

	General.	Mathe- matics.	Physics.	Chemistry, Geology, Biology.	Totals.
Books.....	11	16	5	6	38
Articles :					
Secondary Schools....	61	79	14	40	194
Universities.....	14	28	7	9	58
Totals	86	123	26	55	290

form for permanent preservation and use the record of the entire activity of the commission, an activity which will not lose its significance for many years to come, and whose record will long remain a pedagogic document of the first importance.

J. W. A. YOUNG.

NOTES.

ALL the papers read at the joint meetings of mathematicians and engineers, held at Chicago in December, 1907, have been published in *Science*, and reprinted in the form of a 56-page pamphlet, for the use of the joint committee of fifteen, of which Professor E. V. HUNTINGTON is chairman, and which is to present its report, on the teaching of mathematics in colleges of engineering, at the summer meeting, 1909, of the Society for the promotion of engineering education. A limited number of these reprints are available for distribution among members of the AMERICAN MATHEMATICAL SOCIETY, on application to the Secretary of the Chicago Section, Professor H. E. SLAUGHT, 58th Street and Ellis Avenue, Chicago, Ill. They may be had in the order of application while they last.

THE opening (January) number of volume 10 of the *Transactions of the American Mathematical Society* contains the following papers: "Zur Differentialgeometrie der analytischen Curven," by E. STUDY; "The central of a group," by G. A. MILLER; "The hypergeometric functions of n variables," by J. I. HUTCHINSON; "Surfaces derived from the cubic variety having nine double points in four dimensional space," by V. SNYDER; "On a certain class of isothermic surfaces," by A. E. YOUNG; "A geometrical application of binary syzygies," by A. E. LANDRY; "Definite forms in a finite field," by L. E. DICKSON.

THE January number (volume 10, number 2) of the *Annals of Mathematics* contains: "Concerning a compound discontinuous solution of the surface of revolution of minimum area," by MARY E. SINCLAIR; "On the geometric properties of quartic curves possessing fourfold symmetry with respect to a point," by R. D. CARMICHAEL; "Extension of the sieve of Eratosthenes to arithmetical progressions and application," by J. C. MOREHEAD.

THE American association for the advancement of science will not hold a summer meeting this year, in order to avoid interference with the meeting of the British association at Winnipeg. The winter meeting will be held in Boston under the presidency of President D. S. JORDAN, of Stanford University. Professor E. W. BROWN is vice-president and Professor G. A. MILLER secretary of Section A.

THE second regular meeting of the Syracuse Section of the teachers of mathematics in the middle states and Maryland was held at the Syracuse high school, December 29, 1908. The following papers were presented. By H. DE W. GROAT, "Field notes on the teaching of secondary mathematics"; by A. M. CURTIS and C. E. BIKLÉ, "What should be the aims in teaching algebra, and how to attain them?"; by W. E. BOND and E. P. SISSON, "What should be the aims in teaching geometry and how to attain them?"

THE committee on organization of the International commission on the teaching of mathematics has appointed as the members of the commission to represent the United States Professors W. F. OSGOOD, D. E. SMITH, and J. W. A. YOUNG. The preliminary report, setting forth the general plan of the work, was published in *L'Enseignement Mathématique*, November 15, 1908.

FOLLOWING the amendment to the constitution enacted in August, 1907, the council of the Circolo matematico di Palermo now consists of five resident and forty non-resident members. Among the latter are Professor E. H. MOORE, of the University of Chicago, and Professor W. F. OSGOOD, of Harvard University.

AT the annual public meeting of the Paris academy of sciences, held on December 7, 1908, the following prizes were

awarded for memoirs in pure and applied mathematics: Grand prize (fr. 3000) divided equally between Professor L. BIANCHI, of the University of Pisa, and Professor C. GUICHARD of the University of Clermont-Ferrand, for their memoirs on the deformations of quadric surfaces; Franceur prize (fr. 1000) to Dr. E. LEMOINE, for his contributions to geometry; Poncelet prize (fr. 2000) to Professor I. FREDHOLM, of the University of Stockholm, for his researches in functional analysis; Montyon prize (fr. 700) to E. LEBERT, chief engineer of the department of roads and bridges, for his contributions to mechanics; Fourneyron prize, not awarded; Guzman prize not awarded; Lalande prize (fr. 540) divided between Director W. L. ELKIN, of the Cape Town Observatory, and Mr. F. L. CHASE, of Yale University, with honorable mention of Mr. M. F. SMITH, of Yale University, for their investigations of stellar parallax; Valz prize (fr. 460) to Professor M. LUIZET, of the University of Lyons, for his researches in astronomy; Janssen prize (fr. 400) to Professor P. PUISEUX, of the University of Paris, Wilde prizes (two, fr. 2000 each) to Dr. M. TIKHOFF, of the Observatory of St. Petersburg, and Dr. C. NORDMANN, of the Observatory of Paris, for their researches on the dispersion of light and on variable stars; Houllevigue prize (fr. 500) was divided between Professor DEBIERNE, of the University of Paris, Professor PETOT, of the University of Lille, and Professor E. FABRY, of the University of Montpellier; Delcroz prize (fr. 8000) to Professor J. HADAMARD, of the University of Paris; Laplace prize (complete works of Laplace) to Dr. P. M. E. LANCRENON, of the national school of mines.

The following programme of proposed prize subjects was announced. Grand prize (fr. 3000) (1910): "It is known how to find all the systems of two meromorphic functions of one complex variable, connected by an algebraic relation. An analogous problem is proposed for three uniform functions of two complex variables, having for finite regions the character of rational functions, and connected by an algebraic relation. In case a complete solution is not obtained, the academy demands at least some illustrative examples which lead to classes of new transcendental functions;" Franceur prize (fr. 1000) (1909) for work of merit in pure or applied mathematics; Poncelet prize (fr. 2000) in 1909 for a meritorious memoir in applied mathematics, in 1910 for a similar contribution to pure mathematics; Bordin prize (fr. 3000) (1911). "Complete in some impor-

tant point, the theory of systems of triply orthogonal surfaces ;” Montyon prize (fr. 700) (1910): “ Invent or perfect useful machines in agriculture or the mechanic arts ;” Vaillant prize (fr. 4000) (1911): “ Complete, in some important point, the theory of the movement of an ellipsoid in an infinite, viscous liquid.” Besides these, a number of prizes are offered for meritorious advances in any science.

THE philosophical faculty of the University of Göttingen announces the following problem, for the solution of which the faculty will award the Beneke prize in 1911 :

“ The number of oscillations which have been observed in the spectra of the elements seem to be distributed according to some definite law. They form so-called series. All the known observations should be collected and studied, and theories deduced from them should be critically examined. Moreover, further experiments are desired, to complete the known observations. It is probable that barium will show a three-fold series, corresponding to the known three-fold series of related substances.”

Competing memoirs should be sent to the secretary before August 31, 1910. The result of the competition will be announced March 11, 1911. The value of the first prize is 3400 Marks, of the second is 680 Marks.

THE curators of the Wolfskehl foundation announce that Professor H. POINCARÉ has consented to deliver at Göttingen, April 22–28, a series of lectures on various mathematical subjects. Mathematicians generally are invited to attend these lectures. Sessions of the Göttingen mathematical society have also been arranged for the same week.

THE publishing house of B. G. Teubner in Leipzig and Berlin announces that the following mathematical works are in the press and will probably appear within a few weeks : “ Encyklopädie,” parts of volumes II₂, III₁, III₂, IV₂, V₂, V₃, VI₁, VI₂; “ Encyclopédie,” all the remaining parts of tome I, volumes 1, 2, 3, 4; part of tome II, volume 1, tome IV, volumes 2 and 3; “ Grundlagen der Geometrie” (3d edition), by D. HILBERT; “ Elementar-Mathematik vom höheren Standpunkte aus : Teil 2, Geometrie,” by F. KLEIN; “ Handbuch der Mathematik,” by F. MEYER, H. THIEME, E. NETTO, and C. FÄRBER; “ Ein-

führung in die höhere Algebra," by M. BÔCHER; "Grundzüge der Differential- und Integralrechnung," by G. KOWALEWSKI; "Vorlesungen über Variationsrechnung" (part 2), by O. BOLZA; "Projektive Geometrie der Ebene," by H. GRASSMANN; "Die Lehre von den geometrischen Verwandtschaften, Band III, Die eindeutigen linearen Verwandtschaften zwischen Gebilden dritter Stufe," by R. STURM. The second installment of volume 1 in the second edition of Clebsch-Lindemann's "Vorlesungen über Geometrie," will also soon appear. The plan for the compilation of the second edition of volume 2 of Pascal's "Repertorium der höheren Mathematik" has now been completed. It is hoped that the German edition will appear before the end of the present year.

PROFESSOR M. DISTELI, of the technical school at Dresden, has accepted a professorship of mathematics at the technical school of Karlsruhe.

PROFESSOR A. SOMMERFELD, of the University of Munich, has been elected associate member of the Bavarian academy of sciences.

PROFESSOR LIAPOUNOFF, of the University of St. Petersburg, has been elected corresponding member of the Academia dei Lincei at Rome.

DR. L. KOLLROS has been appointed docent in mathematics at the technical school of Zürich.

DR. H. HERTZER, emeritus professor of mathematics at the technical school of Charlottenberg, died November 16, 1908, at the age of 78 years.

DR. W. F. WHITE, head of the department of mathematics in the State Normal School at New Paltz, N. Y., died November 29, 1908.

SECOND-HAND catalogue: H. Hugendubel, 18 Salvatorstrasse Munich. Catalogue No. 39, containing 603 mathematical titles.