Jacobian ellipsoids are reproduced, but the investigations of Darwin and Poincaré on other possible forms receive little more than a passing mention.

The author is to be congratulated on the completion of a task which will earn him the gratitude of all those who are now or may in the future be interested in hydrodynamics. The manner in which his materials are put together and the fact that he never loses sight of the practical applications make the book unusually interesting ; the large number of references will enable anyone to find out all that has been done in any branch. In fact, although the volume is a bulky one, we cannot but regret that it has not been divided into two and extended by including the investigations noted above as omitted, and by giving a much fuller index of subjects.

<div style="text-align: right">ERNEST W. BROWN.</div>

NOTES.

THE Toronto Meeting of the British Association for the Advancement of Science, held August 18–25, like the Montreal meeting of 1884, proved a very gratifying success. The attendance was about 1,300 as against 1,700 at the Montreal Meeting. The papers presented were in number and value well up to the Association's standard. The meetings of the American Botanical Society, the American Society for the Promotion of Engineering Education, and the AMERICAN MATHEMATICAL SOCIETY were held in Toronto immediately preceding the Association Meeting, and many members of these Societies remained to attend the session of the Association. Many members of the American Association were also in attendance, a large number coming directly from Detroit after the adjournment of the American Association in the preceding week. In all about 250 Americans were present, to whom a cordial reception was extended by the Association throughout the proceedings. They participated freely in the general and sectional meetings ; a considerable number were placed on important committees ; and several were appointed vice-presidents.

The officers of Section A,—Mathematical and Physical Science —, were : President, Professor A. R. FORSYTH ; Vice-Presidents, Professor W. E. AYRTON, Professor G. C. FOSTER, Professor O. HENRICI, Dr. G. W. HILL, Professor A. JOHN-

SON, Lord KELVIN, Professor O. J. LODGE, President LOU-
DON, Professor A. A. MICHELSON, Professor SIMON NEWCOMB;
Secretaries, Professor W. H. HEATON, J. C. GLASHAN, J. L.
HOWARD, Professor J. C. McCLELLAN, Professor J. G. MC-
GREGOR. The Presidential Address, which has since been
published in *Nature*, was an able and timely statement of
the function of mathematical science, its place among sister
sciences, and its claim to be studied and developed for its
own sake. The meetings of the Section extended through
five days, and over sixty papers were presented. The fol-
lowing are the titles of the mathematical papers : " Report
of the Committee on tables of certain mathematical func-
tions;" " On the solution of the cubic equation," by Profes-
sor ALEXANDER MACFARLANE ; " The historical development
of the Abelian functions," by Dr. HARRIS HANCOCK ; " On a
notation in vector analysis," by Professor O. HENRICI ; " New
harmonic analyses," by Professor A. A. MICHELSON and Mr.
S. W. STRATTON ; " The quinquisection of the cyclotomic
equation," by Mr. J. C. GLASHAN. The next meeting of
the British Association will be held at Bristol, England,
in August, 1898, under the presidency of Sir WILLIAM
CROOKES.

DURING the winter semester 1897-98, the several univer-
sities mentioned below offer the following mathematical
courses:—

UNIVERSITY OF GÖTTINGEN. Professor SCHERING: Rie-
mann's functions ; Mathematical-physical seminar.—Pro-
fessor VOIGT : Mathematical-physical seminar.—Professor
HILBERT : Theory of numbers; Irrational numbers and quad-
rature of the circle ; Focal properties of curves and surfaces
of the second order ; Mathematical-physical seminar.—Pro-
fessor SCHOENFLIES : Projective geometry ; Exercises in de-
scriptive geometry ; Proseminar.—Dr. BOHLMANN : Theory
of functions ; The mathematics of life insurance; Mathe-
matical exercises in the insurance seminar.—Dr. SOMMER-
FELD : Integral calculus with exercises ; Partial differential
equations of the second order.

UNIVERSITY OF LEIPZIG. Professor SCHEIBNER : Intro-
duction to the analysis of the infinite; On curvilinear co-
ordinates. —Professor NEUMANN : Mathematical seminar.—
Professor LIE : Introduction to projective geometry ; Intro-
duction to the theory of continuous groups with various
applications ; Mathematical seminar.—Professor MAYER:
General introduction to the theory of ordinary differential

equations; Mathematical seminar.—Professor ENGEL: Theory of algebraic equations and theory of substitutions; Mathematical seminar.

UNIVERSITY OF MUNICH. Professor BAUER: Analytical geometry of the plane; Theory of the algebraic plane curves; Mathematical seminar.—Professor LINDEMANN: Differential calculus with exercises; On the geometry of the line and of the sphere; Mathematical seminar.—Professor PRINGSHEIM: Theory of functions; Elementary theory of differential equations with real variables.—Dr. DÖHLEMANN: Descriptive geometry; Exercises in descriptive geometry; Synthetic (modern) geometry; Exercises in synthetic geometry.—Dr. v. WEBER: Introduction to analysis; Application of differential calculus to geometry (Theory of curves and surfaces); Geometry of the circle and of the sphere.

UNIVERSITY OF VIENNA. Professor v. ESCHERICH: Definite integrals and differential geometry; Mathematical proseminar; Mathematical seminar.—Professor GEGENBAUER: Number geometry; Exercises in the mathematical seminar; Exercises in the theory and application of determinants (in the mathematical proseminar) —Professor MERTENS: Elements of the differential and integral calculus; Exercises in the mathematical seminar; Exercises in the mathematical proseminar.—Dr. KOHN: Analytical geometry; Theory of projection.—Dr. SERSAWY: Lectures on the mathematics of insurance, with special reference to the needs of administrative and judicial officials.—Professor TAUBER: Algebraic functions and their integrals; Introduction to the theory of Abelian functions; Mathematics of insurance; Exercises in insurance mathematics.—Dr. ZINDLER: Elementary theory of geometric properties, for beginners.—Dr. BLASCHKE: The application of the theory of probabilities to statistics and insurance.—Dr. ZSIGMONDY: Galois theory of equations.— Dr. DAUBLEBSKY v. STERNECK: General theory of surfaces; Cyclotomy and Kummer's numbers.

UNIVERSITY OF STRASSBURG. Professor REYE: Analytical geometry of space (modern methods); Mathematical theory of elasticity of solid bodies; Exercises in the mathematical seminar.—Professor WEBER: Theory of the Abelian functions; Introduction to higher algebra; Exercises in the mathematical seminar.—Professor ROTH: Algebraic analysis and determinants; Analytical geometry of space; Ordinary differential equations.—Dr. KRAZER: Differential and

integral calculus ; Geometric applications of the differential and integral calculus ; Analytical geometry of the plane.—Dr. TIMERDING : Determinants and their applications in geometry ; On Euclidean and non-Euclidean geometry.

THE Macmillan Company announce the publication of "A Brief Introduction to the Infinitesimal Calculus," by Professor Irving Fisher, of Yale University. This book is a companion volume to Cournot's "Mathematical Principles" and is intended for readers of that work who feel the need of a mathematical key, and in general for those who wish to be able to read intelligently the rapidly growing literature in mathematical economics. Since as recent a date as 1890 no less than seventy-five books and articles on economics have appeared in which the Calculus is employed.

THE publication and sale of the autographed volumes of Klein's Göttingen lectures has now passed into the hands of B. G. Teubner.

NEW PUBLICATIONS.

I. HIGHER MATHEMATICS.

DYCK (W.). Ueber die wechselseitigen Beziehungen zwischer der reinen und der angewandten Mathematik. Festrede. München, Franz, 1897. 4to. 38 pp. Mk. 1.20

GOETTLER (J.). Conforme Abbildung eines von concentrischen, gleichseitigen Hyperbeln oder gewissen Kurven $n$ter Ordnung begrenzten Flächenstückes auf den Einheitskreis. Gekrönte Preisschrift der hohen philosophischen Fakultät (II. Section) der Königl. Ludwig-Maximilians-Universität, München. [Diss.] München, Straub, 1897. 8vo. 75 pp.

PEANO (G.). Logique mathématique. Turin, Bocca, 1897. 8vo. 63 pp.

PICARD (E.) et SIMART (G.). Théorie des fonctions algébriques de deux variables indépendantes. (En 2 volumes.) Vol. I. Paris, Gauthier-Villars, 1897. 8vo. 6 and 246 pp. Fr. 9.00

PINNA (S.). Sulle curve piane razionali e sui fasci che con esse si possono fare. Torino, Bona, 1897. 8vo. 59 pp.

PÜSCHEL (C.). Eine Zusammenstellung von Aufgaben aus der analytischen Geometrie für die Prima des Gymnasiums. Teil I. Waldenburg, 1897. 8vo. 27 pp. Mk. 1.20

REPETTO (G.). Alcune applicazioni del metodo di Jacobi per l' integrazione delle equazioni differenziali. Sassari, Dessi, 1897. 8vo. 23 pp.

RICHARD (J.). Leçons sur les méthodes de la géométrie moderne. Paris, Société d'éditions scientifiques, 1898. 8vo. 242 pp. Fr. 6.00

ROTHE (R.). Untersuchungen über die Theorie der isothermen Flächen. [Diss.] Berlin, Mayer & Müller, 1897. 4to. 42 pp. Mk. 2.00