reader with a pretty complete literature of this highly interesting subject.

The reviewer would have liked to see a chapter on interpolation and related subjects form part of the book, since an intelligent use of the Ephemerides is not to be thought of without a mastery of this topic. The astrophysicist will be somewhat disappointed by not seeing the transformation of velocities included in the third chapter of the book. The student interested in the photometric measurements of the satellites of Jupiter after Pickering and Sampson might well claim that the theory of the photometric eclipses is surely as important as the passages of Mercury and Venus over the disc of the sun, to which the author has devoted 8 pages. Finally in the subject of differential refraction a recognition of the peculiar formulas for measurement of photographic plates might not have been entirely out of place.

KURT LAVES.

NOTES.

AT the meeting of the Edinburgh mathematical society on May 10 the following papers were read: By W. P. Milne, "Investigations on circular cubics and bicircular quartics"; by G. Teixeira, "Notice sur les recherches de Maclaurin concernant les cubiques circulaires"; by H. T. Pioggio, "Note on linear differential equations with constant coefficients."

THE annual meeting of the Deutsche Mathematiker-Vereinigung will be held in affiliation with the eighty-fourth convention of German naturalists and physicians at Münster in Westphalia September 15–21 under the presidency of Professor W. v. DYCK. While papers in other subjects will be welcome, particular emphasis will be put upon reports and new contributions to the theory of differential geometry. Information regarding the meeting can be obtained from the secretary, Professor A. Krazer, Karlsruhe, Westendstrasse 57.

THE Macmillan Company announce the publication during the summer of a work on the calculus by Professors E. W. DAVIS and W. C. BRENKE, of the University of Nebraska.

THE second volume of Professor J. PIERPONT's Theory of functions of a real variable is in press and will be published by Ginn and Company in July.

HENRY Holt and Company announce as in preparation a work on analytic geometry of space by Professors Virgil SNYDER and C. H. SISAM.

UNIVERSITY OF MICHIGAN. The following advanced courses in mathematics are announced for the academic year 1912–1913: By Professor W. W. BEMAN: Advanced calculus, two hours; Higher plane curves, two hours, second half-year; Linear differential equations, two hours, second half-year.— By Professor ALEXANDER ZIWET: Theory of potential, three hours, first half-year; Hydrodynamics, two hours; Vector analysis, three hours, second half-year; Integral equations, two hours, second half-year.—By Professor J. L. MARKLEY: Theory of functions I, three hours; Theory of functions II, two hours.—By Professor J. W. GLOVER: Seminary in probabilities, two hours.—By Professor W. B. FORD: Harmonic analysis, two hours; Infinite series and products I, two hours; Infinite series and products II, two hours.—By Professor PETER FIELD: Theory of twisted curves and surfaces, two hours; Advanced mechanics, three hours.

PROFESSOR J. HADAMARD has been appointed professor of mathematical analysis at the Ecole polytechnique of Paris, as successor to Professor CAMILLE JORDAN, retired.

THE Göttingen academy has awarded M5,000 from the Wolfskehl foundation to Professor E. ZERMELO, of the University of Zurich, for his researches in the theory of sets.

DR. L. SCHRUTKA, of the technical school of Vienna, has been appointed associate professor of mathematics at the German technical school at Brünn.

THE University of Colorado has conferred the honorary degree of doctor of laws on Professor FLORIAN CAJORI, of Colorado College.

PROFESSOR VIRGIL SNYDER, of Cornell University, has been granted leave of absence during the first half of the academic year 1912–1913, which he will spend in travel abroad.

AT the University of Minnesota, Professor H. T. EDDY, head of the department of mathematics and mechanics of the college of engineering and dean of the graduate school, has

retired from active service. Professor W. E. BROOKE has been appointed to succeed Professor Eddy. Dr. W. F. HOLMAN has been appointed to a professorship of engineering mathematics, to succeed Professor A. E. Haynes, retired.

CATALOGUES of second-hand books: Henry Sotheran and Co., 140 Strand, London, catalogue 725, mathematics and allied subjects, about 2,000 titles.—G. E. Stechert and Co., 151 West 25th Street, New York, scientific journals and proceedings, about 700 titles.—Emile Blanchard, 10 rue de la Sorbonne, Paris, catalogue 65, 1,167 titles in pure and applied mathematics.

NEW PUBLICATIONS.

I. HIGHER MATHEMATICS.

BERGHOLZ (O. A.). Die Lösung des Fermatschen Problems $x^n + y^n = z^n$. Dessau, Art'l, 1912. 8vo. 19 pp. 　　　　M. 1.00

BLENCK (G.). Untersuchungen über das Amiotsche Theorem bei den Flächen zweiter Ordnung und über Erzeugungsarten des elliptischen Kegels. (Diss.) Rostock, 1911. 8vo. 91 pp.

BLUHM (B.). Ueber konjugierte Kurven und Flächen. (Diss.) Königsberg, 1911. 8vo. 89 pp.

BÖGER (R.). Symmetrische Involutionen und fokal getrennte Geraden. (Progr.) Hamburg, 1912. 8vo. 56 pp.

BRINCARD (R.). See DUPORCQ (E.).

BURALI-FORTI (C.). Corso di geometria analitico-proiettiva. Torino, Gallizio, 1912. 8vo. 7+268 pp. Cloth. 　　　　L. 8.00

CARSLAW (H. S.). An introduction to the infinitesimal calculus. 2nd edition. London,.Longmans. 8vo. 　　　　4s.

CHEMNITZER (B.). Die kürzesten Linien auf der Kreisringfläche. 1ter Teil. (Progr.) Chemnitz, 1912. 4to. 19 pp.

CREFCOEUR (A. J. M.). Cours d'analyse infinitésimale. 3e partie: Calcul des probabilités ou théorie analytique du hasard. 2e édition, revue et augmentée. Liège, Béranger, 1911. 8vo. 253 pp. 　F. 7.00

DEDEKIND (R.). Stetigkeit und irrationale Zahlen. 4te, unveränderte Auflage. Braunschweig, Vieweg, 1912. 8vo. 7+24 pp. 　　M. 1.00

——. Was sind und was sollen die Zahlen? 3te, unveränderte Auflage. Braunschweig, Vieweg, 1912. 8vo. 21+58 pp. 　　　　M. 1.80

DUPORCQ (E.). Premiers principes de géométrie moderne. 2e édition, revue et augmentée par R. Brincard. Paris, Gauthier-Villars, 1912. 8vo. 7+175 pp.

ECKELHARDT (F.). Differential- und Integralrechnung. Wien, Pichler, 1912. 　　　　M. 0.85