

connected by an algebraic function. In default of a complete solution of the problem, the academy at least desires the treatment of particular examples, leading to classes of new transcendentals."—Fourneyron prize (fr. 1000) for 1910: "Theoretic and experimental study of the blow of a battering ram in an elastic tube."—Poncelet prize (fr. 2000) for 1909 for general progress in applied mathematics; for 1910, for an important memoir in pure mathematics.—Vaillant prize (fr. 4000) for 1909: "Perfect, in some important point, the application of the dynamical principles of fluids to the theory of the propeller."—Boileau prize (fr. 1300) for 1909, for an important contribution to the theory of fluids. The remaining prizes will be awarded under the same conditions as those previously announced.

Dr. H. LEBESGUE has been promoted to a professorship of mathematical analysis at the University of Poitiers.

THE late Mr. RICHARD BROWN, of Youngstown, Ohio, left the sum of \$30,000 to Mount Union College to endow the chair of mathematics. The present professor, Mr. B. F. Yanney, has been appointed to the chair.

PROFESSOR C. O. GUNTHER, of the Stevens Institute of Technology, has been promoted to be acting professor of mathematics.

PROFESSOR W. W. BEMAN, of the University of Michigan, has been granted a leave of absence during the next academic year.

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## NEW PUBLICATIONS.

### I. HIGHER MATHEMATICS.

- BAKER (H. F.). Introduction to the theory of multiply periodic functions. Cambridge, 1907. 8vo. 16 + 336 pp. Cloth. 12s. 6d.
- BÔCHER (M.). Introduction to higher algebra; prepared for publication with the cooperation of E. P. R. Duval. New York, Macmillan, 1908. 8vo. 11 + 321 pp. Cloth. \$1.90
- BROMWICH (T. J. P. A.). Quadratic forms and their classification by means of invariant factors. (Cambridge tracts in mathematics and mathematical physics.) New York, Putnam, 1907. 8vo. 8 + 100 pp. \$1.10
- BROZAT (W.). Ueber Scharen von  $\infty^4$  Flächen im  $R_3$ , die durch Berührungstransformationen in Scharen von  $\infty^4$  Kurven überführbar sind. Greifswald, 1907. 8vo. 53 pp. M. 1.80

- BRUNO (K.). Die Grundlehren der Integral- und Differentialrechnung. Wien, Hölder, 1908. 8vo. 51 pp. M. 1.25
- BUSTELLI (A. M.). Elementi di filosofia della matematica nei riguardi didascalici, con prefazione di V. Cerruti. Fasc. 1-4. Roma-Milano, Società ed. Dante Alighieri, 1905-07. 8vo. 4 fasc. Pp. 46; 54; 13 + 40; 82. L. 2.80
- CERRUTI (V.). See BUSTELLI (A. M.).
- CORNACCHIA (G.). Su di un metodo per la risoluzione in numeri interi dell'equazione  $\sum_{h=0}^n C_h x^{n-h} \cdot y^h = P$ . Faenza, Montanari, 1907. 4to. 15 pp.
- DONADT (A.). See LÜBSEN (H. B.).
- DUVAL (E. P. R.). See BÔCHER (M.).
- GALILEI (G.). Unterredungen und mathematische Demonstrationen über zwei neue Wissenszweige, die Mechanik und die Fallgesetze betreffend. Aus dem Italienischen übersetzt und herausgegeben von A. von Oettingen. (Ostwalds Klassiker der exakten Wissenschaften, No. 11.) 2ter unveränderter Abdruck. Leipzig, Engelmann, 1907. 8vo. 142 pp. M. 3.00
- JUNKER (F.). Repetitorium und Aufgabensammlung zur Differentialrechnung. 2te Auflage. Neudruck. Leipzig, 1907. 12mo. 129 pp. Cloth. M. 0.80
- KELLER (S. S.). Analytical geometry and calculus. New York, Van Nostrand, 1907. 12mo. 359 pp. Cloth. \$2.00
- LARMOR (J.). See POINCARÉ (H.).
- LÜBSEN (H. B.). Ausführliches Lehrbuch der analytischen oder höheren Geometrie, zum Selbstunterricht bearbeitet. 15te Auflage, neu bearbeitet von A. Donadt. Leipzig, 1907. 8vo. M. 4.00
- OETTINGEN (A. VON). See GALILEI (G.).
- PAGLIERO (G.). Applicazioni del calcolo infinitesimale. Torino, Paravia, 1907. 8vo. 244 pp. L. 7.00
- PERCIVAL (A. S.). Practical integration. For the use of engineers, etc. London, Macmillan, 1907. 8vo. 92 pp. 2s. 6d.
- POINCARÉ (H.). Science and hypothesis; with a preface by J. Larmor. New York, Scribner, 1907. 12mo. 27 + 244 pp. Cloth. \$1.25
- SEEVER (E. P.). Mathematical handbook; containing the chief formulas of algebra, trigonometry, circular and hyperbolic functions, differential and integral calculus, and analytical geometry; together with mathematical tables. New York, McGraw, 1907. 8vo. 10 + 278 pp. Cloth. \$2.50
- SITTIGNANI (M.). Sulle funzioni intere di genere finito. Bologna, Zanichelli, 1907. 8vo. 8 pp.
- VALENTINER (S.). Vektoranalysis. Leipzig, 1907. 12mo. 163 pp. Cloth. M. 0.80

## II. ELEMENTARY MATHEMATICS.

- AMANZIO (D.). Trattato di algebra elementare. 3a edizione. Napoli, Pellerano, 1907. 8vo. 543 pp. L. 4.50
- BARBISCH (H.). See JAHNE (J.).

- BREMIKER (C.). Tavole logaritmico-trigonometriche con cinque decimali. Edizione italiana eseguita per cura di L. Cremona. Quinta tiratura stereotipa, con una prefazione e tavole dell'ing. A. Salmoiraghi. Milano, Hoepli, 1908. 8vo. 47 + 161 pp. L. 2.50
- BRIGGS (W.) and BRYAN (G. H.). Tutorial trigonometry. 2d edition. London, Clive, 1907. 8vo. 332 pp. Cloth. 3s. 6d.
- BRYAN (G. H.). See BRIGGS (W.).
- BUCHANAN (A. H.). Plane and spherical trigonometry. New York, Wiley, 1907. 8vo. 6 + 96 pp. Cloth. \$1.00
- CREMONA (L.). See BREMIKER (C.).
- ÉLÉMENTS de géométrie. Lignes droites; perpendiculaires et obliques; parallèles; circonférence; mesures; lignes proportionnelles; figures; polyèdres, etc. Nouvelle édition. Paris, Boulinier, 1907. 16mo. 64 pp. Fr. 0.10
- FUCINI (C.). Algebra elementare per gl'istituti nautici. 3a edizione. Genova, Gioventù, 1908. 8vo. 252 pp.
- . Geometria piana e nozioni di geometria solida, per le scuole secondarie inferiori. 8a edizione. Genova, Gioventù, 1908. 8vo. 143 pp. L. 1.50
- GALLI (F.). Elementi di algebra per le scuole medie di primo grado. Cremona, Fezzi, 1907. 8vo. 58 pp. L. 0.75
- GHIOTTI (E.). Nozioni pratiche di aritmetica e geometria per le scuole operaie, professionali e tecniche. Nuova edizione. Torino, Gallizio, 1908. 16mo. 6 + 243 pp.
- GRAVELAAR (N. L. W.). Leerboek der planimetrie. 3er druk. Groningen, 1907. 8vo. 192 pp. M. 2.50
- GRÉVY (A.). Eléments d'algèbre à l'usage des élèves des classes de troisième A et première A et B (programmes de 1905). 6e édition. Paris, Vuibert, 1907. 16mo. 232 pp. Fr. 1.75
- . Géométrie théorique et pratique, conforme au programme du 27 juillet 1905, à l'usage des élèves du premier cycle B (classes de cinquième B à troisième B). 4e édition. Paris, Vuibert, 1908. 16mo. 7 + 473 pp. Fr. 3.50
- . Trigonométrie à l'usage des élèves des classes de première C et D et de mathématiques A et B (programmes de 1905). 4e édition. Paris, Vuibert, 1908. 16mo. 280 pp. Fr. 2.25
- GUICHARD (C.). Traité de géométrie. Vol. I, à l'usage des classes de seconde et première C et D et mathématiques A et B. 3e édition, conforme au programme du 27 juillet, 1905. Paris, Vuibert, 1908. 8vo. 8 + 568 pp. Fr. 6.00
- JACOBSTHAL (W.). See WEBER (H.).
- JAHNE (J.) und BARBISCH (H.). Leitfaden der Geometrie und des geometrischen Zeichnens für Knabenbürgerschulen. Ausgegeben in 1 Bande. 2te, verbesserte Auflage. Wien, Manz, 1907. 8vo. 8 + 185 pp. M. 2.10
- KELLER (S. S.). Algebra. New York, Van Nostrand, 1907. 12mo. 113 pp. Cloth. \$1.00
- . Plane and solid geometry. New York, Van Nostrand, 1907. 12mo. 212 pp. Cloth. \$1.50

- MAINARDI (M.). Una lezione di trigonometria. Napoli, 1907. 8vo. 8 pp.
- MATRICULATION model answers. Mechanics. Sept. 1903–Sept. 1907. New edition. London, Clive, 1907. 8vo. 97 pp 2s.
- MAYER (J. E.). Mathematik für Techniker. Gemeinverständliches Lehrbuch der Mathematik für Mittelschüler sowie besonders für den Selbstunterricht. Vol. 5. Leipzig, Schäfer, 1907. 8vo. 8 + 180 pp. M. 2.40
- RUDIO (F.). Des Simplicius Bericht über die Quadraturen des Antiphon und des Hippokrates, griechisch und deutsch. Mit einem historischen Erläuterungsberichte als Einleitung. Im Anhang ergänzende Urkunden, verbunden durch eine Uebersicht über die Geschichte des Problems von der Kreisquadratur vor Euklid. Leipzig, Teubner, 1907. 8vo. 10 + 184 pp. (Urkunden zur Geschichte der Mathematik im Altertume, 1es Heft.) M. 4.80
- RÜEFLI (J.). Lehrbuch der ebenen Geometrie nebst einer Sammlung von Übungsaufgaben. Zum Gebrauche an Sekundarschulen (Realschulen) und Gymnasial-Anstalten, sowie zum Selbststudium bearbeitet. 4te Auflage. Bern, Francke, 1907. 8vo. 8 + 199 pp. M. 2.40
- SALMOIRAGHI (A.). See BREMIKER (C.).
- SCHMIDT (A.). Beiträge zum mathematischen Unterricht : Berechnung der Logarithmen in Untersekunda ; Einführung der komplexen Zahlen. Berlin, 1907. 4to. 16 pp. M. 1.00
- SCHUBERT (H.). Mathematische Musstunden. Eine Sammlung von Geduldspielen, Kunststücken und Unterhaltungsaufgaben mathematischer Natur. Kleine Ausgabe. 3te Auflage. Leipzig, Göschen, 1907. 8vo. 306 pp. Cloth. M. 5.00
- VALLÍN Y BUSTILLO (A. F.). Elementos de matemáticas. Obra declarada de texto por los gobiernos de España y Portugal. Nueva edición estereotípica. Madrid, Sucesores de Hernando, 1907. 226 pp. P. 7.00
- VÁSQUEZ QUEIPO (V.). Tablas de los logaritmos vulgares de los numeros 1-20000 y de las lineas trigonometricas. 24a edición. Madrid, 1907. 8vo. 268 pp. P. 5.00
- VIVES Y CASADEMONT (L.). Elementos de algebra. Malaga, "La Española," 1907. 240 pp.
- WEBER (H.) und WELLSTEIN (J.). Encyklopädie der Elementar-Mathematik. Ein Handbuch für Lehrer und Studierende. (In 3 Bänden.) Vol. II: Encyklopädie der elementaren Geometrie. Bearbeitet von H. Weber, J. Wellstein und W. Jacobsthal. 2te Auflage. Leipzig, Teubner, 1907. 8vo. 12 + 596 pp. Cloth. M. 12.00
- WELLSTEIN (J.). See WEBER (H.).
- WESTLAKE (H. F.). Construction in practical geometry. London, Philip, 1907. 8vo. 62 pp. 1s.
- WHEELER (A. H.). Algebra for grammar schools, with mental exercises. Boston, Little, 1907. 12mo. 12 + 186 pp. Cloth. \$0.50
- . First course in algebra ; with 8000 examples, including 3000 mental exercises. Boston, Little, 1907. 12mo. 19 + 664 pp. Cloth. \$1.15

## III. APPLIED MATHEMATICS.

- CHOLLET (T.) et MINEUR (P.). *Traité de géométrie descriptive. 1re partie à l'usage des élèves des classes de première C et D. 5e édition, conforme au programme du 27 juillet 1905.* Paris, Vuibert, 1908. 8vo. 8 + 336 pp. Fr. 3.50
- CONTALDI (P.). *La meccanica nella scuola e nell' industria. Vol. I: Meccanica generale; meccanica applicata. 2a edizione riveduta ed ampliata.* Milano, Hoepli, 1908. 8vo. 15 + 711 pp. L. 16.00
- FORNER CARRATALÁ (F.). *Manual de mecánica. Mecánica elemental. 2 tomos.* Barcelona, 1907. 8vo. 246 and 205 pp. P. 5.00
- GARNERI (A.). *Corso elementare di disegno geometrico. Parte I: Problemi grafici e geometrici e ornamentazione geometrica. Fasc. 1.* Torino, Paravia, 1908. 16mo. 48 pp.
- GUICHARD (C.). *Traité de mécanique à l'usage des élèves de mathématiques A et B et des candidats aux écoles. 5e édition, conforme au programme du 27 juillet 1905.* Paris, Vuibert, 1908. 8vo. 7 + 248 pp.
- HERRMANN (G.). See WEISBACH (J.).
- LOVE (A. E. H.). *Theoretical mechanics: an introductory treatise on the principles of dynamics, with applications and numerous examples. 2d edition.* New York, Putnam, 1907. 8vo. 16 + 367 pp. Cloth. \$3.00
- MAURER (E. R.). *Strength of materials: a practical manual of scientific methods of locating and determining stresses and calculating the required strength and dimensions of building materials.* Chicago, American School of Correspondence, 1908. 8vo. 3 + 128 pp. Cloth. \$1.00
- MINEUR (P.). See CHOLLET (T.).
- PEDROTTI (L.). *Importanti applicazioni dei logaritmi, funzioni esponenziali e calcolo degli interessi composti ed annualità.* Milano, Società ed. Sonzogno, 1907. 16mo. 63 pp. L. 0.15
- POPPELWELL (W. C.). *Strength of materials: a manual for students of engineering.* New York, Van Nostrand, 1907. 8vo. 11 + 180 pp. Cloth. \$2.00
- RUIZ-CASTIZO (J.). *Tratado de mecánica racional, apropiado á la enseñanza en las facultades de ciencias y en las escuelas especiales. 20 fasc.: Cinemática.* Madrid, Suarez, 1907. Pp. 305-589. P. 9.00
- SCHÄRTLIN (G. G.). *Zur mathematischen Theorie der Invaliditätsversicherung.* Bern, 1907. 4to. 43 pp. M. 2.00
- SCHULTZ (E.). *Mathematische und technische Tabellen für Maschinenbauschulen und für den Gebrauch in der Praxis. Ausgabe A, mit hinten lose eingehängter Anleitung. 7te Auflage.* Essen, Baedeker, 1908. 8vo. 4 + 228 pp. M. 2.00
- SOTHERN (J. W. and R. M.). *Simple problems on marine engineering design.* Glasgow, Munro, 1907. 8vo. 200 pp. 2s. 6d.
- WEISBACH (J.) and HERRMANN (G.) *The mechanics of hoisting machinery. New edition.* London, Macmillan, 1907. 8vo. Cloth. 12s. 6d.
- WHITTAKER (E. T.). *The theory of optical instruments. (Cambridge tracts in mathematics and mathematical physics; No. 7.)* Cambridge, University Press, 1907. 8vo. 80 pp. 2s. 6d.
- ZEUNER (G.). *Technical thermodynamics. 2 vols. First English edition.* London, Constable, 1907. 8vo. 472 and 564 pp. Cloth. 36s.