

NOTES.

THE April number (volume 40, number 2) of the *American Journal of Mathematics* contains the following papers: "On the representation of functions in series of the form $\sum c_n g(x+n)$," by R. D. CARMICHAEL; "Transformations of planar nets," by L. P. EISENHART; "Orthogonal function sets arising from integral equations," by O. D. KELLOGG; "Complete systems of concomitants of the three-point and the four-point in elementary geometry," by C. H. RAWLINS, JR.; "Systems of pencils of lines in ordinary space," by A. L. MILLER; "Some contributions to the geometry of plane transformations," by TOBIAS DANTZIG; "Properties of a certain projectively defined two-parameter family of curves on a general surface," by PAULINE SPERRY.

AN announcement has just been issued that the *Bollettino di Bibliografia e Storia delle Scienze Matematiche*, edited by Professor GINO LORIA, of Genoa, is about to begin a new series. This valuable journal will hereafter be published by the Libreria Scientifica D. Capozzi, Palermo, Via Croce dei Vespri, 8. The *Bollettino* has proved so useful to students of the bibliography and history of mathematics that the inauguration of a new series becomes a matter of interest to all mathematicians.

AT the meeting of the Edinburgh mathematical society held February 8, the following papers were read: By G. SMEAL, "The parameter method of iteration"; by Miss E. PAIRMAN, "A new form of the remainder in Newton's interpolation formula."

At the meeting of March 8, the following papers were read: By C. G. KNOTT, "Note on the quaternion theory of confovals"; by R. F. MUIRHEAD, (a) "A graphic method of determining the maximum bending moment for a rolling load on a uniform beam"; (b) "Geometrical notes on the accelerations of points of a rigid plane body moving in its own plane."

AT the meeting of the London mathematical society held February 14 the following papers were read: By A. C. DIXON,

“Note on functional equations which are limiting forms of integral equations”; by D. M. Y. SOMMERVILLE, “The singularities of trochoidal curves”; by L. J. MORDELL, “A statement of Fermat.”

AT the meeting of the National academy of sciences at Washington, April 22–24, Professor EDWARD KASNER presented a paper on “Conformal geometry.” Professor G. D. BIRKHOFF was elected a member of the academy.

GINN and Company announce that the second volume of Veblen and Young’s Projective geometry is now in press.

THE Cambridge University Press announces the early publication of a Theory of functions of a complex variable, by A. R. FORSYTH. Longmans, Green and Company, London, are publishing a Differential equations by H. BATEMAN.

ON pages 183–267 of the Publications of the members of the University of Chicago 1902–1916, recently issued by the University of Chicago Press, are listed published doctors’ theses and the publications of members of the staffs in the departments of mathematics, astronomy and astrophysics, and physics.

THE following university courses in mathematics are announced:

COLUMBIA UNIVERSITY (summer session, July 8–August 16).—By Professor JAMES MACLAY: Fundamental mathematical concepts, five hours; Higher algebra, five hours.—By Professor EDWARD KASNER: Modern geometry, five hours; Continuous groups, five hours.—By Professor W. B. FITE: Theory of functions of a real variable, five hours; Differential equations, five hours.

COLUMBIA UNIVERSITY (academic year 1918–1919).—By Professor T. S. FISKE: Theory of functions, four hours.—By Professor F. N. COLE: Algebra, four hours.—By Professor JAMES MACLAY: Differential geometry of surfaces, four hours, first half-year; Applications of the elliptic functions, three hours, second half-year.—By Professor D. E. SMITH: History of mathematics, two hours; Practicum in the history of mathe-

matics, four hours.—By Professor C. J. KEYSER: Philosophy of mathematics, four hours.—By Professor EDWARD KASNER: Ballistics, two hours, second half-year; Seminar in differential geometry, two hours.—By Professor W. B. FITE: Differential equations, three hours.—By Dr. C. A. FISCHER: Calculus of variations, three hours, second half-year.

The following university and college teachers of mathematics have recently entered the national military service:

Dr. W. L. CRUM, of Yale University, has joined the national army. Professor G. C. EVANS, of Rice Institute, has joined the signal corps and has gone to France. Professor W. E. MILNE, of Bowdoin College, has been made first lieutenant in the ordnance reserve corps. Dr. H. C. M. MORSE, of Harvard University, has joined the ambulance corps and is in France. Professor F. R. MOULTON, of the University of Chicago, has been commissioned major in the ordnance reserve corps. Professor A. H. NORTON, of Elmira College, and Professor L. P. SICELOFF, of Columbia University, are engaged in Y. M. C. A. work in France. Dr. J. F. RITT, of Columbia University, has joined the ordnance at the Aberdeen proving ground, Aberdeen, Md.

PROFESSOR E. W. BROWN, of Yale University, has been elected a member of the council of the American philosophical society.

AT Harvard University assistant professor J. L. COOLIDGE has been promoted to a full professorship of mathematics.

AT Wellesley College, Professor ROXANA H. VIVIAN, of the department of mathematics, has been made director of the department of hygiene and physical education. Professor CLARA E. SMITH is to exchange with Professor FLORENCE P. LEWIS, of Goucher College, for the coming academic year. Dr. MARY F. CURTIS, of Western Reserve University, has been appointed instructor in mathematics.

DR. W. G. SIMON has been appointed instructor in mathematics at Adelbert College, Western Reserve University.

PROFESSOR A. BENTELI, of the University of Bern, died November 10, 1917, at the age of seventy years.

PROFESSOR E. OTT, of the University of Bern, died November 17, 1917, at the age of seventy years.

PROFESSOR F. R. HELMERT, of the University of Berlin, died June 15, 1917, at the age of seventy-three years.

THE death is reported of Professor CYPARISSOS STÉPHANOS, of the University of Athens.

LEWIS B. CARLL, the blind author of the first American treatise on the calculus of variations (published in 1881), died March 22, 1918, at the age of seventy-four years.

PROFESSOR H. R. HIGLEY, of the Stevens Institute of Technology, died May 1, 1918, at the age of fifty-four years.

BOOK CATALOGUES:—Galloway and Porter, Cambridge, England, list number 91, 149 titles in mathematics and physics. —Henry Sotheran and Co., 140 Strand, London, catalogue 770, exact and applied science, 928 titles in mathematics.

NEW PUBLICATIONS.

I. HIGHER MATHEMATICS.

- ASKWITH (E. H.). A course of pure geometry containing a complete geometrical treatment of the properties of the conic sections. New edition revised and enlarged. Cambridge, University Press, 1917. Demy 8vo. 11 + 284 pp. 7s. 6d.
- CAREY (F. S.). Infinitesimal calculus. Section 2. London, Longmans, Green and Company, 1917. 10s. 6d.
- CISOTTI (U.). Lezioni di analisi matematica, svolte nel r. Istituto tecnico superiore di Milano. Pavia, tip. Cooperativa, 1918. 8vo. 16 + 674 pp. L. 30.00
- CRAWLEY (E. S.) and EVANS (H. B.). Analytic geometry. Philadelphia, E. S. Crawley, 1918. 8vo. 14 + 239 pp.
- EVANS (H. B.). See CRAWLEY (E. S.).
- INTERNATIONAL catalogue of scientific literature. Fourteenth annual issue. A: Mathematics. London, Harrison, 1917. 8vo. 8 + 163 pp. Paper. 15s.
- MICHEL (C.). Cours d'algèbre et d'analyse. Paris, Alcan, 1916. 8vo. 10 + 860 pp.