

## NOTES

A REGULAR meeting of the NEW YORK MATHEMATICAL SOCIETY was held Saturday afternoon, April 1, at half-past three o'clock, the president, Dr. McClintock, in the chair. The following persons, having been duly nominated and being recommended by the council, were elected to membership: Mr. George Lincoln Manning, Stevens Institute of Technology; Mr. Charles Moen Rice, Worcester, Mass.; Dr. Edward Burr Van Vleck, Middletown, Conn. Professor T. H. Safford read a paper entitled "Instruction in mathematics, as affected by modern algebraic and geometrical developments and by the progress of the physical sciences." Mr. Maclay read a note on the "Geometry of the maxima and minima of a certain class of functions."

WE have received through the courtesy of Professor George Bruce Halsted a circular recently issued by the Physico-Mathematical Society of the University of Kasàn, calling attention to the approaching centennial anniversary of the birth of Lobachevsky. It is proposed either to establish a prize bearing the name of Lobachevsky to be awarded for investigations in mathematics, especially in branches appertaining to his work, or to place his bust in the buildings of the University; or, if sufficient funds are obtained, to do both. Lobachevsky was born on October 22, 1793. He studied at the University of Kasàn, and became a professor there in 1812, being the first of its own students to attain that honor. He was made rector in 1827, and he held that position as well as his professorship until 1846. The work of Lobachevsky marks an important epoch in the history of mathematics. He was the first to perceive that Euclid's postulate is equivalent to the assumption of certain properties of space which can be verified only by experiment or observation, and to show the possibility of a geometry without making use of it. Subscriptions to the Lobachevsky memorial fund should be addressed to the Physico-Mathematical Society, Kasàn, Russia.

AMONG the recent announcements of Longmans, Green, and Co. we notice a "Treatise on Electricity and Magnetism," by G. W. De Tunzelmann, 2 vols. A. and C. Black announce a "History of Astronomy during the Nineteenth Century," by Agnes M. Clerke, third edition, revised and enlarged; and "Algebra, an Elementary Text-book for the Higher Classes of Secondary Schools and Colleges," by Prof. George Chrystal, part I., third edition. The Clarendon Press will soon have ready: "Mathematical Papers of the late Prof. Henry

J. S. Smith, with memoir and portrait, 2 vols.; "A Supplementary Volume to Prof. Clerk Maxwell's Treatise on Electricity and Magnetism," by Prof. J. J. Thomson; "A Treatise on the Kinetic Theory of Gases," by Dr. H. W. Watson, new edition; and "An Elementary Treatise on Pure Geometry," by J. W. Russell.

IN Macmillan and Co.'s list are: "An Elementary Treatise on Modern Pure Geometry," by R. Lachlan; "The Theory of Functions," by Prof. Frank Morley and Prof. James Harkness; "An Elementary Treatise on Theoretical Mechanics," by Prof. Alexander Ziwet, part I., Kinematics (the second part will be ready next fall, and the third and last part a year later); "A Short Course in the Theory of Determinants," by Prof. L. G. Weld; a translation of Weisbach's "Mechanics of Hoisting Machinery," by K. P. Dahlstrom; and "Text-book on Electromagnetism and the Construction of Dynamos," by Prof. D. C. Jackson. The same firm will shortly receive from the Cambridge University Press a work on the "Theory of Functions of a Complex Variable," by Dr. A. R. Forsyth.

COPIES of Professor A. Macfarlane's "Principles of the Algebra of Physics," 1892, 53 pp., can be obtained from the author (Austin, Texas, U. S. A.); price \$1.00. This paper is a reprint from the *Proceedings of the American Association for the Advancement of Science*, vol. 40 (1891), pp. 65-117.

DR. EDWARD PHRAGMÉN has been appointed to succeed Madame Sophie Kovalevsky as professor of mathematics at the University of Stockholm.

T. S. F.

AT the University of Missouri during the first semester of this academic year the following graduate courses in mathematics were given: theory of equations and quantics, solid analytical geometry, differential equations, elliptic functions, mathematical seminary for the theory of probability, practical astronomy. The first two courses were given by Professor Tindall, the last by Professor Updegraff, and the others by Professor W. B. Smith. During the second semester the courses are being continued without change, except in the case of the seminary, which is devoted to hyperspace.

W. B. S.

B. G. TEUBNER, of Leipzig, announces as in preparation: (1) a complete edition of Hermann Grassmann's mathematical works, to be published in three volumes under the auspices of the Saxon Academy of Sciences; and (2) an edition of Leopold Kronecker's works, under the auspices of the Prussian Academy of Sciences. During the last years of his

life, Kronecker himself had planned and made some preparation for the publication of all his writings in a collected form. Soon after his death the Prussian Academy of Sciences, of which Kronecker had been a member for over thirty years, decided to carry out this plan and entrusted its execution to Dr. Karl Hensel, of the University of Berlin. Two series are contemplated, one to comprise Kronecker's published writings (*Gesammelte Werke*), in four volumes, 4to; the other to contain his hitherto unpublished lectures at the University of Berlin (*Mathematische Vorlesungen*), in five volumes, 8vo. The first volume of the *Werke*, which will be adorned with a portrait of the author, is devoted to the pure theory of numbers and the theory of algebraic equations; the second and third volumes will bring the papers on the arithmetic theory of the algebraic functions; the fourth is to comprise the papers on the integral calculus, the theory of elliptic functions, the theory of the potential, mathematical physics, etc. Volumes II. and III. are nearly ready for the printer: volumes I. and IV. will follow later.

The publication of Kronecker's university lectures cannot fail to arouse great interest. For, apart from their intrinsic value as systematic expositions of certain branches of mathematical science by one of the greatest of modern mathematicians, they will serve in a large degree as a commentary on Kronecker's original papers, which are well known to be frequently so concise as to present serious difficulties to those not very familiar with his profound and original ideas. The first volume of the *Vorlesungen*, on simple and multiple integrals, is edited by Dr. E. Netto, and will appear this summer. The remaining volumes (II.: determinants, III.: theory of numbers, IV. and V.: theory of algebraic equations) are in charge of Dr. Karl Hensel, of Berlin, who requests all former students of Prof. Kronecker to assist him in the preparation of these lectures by transmitting to him (Berlin, N. W., Klopstockstrasse 30, II.) for temporary use any careful notes of Kronecker's lectures that they may possess. A. Z.

CORRECTION. Professor O. Bolza sends us the following in connection with his recent article in the BULLETIN: "Professor Camille Jordan has kindly called my attention to a misstatement in my review of Cole's Translation of Netto's Theory of Substitutions, in the February number of the BULLETIN, viz., the assertion at the end of the article (p. 106) that the determination of all primitive solvable groups of order  $p^k$  ( $p$  a prime) was, in the case  $k > 1$ , as yet an unsolved problem. The problem has, in fact, been completely solved by Mr. Jordan in book IV. of his 'Traité des Substitutions.'"