

TCHEBYCHEF'S THEORY OF CONGRUENCES.

THE note, "Errors in Legendre's tables of linear divisors," by Dr. D. N. Lehmer (BULLETIN, volume 8, pages 401-402) constrains me to observe that the errors in the tables annexed to Tchebychef's Theory of Congruences were corrected in the third Russian edition of this work.

In a short preface to this new edition of the Theory of Congruences, published in the year 1901, I announced that Mr. J. J. Ivanof and myself had devoted special attention to the annexed tables and had carefully revised them and corrected several errors.

ANDRÉ MARKOFF.

ST. PETERSBURG,
January 28, 1905.

NOTES.

AT the meeting of the London mathematical society held on January 12, the following papers were read: By Dr. W. BUSSEY, "Generational relations of the abstract group simply isomorphic with the abstract group $L F [2, p^n]$ "; by Professor C. A. DIXON, "On a class of expansions in oscillating functions"; by Mr. H. L. TRACHTENBERG, "Isogonal transformations and the diameter transformation"; by Mr. H. BATEMAN, "A generalization of the Legendre polynomials"; by Mr. H. F. Moulton, "Current flow in rectangular conductors"; by Rev. F. H. JACKSON, "Basic generalizations of some well known analytic functions"; by Mr. J. H. JEANS, "On the kinematics and dynamics of a granular medium in normal piling"; by Dr. H. F. BAKER, "On alternants and continuous groups."

THE Paris academy of sciences announces the following prizes in mathematics for 1905: the Franccour prize of 1,000 francs for discoveries or work useful for the progress of pure or applied mathematics; Poncelet prize of 2,000 francs in applied mathematics. Besides these, the following general prizes are offered for the promotion of scientific knowledge:

Trémont prize of 1,100 francs ; Gegner prize of 3,800 francs ; Lannelongue prize of 1,200 francs ; Wilde prize of 4,000 francs ; Saintoin prize of 3,000 francs, and two Petit d'Ormay prizes each of 10,000 francs. The grand prize of 3,000 francs was not awarded in 1904 ; the same prize problem has been set for 1906 : "to perfect in some important point the study of the convergence of algebraic continued fractions."

Two prizes for 1907 have been announced : the Bordin prize of 3,000 francs, the subject being "to determine in a general manner whether the coördinates of the points of an algebraic surface can be expressed as abelian functions of two variables in such manner that to every point of the surface corresponds more than one system of values of the parameters (apart from values which differ by multiples of periods), in particular, to discuss the case when the equation of the surface is $z^2 = f(x, y)$, f a polynomial, and to give explicit examples of such surfaces" ; the Vaillant prize of 4,000 francs, "to perfect, in some important point, the problem of analysis relative to the equilibrium of supported elastic plates, *i. e.*, the problem of integrating the equation

$$\frac{\partial^4 u}{\partial x^4} + 2 \frac{\partial^4 u}{\partial x^2 \partial y^2} + \frac{\partial^4 u}{\partial y^4} = f(x, y),$$

with the condition that the function u and its derivative along the normal to the contour of the plate shall be zero. In particular, to examine the case of a rectangular contour."

THE Royal academy of sciences of Madrid announces the following prize problem in mathematics : "To calculate and arrange in numerical tables the values of one or more transcendental functions which are of practical and frequent use in the applications of mathematics, and which have not been hitherto thus calculated." The tables should be about as extensive as ordinary trigonometric tables and calculated to such approximation as the special application may require. Competing memoirs must be written in Spanish or Latin and sent to the Secretary of the academy, calle de Valverde 26, Madrid, before December 31, 1906. The first prize consists of a diploma, a gold medal, and 1500 pesetas ; the second prize is a gold medal and a diploma.

THE loan exhibit of mathematical models, shown by Schilling, of Halle, and awarded a gold medal at the St. Louis exposition, has been purchased by the University of Missouri.

A CATALOGUE and price list of one hundred mathematical models constructed by Mr. R. P. Baker, 5519 Monroe Avenue, Chicago, Ill., has recently been issued.

ON December 16 (3) occurred at St. Petersburg the celebration of the centenary of the birth of the Russian mathematician W. J. BUNIAKOWSKY, principally known for his researches in the theory of probabilities.

THE centenary of the birth of K. SCHELLBACH was appropriately observed December 29 at Berlin.

THE editorship of the *Mathematisch-naturwissenschaftliche Blätter* is in the hands of Dr. W. LEITZMANN for the present year.

THE firm of J. A. Barth in Leipzig has undertaken to publish a directory, compiled by F. Strobel in Jena, of all living mathematicians, physicists, astronomers and chemists. A new edition is to appear every two years.

AN academic bureau of information has been established at the University of Berlin for the use of the students, in particular for foreigners and prospective students. The office is in the main university building and is open daily.

UNIVERSITY OF GÖTTINGEN. — The following courses are offered for the summer semester of 1905. — By Professor F. KLEIN: Elementary geometry from the standpoint of higher mathematics, four hours; Seminar, two hours. — By Professor D. HILBERT: Theory of numbers, four hours; Logical principles of mathematical thinking, two hours; Seminar on the theory of electrons, two hours. — By Professor H. MINKOWSKI: Elementary differential equations, four hours; Automorphic functions, two hours; Seminar (with Professor Hilbert), two hours. — By Professor C. RUNGE: Differential and integral calculus, four hours. — By Professor K. SCHWARZSCHILD: Celestial mechanics, three hours. — By Professor W. VOIGT: Hydrodynamics, four hours. — By Dr. E. ZERMELO: Theory of functions, four hours. — By Dr. M. ABRAHAM: Differential equations of physics, four hours. — By Dr. O. BLUMENTHAL: Analytic geometry, four hours. — By Dr. H. HERGLOTZ: Theory of surfaces, four hours.

PROFESSOR G. V. SCHIAPARELLI, of Milan, has been elected corresponding member of the academy of sciences of Berlin.

PROFESSOR VIEILLE has been elected a member of the academy of sciences of Paris as successor of the late Professor Savrau.

PROFESSOR F. MEYER, of the University of Königsberg, has been elected corresponding member of the Royal society at Liege.

PROFESSOR E. NEUMANN has been transferred from the University of Breslau to the University of Marburg.

DR. F. PROCHAZKA, of Nachod, has been appointed professor of descriptive geometry at the Bohemian technical school of Brünn.

PROFESSOR PUZYNA, of the University of Lemberg, has been elected rector of the university.

PROFESSORS D. HILBERT, of Göttingen, and P. GORDAN, of Erlangen, have received the title of privy councilor.

PROFESSOR L. KIEPERT, of Hanover, has recently celebrated the twenty-fifth anniversary of his appointment as professor of mathematics at the technical school.

PROFESSORS A. v. BRAUNMÜHL and A. FÖPPL, of the technical school of Munich, have been decorated with the order of St. Michael of the fourth class.

MR. J. R. HOGAN and Mr. E. WHITFORD have been appointed tutors in mathematics at the College of the City of New York.

MR. R. F. SHARPE has been appointed assistant in mathematics at Cornell University.

DR. H. C. DEMOTTE, professor of mathematics at the Illinois Wesleyan University, died December 16, 1904.

RECENT catalogues of second-hand mathematical works : F. Cohen, Am Hof. 30, Bonn, catalogue No. 115, 768 titles from the libraries of R. Lipschitz and F. W. Argelander ; Galloway and Porter, Cambridge, England, catalogue No. 25, 473 titles, mostly English ; Johann Ambrosius Barth, Leipzig, periodicals in physics and chemistry ; Ferd. Raabe's Nachfolger, Königsberg in Prussia, catalogue 220, exact sciences.