fessor A. MANNHEIM upon his retirement from the chair of geometry, which he has filled since 1864, and which he now relinquishes under the age limit. The reception, which was held in the large amphitheater of the school, was arranged by a representative committee and was attended by the minister of war and many prominent scientists and officials. Several addresses were made, M. E. Rouché and the minister of war being among the speakers. The former dwelt particularly upon M. Mannheim's contributions to science in his Principes et développements de la géométrie cinématique. The occasion was further marked by the presentation to M. Mannheim of a token of remembrance in the form of a bronze by Coutan.

PROFESSOR G. MITTAG-LEFFLER has recently been elected foreign associate of the Royal society of Naples and associate of the Royal academy of Belgium.

MR. T. J. I'A BROMWICH, fellow of St. John's College, Cambridge, has been appointed professor of mathematics in Queen's College, Galway, in succession to Professor A. C. DIXON, now professor of mathematics in Queen's College, Belfast.

MR. R. J. PARANJPYE, senior wrangler at Cambridge University three years ago, and recently fellow of St. John's College, has returned to his native country to accept a professorship at Fergusson College, Poona.

MR. FREDERICK PURSER has been elected to the chair of natural philosophy in Trinity College, Dublin, lately vacated by Dr. TARLETON.

SEVERAL scientific societies will unite in tendering a reception to Lord KELVIN at Columbia University on the evening of April 21.

DR. C. M. GULDBERG, professor of mathematics in the technical school at Christiania, Norway, died on January 14.

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# NEW PUBLICATIONS.

## I. HIGHER MATHEMATICS.

BASS (E. W.). Elements of differential calculus. 2d edition revised. New York, Wiley, 1902. 12mo. 8 + 356 pp. Cloth.
$4.00

BURKHARDT (H.). See ENCYKLOPÄDIE.

DEDEKIND (R.). Ueber die Permutationen des Körpers aller algebraischen Zahlen. (Festschrift zur Feier des 150jährigen Bestehens der k. Gesellschaft der Wissenschaften zu Göttingen.) Berlin, Weidmann, 1901. 4to. 17 pp. M. 2.00

DICKSON (L. E.). Representation of linear groups as transitive substitution groups. 1901. 4to. (*American Journal of Mathematics* 23, pp. 337–377.)

——. The configurations of the 27 lines on a cubic surface and the 28 bitangents to a quartic curve. 1901. 8vo. (*Bulletin of the American Mathematical Society,* 2d series, Vol. 8, pp. 63–70.)

——. The groups of Steiner in problems of contact. 1902. 4to. (*Transactions of the American Mathematical Society* 3, pp. 38–45.)

ENCYKLOPÄDIE der mathematischen Wissenschaften mit Einschluss ihrer Anwendungen. Herausgegeben im Auftrage der Akademien der Wissenschaften zu München und Wien und der Gesellschaft der Wissenschaften zu Göttingen, sowie unter Mitwirkung zahlreicher Fachgenossen. (In 7 Bänden.) Vol. II: Analysis, in 2 Teilen, redigiert von H. Burkhardt. Teil 2, Heft 1: W. F. Osgood, Allgemeine Theorie der analytischen Funktionen (*a*) einer und (*b*) mehrerer komplexen Grössen; W. Wirtinger, Algebraische Funktionen und ihre Integrale. Leipzig, Teubner, 1901. 8vo. 175 pp. M. 5.20

GUNDERSEN (C.). On the content or measure of assemblages of points. Submitted in partial fulfillment of the requirements for the degree of doctor of philosophy, in the Faculty of pure science, Columbia University. New York, 1901. 4to. 24 pp.

HAMEL (G.). Ueber die Geometrien, in denen die Geraden die Kürzesten sind. (Diss.) Göttingen, 1901. 8vo. 90 pp.

Χατζιδάκι (I. H.). Εἰσαγωγὴ εἰς τὴν ἀνωτέραν ἀλγέβραν. 2d edition. Athens, 1898.

HILBERT (D.). Ueber das Dirichlet'sche Prinzip. (Festschrift zur Feier des 150jährigen Bestehens der k. Gesellschaft der Wissenschaften zu Göttingen.) Berlin, Weidmann, 1901. 4to. 27 pp. M. 2.00

KORTEWEG (D. J.). Oplossingen van vraagstukken uit de analytische meetkunde van het platte vlak en der ruimte, voorkomende in Briot et Bouquet, Leçons de géométrie analytique, benevens een gelijk aantal vraagstukken ter oefening. 3ter druk. 's Hertogenbosch, 1901. 8vo. 8 + 192 pp. M. 5.50

LEONARDI (G.). Sull' omografia della specie *n.* Acireale, Tipografia dell' *Etna,* 1901. 8vo. 32 pp.

OSGOOD (W. F.). See ENCYKLOPÄDIE.

SCHÜTTENHELM (A.). Ueber eine besondere Art Cremona'scher Transformationen. (Diss.) Strassburg, 1901. 8vo. 47 pp.

TORRELLI (G.). Sulla totalità dei numeri primi fino ad un limite assegnato; monografia, premiata dalla r. Accademia delle scienze fisiche e matematiche di Napoli nell'adunanza del 15 dicembre 1900. Napoli, Tipografia dell'Accademia, 1901. 4to. 215 pp., 1 table. (Memoria estratta dal Vol. XI, serie 2a, No. 1, degli *Atti della r. Accademia delle scienze fisiche e matematiche di Napoli.*)

VAN VLECK (E. B.). A determination of the number of real and imaginary roots of the hypergeometrric series. 1902. 4to. (*Transactions of the American Mathematical Society* 3, pp. 110–131.)

WILCZYNSKI (E. J.). Geometry of a simultaneous system of two linear homogeneous differential equations of the second order. 1901. 4to. (*Transactions of the American Mathematical Society* 2, pp. 343–362.)

——. Reciprocal systems of linear differential equations. 1902. 4to. (*Transactions of the American Mathematical Society* 3, pp. 60–70.)

WILHELM (J.). Die Kegelschnitte mit einem gemeinschaftlichen Brennpunkt in ihrem Zusammenhange mit den Kreisen der Ebene. (Diss.) Strassburg, 1901. 8vo. 40 pp.

WIRTINGER (W.). See ENCYKLOPÄDIE.

ZOLL (O.). Ueber Flächen mit Schaaren von geschlossenen geodätischen Linien. (Diss.) Göttingen, 1901. 8vo. 45 pp.

## II. ELEMENTARY MATHEMATICS.

AMES (A. F.). See MCLELLAN (J. A.).

BEMAN (W. W.). See SUNDARA ROW (T.).

BOUVART (C.) et RATINET (A.). Nouvelles tables de logarithmes à cinq décimales (division centésimale, conforme à l'arrêté ministériel du 3 août 1901), à l'usage des candidats aux écoles polytechnique et Saint-Cyr, contenant: 1° les logarithmes des nombres entiers, de 1 à 10,000; 2° une table à sept décimales pour les calculs relatifs aux intérêts composés; 3° un tableau permettant de calculer rapidement la longueur d'un arc en fonction du rayon; 4° une table pour la conversion des divisions sexagésimales en divisions centésimales; 5° une table pour la conversion des divisions centésimales en divisions sexagésimales; 6° une table trigonométrique centésimale. Paris, Hachette, 1902. 8vo. 128 pp.     Fr. 2.00

CAVEZZALI (A.). Esercizî e nozioni di aritmetica e geometria, compilati in conformità dei programmi governativi 29 novembre 1894 e distribuiti con metodo ciclico. Parte III, per la classe 16mo. 120 pp.     Fr. 0.40

CIAMBERLINI (C.). Esercitazioni e ricrezioni geometriche ad uso degli alunni delle scuole elementari. Lanciano, Carabba, 1902. 16mo. 45 pp.     Fr. 0.30

DEEL (G. A.). Practical rapid calculator for the use of schools where the commercial branches are taught, and self-instruction; embracing the shortest and most practical methods of calculating for a large variety of trades and professions. Poughkeepsie, N. Y., Deel, 1901. 76 pp. Cloth. $0.50

DEWEY (J.). See McLELLAN (J. A.).

DICKSON (L. E.). College algebra. New York, Wiley, 1902. 12mo. 7 + 214 pp. Cloth. $1.50

DURET (G.). See SURIER (A.).

GAZZANIGA (P.). See VERONESE (G.).

GRASSI (F.). See SERRET (G. A.).

HALL (H. S.). Algebraical examples: supplementary to Hall and Knight's algebra for beginners and elementary algebra (chapters 1 to 27). London and New York, Macmillan, 1901. 12mo. 8 + 172 pp. Cloth. $0.50

KELLOGG (A. M.). Elements of algebra. New York, Kellogg and Co., 1901. 12mo. 47 pp. Cloth. $0.25

KINKELIN (D. H.). See RIEM (J.).

LEATHEM (J. G.). See TODHUNTER (I.).

McLELLAN (J. A.)., DEWEY (J.)., and AMES (A. F.). Public school arithmetic for grammar grades, based on McLellan and Dewey's "Psychology of number." New York, Macmillan, 1902. 12mo. 12 + 369 pp. $0.60

MILNE (W. J.). A key to the "Standard arithmetic" and the "Mental arithmetic." New York, American Book Co. [1901]. 74 pp. Cloth. $1.00

MORE (E.). The trisection of a given angle geometrically solved and illustrated. Grand Rapids, Mich., Gregory Wickes Pub. Co., 1901. 7 pp. $1.00

MÜLLER (H.). Die Elementar-Planimetrie. Ein methodisches Lehrbuch. Leipzig, Teubner, 1901. 8vo. 8 + 188 pp. Boards.
M. 2.40

RATINET (A.). See BOUVART (C.).

RIEM (J.). Tables de multiplication pour le commerce et l'industrie. Avec un avant-propos par D. H. Kinkelin. 2e édition. Paris, 1901. 4to. Fr. 8.50

SABRÁZ Y CAUSAPÉ (T.). See SANCHEZ RAMOS (E.).

SÁNCHEZ RAMOS (E.) Y SABRÁS Y CAUSAPÉ (T.). Segundo curso de matemáticas; nociones de geometría. 2a edición. Vitoria, Egaña, 1901. 8vo. 124 pp.

SERRET (G. A.). Trattato di trigonometria piana e sferica tradotta in italiano sulla settima edizione francese, col consenso dell'autore, da F. Grassi. 5a edizione, can note ed aggiunte del traduttore, 1,000 esecizî. colla soluzione, coll'aggiunta di un formulario di matematica e fisica. Torino, Bocca, 1902. 16mo. 312 pp. Fr. 3.00

SMITH (D. E.). See SUNDARA ROW (T.).

SPERINDEO (G.). Appunti di geometria per le prime tre classi ginnasiali. 2a edizione. Napoli, D'Auria, 1901. 16mo. 90 pp.
Fr. 0.80

SUNDARA ROW (T.). Geometric exercises in paper folding; edited and revised by W. W. Beman and D. E. Smith. Chicago, The Open Court Publishing Co., 1901. 12mo. 14 + 148 pp. Cloth.

SURIER (A.) et DURET (G.). L'arithmétique simplifiée, en concordance avec la géométrie et le système métrique (Cours moyen et supérieur.) Mille cinq cent cinquante problèmes. Paris, Delalain, 1901. 8vo. 8 + 272 pp.                    Fr. 1.80

TODHUNTER (I.). Spherical trigonometry. For colleges and schools. Revised by J. G. Leathem. London, Macmillan, 1902. 12mo. 288 pp. Cloth.

VERONESE (G.). Elementi di geometria ad uso dei ginnasî e licei e istituti tecnici (1° biennio), trattati con la collaborazione di P. Gazzaniga. Parti I–II. 2a edizione. Verona e Padova, Drucker, 1901. 8vo. Vol. I: 20 + 111 pp.; Vol. II: 4 + 212 pp.
Fr. 4.50

WIMMENAUER (F.). Arithmetische Aufgaben nebst Lehrsätzen und Erläuterungen. 2te Ausgabe. Breslau, Hirt, 1901. 8vo. 7 + 312 pp.                              M. 3.25

## III. APPLIED MATHEMATICS.

APPELL (P.). Traité de mécanique rationnelle. (Cours de mécanique de la faculté des sciences.) Vol. III: Equilibre et mouvement des milieux continus. Fasc. 2. Paris, Gauthier-Villars, 1900. 8vo. Pp. 225–456.

BAUSCHINGER (J.). Tafeln zur theoretischen Astronomie. Leipzig, Engelmann, 1901. 4to. 4 + 148 pp., 2 plates. Cloth. M. 12.00

BECKER (A.). Interferenzröhren für elektrische Wellen. (Diss.) Heidelberg, 1901. 8vo. 62 pp., 3 plates.

BRACE (D. B.). Laws of radiation and absorption: memoirs by Prévost, Stewart, Kirchhoff, and Kirchhoff and Bunsen. Contents: On the equilibrium of heat, by Pierre Prévost; Treatise on radiant heat (selections), by Pierre Prévost; Biographical sketch of Prévost; account of some experiments on radiant heat, by Balfour Stewart; Biographical sketch of Stewart; On the relation between the emissive and the absorptive power of bodies for heat and light, by G. R. Kirchhoff; Biographical sketch of Kirchhoff; chemical analysis by spectral observations, by G. R. Kirchhoff and R. Bunsen; Biographical sketch of Bunsen; Bibliography. New York, American Book Co. [1901]. 7 + 131 pp. Cloth.                                     $1.00

BUNSEN (R.)   See BRUCE (D. B.).

CONCINA (U.).   See ENRIQUES (F.).

DELASTELLE (F.). Mathématiques appliquées. Traité élémentaire de cryptographie. Paris, Gauthier-Villars, 1902. 8vo. 164 pp.
Fr. 5.00

Du Bois (A. J.). Mechanics of engineering. Volume I: Kinematics, statics, kinetics, statics of rigid bodies and of elastic solids. New York, Wiley, 1901. 4to. 634 pp. Cloth. $7.50

Dunlap (H. C.) and Jackson (C. S.). Slide rule notes. London, Simpkin, 1902. 4to. 68 pp. 3s.

Enriques (F.). Lezioni di geometria descrittiva, pubblicate per cura di U. Concina. Bologna, 1901. 8vo. 121 pp., 24 plates. Fr. 12.00

Huygens (C.). Oeuvres complètes, publiées par la Société Hollandaise des sciences. Vol. IX: Correspondance 1685–90. La Haye, 1901. 4to. 662 pp., 1 portrait, 2 plates. M. 25.00

Jackson (C. S.). See Dunlap (H. C.).

Jadanza (N.). Elementi di geodesia. 5a edizione. Torino, Giorgis, 1902. 8vo. 542 pp.

Kirchhoff (G. R.). See Brace (D. B.).

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Landré (C. L.). See Schouten (P.).

Prévost (P.). See Bruce (D. B.).

Schouten (P.). Grondbeginselen der levensverzekeringswiskunde. Met een voorwort van C. L. Landré. Utrecht, 1901. 8vo. 8 + 152 pp. M. 3.80

Stewart (B.) See Brace (D. B.).

Wildt (J.). Praktische Beispiele aus der darstellenden Geometrie für Lehranstalten mit bau- und kunstgewerblicher Richtung. Wien, Pichler, 1902. 4to. M. 17.00