

sued. If the prospective student of higher mathematics has taken only the ordinary college courses in trigonometry and analytic geometry, he is not provided with machinery to facilitate the work in hand. It is not likely that he can make free use of the hyperbolic functions, and he may have difficulty with oblique axes. The equation of an ellipse referred to a pair of conjugate diameters will mean very little to him if he has never heard of conjugate diameters. To such a student this volume would be very valuable as a source of suggestion for further study in the subjects which ordinarily precede the work in mechanics.

W. R. LONGLEY.

NOTES.

THE annual meeting of the London mathematical society was held on November 10. Reports for the preceding year were presented, and the following officers elected: president, H. F. BAKER; secretaries, A. E. H. LOVE and J. H. GRACE; treasurer, Sir J. LARMOR; four vice-presidents, and nine other members of the council. The following papers were read at this meeting: By W. D. NIVEN (presidential address), "The relation of mathematics to experimental science"; by G. H. HARDY, "Properties of logarithmico-exponential series"; by G. T. BENNETT, "The double six of lines"; by W. H. YOUNG, "On semi-integrals and oscillating successions of functions," and (with Mrs. YOUNG), "On the existence of a differential coefficient"; by F. TAVANI, "The analytical extension of Riemann's zeta-function"; by T. W. CHAUNDY, "The geometrical representation of non real points in space of two and of three dimensions"; by J. E. LITTLEWOOD, "The extension of Tauber's theorem"; by W. H. YOUNG, "A note on the property of being a differential coefficient" by F. B. PIDDUCK, "The stability of rotating shafts"; by J. W. CHAPMAN, "On non-integral orders of summability of series and integrals"; by A. A. ROBB, "Optical geometry of motion"; by A. R. FORSYTH, "Lineo-linear transformations, especially in two variables"; by W. H. YOUNG, "On the condition that a trigonometric series should have the Fourier form."

AT the Basel meeting of the Swiss mathematical society Professor Rudio reported on the organization and progress of the committee to superintend the publication of Euler's works. Editors have been selected for all the 43 volumes, and a large part of the material has already been distributed among them. Complete files of the publications of the academies of Berlin and St. Petersburg have been secured, and a complete set of the books of Euler which were published separately was presented to the commission. A set of 165 packages of manuscripts, hitherto in the possession of the St. Petersburg academy, have been received and found to contain a wealth of new material. A large number of portraits have been collected, which will be reproduced in the leading volumes of each series. Teubner, of Leipzig, has been selected as publisher. Three volumes are now in the press and will appear in a few weeks. Further volumes are in preparation and will be issued during 1911. The commission has received subscriptions for 350 sets, and fr. 110,752 in cash.

THE firm of Martin Schilling in Halle announces the following additions to its collection of mathematical models: Series XXX, number 8, plaster model of the surface

$$z = xy \cdot \frac{x^2 - y^2}{x^2 + y^2}, \text{ for which } \frac{\partial^2 z}{\partial x \partial y} \neq \frac{\partial^2 z}{\partial y \partial x} \text{ at the point } (0, 0, 0),$$

by W. FISCHER, with the cooperation of Professors Schilling and Sommer, of the technical school at Danzig; series XXXVI, numbers 1-4, four models to represent affine transformations in the plane and in space, by Professor F. KLEIN; series XXXVII, numbers 1-4, four pasteboard models of regular reentrant polygons, by Professor F. SCHILLING and Dr. O. WIESSING; series XXXVIII, number 1, model to illustrate the theory of the linear line complex, by Professor F. SCHILLING.

THE following university courses in mathematics are announced:

OXFORD UNIVERSITY (Michaelmas term, beginning October 18, 1910). All courses are two hours per week.—By Professor W. ESSON: Analytic theory of plane curves; Synthetic theory of plane curves.—By Professor E. B. ELLIOTT: Sequences and series; Elementary theory of numbers.—By Professor A. E. H. LOVE: Analytic statics and harmonic analysis.—By Professor H. H. TURNER: Mathematical as-

tronomy. — By Dr. J. E. CAMPBELL: Differential equations. — By Mr. H. C. THOMPSON: Integral calculus. — By H. T. GERRANS: Tridimensional rigid dynamics. — By Mr. A. L. DIXON: Hydrostatics. — By Mr. A. L. PEDDER: Problems in pure mathematics. — By Mr. C. E. HASELFOOT: Theory of equations. — By Mr. P. J. KIRKBY: Projective geometry. — By Mr. C. H. SAMPSON: Plane analytic geometry. — By Mr. A. E. JOLLIFFE: Solid geometry. — By Mr. J. W. RUSSELL: Differential calculus. — By Mr. E. H. HAYES: Elementary mechanics.

UNIVERSITY OF PARIS (second semester, beginning March 1, 1911). — By Professor E. PICARD: Functional equations of analysis and of mathematical physics, two hours. — By Professor E. GOURSAT: Ordinary and partial differential equations, two hours. — By Professor P. APPELL: General laws of motion and analytical mechanics, two hours. — By Professor E. CARTAN: Analysis and mechanics, two hours. — By Professor P. ANDOYER: Program for the higher certificate in astronomy, two hours. — By Professor J. BOUSSINESQ: Dispersion, double and circular diffraction, two hours. — By Professor G. KÖNIGS: General theory of machines, two hours.

COLLEGE OF FRANCE (academic year beginning December 1, 1910). — By Professor J. HADAMARD: Quasi-periodic functions with applications to mechanics, two hours. — By Professor C. JORDAN: Algebraic integers, particularly quadratic numbers, two hours. — By Dr. BRILLOUIN: Elasticity of isotropic and non-isotropic bodies, two hours.

At the University of Glasgow a portrait of Professor WILLIAM JACK was recently unveiled. In commemoration of his fifty years of service as teacher of mathematics, a fund of three hundred pounds has been secured, the income of which will be known as the William Jack prize. It will be awarded to the writer of the most meritorious thesis for the degree of doctor of science in mathematics at the University of Glasgow.

PROFESSORS E. W. HOBSON and Sir J. LARMOR have been appointed moderators for Part II of the Cambridge mathematical tripos in 1911.

THE second award of the Bolyai prize founded in 1905 by the Hungarian academy of sciences (see BULLETIN, volume

12, pages 43, 212) was made to Professor DAVID HILBERT, of the University of Göttingen. The jury of award consisted of Professors König and Rados, of the academy, Professor Mittag-Leffler, of Stockholm, and Professor Poincaré, of Paris.

AT the annual meeting of the Royal society of London, the Sylvester medal was awarded to Dr. H. F. BAKER, in recognition of his treatise on abelian functions, and for his edition of the works of Sylvester. The medal is awarded biennially for the encouragement of mathematical research irrespective of nationality.

SIR GEORGE DARWIN has been elected president of the Cambridge philosophical society.

DR. P. KOEBE, of the University of Göttingen, has been appointed associate professor of mathematics at the University of Leipzig.

DR. W. KUTTA has been appointed professor of mathematics at the technical school at Aachen.

DR. J. JOUGUET has been appointed professor of mathematical analysis at the national school of mines at Paris.

PROFESSOR BEPPO LEVI, of the University of Cagliari, has been transferred to the University of Parma.

DR. A. VITERBI, of the University of Pavia, has been promoted to an associate professorship of theoretical geodesy.

PROFESSOR W. S. EICHELBERGER has been appointed director of the U. S. Nautical Almanac Office.

THE examiners in mathematics of the College entrance board for 1911 are Professors R. W. PRENTICE, of Rutgers College, and H. E. HAWKES, of Columbia University, and Mr. E. B. PARSONS, of the Boys High School, Brooklyn, N. Y.

AT the University of Nevada Dr. CHARLES HASEMAN has been promoted from an associate professorship to a full professorship of mathematics and mechanics.

MR. I. W. SMITH has been promoted to an assistant professorship of mathematics at the College of Agriculture and Mechanic Arts of the University of North Dakota.

AT Marietta College Professor H. L. COAR has been made full professor of mathematics and Lee lecturer on astronomy.

AT Syracuse University Dr. F. F. DECKER has been promoted to an assistant professorship of mathematics.

MR. R. R. SHUMWAY has been appointed assistant professor of mathematics in the University of Minnesota.

AT the State University of Iowa Dr. R. P. BAKER has been promoted to an assistant professorship of mathematics.

DR. A. M. HILTEBEITEL has been appointed instructor in mathematics at the University of Pennsylvania.

MR. W. S. PEMBERTON, of the University of Missouri, has been appointed professor of mathematics at Wheaton College, Wheaton, Ill.

PROFESSOR MAURICE LÉVY, of the College of France, died in October, at the age of 72 years.

COOPER D. SCHMITT, professor of mathematics in the University of Tennessee for twenty-one years, and dean of the University, died December 9, at the age of 51 years.