

NOTES.

AT the meeting of the AMERICAN MATHEMATICAL SOCIETY on April 27, Professor W. F. OSGOOD will deliver his presidential address, postponed from the recent annual meeting. The subject of the address will be "The calculus in colleges and technical schools."

THE Annual Register of the AMERICAN MATHEMATICAL SOCIETY for 1907, containing the list of officers and members of the Society, constitution and by-laws, annual reports, and catalogue of journals in the Society's library together with other accessions for 1905-1906, has recently been issued. A complete catalogue of the library up to 1905 is contained in the Register for that year, copies of which may still be obtained from the Secretary.

THE opening (January) number of volume 8 of the *Transactions* of the AMERICAN MATHEMATICAL SOCIETY contains the following papers: "Generalization of the groups of genus zero," by G. A. MILLER; "On reflexive geometry," by F. MORLEY; "The groups in which every subgroup is either abelian or hamiltonian," by G. A. MILLER; "On modular groups isomorphic with a given linear group," by H. F. BLICHFELDT; "Denumerants of double differentials," by W. E. STORY; "The groups of classes of congruent matrices, with application to the group of isomorphisms of any abelian group," by A. RANUM; "A theorem of Abel and its application to the development of a function in terms of Bessel's functions," by C. E. SMITH; "Irreducible linear homogeneous groups whose orders are powers of a prime," by W. B. FITE; "Applicable surfaces with asymptotic lines of one surface corresponding to a conjugate system of the other," by L. P. EISENHART.

AT the meeting of the London mathematical society held on January 10 the following papers were read: By A. STOTT, "Exhibition of four-dimensional models"; by E. W. HOBSON, "On the uniform convergence of Fourier series"; by J. E. LITTLEWOOD, "Asymptotic approximation of integral functions of zero order"; by A. R. FORSYTH, "Partial differential equations of the second order having integral systems free from

partial quadratures"; by G. H. HARDY, "On the singular points of some classes of power series in several variables"; by W. BURNSIDE, "The construction of the line drawn through a given point to meet two given lines"; by P. W. WOOD, "On the reduction of covariants of binary quantics of infinite order, part III"; by A. CUNNINGHAM, "On hyper-even numbers, and on Fermat's numbers."

THE annual meeting of the British mathematical association was held at King's College, London, January 26. Professor G. H. BRYAN was elected president for the ensuing year. The following papers were read: by H. H. HUDSON, "Diagrams of anemoids"; by A. LODGE, "On contracted methods in arithmetic"; by C. S. JACKSON, "On the elementary arithmetic of the theory of numbers." The association now includes 419 members.

AT the annual public meeting of the Paris academy of sciences, held on December 17, 1906, the following prizes were awarded for mathematical memoirs: Grand prize (fr. 3000) divided among H. PADÉ (fr. 1500), R. DE MONTESSUS (fr. 1000) and M. AURIC (fr. 500); Francoeur prize (fr. 1000) to E. LEMOINE; Poncelet prize (fr. 2000) to L. GUICHARD; Montyon prize (fr. 700) to G. MARIÉ; Lalande prize (fr. 540) divided between R. G. AITKEN and W. J. HUSSEY; Valz prize (fr. 460) to J. PALISA; Janssen medal to A. RICCÒ. The Wilde prize (fr. 4000) for general progress in science was awarded in part to M. MASSAU for his work on graphic integration; the Laplace prize (complete works of Laplace) to M. LÉVY. The subjects for which the prizes were offered were announced in the BULLETIN, volume 11, page 327, and volume 12, page 319.

The Academy announces the following prizes in mathematical sciences for 1908 and 1909; competing memoirs should be in the hands of the secretary before December 31 of the year preceding that in which the respective prizes are awarded:—The Grand prize and Francoeur prize as announced before, the Poncelet prize in 1908 for general progress in pure mathematics, in 1909 for general progress in applied mathematics; the Bordin prize (fr. 3000) for the following problem:

"The absolute invariant which represents the number of double integrals of the second kind on an algebraic surface depends upon a relative invariant ρ , which plays an important

part in the theory of integrals of total differentials of the third kind and in the theory of algebraic curves traced upon the surface. It is proposed to make an exhaustive study of this invariant and to determine in particular how its exact value can be found, at least for an extended category of surfaces" (competing memoirs must be received before January 1, 1909).

The Montyon, Fourneyron, Vaillant and Borleau prizes are to be awarded under the conditions previously announced.

COLUMBIA UNIVERSITY. — The following special courses of public lectures in mathematical physics are announced:— By Professor OTTO LUMMER, of the University of Breslau: The laws of radiation of the black body; their theoretical establishment and practical importance. Ten lectures, Fridays at 4 P. M., Saturdays at 10 A. M., beginning Friday, February 15.— By Professor JOSEPH LARMOR, of Cambridge University: Physical dynamics. Six lectures, Wednesday–Thursday, March 27–28; Friday–Saturday, April 5–6, April 12–13. The Wednesday and Friday lectures are given at 4 P. M., the Thursday and Saturday lectures at 10 A. M.

Detailed information regarding these courses is contained in the circulars issued by the University.

DR. R. BAIRE, associate in mathematics at the University of Dijon, has been promoted to a full professorship of mathematics at the same institution.

THE British royal astronomical society has awarded its gold medal for 1907 to Professor E. W. BROWN for his work on the motion of the moon.

PROFESSOR R. MÜLLER, of the technical school at Brunswick, has been appointed professor of mathematics at the technical school of Darmstadt.

PROFESSOR C. K. RUSSJAN, of the technical school at Lemberg, has been appointed professor of pure mathematics at the University of Charkow.

PROFESSOR K. BOEHM, of the University of Heidelberg, has been promoted to a full professorship, with special regard to elementary mathematics.

DR. E. W. HOBSON has been appointed chairman of the mathematical tripos, part II, for 1907.

PROFESSOR C. A. NOBLE, of the University of California, has been granted leave of absence and will spend next year in study at European universities.

DR. C. C. JONES has been appointed chancellor and professor of mathematics at the University of New Brunswick, to succeed the late Professor Harrison.

PROFESSOR G. W. JONES, of Cornell University, will retire from active service at the close of the present academic year with the title of professor emeritus.

AT the University of Texas, Professor H. Y. BENEDICT has been appointed professor of applied mathematics.

MR. G. A. ROSS, formerly of Hardin College, has been appointed instructor in mathematics at the George Washington University.

PROFESSOR E. JURGENS, of the technical school at Aachen, died January 5, 1907, at the age of 56 years. Professor A. MANNHEIM, professor emeritus at the Ecole Polytechnique of Paris, died December 11, 1906, at the age of 75 years. Professor J. A. OUDEMANS, of the University of Utrecht, died December 13, 1906, at the age of 78 years.

CATALOGUES of second-hand books: Martin Boas, Berlin, Karlstrasse 25, catalogue No. 60, 3082 titles in mathematics, physics and astronomy. — W. Heffer and Sons, Cambridge, Eng., catalogue No. 22, 1029 titles in mathematics and science, including the library of the late Professor Joly. — W. Junk, Berlin, Kurfürstendamm 201, 1629 titles in mathematics and science.

NEW PUBLICATIONS.

I. HIGHER MATHEMATICS.

ARNOUX (G.). Arithmétique graphique. Introduction à l'étude des fonctions arithmétiques. Paris, Gauthier-Villars, 1906. 8vo. 20 + 225 pp. Fr. 5.00

AUZEMBERGER. See VESSIOT (E.).

BERNSTEIN (R.). Les courbes du troisième degré. (Thèse.) Besançon, 1906.

BERTRAND (J.). Calcul des probabilités. 2e édition conforme à la 1re. Paris, Gauthier-Villars, 1907. 8vo. 57 + 322 pp. Fr. 12.00