANCE MATHEMATICS. MANUSCRIPTS. #186.

D'AMBROSIO UBIRATAN 1976 Overall goals and objectives for mathematical EDUCATION. Campanas-Sao Paulo, Brasil (Universidade Estadual de Campinas) Duplicated typescript, 48 p. ROLE OF MATHEMATICS. CURRENT HISTORY. Wide ranging report at the 3rd Int. Cong. on Math Ed, Karlsruhe, August 1976. #187.

TEUGELS JOZEF L 1976 A BIBLIOGRAPHY on SEMI-MARKOV PROCESSES. J of Computational and Applied Mathematics 2(2), 125-148. About 600 items. #188.

BOAS P VAN EMDE 1969 NOWHERE DIFFERENTIABLE CONTINUOUS FUNCTIONS with an extended list of references. Amsterdam (Stichting Mathematisch Centrum). Duplicated typescript, 24 p. BIBLIOGRAPHY (104 items). SURVEY. #189.

RALSTON A & MEEK C L editors 1976 Encyclopedia of Computer Science. N.Y. (Petrocelli/Charter). REFERENCE WORKS. COMPUTER SCIENCE. For non-specialists. Historical articles include biographical sketches of: AIKEN H. ATANASOFF J. BABBAGE C. BOOLE G. ECKERT J P. ECKERT W. HOLLERITH H. LEIBNIZ G. MAUCHLY J. PASCAL B. TURING A. VON NEUMANN J. WATSON T. WIENER N. WILKES M. ZUSE K.

Also descriptions of early COMPUTERS: ATLAS. EDSAC. EDVAC. ENIAC. LARC. MARK I. STRETCH. SWAC. UNIVAC I. WHIRLWIND. (H S Tropp) #190

BERGGREN J L 1977 A lacuna in Book I of ARCHIMEDES' Sphere and Cylinder. HM 4, 1-5. Reviews previous efforts to supply a missing proof and gives a new one of the proposition about the areas of three triangles whose sides are generators of an isosceles cone. #191.

DORLING A R 1976 The Graves mathematical collection in UNIVERSITY COLLEGE LONDON. Annals of Sci 33, 307-309. LIBRARIES. ARCHIVES. GRAVES J T. HAMILTON W R. History and description of one of the best and largest collections of SOURCES for the history of mathematics, collected by Graves (d. 1870). (A C Lewis) #192.

BOS H J M & MEHRTENS H 1977 The interactions of MATHEMATICS AND SOCIETY in history. Some exploratory remarks. HM 4, 7-30. SOCIOLOGY OF MATHEMATICS. HISTORIOGRAPHY OF MATHEMATICS. HISTORICAL THEORY. GREEK MATHEMATICS. SCIENTIFIC ACADEMIES. ORGANIZATIONS. MATHEMATICAL PROFESSIONS. MATHEMATICAL PRACTICIONERS. BIBLIOGRAPHY. #193.

MCAULEY LOUIS 1969 F. Burton Jones. In Proceedings of the Auburn Topology Conference, edited by W R R Transue, Auburn, Alabama, iii-xii. Brief biography of JONES F BURTON on occassion of his 60th birthday. TOPOLOGY. BIBLIOGRAPHY. (H S Tropp) #194.

GUPTA RADHA CHARAN 1977 PARAMESVARA's rule for the CIRCUMRADIUS OF A CYCLIC QUADRILATERAL. HM 4, 67-74. Presents an anticipation in the XV century of a formula attributed to L'Huilier in the XVIII. #195.

GARDNER MARTIN 1976 CATALAN NUMBERS: An integer sequence that materializes in unexpected places. Scientific American 234(6), 120-122, 124-125, 132. SEQUENCES OF INTEGERS. (H S Tropp) #196.

ROSS BERTRAM 1977 The development of FRACTIONAL CALCULUS 1695-1900. HM 4, 75-89. Fractional calculus is that of derivatives and integrals of fractional order. #197.

KOLATA GINI BARI 1976 The FOUR-COLOR CONJECTURE: a COMPUTER-AIDED PROOF. Science 193, 564-565. Brief exposition of the recent proof by APPEL K and HAKEN W. (H S Tropp) #198.

GUPTA R C 1977 1500th birth anniversary of ARYABHATA at Delhi. HM 4, 91-93. #199.

AUSTING R H & BARNES B H & ANGEL G L 1977 A survey of the literature in COMPUTER SCIENCE EDUCATION since Curriculum '68. Communications of the ACM 20(1), 13-21. BIBLIOGRAPHY (200 items classified). (H S Tropp) #200.

STIGLER STEPHEN M 1977 An attack on Gauss published by Legendre in 1820. HM 4, 31-35. GUASS C F. LEGENDRE A M. LEAST SQUARES. PRIORITY. #201.

HUGHES T P 1975 ENIAC: invention of a computer. Technikgeschichte 42(2), 148-165. COMPUTERS. SOCIOLOGY OF SCIENCE. MAUCHLY J. ECKERT J P. BUSH V. BRAINERD J. PENNSYLVANIA U. (H S Tropp) #202.

MÜÜRSEPP PEETER 1977 Gauss' LETTER to Fuss of 4 April 1803. HM4, 37-41. GAUSS C F writes FUSS N refusing the offer of the ST PETERSBUR G ACADEMY and mentioning astronomical obersvations. First publication of this MANUSCRIPT. #203.

FERGUSON ROLFE P 1974 On Fermat's last theorem. J of Undergrad Math 6(1), 1-14; 6(2), 85-97; 7(1), 35-45. FERMAT LAST THEOREM. BIBLIOGRAPHY. TABLES OF BERNOULLI NUMBERS. (H. S. Tropp) #204.

NOVIKOFF ALBERT & BARONE JACK 1977 The BOREL LAW OF NORMAL NUMBERS, the BOREL ZERO-ONE LAW, and the work of Van Vleck. HM 4, 43-65. VAN VLECK E. MEASURE THEORY. PROBABILITY. ERGODIC THEORY. METRICALLY TRANSITIVE TRANSFORMATIONS. VAN VLECK ZERO-ONE LAW. #205.

BOTTS TRUMAN 1977 Award for Distinguished Service to Professor Victor Klee. Amer. Math. Mo. 84(2), 81-82. KLEE VICTOR. AWARDS. PORTRAIT. (H S Tropp) #206.

JONES H W 1974 A seventeenth-century debate. Annals of Sci 31, 307-333. WHITE THOMAS. GULDIN P H. HOBBES T. TORRICELLI E. INDIVISIBLES. COLLINS JOHN. White's Exercitatio geometrica and his Tutela geometrica, the anonymous (Collins?) attack Querela geometrica, and White's reply Chrysaspis to Querela. (Colin Fletcher) #207.

ROGERS L F 1977 History of mathematics at the Third International Congress for Mathematical Education, Karlsruhe, 16-21 August 1976. HM 4, 94-95. HISTORY OF MATHEMATICS IN EDUCATION. #208.

GRATTAN-GUINNESS I 1974 The Russell ARCHIVES: some new light on Russel's LOGICISM. Annals of Sci 31, 387-406. RUSSELL BERTRAND. The material on logic in the Russell Archives at McMaster University, with special reference to a pre-Principia logical system and a delay in the printing of the second volume of the Principia. (Colin Fletcher) #209.

JONES P S 1976 1876+100. The Math. Teacher 69, 586-593. EDUCATION. TEXTBOOKS. USA. Selective survey of work of American mathematicians and textbook writers including: GIBBS W. PEIRCE C S. HODDER J. GREENWOOD I. BOWDITCH N. (J K Bidwell) #210.

WILKES M V 1976 The EDSAC film. 10 min. 16 mm. color film with optical soundtrack. (Computer Laboratory, Corn Exchange st, Cambridge, England CB2 3QG) $175. In 1951 a film was made in the Math Lab at Cambrdige illustrating the operation of EDSAC, which had been designed by M. Wilkes after he attended a summer course on ENIAC and the proposed EDVAC at the Moore School in 1946 under the guidance of J Mauchly, J P Eckert, J Van Neumann, A Burks, and others. The film was first shown at the First Joint Computer Conference in Philadelphi in December 1951 and is probably the first one describing a stored program computer. Participants in the film include: GILL S. DOUGLAS A S. MUTCH E N. This 1976 reissue has added a recorded commentary by Wilkes. (H S Tropp) #211.

SMALL CHARLES 1977 Waring's problem mod n. Amer Math Mo 84, 12-25. SURVEYS. WARING PROBLEM. CURRENT HISTORY. BIBLIOGRAPHY. (H S Tropp) #212.

ABELES FRANCINE 1976 Multiplication in changing bases: a note on Lewis Carroll. HM 3, 183-184. CARROLL LEWIS. NUMBER BASES. RECREATIONS. #213.

ANON 1976 Math in CHINA is devoted to production and supply. Siam News 9(6), 1, 4. PURE AND APPLIED MATHEMATICS. Brief summary of part of forthcoming report on a visit dealing with status there of APPLIED MATHEMATICS and OPERATIONS RESEARCH. (H S Tropp) #214.

AABOE A & HENDERSON J A 1975 The Babylonian theory of lunar latitude and eclipes according to System A. Arch Int d'Hist Sci 25(97), 181-222. BABYLONIAN ASTRONOMY. #215.

AHMAD SALAH & RASHED ROSHDI 1976 A A Saidan's review of Al-Bahir en algebre d'as-Samawal. HM 3, 78-80. A reply. #216.

SAMMET JEAN E 1976 Roster of PROGRAMMING LANGUAGES for 1974-1975. Communications of the ACM 19, 655-669. Alphabetical list of 168 programming languages that have been developed or reported in the U.S. and used on at least one general purpose computer, with description, implementation, bibliographic reference, application area, contact address. (H S Tropp) #217.

ALBIS-GONZALEZ VICTOR & SORIANO-LLERAS LUIS I 1976 The work of Indalecio Lievano on the foundations of REAL NUMBERS. HM 3, 161-166. LIEVANO INDALECIO. Published in Bogota from 1856. #218.

GILLESPIE CHARLES C 1976 Eloge: Carl B. Boyer. Isis 67, 610-614. BOYER CARL B. PORTRAIT. (H S Tropp) #219.

DUGAC PIERRE 1976 Option d'histoire des mathematiques (1975-1976). Paris (Universite Pierre et Marie Curie) 163 p. (mimeographed) TEXTS IN HISTORY OF MATHEMATICS. ANALYSIS FOUNDATIONS. SERIES. INTEGRATION. FOURIER SERIES. BIBLIOGRAPHY (110 items). Materials for a course designed to give some understanding of the evolution in the XIX century of notions taught in the "first cycle" at the university. REPRINTS of DARBOUX G "Memoire sur les fonctions discontinues" and DIRICHLET P G L "Sur la convergence des series trigonometriques. Two sample examinations. #220.

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