ABSTRACTS

The purpose of this department is to give sufficient information about the subject matter of each publication to enable users to decide whether to read it. It is our intention to cover all books, articles, and other materials in the field.

Books for abstracting and eventual review should be sent to this department, with an extra copy sent directly to the editor of the Book Reviews Department if the publisher wishes to accelerate the process. Materials should be sent to Dr. Albert C Lewis, Humanities Research Centre, Box 7219, Austin, TX 78712.

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

The indexing terms (in 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.

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. Isis 102, 45 means item 45 in the 102nd Isis Critical Bibliography.

In order to facilitate reference and indexing, entries are given serial numbers which appear at the end following the symbol #. The serial numbers of books are underlined.


HØYRUP ELSE 1978 WOMEN AND MATHEMATICS, sciences and engineering, a partially annotated bibliography with emphasis on mathematics and with references on related topics. Skriftserie fra Roskilde Universitetsbibliotek 4. Denmark (Roskilde University Library). 62 pp. Approximately 350 authors are represented, subject arranged with an author index. The address of the author, who is continuing this work, is: Bøgevej 8, DK 3500 Vaerløse, Denmark. (ACL). #952.


POVIČIĆ ŽOZE 1978 Bibliografija Franca Hočevarja; FRANC HOCEVAR--BIBLIOGRAPHY. Ljubljana, Yugoslavia (Slovenska Akademija Znanosti in Umjetnosti). 35 pp. A 3-page introduction to the life and work of Hočevar, 1853-1919, is given, also in English. The bibliography includes his 20 major works and nearly 200 different editions of his textbooks in mathematics. Portrait. (ACL). #954.


GOLOVINSKII I A 1977 Iz istorii interpolatsionnykh ryadov (From the history of INTERPOLATION SERIES). In #955, 65-81. A survey of interpolation methods up to the beginning of the 19th century. Series introduced by J. NEWTON, B. TAYLOR, P. LAPLACE and N. ABEL and their consideration by other mathematicians, such as J. LAGRANGE and L. EULER. (ERP). #959.

KHUDOVYNOVA A I 1977 Ekstr的有效性 интегралы Косиги (The EXTRAORDINARY INTEGRAL of CAUCHY). In #955, 82-84. This integral was first introduced in an attempt to extend the definition of the GAMMA-FUNCTION to negative values of the argument. It is seen as a precursor of the 20th century concept of a GENERALIZED FUNCTION. (ERP). #960.

LYUSTERNIK L A & PETROVA S S 1977 Iz istorii simbolicheskovo ischisleniya (From the history of symbolic calculus). In #955, 85-101. The works of French mathematicians of the late 18th and early 19th centuries on operations induced by differentiation.


MAISTROV L E 1977 O veroyatnostnomu kontseptsi Pasculya u A. Reni (On Pascal's concept of probability, according to A. RENI). In #955, 200-211. Objections are raised to A. RENI's reconstruction of a non-existing letter from B. PASCAL to P. FERMAT on the subject of PROBABILITY. Pascal's conception of PROBABILITY. (ERP). #966.

SHEINEN O B 1977 Teoriya veroyatnosti P.S. Laplasa (Laplace's theory of probability). In #955, 212-224. LAPLACE's contributions to the general theory of PROBABILITY, his philosophical DETERMINISM, probabilistic ideas in physics. (ERP). #967.

YURKINA M I 1977 Vklad Eilera i Gaussa v reshenie zadach o schete vysoy (The contributions of EULER and GAUSS to the solution of the problem of calculating altitude) In #955, 225-228. Theory of POTENTIAL. GEODESY. (ERP). #968.

SLAVUTIN E I 1977 O "Dannykh" Evklida (EUCLID's "DATA"). In #955, 229-236. The first 23 problems in the DATA, stated by Euclid in the language of the THEORY OF PROPORTIONS, are translated into the language of linear functions. (ERP). #969.


ALEKSANDROV P S 1977 Vospominaniya o Gettingene (Recollections of GÖTTINGEN). In #955, 242-244. An account by the noted topologist of his visits to Göttingen throughout the 1920s and 1930s, and again after the war. D. HILBERT, E. NOETHER, H. HOPF, A. KUROSH. (ERP). #971.

GELFOND A O 1977 Nekotorye vpechatleniya o nauchnoi poezdke v Germaniyu v 1930 g (Some impressions of a scientific trip to Germany in 1930). In #955, 246-251. Among those in GÖTTINGEN at that time were D. HILBERT, H. WEYL, R. COURANT, E. LANDAU, E. NOETHER, B. L. VAN DER WAERDEN, E. ARTIN, H. HAASE, K. FRIEDRICH, H. LEVI, O. NEUGEBAUER, and many others! (ERP). #972.

SHTYKAN A B 1977 O nekotorykh vprosakh istorii matematicheskovo analiza i evolutsii sredstv vychislenii (Some questions in the history of ANALYSIS and the evolution of the methods of CALCULATION). In #955, 252-273. Discoveries made by I. NEWTON, J. HUYGENS, W. LEIBNIS, and the BERNOULLI brothers in the area of QUADRATURES and CUBATURES and their role in the development of the INFINITESIMAL CALCULUS. The author claims that these discoveries have not been taken into account in the generally accepted histories of this subject. BIBLIOGRAPHY. (ERP). #973.
LEIBNIZ G W 1977 Supplementum geometricae dimensoriae, seu generalissima omnium tetragonismorum effectio per motum, similituerque multiplex constructio linearum data tangentiun conditions (translated into Russian and annotated by A.B. SHTYKAN). In #955, 274-285. Written in 1693, this paper contains a description of a mechanical scheme related to the process of integration. It is discussed in #973. (ERP).

HUYGENS C 1977 Pismo k avtoru (A letter to the author). In #955, 286-288. Translated by A.B. Shtykin, with notes. MECHANICAL METHOD for tracing a TRACTRIX. This letter is discussed in #973. (ERP).


BERNOULLI JAC. 1977 Solutio problematis Fraterni ante octiduum Lipsiam transmissi (translated from the Latin by A.B. Shtykan, with notes). In #955, 292-294. A mechanism is described for a geometric construction of a curve if properties of the tangent are given. Discussed in #973. (ERP).

DIOPHANTUS 1975 Sina't al-Gabr l'Diophantus (The art of algebra by Diophantus). Cairo: L'Organisme Egyptien du Livre. 253 pp. Contains the text of DIOPHANTUS' four books of arithmetic, the only known translation of which is this Arabic one of the 10th century. Rosdi Rashed, the editor, also provides an introduction. See the critical review in Isis 68, 627-630. (ACL).


GRABINER JUDITH V 1977 Mathematics in America: The first hundred years. In #979, 9-24. The factors in AMERICAN MATHEMATICS, 1776 to 1886, are described which led to a mature mathematical community by the 1890s. (ACL).

BIRKHOFF GARRETT 1977 Some leaders in AMERICAN MATHEMATICS: 1891-1941. In #979, 25-78. An account of some 40 mathematicians is given in the context of the growth of American mathematics. Of special value are the recollections, some recorded here for the first time, of the author's own experiences and of his father G.D. BIRKHOFF. (ACL).


HAMMING R W 1977 The history of COMPUTING in the United States. In #979, 117-128. With some historiographical remarks, a chronological account is given of the "hardware," "software," and uses of computers from the nineteenth century to the present. (ACL).

LAX PETER D 1977 The bomb, Sputnik, computers, and European mathematicians. In #979, 129-135. The items listed in the title are, in the author's opinion, "the principal tangible causes" of the changes in AMERICAN MATHEMATICS, 1940-1960. The author also remarks, from a refugee's point of view, on the effect of the periods of antisemitism and McCarthyism. (ACL).


BAG A K 1977 The method of integral solution of INDETERMINATE EQUATIONS of the type: \(ay = ax + c\) in ancient and medieval INDIA. Indian Journal or History or Science 12, 1-16. ARYABHATA I (476 AD). CONTINUED FRACTIONS. Passages in Sanskrit with English translation are given of the Karanapaddhati (1596 AD). (ACL). #993.

BEHARI RAM & JAIN B S 1977 Some mathematical contributions of ANCIENT INDIAN MATHEMATICIANS as given in the works of BHASKARACARYA II (12th century A.D.). Indian Journal of History of Science 12, 45-56. Emphasis is given to the cyclic method for solving the quadratic equation, \(ax^2 + bx = c\). (ACL). #994.

JAIN L C 1977 Divergent sequences locating TRANSFINITE SETS in TRILOKASARA. Indian Journal of History of Science 12, 57-75. A Prakit text of the 11th century A.D. is described which parallels the program of G. CANTOR and ZERMELO, that was opposed by BOREL, BAIRE, and LEBESGUE, with respect to well-ordered sequences. (ACL). #995.


WHITE F C 1975 PLATO on GEOMETRY. Apeiron 9, 5-14. CB 102, 800. (ACL). #1006.

FREGUGLIA PAOLO 1974 Osservazioni sul procedimento di Leonardo Pisano per la determinazione di Cultura e Scuola 13, 209-221. CB 102, 914. FIBONACCI. PI. (ACL). #1007.


SPRINGER VERLAG 1978 MATHEMATICS CALENDAR 1979. A large format, colored, decorative calendar selling for $7.50. One topic is illustrated and described for each month, from Sinai's billiard to Omar Khayyam. (ACL). #1027.


WEXELBLATT RICHARD editor 1978 Preprints: History of Programming Languages Conference. ACM SIGPLAN Notices 13(8), xi + 310 pp. The Conference was held in Los Angeles, June 1-3, 1978. This volume includes a summary of each language presented as well as the historical papers themselves: ALGOL 60 (PERLIS, A., and NAUR, P.); APL (FALKOFF, A.D., and IVERSON, K.E.); APT (ROSS, D.T.); BASIC (KURTZ, T.E.); COBOL (SAMMET, J.E.); FORTRAN (BACKUS, J.); GPSS (GORDON, G.); JOVIAL (SCHMARTZ, J.I.); LISP (McCarthy, J.); PL/I (RADIN, G.); SIMULA (NYGAARD, K., and DAHL, O.-J.); and SNOBOL (GRISWOLD, R. E.). (H.S. Tropp). #1030.

DAHL AUBREY 1978 The Last of the first. Datamation 24(6), 145-149. A UNIVAC II with its "5200 vacuum tubes, 18,000 chystal diodes, 184,000 magnetic cores, hundreds of feet of plumbing, and countless miles of wires," finally retired after 18 years of work. COMPUTERS. (H.S. Tropp). #1031.


ROARK ANNE C 1978 The mathematician who may be this century's greatest. The Chronicle of Higher Education 17(1), 1-10, 11 (Sept. 5). Popular sketch of CHARLES

McALLISTER BYRON L 1978 Hyperspaces and multifunctions, the first half century (1900-1950). Nieuw Archief voor Wiskunde (3) 26, 309-329. "A function \( f \) that assigns to each element of a given set \( X \) a subset (sometimes possibly empty) of a given set \( Y \) is called a multifunction from \( X \) into \( Y \)." TOPOLOGY. CONVERGENCE. FOMPEI D. HAUSDORFF F and his METRIC for sets. VIETORIS L. KURATOWSKI K. TIKHONOV A. BIBLIOGRAPHY of 65 items. (Leroy F. Meyers). #1034.

LUTZEN JESPER 1978 Funktionsbegrebet udvikling fra Euler til Dirichlet (The development of the concept of function from Euler to Dirichlet). Nordisk Matematisk Tidsskrift 25/26, 5-32 (English summary on p. 56). In Danish. Why the modern definition of FUNCTION as correspondence was so late in replacing.Euler's definition as an analytic expression. VIBRATING STRING. D'ALEMBERT. LAGRANGE. LACROIX S F. FOURIER SERIES. CUACHY. DIRICHLET. (Leroy F. Meyers). #1055.


KURATOWSKI K & BORSUK K 1978 One hundred volumes of "Fundamenta Mathematicae." Fundamenta Math. 100 (1), 1-8. XX. POLISH SCHOOL OF MATHEMATICS. The editors give a brief history of this prominent MATHEMATICS JOURNAL and the culture which nurtured it. Tabular summaries of authors by nationality and of papers by language and topic. (D.E. Kullman). #1040.


