NOTES.

AT the annual meeting of the London mathematical society held on November 9 the following papers were read: By J. E. CAMPBELL, "The invariants of the linear partial differential equation of the second order, having two independent variables"; by H. HILTON, "On invariants of a canonical substitution"; by C. T. BENNETT, "The system of lines on a cubic surface"; by G. H. HARDY and J. E. LITTLEWOOD, "The relations between Borel's and Cesaro's methods of summation"; by W. P. MILNE, "A method of establishing the 27-line configuration on a cubic surface"; by H. BATEMAN, "Mathematical analogues of mental phenomena."

AT the meeting of the Edinburgh Mathematical Society on November 10, the following papers were read: By W. P. MILNE, "The system of cubic curves circumscribing two triangles and apolar to them"; by W. P. MILNE, "An easy geometrical representation of the sextic covariant of a binary quartic"; by T. HUGH MILLER, "On the numerical calculation of natural logarithms."

At the meeting of December 8 the following papers were read: By WILLIAM PEDDIE: "The mechanical solution of an n-ic equation, and exhibition of a model for the determination of the roots of a cubic; by D. M. Y. SOMMERVILLE: "Einstein's principle of relativity in its kinematical aspect" and "Note on Legendre's and Bertrand's proofs of the parallel postulate by infinite areas."

The officers of the society for the year 1911–1912 are: president, D. M. Y. SOMMERVILLE; vice-president, A. G. BURGESS; secretary, PETER COWRIE.

THE first congress of Russian professors of mathematics will be held at St. Petersburg January 9–16, 1912.

A NEW journal, entitled the "*Vector*," has been established at Warsaw. It will be devoted to mathematical and physical science in general and especially to questions of method and pedagogy.

THE publishing house of Gauthier-Villars in Paris announces the following mathematical works in press: Works of Hermite,

volume 3; Works of Laplace, volume 14; Stoffaes, Course in higher mathematics, volume 2, curves and surfaces and differential equations. Five further volumes in the Borel series of monographs on the theory of functions, volume 3 of Goursat's Cour d'analyse and volume 4 of Picard's Traité are nearly ready for the press.

THE seventh edition of the catalogue of mathematical models has just appeared from the firm of Martin Schilling, Leipzig. It is arranged in two parts, the first giving descriptions of the several series of models and a scientific explanation of each, the second containing an illustrated price catalogue arranged according to subject matter. The catalogue occupies 172 pages, and contains descriptions of 377 models in stock.

The two latest additions are an apparatus for generating a hyperboloid of revolution by turning one line about another skew to it, by Professor K. DOEHLEMANN, of the University of Munich, and a plaster model of a surface of constant latitude, by Dr. E. MEISSNER of the technical school at Zürich.

THE publication of an Introduction to the Lie theory of one-parameter groups, with applications to the solution of differential equations, by Dr. A. COHEN, of John Hopkins University, is announced by D. C. Heath and Company.

THE Jean Reynaud prize of ten thousand francs, awarded by the Paris academy of sciences every five years, has been bestowed this year on Professor EMILE PICARD, for his contributions to mathematics.

AT the annual meeting of the Royal society of London held in November a royal medal was awarded to Professor GEORGE CHRYSTAL, of the University of Edinburgh, for his researches in mathematics and physics, and a Copley medal was awarded to Professor Sir G. H. DARWIN, of the University of Cambridge, for his contributions to the theory of astronomical evolution.

PROFESSOR E. W. HOBSON, of the University of Cambridge, has been elected a member of the academy of sciences of Halle.

AT the University of Liège M. J. DERUYTS has been appointed professor of analysis and M. E. FAIRON professor of geometry, algebra, and methodology.

DR. TRAYNARD, of the University of Lille, has been appointed professor of differential and integral calculus at the University of Besançon.

DR. MAILLET has been appointed professor of mathematics and mechanics at the Ecole des ponts et chaussées at Paris.

THE College entrance examination board has appointed two groups of examiners in mathematics for 1912. The first will prepare the questions in algebra, and is composed of H. E. HAWKES, chairman, C. R. MACINNES, and W. A. FRANCIS; the second, composed of V. SNYDER, chairman, P. F. SMITH, and J. T. RORER, is to prepare the questions in geometry and trigonometry.

AT the University of Washington, Mr. G. I. GAVETT has been promoted to an assistant professorship of mathematics. Miss A. D. BIDDLE and Mr. JOHN WHITMORE have been appointed instructors in mathematics.

Mr. J. S. LOCKNER, of Lehigh University, has been appointed instructor in mathematics at the Case school of applied science at Cleveland, Ohio.

NEW PUBLICATIONS.

I. HIGHER MATHEMATICS.

ARMBRECHT (A.). Zum grossen Fermatschen Satz! 2te, verbesserte Auflage. Dresden, Köhler, 1911. 8vo. 4 pp. M. 0.50

BONOLA (R.). Non-Euclidean geometry. A critical and historical study of its development. Authorized English translation, with additional appendices, by H. S. Carslaw. Chicago, Open Court Pub. Co., 1911. 10+258 pp.

BORGHINO (G. N.). Metodo generale di estrazione delle radici e di soluzione delle equazioni, con numerose tavole per l'estrazione delle radici e la soluzione delle equazioni fino al 10° grado. Introduzione alla logica matematica. Torino, Paravia, 1911. 8vo. 192 pp. L. 2.50

BOTTO (A.). Soluzione geometrica del problema relativo alla duplicazione del cubo. Torino, Paravia, 1911. 8vo. 13 pp.

BROMWICH (T. J. I'a). Elementary integrals. London, Macmillan, 1911. 8vo. Sewed. 1s.

BURALI-FORTI (C.). Sopra una formola generale per la trasformazione di integrali di omografie vettoriali. (Nota.) Torino, Bona, 1911. 8vo. 23 pp.

CALEGARI (A.). Brevi nozioni di calcolo infinitesimale. Livorno, Giusti, 1911. 16mo. 139 pp. L. 2.00

CARSLAW (H. S.). See BONOLA (R.).