REFERENCES.

I. Borel, Leçons sur la Théorie des Fonctions.
II. Lebesgue, "Intégrale, longeur, aire," *Annali di Matematica Pura ed Applicata*, Serie 3, vol. 7 (1902), p. 231.
III. Lebesgue, Leçons sur l'Intégration.
IV. Lebesgue, "Sur l'intégration des fonctions discontinues," *Annales Scientifiques de l'Ecole Normale Supérieure*, vol. 27 (1910), p. 361.
V. Vallée Poussin, Cours d'Analyse Infinitésimale, vol. 1, 2d and 3d editions; vol. 2, 2d edition.
VI. Vallée Poussin, "Sur l'Intégrale de Lebesgue," *Transactions of the American Mathematical Society*, vol. 16 (1915), p. 435.
VII. Vallée Poussin, Intégrales de Lebesgue.
VIII. Radon, "Theorie und Anwendungen der absolut additiven Mengen-funktionen," *Sitzungsberichte der kaiserlichen Akademie der Wissenschaften zu Wien*, vol. 122 (1913), Abtheilung IIa, p. 1295.
IX. Jordan, Cours d'Analyse, vol. 1, 2d edition.

NOTES.

THE July number (volume 18, number 3) of the *Transactions of the American Mathematical Society* contains the following papers: "Set of independent postulates for betweenness," by E. V. HUNTINGTON and J. R. KLINE; "Haskins's momental theorem and its connection with Stieltjes's problem of moments," by E. B. VAN VLECK; "Point sets and allied Cremona groups (part III)," by A. B. COBLE; "On the second derivatives of the extremal integral for the integral $\int F(y; y')dt$," by ARNOLD DRESDEN; "Concerning singular transformations B_k of surfaces applicable to quadrics," by LUIGI BIANCHI; "Types of (2, 2) point correspondences between two planes," by F. R. SHARPE and VIRGIL SNYDER.

THE July number (volume 39, number 3) of the *American Journal of Mathematics* contains: "A concomitant curve of the plane quartic," by TERESA COHEN; "On two related transformations of space curves," by W. C. GRAUSTEIN; "The space problem of the calculus of variations in terms of angle," by P. R. RIDER; "Derivation of the complementary theorem from the Riemann-Roch theorem," by S. BEATTY; "On the equivalence of relations $K_{q_1 q_2 m}$," by E. W. CHITTENDEN; "Some properties of certain finite algebras," by EDWARD KIRCHER; "The primitive groups of class 15," by W. A. MANNING;

"Multiple integrals over infinite fields and the Fourier multiple integral," by B. H. CAMP.

NOTICE has been sent to the members of the Circolo matematico di Palermo that the society has temporarily suspended publication of the *Rendiconti*.

THE spring meeting of the Swiss mathematical society, which was held at Zurich on May 30 under the presidency of MARCEL GROSSMANN, was devoted to hearing an address by Professor J. HADAMARD, of Paris, on "The notion of analytic function and the partial differential equations."

AT the meeting of the Edinburgh mathematical society held on June 8 the following papers were read: By E. T. WHITTAKFR, "On the expression of compound determinants as simple determinants"; by W. L. MARR, "A closed system of triangles apolar to a given triangle, and derivative systems"; by J. F. TINTO, (a) "On a group of transformations connected with the 27 lines of the cubic surface"; (b) "On the plane representation of a certain class of homaloidal surfaces."

THE following advanced courses in mathematics are offered at the Italian universities during the academic year 1917–1918:

UNIVERSITY OF BOLOGNA.—By Professor P. BURGATTI: Mathematical theory of fluids, three hours.—By Professor L. DONATI: Thermodynamics and thermokinetics; Electrodynamics and radiations, three hours.—By Professor F. ENRIQUES: Geometrical theory of algebraic equations and functions, three hours.—By Professor S. PINCHERLE: Theory of analytic functions; the different points of view in the theory of linear differential equations, three hours.

UNIVERSITY OF CATANIA.—By Professor M. CIPOLLA: Theory of numbers in rational and in any quadratic field; classical topics in asymptotic arithmetic, four hours.—By Professor E. DANIELE: Vibrations; applications to optics, four hours.—By Professor G. SCORZA: Geometry on an algebraic curve and abelian integrals, especially the reducible ones, three hours.—By Professor C. SEVERIN: Theory of integral equations, four hours.

UNIVERSITY OF GENOA.—By Professor E. E. LEVI: (at present with the army).—By Professor G. LORIA: n-dimen-

sional geometry, three hours.—By Professor O. TEDONE: Optics; Phenomena of interferences and diffraction, three hours.

UNIVERSITY OF NAPLES.—By Professor F. AMODEO: History of mathematics: Newton and Leibniz, three hours.—By Professor P. DEL PEZZO: Cremona's transformations between planes and spaces, with applications to the analysis of singularities of curves and surfaces and to the plane representation of surfaces, three hours.—By Professor A. DEL RE: Analysis of Grassmann with applications; especially n-dimensional vector analysis, four and one half hours.—By Professor R. MARCOLONGO: Hydrodynamics, three hours.—By Professor D. MONTESANO: Birational transformations of space; Kantor's transformations; rational surfaces of the fourth and fifth orders, three hours.—By Professor E. PASCAL: Selected chapters of analysis, three hours.—By Professor L. PINTO: Electrostatics and magnetism with particular regard to the method of images and to the theory of dielectrica, three hours.

UNIVERSITY OF PADUA.—By Professor F. D'ARCAIS: Harmonic and polyharmonic functions; topics in partial differential equations, four hours.—By Professor A. COMESSATTI: Introduction to algebraic geometry, three hours.—By Professor T. LEVI-CIVITA: Hydrodynamics, four hours.—By Professor G. RICCI: Absolute differential calculus with applications to the theory of elasticity, four hours.—By Professor F. SEVERI: Differential geometry, four hours.—By Professor A. TONOLO: Partial differential equations of the second order, three hours.—By Professor ————: Non-archimedean geometry, three hours.

UNIVERSITY OF PALERMO.—By Professor G. BAGNERA: Differential equations of the first order and calculus of variations, three hours.—By Professor M. DE FRANCHIS: Non-euclidean geometry and introduction to differential geometry, three hours.—By Professor M. GEBBIA: Electricity and magnetism (advanced part), four and one half hours.—By Professor A. SIGNORINI: Theory of elasticity, four hours.

UNIVERSITY OF PAVIA.—By Professor L. BERZOLARI: Geometry of the hyperspaces, three hours.—By Professor U. CISOTTI: Electrodynamics, three hours.—By Professor F.

GERBALDI: Functions of a complex variable; elliptic functions, three hours.—By Professor G. VIVANTI: Integral equations, three hours.

UNIVERSITY OF PISA.—By Professor E. BERTINI: Projective geometry of hyperspaces, three hours.—By Professor L. BIANCHI: (I) Existence theorems in the theory of ordinary and partial differential equations. (II) Applications to the infinitesimal geometry of curves and surfaces, four and one half hours.—By Professor U. DINI: Series, with particular regard to the divergent ones and to the various meanings of the sum of a series, four and one half hours.—By Professor G. H. MAGGI: Selected topics in the dynamics of continuous systems, four and one half hours.—By Professor P. PIZZETTI: Introduction to spherical astronomy; determination of an elliptic orbit; interpolation; variation of arbitrary constants and theory of perturbations.

UNIVERSITY OF ROME.—By Professor G. BISCONCINI: Geometrical and kinematical applications of calculus, three hours.—By Professor G. CASTELNUOVO: Algebraic plane and twisted curves, three hours.—By Professor U. CRUDELI: Arithmetic theory of binary and ternary forms, three hours. —By Professor L. SILLA: Differential equations of dynamics, three hours. By Professor V. VOLTERRA: Theory of the rotation of bodies possessing polycyclic interior motions, and the problem of the variation of latitudes, three hours.—Thermodynamics with applications; theory of explosives, three hours.

UNIVERSITY OF TURIN.—By Professor T. BOGGIO: Hydrodynamics, three hours.—By Professor G. FUBINI: Abelian, elliptic and modular functions, three hours.—By Professor C. SEGRE: Applications of abelian integrals to geometry, three hours.—By Professor C. SOMIGLIANA: Elasticity and optics, three hours.

PROFESSORS U. CISOTTI and A. VITERBI, of the University of Pavia, have been elected corresponding members of the Reale Istituto Lombardo.

PROFESSORS U. CISOTTI, of the University of Pavia, and E. DANIELE, of the University of Catania, have been promoted to full professorships of mathematical physics.

DR. V. STRAZZERI has been appointed instructor in analytic and projective geometry at the University of Palermo.

THE De Morgan medal has been awarded by the London mathematical society to Professor W. H. YOUNG. The award is made every three years. The last three recipients were Glaisher (1908), Lamb (1911), and Larmor (1914).

PROFESSOR C. A. WALDO, of Washington University, St. Louis, has retired from active service.

PROFESSOR L. E. DICKSON, of the University of Chicago, is spending the present academic half-year as visiting professor at the University of California.

DR. H. N. WRIGHT, of the University of California, has been appointed professor of mathematics and dean of the faculty at Whittier College.

PROFESSOR J. L. RILEY, of the state normal school at Talequah, Okla., has been appointed professor of mathematics in the Junior Agricultural and Mechanical College of Texas, at Stephenville, Tex.

PROFESSOR W. A. GARRISON, of Union College, has been appointed professor of mathematics in King College, Bristol, Tenn.-Va.

MR. F. S. NOWLAN has been appointed professor of mathematics at Brandon College, Brandon, Manitoba.

AT Hamilton College associate professor W. M. CARRUTH has been promoted to a full professorship of mathematics.

AT the University of Cincinnati assistant professors LOUIS BRAND and C. N. MOORE have been promoted to associate professorships of mathematics. Mr. J. H. KINDLE and Dr. E. S. SMITH have been promoted to assistant professorships of mathematics.

AT the University of Kansas assistant professor E. B. STOUFFER has been promoted to an associate professorship of mathematics.

AT Dartmouth College Drs. L. C. MATHEWSON and C. R. DINES have been promoted to assistant professorships of mathematics.

DR. F. B. HITCHCOCK, of the Massachusetts Institute of Technology, has been promoted to an assistant professorship of mathematics.

MR. H. HALPERIN, of Vanderbilt University, has been appointed assistant professor of mathematics at the University of Arkansas.

PROFESSOR H. C. GOSSARD, of the University of Oklahoma, has been appointed to an instructorship in mathematics in the U. S. Naval Academy.

MR. K. W. LAMSON has been appointed instructor in mathematics at Columbia University.

MR. T. N. SIMPSON, of Converse College, Spartanburg, South Carolina, has been appointed instructor in mathematics at the University of Texas.

PROFESSOR GIUSEPPE VERONESE, of the University of Padua, died July 17, 1917, at the age of 63 years. He had been professor of mathematics at Padua since 1883, was a member of the Accademia dei Lincei, of the national Italian academy (the forty) and of many other learned societies, and was the author of well-known works on hypergeometry.

PROFESSOR G. W. HARTWELL, of Hamline University, died July 23, at the age of thirty-six years. Professor Hartwell had been a member of the American Mathematical Society since 1907.