

By special invitation Dr. A. R. FORSYTH is delivering a course of sixteen lectures on the theory of functions of two or more complex variables at the University of Calcutta. It has been announced that the lectures will be published in book form later.

PROFESSOR OSKAR BOLZA, of the University of Freiburg, will give courses of lectures on the theory of functions and on linear integral equations at the University of Chicago throughout the coming summer quarter.

MR. W. C. GRAUSTEIN, now studying at Bonn as Sheldon fellow of Harvard University, has been appointed instructor in mathematics at Harvard for the academic year 1913-1914.

PROFESSOR J. H. TANNER, of Cornell University, has been granted leave of absence for the entire academic year 1913-1914.

PROFESSOR P. GORDAN, of the University of Erlangen, died December 21, 1912, at the age of 76 years. He had been professor of mathematics in the University of Erlangen since 1875 and an associate editor of the *Mathematische Annalen* since 1873.

PROFESSOR G. LAURICELLA, of the University of Catania, died on January 9, at the age of 45 years. He was a member of the Accademia dei Lincei, and was well known for his researches on the integration of the equations of mathematical physics and on integral equations.

PROFESSOR H. KINKELIN, formerly professor of mathematics in the University of Basel, died on January 2, at the age of 80 years.

NEW PUBLICATIONS.

I. HIGHER MATHEMATICS.

- BALL (W. W. R.). A short account of the history of mathematics. 5th edition. New York, Macmillan, 1912. 12mo. 24 + 536 pp. \$3.25
- CIANI (E.). Lezioni di geometria proiettiva ed analitica. Pisa, Spoerri, 1912. 8vo. 525 pp. L. 20.00
- DINGLER (H.). Ueber wohlgeordnete Mengen und zerstreute Mengen im allgemeinen. (Habilitationsschrift.) München, Ackermann, 1912. 8vo. 46 pp. M. 1.20
- ERNST (E.). Mathematische Unterhaltungen und Spielereien. 2ter Band. Ravensburg, Maier, 1912. 8vo. 84 pp. M. 1.00

- FABRY (E.). Problèmes d'analyse mathématique. Paris, Hermann, 1912.
Svo. 400 pp. Fr. 12.00
- FUBINI (G.). Lezioni di analisi matematica. Torino, Tipografia Nazionale, 1912. Svo. 535 pp. L. 14.00
- GIESEKING (H.). Analytische Untersuchungen über topologische Gruppen. Hilchenbach, Wiegand, 1912. Svo. 16 + 250 pp. M. 3.60
- KOCH (J.). Der Fermatsche Satz. Kaiserslautern, Rohr, 1912. Svo. 11 pp. M. 0.75
- LIPPMANN (B.). Anmerkungen zum Beweise des Fermat'schen Satzes. Prag, Katz, 1912. Svo. 10 pp. M. 0.40
- . Beitrag zur Theorie des Fermat'schen Satzes. Prag, Katz, 1912. Svo. 14 pp. M. 2.00
- SUINI (A.). Nuovo contributo alla confutazione delle geometrie non euclidee coll'esame delle interpretazioni datene dal Beltrami e dal Poincaré. Piacenza, Porta, 1912. Svo. 18 pp.

II. ELEMENTARY MATHEMATICS.

- BARDEY (E.). Aufgabensammlung für Arithmetik, Algebra und Analysis. Reformausgabe A. 1ter Teil: Unterstufe. Leipzig, Teubner, 1913. Svo. 6 + 201 pp. Cloth. M. 2.00
- BECK (H.). Raumlehre. Halle, Schroedel, 1913. Svo. 8 + 173 pp. Cloth. M. 2.00
- BERSANO (G. B.). Algebra per le scuole tecniche. Nuova ristampa corretta. Torino, Olivero, 1912. Svo. 176 pp. L. 2.40
- BÜRKLIN (O. T.). Formelsammlung und Repetitorium der Mathematik. 3te, durchgesehene Auflage. (Sammlung Göschen. Neue Auflage. Nr. 51.) Berlin, Göschen, 1912. Svo. 227 pp. Cloth. M. 0.80
- CONTI (A.). Elementi di calcolo letterale. 3a edizione. Bologna, Zanichelli, 1912. 16mo. 136 pp. L. 1.20
- DOLEŽAL (E.). See STAMPFER (S.).
- DUMONT (E.). Trigonométrie rectiligne et sphérique. 2e édition, revue et augmentée. Bruxelles, DeBoeck, 1912. 16 + 314 pp. Fr. 5.00
- DÜSING (K.). Einführung in die Algebra. Leipzig, Jänicke, 1912. Svo. 6 + 155 pp. M. 2.30
- FAIFOFER (A.). Elementi di algebra. 18a edizione. Venezia, Sorteni e Vidotti, 1912. Svo. 435 pp. L. 3.00
- . Elementi di geometria. 18a edizione. Venezia, Sorteni e Vidotti, 1912. Svo. 533 pp. L. 4.00
- FENKNER (H.). Mathematisches Unterrichtswerk. Ausgabe A. 4ter Teil: Analytische Geometrie. Berlin, Salle, 1912. Svo. 8 + 220 pp. M. 2.80
- FITZ-PATRICK (J.). Exercices d'arithmétique. Avec préface de J. Tannery. 3e édition, entièrement refondue et très augmentée. Paris, Hermann, 1912. Svo. 600 pp. Fr. 10.00
- FRATTINI (G.). Lezioni di algebra, geometria e trigonometria. Volume I. 2a edizione. Torino, Paravia, 1912. Svo. 227 pp. L. 4.00
- GECK (C.). Drehbare logarithmische Rechenscheibe. Gronau, Schievink, 1912. Svo. 7 pp. M. 3.00

- HARTL (R. H.). Lehrbuch der ebenen Trigonometrie. 3te Auflage. Wien, Deuticke, 1912. 8vo. 5 + 93 pp. Cloth. M. 1.50
- JACOB (J.) und SCHIFFNER (R. F.). Ebene und sphärische Trigonometrie. Wien, Deuticke, 1912. 8vo. 4 + 107 pp. M. 1.80
- und TRAVNÍČEK (J.). Analytische Geometrie der Ebene. Wien, Deuticke, 1912. 8vo. 4 + 115 pp. M. 2.00
- — —. Ebene Trigonometrie. Wien, Deuticke, 1912. 8vo. 4 + 78 pp. M. 1.40
- KOENIG (A.). Planimetrie. (Goldene Schülerbibliothek. 41ter Band.) Kattowitz, Phönix-Verlag, 1912. 8vo. 123 pp. M. 1.00
- KUTNEWSKY (M.). See MÜLLER (H.).
- MASSARI (V.). Elementi di geometria intuitiva. Volume I. Città di Castello, Lapi, 1912. 8vo. 173 pp. L. 2.00
- MÜLLER (H.) und KUTNEWSKY (M.). Aufgaben aus der Arithmetik, Trigonometrie und Stereometrie. 2ter Teil. 4te Auflage. Leipzig, Teubner, 1912. 8vo. 10 + 308 pp. Cloth. M. 3.00
- ORTU CARBONI (S.). Esercizi di geometria elementare. 2a edizione riveduta. Livorno, Giusti, 1913. 16mo. 8 + 170 pp. L. 1.00
- ROTHROCK (D. A.). Answers to the problems in the Elements of plane and spherical trigonometry. New York, Macmillan, 1912. 8vo. 10 pp. Paper. \$0.20
- SAINTE-LAGÜE (A.). Notions de mathématiques. Arithmétique, algèbre, géométrie, trigonométrie, cinématique. Avec préface de G. Koenigs. Paris, Hermann, 1912. 8vo. 480 pp. Fr. 7.00
- SCHIFFNER (R. F.). See JACOB (J.).
- SCHMEHL (C.). Die Elemente der analytischen Geometrie der Ebene. Giessen, Roth, 1912. 8vo. 8 + 221 pp. M. 3.00
- SHUTTS (G. C.). Plane and solid geometry; suggestive method. Revised edition. Boston, Atkinson, Mentzer & Co., 1912. 12mo. 4 + 376 pp. Cloth. \$1.25
- STAMPFER (S.). Sechsstellige logarithmisch-trigonometrische Tafeln. Neu bearbeitet von E. Doležal. 21te Auflage. Ausgabe für Praktiker. Wien, Gerold, 1912. 8vo. 34 + 340 pp. Cloth. M. 8.00
- TRAVNÍČEK (J.). See JACOB (J.).
- TRENARD (M.). Géométrie. 2e et 3e années. Paris, Dunod et Pinat, 1912. 18mo. Cartonné. Fr. 3.00
- UMLAUF (K.). Mathematik und Naturwissenschaften an den deutschen Lehrerbildungsanstalten. (Arbeiten des Bundes für Schulreform. Nr. 3.) Leipzig, Teubner, 1912. 8vo. 4 + 124 pp. M. 3.60
- USE of logarithms and logarithmic tables. 2d edition. New York, Industrial Press, 1912. 8vo. 35 pp. \$0.25
- VORSCHLÄGE für den mathematischen, naturwissenschaftlichen und erdkundlichen Unterricht an Lehrerseminaren. (Schriften des deutschen Ausschusses, 14tes Heft.) Leipzig, Teubner, 1912. 8vo. 5 + 49 pp. M. 0.80
- WENZEL (G.). Lehrbuch der Arithmetik und Algebra für Lehrerbildungsanstalten. Wien, Tempsky, 1912. 8vo. K. 6.50
- . Lehrbuch der Geometrie. Wien, Tempsky, 1912. 8vo. K. 3.50

WILKIN (B.). *Eléments de trigonométrie.* Bruxelles, DeBoeck, 1912.
2 + 92 pp. Fr. 1.35

III. APPLIED MATHEMATICS.

ADLER (A. A.). *The theory of engineering drawing.* New York, Van Nostrand, 1912. 8vo. 15 + 312 pp. Cloth.

BATES (E. L.) and CHARLESWORTH (F.). *Practical geometry and graphics.* New York, Van Nostrand, 1912. 12mo. 8 + 621 pp. Cloth. \$2.00

— — —. *Practical mathematics.* New York, Van Nostrand, 1912. 12mo. 8 + 513 pp. Cloth. \$1.50

BOGAERT (E. W.). *L'effet gyrostatique et ses applications.* Paris, Dunod et Pinat, 1912. 8vo. Fr. 10.00

BUCHWALD (E.). *Einführung in die Kristalloptik.* (Sammlung Götschen, Nr. 619.) Berlin, Göschen, 1912. 8vo. 124 pp. Cloth. M. 0.80

BURR (W. H.) and FALK (M. S.). *The graphic method by influence lines for bridge and roof computations.* 3d edition. New York, Wiley, 1912. 8vo. 11 + 253 pp. Cloth. \$3.00

CHARLESWORTH (F.). See BATES (E. L.).

CIANCHETTI (A.). *Trasporto delle coordinate geografiche; problema inverso.* Veroli, Reali, 1912. 8vo. 42 pp.

CRAWFORD (W. J.). *Calculations on the entropy-temperature chart.* Philadelphia, Lippincott, 1912. 12mo. 74 pp. Cloth. \$1.00

DAVIDGE (H. T.) and HUTCHINSON (R. W.). *Technical electricity.* 3d edition. London, Clive, 1912. 8vo. 612 pp. 5s. 6d.

DRUDE (P.). *Lehrbuch der Optik.* 3te, erweiterte Auflage, herausgegeben von E. Gehrke. Leipzig, Hirzel, 1912. 8vo. 16 + 548 pp. M. 13.00

ENCYCLOPÉDIE des sciences mathématiques. Edition française. Tome IV, volume 5: *Systèmes déformables.* Fascicule 1: *Notions géométriques fondamentales*, par M. Abraham et P. Langevin.—*Hydrodynamique (partie élémentaire)*, par A. E. H. Love, P. Appell et R. Beghin. Leipzig, Teubner, 1912. 8vo. pp. 1-96. M. 3.60

ENZYKLOPÄDIE der mathematischen Wissenschaften. Band V: *Physik.* 1ter Teil, 5tes Heft: *Die Zustandsgleichung*, von H. K. Onnes und W. H. Keesom. Leipzig, Teubner, 1912. 8vo. pp. 615-945. M. 10.40

FALK (M. S.). See BURR (W. H.).

FOSCHI (V.). *Sul calcolo grafico del diagramma dei momenti in alcune travi staticamente indeterminate.* Città di Castello, Lapi, 1912. 8vo. 10 pp.

FRENCH (L. G.). *First principles of theoretical mechanics.* 3d revised edition. (Machinery's reference series.) New York, Industrial Press, 1912. 8vo. 40 pp. \$0.25

GEBHARDT (G. F.). *Steam power plant engineering.* 3d edition, revised and enlarged. New York, Wiley, 1912. 8vo. 30 + 902 pp. \$6.00

GEHRKE (E.). See DRUDE (P.).

GRAY (A.). *Electrical machine design.* New York, McGraw-Hill, 1913. 8vo. 13 + 528 pp.

- GUILLET (A.). Propriétés cinématiques fondamentales des vibrations. Paris, Dunod et Pinat, 1912. 8vo. Fr. 16.00
- HAREN (R.). Aufgabensammlung der Festigkeitslehre. Neudruck. (Sammlung Göschen, Neue Auflage. Nr. 491.) Berlin, Göschen, 1912. 8vo. 89 pp. M. 0.80
- HELICAL and elliptic springs. 2d edition. New York, Industrial Press, 1912. 8vo. 48 pp. \$0.25
- HUTCHINSON (R. W.). See DAVIDGE (H. T.).
- INGLIS (C. E.). Examples on applied mechanics and elementary theory of structures. New York, Putnam, 1912. 8vo. 77 pp. Paper. \$0.75
- JAMIESON (A.). Elementary manual on applied mechanics. New edition. London, Griffin, 1912. 8vo. 452 pp. 3s. 6d.
- KNOX (J.). Physico-chemical calculations. New York, Van Nostrand, 1912. 12mo. 8 + 188 pp. \$1.00
- KOHNSTAMM (P.). See WAALS (J. D. v. d.).
- LOMBARD (J.). Cours de technologie. Tome II: Bois, travail mécanique. Paris, Dunod et Pinat, 1912. 8vo. 205 pp. Cartonné. Fr. 5.00
- LUCKE (C. E.). Engineering thermodynamics. New York, McGraw-Hill, 1912. 8vo. 24 + 1176 pp. \$8.00
- MARSH (H. W.). Industrial mathematics. New York, Wiley, 1913. 8vo. 8 + 476 pp. Cloth. \$2.00
- MARTENS (F. F.). Physikalische Grundlagen der Elektrotechnik. 1ter Band: Eigenschaften des magnetischen und des elektrischen Feldes. (Die Wissenschaft. Nr. 46.) Braunschweig, Vieweg, 1913. 8vo. 13 + 245 pp. M. 8.00
- MARTIN (L. A.). Textbook of mechanics. Volume 4: Applied statics. New York, Wiley, 1913. 12mo. 12 + 198 pp. Cloth. \$1.50
- MARTUS (H. C. E.). Astronomische Erdkunde. Ein Lehrbuch angewandter Mathematik. Grosse Ausgabe. 4te Auflage, mit vielen Zusätzen, bearbeitet nach dem Stande der Wissenschaft im Jahre 1911. Dresden, Koch, 1912. 8vo. 20 + 501 pp. M. 12.50
- MAUDUIT (A.). Recherches expérimentales et théoriques sur la commutation dans les dynamos a courant continu. Paris, Dunod et Pinat, 1912. 8vo. 292 pp. Fr. 9.00
- MELANBY (A. L.). See UNWIN (W. C.).
- MERRIMAN (M.). Elements of hydraulics; a textbook for secondary technical schools. New York, Wiley, 1912. 12mo. 6 + 156 pp. \$1.00
- MINCHIN (G. M.). A treatise on hydrostatics. 2d edition, revised. Volume 1: Elementary. London, Frowde, 1912. 8vo. 4 + 200 pp. Cloth. 4s. 6d.
- . A treatise on hydrostatics. 2d edition, revised. Volume 2: Advanced. London, Frowde, 1912. 8vo. 4 + 200 pp. Cloth. 6s.
- MOIR (H.). Life assurance primer; the practice and mathematics of life insurance. 3d edition, revised and enlarged. New York, Spectator Co., 1912. 8vo. 7 + 230 pp. Cloth. \$2.00
- MÜLLER (E.). Lehrbuch der darstellenden Geometrie. 2ter Band, 1tes Heft. Leipzig, Teubner, 1912. 8vo. 7 + 129 pp. M. 4.40

- PALMER (C. I.). Practical mathematics; in 4 parts. Parts 1-2: Arithmetic and geometry, with applications. New York, McGraw-Hill, 1912. 12mo. \$1.50
- PERCIVAL (A. S.). Geometrical optics. London, Longmans, 1912. 8vo. 6 + 132 pp. Cloth. 4s. 6d.
- PETERS (J.). Tafeln zur Berechnung der Mittelpunktsgleichung und des Radiusvektors in elliptischen Bahnen für Exzentrizitätswinkel von 0° bis 24° . (Veröffentlichungen des astronomischen Rechen-Instituts. Nr. 41.) Berlin, Dümmler, 1912. 8vo. 99 pp. M. 4.00
- RICKER (N. C.). A treatise on the design and construction of roofs. New York, Wiley, 1912. 8vo. 13 + 419 pp. Cloth. \$5.00
- RYAN (W. T.). Design of electrical machinery. Volume 3: Alternators, synchronous motors, rotary convertors. New York, Wiley, 1912. 8vo. 7 + 129 pp. \$1.50
- SANBORN (F. B.). Mechanics problems for engineering students. 3d edition. New York, Wiley, 1912. 8vo. 8 + 212 pp. Cloth. \$1.50
- SCHIFFNER (F.). Grundzüge der darstellenden Geometrie. Wien, Deuticke, 1912. 8vo. 3 + 64 pp. M. 1.25
- SCHOTT (G. A.). Electromagnetic radiation and the mechanical reactions arising from it. (Adams prize essay of the University of Cambridge.) New York, Putnam, 1912. 4to. 22 + 330 pp. \$5.75
- TURCK (J. B.). Advanced system of phonography; making use of involute and evolute curved lines. Evanston, Ill., Correct English Publishing Co., 1912. 8vo. Cloth. \$2.00
- TURILL (S. M.). Elementary course in perspective. New York, Van Nostrand, 1912. 8vo. 81 pp. Cloth. \$1.25
- UNWIN (W. C.) and MELANBY (A. L.). The elements of machine design. Part 2: Chiefly on engine details. New and revised edition. New York, Longmans, 1912. 8vo. 23 + 426 pp. Cloth. \$2.50
- WAALS (J. D. v. d.). Lehrbuch der Thermodynamik in ihrer Anwendung auf das Gleichgewicht von Systemen in gasförmig-flüssigen Phasen. Nach Vorlesungen bearbeitet von P. Kohnstamm, 2ter Teil. Leipzig, Barth, 1912. 8vo. 16 + 646 pp. Cloth. M. 24.00