NOTES.

THE opening (January) number of volume 32 of the *American Journal of Mathematics* contains the following papers : " The complementary theorem," by J. C. FIELDS ; " The twelve surfaces of Darboux and the transformation of Moutard," by L. P. EISENHART ; " On the problem of the spherical representation and the characteristic equations of certain classes of surfaces," by A. E. YOUNG ; " The general circulation of the atmosphere," by F. R. SHARPE ; " Generalizations of the tetrahedral and octahedral groups," by G. A. MILLER ; " The theory of degenerate curves and surfaces," by O. E. GLENN.

THE January number (volume 11, number 2) of the *Annals of Mathematics* contains the following papers : " Necessary and sufficient conditions that ordinary differential equations shall admit a conformal group," by L. I. HEWES ; " The three-space projective geometry (3, 2) and its group," by G. M. CONWELL ; " The geodesic lines on the helicoid," by S. E. RASOR : " Cubic congruences with three real roots," by E. B. ESCOTT.

AT the meeting of the London mathematical society held on January 13 the following papers were read : By H. BATEMAN, " The transformations of coordinates which can be used to transform one physical problem into another " ; by W. H. YOUNG, " On homogeneous oscillation "; by W. H. and Mrs. G. C. YOUNG, " On the determination of a semicontinuous function for a countable set of values " ; by G. H. HARDY, " Note on a former paper on the theory of divergent series " ; by H. F. BAKER, " On the expression of a certain function by means of a series of polynomials," and " On the theory of the cubic surface " ; by G. N. WATSON, " The harmonic functions associated with the parabolic cylinder."

THE British mathematical association and the Association of public school science masters have appointed a joint committee to consider the possibility of correlating the teaching of mathematics and the sciences. The committee made its report on January 12, but the associations wish to consider it further before the contents are made public.

THE Euler commission announces that the editorial commit-
tee will consist of Professor F. RUDIO, of the technical school
at Zürich, chairman, and Professors A. KRAZER and P.
STAECKEL, of the technical school at Karlsruhe. The first
volume of the works will be devoted to algebra and will be
edited by Professor H. WEBER, of the University of Strassburg.
As now planned, the entire series will consist of 43 quarto
volumes of about 500 pages each. The 18 volumes in pure
mathematics are distributed as follows : arithmetic and algebra,
5 volumes ; analysis, 11 volumes ; geometry, 2 volumes. Me-
chanics occupies 11 volumes.

THE list of German doctorates in mathematics for the years
1906–1908 which appeared in the February number of the
BULLETIN was compiled by Mr. DUNHAM JACKSON from the
Verzeichnis der an den deutschen Universitäten erschienenen
Doktor-Dissertationen und Habilitationsschriften. A continua-
tion of the list will appear in an early number of the BULLETIN.

THE Central Committee of the International Commission on
the teaching of mathematics, consisting of Professors Klein,
Greenhill, and Fehr, held a meeting at Basel on December 28,
1909. Reports received on the present state of the work in the
eighteen participating countries showed that the investigation
was proceeding with much energy and that it had enlisted the
services of a large number of prominent teachers and mathema-
ticians. The Central Committee will hold its next meeting at
Brussels about the middle of August, 1910. It is hoped that
the international exhibition to be held there at that time will
bring together a considerable number of official delegates of the
commission.

THE annual meeting of the council of the American Federa-
tion of teachers of the mathematical and natural sciences was
held on Monday, December 27, 1909, at the Massachusetts
Institute of Technology, Boston, Mass. Twenty-two represen-
tatives of eight associations were present. The report of the
executive committee showed that six associations had joined the
Federation during the preceding year. The total number of
paid up members in the associations belonging to the Federation
is now 2040. Reports were presented from the local associa-
tions showing activity and progressive work in all. The com-
mittee on a syllabus in geometry reported that work was well

under way.   The committee has been divided into three sub-committees, one on logical considerations, one on lists of basal theorems, and one on exercises and applications.   It expects to have its work completed during the present year.

The committee on college entrance requirements had gathered a large amount of information which showed a great variation in the requirements of the different colleges, making it impossible for any school to meet them all.   The committee recommended that the Federation take up this matter with the College entrance examination board and see what can be done toward bringing about uniformity.   The report was accepted and the committee continued.

It was urged that reports of local meetings be published in such periodicals as would best serve the associations concerned.

A committee was appointed to cooperate with the College entrance examination board to determine the best forms of logarithmic tables to be used at examinations.

The question of the publication of a journal for mathematics alone was discussed at some length, and it was voted that a committee be appointed to consider this question and report at the next meeting.

Informal reports of progress were presented by members of the International commission on the teaching of mathematics.

The following officers were elected for the present year: President, Professor C. R. MANN, of the University of Chicago; secretary and treasurer, Professor E. R. SMITH, of the Brooklyn Polytechnic Institute; and three other members of the executive committee.   This committee will determine the time and place of the next meeting.

STATISTICS presented by Professor A. SCHOENFLIES in the *Jahresbericht der Deutschen Mathematiker-Vereinigung* show that the number of students of mathematics (excluding foreigners) in the Prussian universities has increased from 1,440 in 1907 to 1,730 in 1910, the latter number exceeding all previous records.   At present the supply of available graduates meets about one-half the demand for teachers, but warning is given that less favorable conditions are likely to result from a continued increase in the number of students.

PROFESSOR R. DEDEKIND, of the technical school at Braunschweig, has received the honorary degree of doctor of mathematics from the technical school at Zürich.

PROFESSOR E. SCHMIDT, of the University of Zurich, has been appointed to a full professorship of mathematics at the University of Erlangen.

DR. I. SCHUR, of the University of Berlin, has been promoted to an associate professorship of mathematics.

MISS E. GREENE has been appointed mathematical tutor at Bedford College, of the University of London.

MR. A. J. KENNY has been appointed assistant lecturer in mathematics at the University of Birmingham.

MR. J. H. SLEEMAN has been appointed lecturer in mathematics at the University of Sheffield.

MR. M. J. CONRAN has been appointed lecturer in mathematical physics at the University College of Cork.

PROFESSOR W. W. CAMPBELL, of the Lick Observatory, delivered at Yale University, on the Silliman foundation, in the week beginning January 24, a course of eight lectures on "Stellar motions."

DURING the week February 4–10, Professor CARL RUNGE, of the University of Göttingen, delivered a course of five lectures on graphical methods at the University of Michigan.

PROFESSOR C. J. KEYSER, of Columbia University, is spending a half-year abroad, on leave of absence.

DR. E. G. BILL, of Yale University, has received leave of absence for the coming academic year, which he will spend in the study of geometry at the University of Turin.

PROFESSOR L. A. WAIT, head of the department of mathematics at Cornell University, will retire from active service at the close of the present academic year.

EDWARD A. BOWSER, professor emeritus of mathematics and engineering at Rutgers College, died at Honolulu on February 29 at the age of sixty-five years.

PROFESSOR H. B. NEWSON, of the University of Kansas, died on February 18, at the age of fifty years. Professor Newson graduated from Ohio Wesleyan University in 1883. Later he studied at Johns Hopkins, Heidelberg, and Leipzig. He became associate professor of mathematics at the University

of Kansas in 1890, and was promoted to a full professorship in 1905. He had been a member of the American Mathematical Society since 1895.

PROFESSOR J. E. WRIGHT, of Bryn Mawr College, died on February 20 after an illness of several months. Professor Wright was senior wrangler of the University of Cambridge in 1900, first in the second part of the mathematical tripos in 1901, Smith's prizeman in 1902, and fellow of Trinity College since 1903. He was called to Bryn Mawr in 1903. His treatise on Invariants of Quadratic Forms was published by the Cambridge University Press in 1908.

NEW PUBLICATIONS.

(*In order to facilitate the early announcement of new mathematical books, publishers and authors are requested to send the requisite data as early as possible to the Departmental Editor,* PROFESSOR W. B. FORD, *1345 Wilmot Street, Ann Arbor, Mich.*)

I. HIGHER MATHEMATICS.

BERWALD (L.). Krümmungseigenschaften der Brennflächen eines geradlinigen Strahlensystems und der in ihm enthaltenen Regelflächen. (Diss.) München, 1909. 8vo. 67 pp.

BÖHM (F.). Parabolische Metrik im hyperbolischen Raum. (Diss.) München, 1908. 8vo. 62 pp.

BOJKO (J.). Neue Tafel der Viertelquadrate aller natürlichen Zahlen von 1–20000 zur Bildung aller möglichen Produkte im Bereiche $1 \times 1 -$ 10000×10000. Zürich, Speidel, 1909. 8vo. 20 pp.   M. 1.50

DEGENHART (H.). Ueber einige zu zwei ternären quadratischen Formen in Beziehung stehende Konnexe. (Diss.) München, 1909. 8vo. 55 pp.

DENJOY (A.). Sur les produits canoniques d'ordre infini. (Thèse.) Paris. Gauthier-Villars, 1909. 4to. 141 pp.

ENCYCLOPÉDIE des sciences mathématiques pures et appliquées. Tome I (volume 1): Arithmétique. Fascicule 4: Schoenflies et Baire, Théorie des ensembles; Burkhardt et Vogt, Sur les groupes finis discontinus. Paris, Gauthier-Villars; Leipzig, Teubner, 1909. 8vo. Pp. 489–616.
                                                       Fr. 5.00

—— Tome I (vol. 4): Calcul des probabilités; théorie des erreurs; applications diverses. Fascicule 4: Mehmke et d'Ocagne, Calculs numériques; Bortkiewicz et Oltramare, Statistique. Paris, Gauthier-Villars; Leipzig, Teubner, 1909. 8vo. Pp. 321–480.   Fr. 6.00

GRAND (J.). Anwendung der Lindstedtschen Methode auf die Integration der Differentialgleichung für hin- und hergehende Bewegungen eines zwangläufigen Mechanismus. (Diss.) Zürich, 1908. 8vo. 52 pp.

HAAR (A.). Zur Theorie der orthogonalen Funktionensysteme. (Diss.) Göttingen, 1909. 8vo. 48 pp.