

NOTES.

The twenty-seventh annual meeting of the American Mathematical Society will be held in New York City on Tuesday and Wednesday, December 28-29. At this meeting President Morley will deliver his retiring address, the subject of which will be "Pleasant Questions and Wonderful Effects." The annual election of officers and other members of the Council will close on Wednesday morning. The regular western meeting of the Society, being the forty-sixth regular meeting of the Chicago Section, will be held at the University of Chicago, on December 29-30, in conjunction with the meetings of the Mathematical Association of America and the American Association for the Advancement of Science.

THE fifth summer meeting of the Mathematical Association of America was held at the University of Chicago on September 6, immediately preceding the meeting and colloquium of the American Mathematical Society. The attendance included 113 members. The following papers were read: "On certain fundamental principles in the mathematics of life insurance," by D. F. CAMPBELL; "Certain features of the application of Makeham's laws of mortality," by H. L. RIETZ; "The plan of pensions and insurance recommended by the Carnegie Foundation for the advancement of teaching," by E. L. DODD; Report of progress of the National committee on mathematical requirements, by J. W. YOUNG; "The debt of mathematics to the experimental sciences," by A. C. LUNN, followed by discussion, led by E. H. MOORE and M. W. HASKELL; "Retrospect and prospect for mathematics in America" (retiring presidential address), by H. E. SLAUGHT. Steps were taken towards the incorporation of the Association, which was completed under the laws of the state of Illinois in September. The Association held a joint dinner with the American Mathematical Society on Tuesday evening at the Quadrangle Club.

THE July number (volume 21, number 3) of the *Transactions of the American Mathematical Society* contains the following papers: "On the representation of a number as the sum of any number of squares, and in particular of five," by G. H. HARDY;

"A memoir upon formal invariancy with regard to binary modular transformations. Invariants of relativity," by O. E. GLENN; "Properties of the subgroups of an abelian prime power group which are conjugate under its group of isomorphisms," by G. A. MILLER; "On the order of magnitude of the coefficients in trigonometric interpolation," by DUNHAM JACKSON; "Concerning simple continuous curves," by R. L. MOORE; "On the iteration of rational functions," by J. F. RITT.

THE following fifteen doctorates with mathematics as major subject were conferred by American universities in the academic year 1919-1920; the title of the dissertation is added in each case: J. D. BOND, Michigan, "Plane trigonometry in Richard Wallingford's *Quadri partium de sinibus demonstratis*;" J. DOUGLAS, Columbia, "On certain two-point properties of general families of curves"; T. C. FRY, Wisconsin, "The use of divergent integrals in the solution of differential equations"; GLADYS GIBBENS, Chicago, "Comparison of different line-geometric representations for functions of a complex variable"; C. F. GREEN, Illinois, "On the summability and regions of summability of a general class of series of the form $\sum c_n g(x+n)$ "; J. W. LASLEY, Chicago, "Some special cases of the flecnode transformation of ruled surfaces"; ELSIE J. McFARLAND, California, "On a special quartic curve"; J. J. NASSAU, Syracuse, "Some theorems in alternates"; C. A. NELSON, Chicago, "Conjugate systems with conjugate axis curves"; E. L. POST, Columbia, "Introduction to a general theory of elementary propositions"; SUSAN M. RAMBO, Michigan, "The point at infinity as a regular point of certain difference equations of the second order"; L. L. STEIMLEY, Illinois, "On a general class of series of the form $Y(x) = C_0 + \sum C_n g(nx)$ "; J. L. WALSH, Harvard, "On the location of the roots of the jacobian of two binary forms"; R. WOODS, Illinois, "The elliptic modular functions associated with the elliptic norm curve E' "; T. YANG, Syracuse, "A problem in differential geometry."

The Library of the American Mathematical Society is in receipt of the thirteenth and final volume of the magnificent edition of the complete works of Christian Huygens issued by Nijhoff on behalf of the Dutch Society of Sciences. The

first ten volumes, containing the correspondence of Huygens during the period 1636-1695, were published from 1888 to 1905. The eleventh volume, appearing in 1908, was a comparatively small one of less than four hundred pages, and contained early mathematical works of Huygens of the period 1645-1651. The twelfth volume (1910), also a small one, was devoted to works on pure mathematics, 1652-1656. The thirteenth volume (1916), of over nine hundred pages, contains the various writings of Huygens on dioptrics during the period 1653-1692. It is doubtful if the works of any other scientist have received such detailed editing in the way of translations, footnotes, and all sorts of indexes.

IN the department of mathematics of the University of Michigan the following promotions are announced: Professors W. H. BUTTS and T. R. RUNNING to full professorships; Professors C. E. LOVE and T. H. HILDEBRANDT to associate professorships; Dr. L. J. ROUSE, Dr. A. L. NELSON, Dr. W. W. DENTON, and Dr. R. B. ROBBINS to assistant professorships. Dr. ROBBINS has been granted leave of absence for the year. Mr. N. ANNING, Mr. S. E. FIELD, Mr. K. W. HALBERT, Mr. G. D. JONES, Mr. J. N. LANDIS, and Mr. H. A. SIMMONS have been appointed instructors.

PROFESSOR J. M. TAYLOR, of Colgate University, has retired after fifty years of teaching.

PROFESSOR H. E. BUCHANAN, of the University of Tennessee, has been appointed head of the department of mathematics at Tulane University.

PROFESSOR E. W. BROWN, of Yale University, has been granted leave of absence for the first half year. His address will be Christ's College, Cambridge.

DR. A. S. HATHAWAY, professor of mathematics at the Rose Polytechnic Institute since 1891, has retired from active teaching. He is succeeded by Dr. I. P. SOUSLEY, of Pennsylvania State College.

AT the University of Iowa, assistant professor E. W. CHITTENDEN has been promoted to an associate professorship

of mathematics; Dr. W. H. WILSON has been promoted to the rank of associate; Dr. ROSCOE WOODS, of the University of Illinois, has been appointed instructor in mathematics, and Mr. H. M. JEFFERS, of the Lick Observatory, instructor in mathematics and astronomy.

At the University of Wisconsin, Professor C. S. SLICHTER has been appointed dean of the graduate school; associate professor E. B. SKINNER has been promoted to a full professorship; assistant professor H. W. MARCH has been promoted to an associate professorship; Dr. WARREN WEAVER has been appointed assistant professor; Mr. HAROLD DAVIS, of Harvard University, and Mr. M. L. MACQUEEN, of Southwestern Presbyterian University, have been appointed instructors in mathematics.

ASSISTANT professor EUGENE TAYLOR, of the University of Wisconsin, has been appointed professor and head of the department of mathematics at the University of Idaho.

PROFESSOR D. A. ROTHROCK has been elected dean of the college of liberal arts of Indiana University.

At the University of Kentucky, Dr. F. ELIZABETH LE-STOURGEON, of Carleton College, has been appointed assistant professor of mathematics, and Mr. W. E. PAYNE has been appointed instructor. Dr. G. W. SMITH has resigned, to accept an assistant professorship of mathematics at the University of Kansas.

PROFESSOR PAUL BACHMANN died at Weimar, March 31, 1920, at the age of eighty-three years.

NEW PUBLICATIONS.

I. HIGHER MATHEMATICS.

- BONOLA (R.). Die nichteuklidische Geometrie. Historisch-kritische Darstellung ihrer Entwicklung. Autorisierte deutsche Ausgabe, besorgt von H. Liebmann. 2te Auflage. Leipzig, Teubner, 1919.
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- DRAEGER (M.). Ueber rekurrente Reihen von höherer, insbesondere von der dritten Ordnung. (Dissertation.) Jena, 1919.