

CORRECTION.

The following errata in the present volume of the *BULLETIN* have come to the attention of the editors :

Page 162, lines 8-9 relate to Dr. Irwin's paper, No. 6 on the preceding pages.

Page 324, lines 2-3, read "Note on Laplace's equation," read October 25, 1902.

NOTES.

BEGINNING July 1, 1909, the publication of the *Bulletin* and the *Transactions* of the AMERICAN MATHEMATICAL SOCIETY, heretofore in charge of The Macmillan Company, will be taken over by the Society. Orders and subscriptions of non-members should be sent direct to the Society at 501 West 116th Street, New York, N. Y.

A FEW copies of the reprint of the Chicago Symposium on mathematics for engineering students are still on hand and may be procured from the Secretary of the Chicago Section, Professor H. E. Slaughter, University of Chicago.

AT the meeting of the London mathematical society held on May 13, the following papers were read : By H. W. TURNBULL, "Ternary quadratic types" ; by J. G. LEATHEM, "The theorem of Gauss in the theory of attraction" ; by J. E. LITTLEWOOD, "Criteria for continuity and discontinuity of a function defined by an infinite product."

The committee on a syllabus of geometry for secondary schools recently appointed by the Council of the American federation of teachers of the mathematical and natural sciences in connection with the mathematics section of the department of secondary education of the National education association has been arranged as follows : Professors H. E. Slaughter, chairman, C. L. Bouton, F. Cajori, H. E. Hawkes, E. R. Hedrick, H. L. Rietz, D. E. Smith, Messrs. Wm. Betz, E. L. Brown, W. B. Carpenter, W. W. Hart, F. K. Newton, E. R. Smith, R. L. Short, and Miss Mabel Sykes.

ON the occasion of the second centenary of the birth of Leonhard Euler, in 1907, the Swiss society of naturalists ap-

pointed a committee to investigate and report on the feasibility of publishing all his memoirs. The fourth international congress of mathematicians, in Rome, 1908, passed a resolution commending the action of the Swiss society, and urging academies, mathematical societies, and individual mathematicians to assist in the undertaking. On August 30, 1908, the committee reported its readiness to undertake the task, provided sufficient financial assistance could be secured. Before making a public request, the committee first addressed itself to the Swiss people, from whom it has received about 100,000 francs. At the Cologne meeting of the Deutsche Mathematiker-Vereinigung the sum of 5,000 francs was appropriated for the same purpose. The Paris academy of sciences has subscribed for forty complete sets. It is estimated that the total cost of publication will be 400,000 francs; the complete works will comprise about forty volumes, and are offered at subscription at not to exceed 25 francs per volume, to be paid upon appearance of the single volumes.

With this much already accomplished, the society now addresses itself to the world, with the special request that academies, mathematical societies, physical societies, associations of engineers and of industrial undertakings follow, so far as they can, the example of the organizations mentioned. In particular, libraries of institutions of learning, of insurance companies, and of cities are invited to send in their subscriptions at once. Moreover, voluntary contributions from individuals will be of great assistance to the committee. All subscriptions and contributions should be sent to Professor Ferdinand Rudol, Zürich V, Dolderstrasse 111.

THE eighty-first convention of German naturalists and physicians will be held at Salzburg, Austria, September 19–25, 1909. The Deutsche Mathematiker-Vereinigung will hold its annual summer meeting in affiliation with it, under the presidency of Professor M. KRAUSE, of the technical school at Dresden. Titles and abstracts of papers to be read at this meeting should be sent to the secretary, Professor A. KRAZER, Westendstrasse 57, Karlsruhe, as soon as possible. Reports on algebraic functions of several variables and the theory of integral equations will be presented.

WITH the new editorial organization of the *American Mathematical Monthly* the University of Illinois joins the University

of Chicago in assisting in its financial support. The *Monthly* does not desire to compete with other mathematical periodicals, but hopes to offer an opportunity for less mature writers to express views on points of interest and to publish original solutions, etc., which are of value, yet hardly appropriate for more ambitious journals.

THE following courses in advanced mathematics are announced for the academic year 1909-1910:

UNIVERSITY OF GÖTTINGEN (first semester). — By Professor F. KLEIN: Projective and non-euclidean geometry, four hours; Seminar, two hours. — By Professor D. HILBERT: Partial differential equations, four hours; Seminar, two hours. — By Professor C. RUNGE: Mechanics, four hours; Seminar, two hours. — By Professor L. PRANDTL: Thermodynamics, two hours; Seminar, two hours. — By Professor E. LANDAU: Theory of functions, four hours; Theory of prime ideals, one hour. — By Professor W. VOIGT: Electrodynamics, four hours. — By Professor E. ZERMELO: Logical foundations of mathematics, two hours. — By Professor F. BERNSTEIN: Calculus of probabilities, two hours. — Fourier's series, two hours. — By Dr. O. TOEPLITZ: Determinants, with applications to analytic geometry of space, four hours. — By Dr. P. KOEBE: Algebra, four hours; Differential equations, two hours.

INDIANA UNIVERSITY. — By Professor S. C. DAVISSON: Theory of surfaces, three hours; Differential equations, three hours (*a*, *w*). — By Professor D. A. ROTHROCK: Theory of functions, three hours (*a*, *w*); Advanced calculus, three hours; History of mathematics, three hours (*s*). — By Professor U. S. HANNA: Invariants, two hours. — By Professor C. HASEMAN: Applications of partial differential equations, three hours. (*a* = autumn, *w* = winter, *s* = spring.)

INDIANA UNIVERSITY (summer quarter, June 24 to September 3, 1909). — By Professor D. A. ROTHROCK: Theory of equations, five hours; Advanced calculus, five hours. — By Professor U. S. HANNA: Theory of numbers, five hours. — By Professor C. HASEMAN: Vector analysis, five hours.

UNIVERSITY OF PENNSYLVANIA. — By Professor E. S. CRAWLEY: Solid analytic geometry, two hours; Higher plane curves, three hours; Mathematics of insurance, two hours. — By Professor G. E. FISHER: Advanced calculus, two hours;

Calculus of variations, two hours. — By Professor I. J. SCHWATT: Infinite series and products, two hours; Definite integrals, three hours. — By Professor G. H. HALLETT: Modern higher algebra, three hours (first half year); Galois theory of equations, three hours (second half year); Theory of groups of a finite order, three hours; Lie's theory of continuous groups, three hours (first half year). — By Professor F. H. SAFFORD: Mathematical theory of precision of measurements, three hours (first half year); Curvilinear coordinates, three hours (second half year). — By Dr. O. E. GLENN: Invariants and covariants, three hours.

THE Belgian academy of sciences announces the following prize subjects for 1910:

A systematic and didactic treatise on recent advances in the theory of partial differential equations of the second order is desired. Prize, 800 francs.

Analyze and complete the investigations made in the calculus of variations since 1850. Prize 600 francs.

Manuscripts should be written in French or in Flemish, and submitted to the secretary of the academy under the usual conditions before August 1, 1910.

THE Jablonowski society of Leipzig announces the following prize problem for the year 1911:

"It is desired that the theory of the rainbow should be extended, especially the distribution of light over the surface of a sphere, with a stated degree of approximation. The diameter of the sphere should be small enough to avoid bending of the spectrum bands, and large enough to be at least comparable with the length of light waves."

PROFESSOR G. LORIA, of the University of Genoa, has been elected foreign member of the Bohemian academy of sciences of Prague.

PROFESSOR T. LEVI-CIVITA, of the University of Padua, and Professor C. ARZELÀ, of the University of Bologna, have been elected corresponding members of the mathematical society at Charkow.

SINCE the complete destruction of the University of Messina by the earthquake, various professors have been temporarily assigned to duties in technical schools, academic institutes, and other schools. Professor T. BOGGIO has been appointed professor of mechanics at the institute of Florence.

PROFESSOR C. CARATHÉODORY, of the University of Bonn, has accepted a professorship of mathematics at the technical school at Hanover.

PROFESSOR J. HADAMARD, of the University of Paris, has been appointed professor of analytic mechanics at the Collège de France, as successor to the late M. Lévy.

PROFESSOR M. KUTTA, of the technical school at Munich, has accepted a full professorship of applied mathematics at the University of Jena.

MR. J. F. CAMERON has been appointed tutor in Gonville and Caius College, Cambridge.

PROFESSOR W. L. TANNER, of the University of Monmouthshire, South Wales, has resigned after holding the chair of mathematics for twenty-six years.

PROFESSOR G. H. LING, of Columbia University, has been appointed head of the department of mathematics in the newly established University of Saskatchewan.

AT the University of Minnesota, Dr. A. L. UNDERHILL, of the University of Wisconsin, and Professor G. P. PAINE, of Ripon College, have been appointed assistant professors of mathematics. Mr. J. S. MIKESH, of the University of Colorado, has been appointed instructor in mathematics. Mr. R. R. SHUMWAY has been granted a year's leave of absence for further study. Professor G. A. BAUER will return from Europe this summer to resume his position.

AT Yale University Dr. W. R. LONGLEY has been promoted to an assistant professorship of mathematics. Dr. L. I. HEWES has resigned his position as instructor in mathematics.

THE following changes have taken place at Princeton University: Professor J. H. JEANS has resigned to accept a professorship of mathematical physics at the University of Cambridge; Professor L. P. EISENHART has been promoted to a full professorship of mathematics; Professor C. E. STROMQUIST has resigned, having accepted the professorship of mathematics at the University of Wyoming.

PROFESSOR F. S. WOODS, of the Massachusetts Institute of Technology, has been granted leave of absence for the academic year to study in Europe. Dr. A. J. LENNES returns to the Institute as instructor in mathematics.

AT the University of Colorado Professor S. EPSTEEN has been appointed Secretary of the Graduate School. Professor Epsteen has also been elected president of the Colorado mathematical society.

THE following instructors in mathematics have been appointed at the University of Wisconsin : Dr. A. DRESDEN, in the department of letters and science : Dr. H. E. BUCHANAN, Mr. E. E. MOOTS, and Mr. E. H. MOULTON in the school of engineering.

PROFESSOR C. S. SLICHTER, of the University of Wisconsin, has been granted leave of absence during the academic year 1909-1910 to study in Europe.

PROFESSOR O. BIERMANN, of the German technical school at Brünn, died April 28, at the age of 51 years.

PROFESSOR P. MUTH, the author of the *Elementarteiler*, died April 30 at Osthofen, Rheinhausen, at the age of 48 years.

PROFESSOR G. VAILATI died at Rome, May 15, at the age of 46 years.

NEW PUBLICATIONS.

I. HIGHER MATHEMATICS.

- BALL (W. R.). *Récérations mathématiques et problèmes des temps anciens et modernes*. Vol. III. Paris, Hermann, 1909. 8vo. Fr. 5.00
- BOREL (E.). *Eléments de la théorie des probabilités*. Paris, Hermann, 1909. 8vo. 6 + 200 pp. Fr. 6.00
- BURGGRAF (G.). *Die Γ -Function für komplexe Argumente*. Brünn, 1909. 8vo. 33 pp.
- D'ADHÉMAR (R.). *L'équation de Fredholm. Problèmes de Dirichlet et de Neumann*. Paris, Hermann, 1909. 8vo. Fr. 3.50
- DZIOBEK (O.). *Lehrbuch der analytischen Geometrie. Teil I: Analytische Geometrie der Ebene. 2te verbesserte Auflage*. Braunschweig, Graff, 1909. 8vo. 8 + 358 pp. M. 4.50
- HASS (P.). *Zur Definition des Begriffs der eindeutigen analytischen Funktion*. (Diss.) Kiel, 1908. 8vo. 55 pp.
- JORDAN (C.). *Cours d'analyse de l'école polytechnique. 3e édition, revue et corrigée. Vol. I*. Paris, Gauthier-Villars, 1909. 8vo. 16 + 621 pp. Fr. 17.00
- KAMBLY und ROEDER. *Elemente der analytischen Geometrie der Ebene. Neu bearbeitet von A. Thaer*. Breslau, Hirt, 1909. 8vo. 121 pp. M. 1.30