

NOTES.

THE annual meeting of the AMERICAN MATHEMATICAL SOCIETY will be held in the Rogers Building of the Massachusetts Institute of Technology, 491 Boylston Street, Boston, opening on Tuesday afternoon, December 28. Wednesday morning will be devoted to a joint session with Section A of the American Association. Arrangements have been made for a joint smoker with the Association of Mathematical Teachers in New England on Tuesday evening, and for the usual dinner of the Society on Wednesday evening.

THE Annual Register of the AMERICAN MATHEMATICAL SOCIETY is now in preparation and will be issued in January. Blanks for furnishing necessary information have been sent to the members. Early notice of any changes since the issue of the last Register will greatly facilitate the work of the Secretary. The Register is widely circulated and it is desirable that the information which it contains should be accurate and reliable.

THE twenty-fifth regular meeting of the Chicago Section of the AMERICAN MATHEMATICAL SOCIETY will be held at the University of Chicago on Friday, December 31, 1909, and Saturday, January 1, 1910. Titles and abstracts of papers to be presented at this meeting should be in the hands of the Secretary of the Section on or before December 10, 1909. It is desired that all abstracts be printed in advance of the meeting.

THE seventeenth regular meeting of the San Francisco Section will be held at Stanford University, February 26, 1910.

THE concluding (October) number of volume 31 of the *American Journal of Mathematics* contains the following papers: "The asymptotic representation of the elliptic cylinder functions," by W. MARSHALL; "A theory of invariants," by L. E. DICKSON; "Symmetric binary forms and involutions (continued)," by A. B. COBLE; "A theory of geometrical relations," by A. R. SCHWEITZER.

UNIVERSITY OF PARIS. The following mathematical courses are announced for the semester beginning November 3, 1909: —By Professor G. DARBOUX: Infinitesimal geometry, particu-

larly triply orthogonal systems, two hours. — By Professor E. GOURSAT: Differential and integral calculus, elements of the theory of analytic functions, two hours. — By Professor L. RAFFY: Twisted curves, properties of curves traced on surfaces, one hour. — By Professor E. BOREL: Definite integrals, with certain applications, two hours. — By Professor P. PAINLEVÉ: General laws of equilibrium and motion, two hours. — By Professor P. APPELL and Mr. E. BLUTEL: General mathematics, first part, one hour. — By Professor H. POINCARÉ: Movements of the heavenly bodies around their center of gravity, two hours. — By Professor J. BOUSSINESQ: Mechanical theory of light, two hours.

In the Ecole Normale. By Professor J. TANNERY: Differential and integral calculus. — By Professor L. RAFFY: Applications of analysis to geometry. — By Professor E. BOREL: Mathematics. — By Professor J. HADAMARD: Mathematics.

Weekly conferences will be held by Professor RAFFY and Messrs. CARTAN, BLUTEL, and SERVANT.

For the second semester the following courses are announced: — By Professor E. PICARD: The principal developments in series occurring in mathematical physics. — By Professor E. GOURSAT: Differential equations, partial differential equations. — By Professor P. PAINLEVÉ: General laws of motion of systems, analytic mechanics, hydrostatics and hydrodynamics. — By Professor P. APPELL: Analysis and mechanics. — By Professor J. BOUSSINESQ: Theory of light. — By Professor G. KOENIGS: General theory of mechanisms.

In the Ecole Normale. By Professor J. TANNERY: Differential and integral calculus. — By Professor E. BOREL: Mechanics. — By Professor J. HADAMARD: Mathematics.

THE president of the Euler commission, Professor F. Rudio, reported at the Salzburg meeting of the Deutsche Mathematiker-Vereinigung that the sixth international congress for the science of insurance and the association of German engineers had each contributed five thousand francs toward the publication of the works of Euler. Subscriptions have now been received for more than 275 sets, and in addition cash contributions of more than 130,000 fr. have been acknowledged. This sum has been conservatively invested, and it is estimated that it will earn at least 30,000 fr. before it need be paid out. The total assets are now over 450,000 fr., and a larger edition than was originally planned (400 sets) will probably be undertaken.

THE index of Euler's writings, prepared by Dr. G. ENESTRÖM, is now in press, and will appear in the spring of 1910 as a supplementary volume of the *Jahresbericht der deutschen Mathematiker-Vereinigung*. An appendix to volume 10 of the *Jahresbericht*, containing additions and an index to Professor BURKHARDT'S report on oscillating functions, is also in preparation.

THE first Scandinavian congress of mathematicians was held at Stockholm, September 22–25, 1909, under the presidency of Professor G. MITTAG-LEFFLER. The following papers were read: By A. C. BJERKNES, "Mathematical investigation of meteorological problems"; by I. FREDHOLM, "On integral equations"; by HJELMSLER, "Some geometric principles"; by H. v. KOCH, "Systems of equations with an infinite number of variables"; by E. LINDELÖF, "Picard's theorem in the theory of functions"; by G. MITTAG-LEFFLER, "Arithmetic formulation of the theory of functions"; by E. PHRAGMÉN, "Theory of integral functions of the second order"; by C. STÖRMER, "Mathematical treatment of polar and magnetic storms"; by SUNDMAN, "Real singularities in the problem of three bodies"; by H. G. ZEUTHEN, "Some methods in the texts on geometry"; by K. BIRKELAND, "On irregular integrals of linear differential equations"; by A. C. BJERKNES, "On a modified form of the Maxwell lines"; by BOHR, "On Dirichlet's summation formula, particularly on the boundary of the region of convergence"; by F. BRODÉN, "On the so-called Richard paradoxes"; by BUCHT, "Reduction of cyclic to metacyclic equations"; by CHARLIER, "Mathematical desiderata in the theory of probabilities"; by EKMAN, "Questions of stability in hydrodynamics"; by P. HANSEN, "On Taylor's series"; by HESSELBERG, "An application of the lines of hydrodynamic continuity to the determination of the vertical motion of the atmosphere"; by E. A. HOLMGREN, "On systems of linear partial differential equations with real characteristics"; by C. JUEL, "Note on a non-analytic surface of revolution"; by LINDEBERG, "On the proper name for the so-called Weierstrass functions in the calculus of variations"; by MELLIN, "A uniform theory for gamma functions and hypergeometric functions"; by J. MOLLERUP, "Regions of convergence for orthogonal functions"; by NÖRLUND, "Linear difference equations"; by C. W. OSEEN, "A partial differential equation in mathematical physics"; by A. PALMSTROM, "On cyclic numbers"; by STRIDSBERG, "Some arithmetic properties of certain

transcendental functions," and "A study of the arithmetic properties of the integrals of algebraic differential equations"; by A. THUE, "Some new arithmetic properties of algebraic numbers with an application to Diophantine equations"; by WICKSELI, "Mathematical deduction of investments"; by VON ZEIPPEL, "On secular perturbations of comets."

THE association of Swiss mathematical teachers held its eleventh meeting at Solothurn, October 10, 1909. Four formal papers were read, reports were heard and plans adopted regarding the activity of the international committee on mathematical instruction, and a committee of fifteen was appointed to consider and report on a general plan for vacation courses in mathematics.

AT the meeting of the New York section of the Association of teachers of mathematics in the middle states and Maryland held on November 12 the following papers were read: By E. R. von NARDROFF, "Mathematics for service"; by W. H. METZLER, "Mathematics for training and culture." Two meetings will be held during the first half of the year 1910.

THE committee of fifteen appointed by the Central association to consider the teaching of geometry has nearly completed its report, and expects to present it during the winter.

DR. A. ADLER, of the technical school at Vienna, has been promoted to an associate professorship of mathematics.

PROFESSOR P. STÄCKEL, of the technical school at Hanover, and Dr. G. ENESTRÖM, librarian of the University of Stockholm, have been elected honorary members of the society of Swiss naturalists.

DR. G. FABER, of the technical school at Karlsruhe, has been appointed associate professor of mathematics at the University of Tübingen.

AN honorary doctorate of philosophy has been conferred by the University of Leipzig upon Professor I. FREDHOLM, of the University of Stockholm.

DR. E. HILB, of the University of Erlangen, has been appointed associate professor of mathematics at the University of Würzburg.

PROFESSOR F. KLEIN, of the University of Göttingen, has been elected chairman of the board of directors of the German museum at Munich.

PROFESSOR R. LEHMANN-FILHÉS, of the University of Berlin, has been appointed honorary professor of mathematics.

PROFESSOR C. NEUMANN, of the University of Leipzig, has received the title of Geheimrat.

THE University of Heidelberg recently publicly celebrated the eightieth birthday of Professor MORITZ CANTOR, who was born at Mannheim, August 23, 1829.

THE Royal Society has awarded its Copley medal to Dr. G. W. HILL.

PROFESSOR G. E. FISHER, of the University of Pennsylvania, has been appointed Dean of the College of Arts and Sciences.

AT the inauguration of President Bryan, of Colgate University, the degree of doctor of science was conferred upon Professor F. C. FERRY, of Williams College.

PROFESSOR R. J. ALEY, of the University of Indiana, has been appointed Superintendent of Public Instruction of the State of Indiana.

AT the University of Pennsylvania Professor I. J. SCHWATT has been promoted to a full professorship of mathematics.

AT Purdue University Professor C. H. BECKETT has been promoted to an associate professorship of mathematics.

AT Oberlin College Miss M. E. SINCLAIR has been promoted to an associate professorship of mathematics.

DR. C. A. MOORE, of the University of Cincinnati, has been promoted to an assistant professorship of mathematics.

AT Syracuse University Professor W. G. BULLARD has been promoted to a full professorship of mathematics.

AT the University of Michigan Dr. J. W. BRADSHAW has been promoted to an assistant professorship of mathematics.

AT the University of Nebraska Dr. W. C. BRENKE has been promoted to an associate professorship of mathematics.

AT Wesleyan University Mr. B. H. CAMP has been promoted to an associate professorship of mathematics.

MR. A. F. CARPENTER has been appointed instructor in mathematics at the University of Washington.

AT Stevens Institute Mr. R. F. DEIMEL has been promoted to an assistant professorship of mathematics.

AT Indiana University Dr. U. S. HANNA has been promoted to an associate professorship of mathematics.

AT the University of Pennsylvania Professor I. J. SCHWATT has been promoted to a full professorship of mathematics.

DR. CLARA E. SMITH has been appointed instructor in mathematics at Wellesley College.

DR. RUTH G. WOOD, of Smith College, has been promoted to an associate professorship of mathematics.

PROFESSOR J. C. STONE, of the Michigan State Normal College, has been appointed head of the department of mathematics at the New Jersey State Normal School, Montclair, N. J.

MR. F. C. MOORE has been appointed assistant professor of mathematics at the New Hampshire College of Agriculture and Mechanic Arts.

DR. H. L. SLOBIN has been appointed assistant in mathematics at the University of Minnesota.

DR. O. DUNKEL, of the University of Missouri, has been granted leave of absence to study in Europe.

DR. M. O. TRIPP, of the College of the City of New York, has been granted leave of absence for the present academic year, which he will spend abroad.

PROFESSOR R. D. CARMICHAEL, of the Alabama Presbyterian College for Men, is spending a year's leave of absence in study at Princeton University.

PROFESSOR B. F. YANNEY, of Mount Union College, is spending a year's leave of absence in study at the University of Chicago.

PROFESSOR J. H. VAN AMRINGE, head of the department of mathematics in Columbia University, and dean of the college, will retire from active service at the end of the present academic year, when he will have completed fifty years of service in the university and reached his seventy-fifth birthday.

PROFESSOR HUGH BLACKBURN, emeritus professor of mathematics at the University of Glasgow, died October 9, 1909, at the age of 86 years. He held the chair of mathematics from 1849 to 1879.

MAJOR GENERAL O. O. HOWARD, U. S. A., who died October 26, 1909, at the age of 78 years, was associate professor of mathematics at the Military Academy at West Point from 1857 to 1861.

CATALOGUES of second-hand mathematical books: Gustav Fock, Schlossgasse 7, Leipzig, catalogue no. 361, 2,600 titles in pure and applied mathematics. — Koehler's Antiquarium, Kurprinzstrasse 6, Leipzig, catalogue no. 581, about 1,100 titles in history, encyclopedia, and bibliography of exact sciences; catalogue no. 582, about 3,800 titles in pure and applied mathematics. — A. Hermann, rue de la Sorbonne 6, Paris, catalogue no. 99, 1,767 titles in pure and applied mathematics. — Basler Buch- und Antiquariatshandlung, catalogue no. 330, 460 titles in pure and applied mathematics.