

## NOTES.

At the Lübeck meeting of the German Mathematical Society, held in September, 1895, it was decided to combine in one volume the official reports of the Vienna and Lübeck meetings. This will form vol. IV of the *Jahresbericht der Deutschen Mathematiker-Vereinigung* (Berlin, Reimer). Through the courtesy of the executive committee we have received advance sheets of the first twenty pages of this volume, containing the general reports of the secretaries, but not the abstracts of the papers.

It appears from the general report of the Vienna meeting (September, 1894) that the following papers should be added to the partial list given in the BULLETIN OF THE AMERICAN MATHEMATICAL SOCIETY, vol. I. (1894-95), pp. 78-79 :

GUTZMER (Berlin): "A new derivation of Kirchhoff's expression for Huygens's principle."

KIEPERT (Hannover): "On the mathematical preparation desirable for specialists in assurance."

KRAUSE (Dresden): "On the theory of the transformation of the elliptic functions."

LANDSBERG (Heidelberg): "On the theory of algebraic numbers."

LERCH (Prague): "On an integral occurring in Cauchy's transformation of the elementary elliptic function of the third kind."

J. SCHMIDT (Budapest): "Remarks on Bolyai's Tentamen."

WÄLSCH (Prague): "On a method of treating surfaces of the third order."

WANGERIN (Halle): "On the history of the theory of conformal transformation."

THE papers originally announced by Nagy, Peschka, Schapira, Schlesinger, and Studnicka (*loc. cit.*) were not read.

At the Lübeck meeting the following papers were read:

HILBERT (Göttingen) and MINKOWSKI (Königsberg): Account of their special report on the present state of the theory of numbers.

E. KÖTTER (Berlin): Account of his special report on the development of synthetic geometry.

FREGE (Jena): "On Prof. Peano's and my own symbolic algebra (*Begriffsschrift*)."

WANGERIN (Halle): "On Franz Neumann's mathematical works."

LAMPE (Berlin): "On the compilation of a general bibliography."

HEFFTER (Giessen): "On common divisors and common multiples of linear differential expressions."

VOSS (Würzburg): "On infinitesimal deformations of surfaces."

POKROVSKY (Kiev): "On the hyperelliptic functions of two arguments."

SOUSLOV (Kiev): "On a continuous group of Darboux rotations."

JUKOVSKY (Moscow): "Geometrical interpretation of S. Kovalevsky's case of the motion of a heavy rigid body about a fixed point."

FRICKE (Braunschweig): "The regions of discontinuity of the groups of real linear substitutions of a complex variable."

KLEIN (Göttingen): "On the theory of ordinary continued fractions."

GORDAN (Erlangen): "Pascal's theorem."

SCHUBERT (Hamburg): "Correlative correspondence in  $n$  dimensions."

GUTZMER (Berlin): "On certain linear differential equations."

GODT (Lübeck): "On the Feuerbach circle and the Steiner curve of fourth order and third class."

KOHN (Vienna): "On the geometric interpretation of homogeneous coördinates."

LONDON (Breslau): "On cubic constructions."

MEYER (Clausthal): "On L. Schendel's memoir on infinite series and products."

GUTZMER (Berlin): "On Schoute's paper on certain envelopes."

SCHÜTZ (Göttingen): "On an interrelated group of thermodynamic, electrodynamic and astrophysical facts."

SOMMERFELD (Göttingen): "Diffraction problems in exact treatment."

The special report on the present state of the theory of numbers, by Hilbert and Minkowski, will probably be published before the end of the present year; E. Kötter's special report on the development of synthetic geometry is expected to follow soon.

Plans for a number of other reports on special branches of mathematics were discussed at both meetings. Thus Pringsheim is preparing a report on the theory of infinite series, Czuber on the calculus of probabilities, Stäckel on differential geometry, Wälsch on line geometry. It was re-

solved at Lübeck that Wirtinger's report on Abelian functions should be postponed till after the publication of the third volume of Weierstrass' collected works and of his lectures on Abelian functions. At the same time, the theory of the functions of a real argument was designated as a subject on which a report would be desirable.

The project of a mathematical dictionary has taken somewhat more definite form, the academies at Vienna, Munich and Göttingen having promised financial assistance; B. G. Teubner will be the publisher.

The Society expressed its sympathy with the idea of an International Congress of Mathematicians, but declined to take the initiative in the matter. A communication from Prof. Molenbroek (Hague), concerning the formation of an international association for the promotion of the study of quaternions and allied subjects, was not received very favorably, the Society deeming it unwise to form such an association merely for promoting a very restricted branch of mathematical science.

Both at Vienna and Lübeck the German Mathematical Society held its sessions together with the section for mathematics and astronomy of the Society of German Naturalists and Physicians. At Lübeck a combined session with the physicists was arranged for. Besides the last two of the above-named papers, a report by Prof. HELM (Dresden), "On the present state of energetics," was read at this session. It provoked a prolonged and thorough discussion, but will not be included in the *Jahresbericht*.

A committee, consisting of Professors Brill, Wangerin and Gutzmer, was appointed to draft and present an address of congratulation to Prof. Weierstrass on his eightieth birthday (31st October, 1895).

The officers of the Society are at present: A. Brill, President; A. Gutzmer, Secretary and Treasurer; A. Wangerin and A. Gutzmer, Publication Committee; F. Klein and G. von Escherich, members of the Council. The membership is 273.

AMONG the prizes awarded at the annual meeting of the French Academy of Sciences were the following: *Prix Francoeur* (1,000 francs), awarded annually for discoveries or works useful to the progress of mathematical science, to J. Andrade; *Prix Poncelet* (2,000 francs), awarded annually for the work, published during the preceding ten years, which, in the judgment of the Academy, has been most useful to the progress of mathematical science, to G. Robin for the

whole of his work on mathematical physics; *Prix Petit d'Ormy* (10,000 francs), awarded every second year, for works on pure or applied mathematics, to the late Albert Ribaucour.

The subjects set by the Academy for the next mathematical prizes are as follows: *Grand Prix des Sciences mathématiques* (10,000 francs), to advance in some important respect the algebraic theory of groups of substitutions of  $n$  letters, papers to be submitted by October 1, 1896. *Prix Bordin* (3,000 francs), to advance in some important respect the theory of geodesic lines, the case of a linear element with any number of variables not being excluded, papers to be submitted by October 1, 1896. *Prix Damoiseau* (1,500 francs); subject in 1896, to connect, by means of the theory of perturbations, the different appearances of Halley's comet, going back to Toscanelli's observations in 1456 and taking into account the attraction of Neptune, and to calculate with precision the next return of this comet in 1910; subject in 1898, to give an exposition of the theory of the perturbations of Saturn's satellite Hyperion, discovered in 1848 simultaneously by Bond and Lassell, taking into account principally the action of Titan, to compare the observations with the theory, and to deduce therefrom the value of the mass of Titan. Papers for the *Prix Damoiseau* must be submitted by June 1.

THE UNIVERSITY OF CHICAGO: SUMMER 1896. The following mathematical courses will be offered: By Professor Moore, Theory of Numbers, Differential Equations (with introduction to Lie's continuous transformation-groups); by Professor Bolza, Theory of Substitutions, Theory of Functions of a Complex Variable; by Professor Miller, of the University of Indiana, Analytic Geometry of Three Dimensions; by Dr. Young, Conferences on Mathematical Pedagogy, Theory of Equations, College Algebra; by Mr. Slaughter, Advanced Integral Calculus, Introductory Course in Differential and Integral Calculus; and by Mr. Baker, Analytic Geometry of the plane. The pedagogical conferences are two hours weekly for six weeks, and the other courses are four or five hours weekly for twelve weeks from July 1, 1896. Those who expect to work in mathematics at the University of Chicago during the coming summer, as well as those who desire further information, are requested to communicate with Professor Moore.

THE 1896 volume of the *Annuaire*, published by the Bureau des Longitudes, has been issued. It contains the usual mass

of material devoted to astronomical and other science. Among the appendices are two articles by M. Cornu, upon forces acting at a distance, and upon Fresnel's optical work. There is also a report by M. Janssen about his third ascent of Mont Blanc. The list of members of the Bureau contains the names of two Americans: Dr. B. A. Gould and Mr. G. Davidson.

---

## NEW PUBLICATIONS.

### I. HIGHER MATHEMATICS.

- ABEL (N. H.). Untersuchungen über die Reihe  $1 + \frac{m}{1}x + \frac{m(m-1)}{1.2}x^2 + \frac{m(m-1)(m-2)}{1.2.3}x^3 + \dots$  (1826.) Herausgegeben von A. Wangerin. (Ostwald's Klassiker der exakten Wissenschaften, No. 71.) Leipzig, Engelmann, 1896. 8vo. 46 pp. Cloth. Mk. 1.00
- COCULESCO (N.). Sur les expressions approchées des termes d'ordre élevé dans le développement de la fonction perturbatrice. Paris, Gauthier-Villars, 1895. 4to. 90 pp.
- CONANT (L. L.). The number concept; its origin and development. New York, Macmillan, 1896. 12mo. Cloth. \$2.00
- DEWEY (J.). See MCLELLAN (J. A.) and DEWEY (J.).
- EPSTEIN (P.). Zur Lehre von den hyperelliptischen Integralen. [Diss.] Strassburg, 1895. 4to. 58 pp.
- GÖPEL (A.). Entwurf einer Theorie der Abel'schen Transcendenten erster Ordnung. (1847.) Herausgegeben von H. Weber. Aus dem Lateinischen übersetzt von A. Witting. (Ostwald's Klassiker der exakten Wissenschaften, No. 67.) Leipzig, Engelmann, 1896. 8vo. 60 pp. Cloth. Mk. 1.00
- KLEIN (F.). Ueber die Arithmetisirung der Mathematik. [*Nachrichten der K. Gesellschaft der Wissenschaften zu Göttingen*, 1895, Heft 2.] 8vo. 10 pp.
- Ueber eine geometrische Auffassung der gewöhnlichen Kettenbruchentwicklung. [*Nachrichten der K. Gesellschaft der Wissenschaften zu Göttingen*, 1895, Heft 3.] 8vo. 3 pp.
- MCLELLAN (J. A.) and DEWEY (J.). The psychology of number and its applications to the methods of teaching arithmetic. (International education series, No. 23.) New York, Appleton, 1895. 8vo. 12 and 310 pp. Cloth. \$1.50.
- MATTHIESSEN (L.). Grundzüge der antiken und modernen Algebra der litteralen Gleichungen. (1878.) 2te Ausgabe (unchanged, but reduced in price). Leipzig, Teubner, 1896. 8vo. 16 and 1,002 pp. Mk. 8.00
- MOLK (J.). See TANNERY (J.) and MOLK (J.).
- NEPPI-MODONA (A.) e VANNINI (T.). Questioni e formole di geometria analitica ad una e due dimensioni. Palermo, 1895. 8vo. 320 pp. Fr. 7.50