NOTES.

THE sessions of the coming summer meeting of the Society will be held on the afternoons of Wednesday, Thursday, and Friday, June 27th–29th, alternating with those of Section A of the American association for the advancement of science. A fourth session will be added if necessary. The place of meeting is room 506, Fayerweather Hall, Columbia University. The Council will meet on Thursday morning.

THE ninth conference of the German association for promoting instruction in the mathematical and natural sciences was held at Hamburg, June 4th–7th, 1900.

A NEW scientific journal, *Il Bolletino di matematiche e di scienze fisiche e naturali*, devoted to the interests of the teachers and students of the normal schools of Italy, has been lately founded at Bologna, under the editorship of Professor ALBERTO CONTÉ. The initial number appeared December 1, 1899, and each annual volume will consist of twenty-four numbers.

THE *Revue Philosophique* for April, 1900, contains two articles of interest to mathematicians : " La première antinomie mathématique de Kant," by C. DUNAN, and "l'Antinomie du transfini," by É. BOREL.

THE first and second numbers of the first volume of the third series of *Bibliotheca Mathematica* under the editorship of Gustaf Eneström appeared from the press of B. G. Teubner April 30th, 1900. The enlarged sphere of this journal is amply indicated by the table of contents of this double number of two hundred and ninety-six pages, containing a portrait of Sophus Lie as frontispiece, some thirty papers, obituary notices of C. I. Gerhard, F. Rosenberger, H. E. Wappler, and L. G. Gascó, a chronological list of the writings of Sophus - Lie by F. Engel, accounts of the annual meetings held by mathematicians in Germany, France, England, and America last summer, reviews, new publications, and current notes of scientific interest.

THE last three parts of GINO LORIA's Le scienze esatte nell' antica Grecia are announced for early publication.

The first two parts appeared in 1893 and 1895. The concluding books are entitled respectively : Il substrato matematico della filosofia naturale dei Greci ; Il periodo argenteo della geometria Greca ; L'aritmetica dei Greci.

THE first part of FELIX MÜLLER's Mathematisches Vocabularium in deutscher und französischer Sprache is in the press. The completed work will contain ten thousand terms of pure and applied mathematics ; it has been prepared with the assistance of J. NEUBERG and A. WANGERIN, and represents years of labor. The authors hope that this vocabulary will prove to be 1° a useful supplement to all French and German dictionaries, 2° the forerunner of an exhaustive mathematical dictionary, 3° a lexicographical guide to the terminology of the mathematical sciences.

THE third volume of the second edition of M. CANTOR'S Vorlesungen über Geschichte der Mathematik is in the press ; it will appear in three parts.

FELIX L. DAMES, of Berlin, announces the appearance of the first part of the third and final volume of Professor J. G. HAGEN's Synopsis der höheren Mathematik. The three volumes are devoted respectively to algebraic analysis, geometry, and differential and integral calculus.

THE UNIVERSITY OF CHICAGO. The announcement for the summer quarter of 1900 appeared in the May number of the BULLETIN. During the three quarters (autumn, winter, spring), October, 1900, to June, 1901, the following mathematical courses will be offered, four or five hours weekly :—By Head Professor E. H. MOORE : Theory of groups with applications to algebra (introductory course followed by a seminar), autumn and winter quarters ; Functions of a real variable, spring quarter ; Advanced integral calculus I, autumn quarter ; Advanced algebra II, winter quarter.—By Professor OSKAR BOLZA : Theory of elliptic functions (Weierstrass) with applications, winter and spring quarters ; Calculus of variations, winter quarter ; Theory of functions of a complex variable, spring quarter.— By Associate Professor H. MASCHKE : Selected chapters of algebra, autumn quarter ; Projective geometry, autumn quarter ; Modern analytic geometry (continuation), winter quarter ; Advanced integral calculus II, winter quarter.—By Assistant Professor J. W. A. YOUNG : Theory of equations I, autumn quarter.—By Assistant Professor L. E. DICKSON : Lie's theory of differential equa-

tions, winter quarter ; Continuous groups, spring quarter.—
By Dr. H. E. SLAUGHT : Solid analytical geometry, spring
quarter.—By Dr. J. H. BOYD : Theoretical mechanics,
autumn quarter ; Differential equations, spring quarter.—
By Dr. F. R. MOULTON : Analytical mechanics I, II,
autumn and winter quarters.

YALE UNIVERSITY. The following courses in mathe-
matics are announced for the year 1900–1901 :—By Pro-
fessor J. WILLARD GIBBS : Vector analysis, three hours ;
Multiple algebra, two hours ; Electromagnetic theory of
light, two hours.—By Professor W. BEEBE : Celestial me-
chanics, three hours.—By Professor J. PIERPONT : Differ-
ential equations and theory of functions, three hours ;
Galois's theory, three hours ; † Theory of numbers, three
hours ; † Partial differential equations and in particular
those of dynamics, three hours.†—By Professor P. F.
SMITH : Continuous groups, two hours ; Transformations
of space, two hours ; † Differential geometry, two hours.†—
By Professor G. P. STARKWEATHER : Theoretical mechanics
(advanced), two hours.—By Dr. M. B. PORTER : Linear
differential equations, three hours ; Calculus (advanced),
three hours.—By Dr. H. E. HAWKES : Modern geometry,
three hours ; Advanced algebra, three hours.†—By Mr. E.
B. WILSON : Algebraic plane curves, three hours ; † Theo-
retical mechanics (elementary), three hours.†

Courses marked † extend through only one-half of the
year.

A MATHEMATICAL seminary, appointed as are those of the
universities of Göttingen and Leipzig, has been equipped at
the University of Jena.

THE mathematical prize of the Istituto Lombardo di
scienze e lettere in Milano, will be awarded for the year
1901 for a study of the differential equations of electrotech-
nics that will indicate the most practicable methods for
their approximate integration and illustrate the exposition
with examples.

THE Istituto Veneto delle scienze, lettere, ed arti offers
its prize for the year 1902 for a memoir on the projective
character of two dimensional surfaces in space of n-dimen-
sions.

PROFESSOR THOMAS CRAIG, of Johns Hopkins University,
died at Baltimore, May 8th, 1900, aged 44 years. Professor

Craig was one of the pioneers in the great movement of the last quarter of a century which has brought American mathematicians in touch with continental ideas and methods. He graduated at Lafayette College in 1875, with the degree of civil engineer ; but with the advent of Sylvester in America his natural interest in pure mathematics immediately asserted itself. At the opening of Johns Hopkins University in 1876, he was appointed to a fellowship and at the same time was entrusted with a part of the mathematical instruction. In 1878, he received the degree of doctor of philosophy from Johns Hopkins, his dissertation being entitled : "Representation of one surface upon another, and on some points in the theory of the curvature of surfaces." During the years 1879–1881, he was connected with the United States Coast Survey, continuing, however, to give certain lectures at the University. His connection with the University covered the entire twenty-four years of its existence. Since 1892 he held a full professorship of mathematics. A considerable part of his activity for twenty years was devoted to the *American Journal of Mathematics*, of which he was an editor from 1883, and editor-in-chief from 1893 to 1898. Besides numerous articles in the *American Journal of Mathematics* and elsewhere, Professor Craig published a treatise on the mathematical theory of projection (1879), a treatise on linear differential equations (1889), and two briefer works on fluid motion (1879).

PROFESSOR L. BIANCHI has been made a member of the editorial board of the *Annali di Matematica* in the place of the late E. Beltrami. The board now consists of L. Cremona, U. Dini, G. Jung, and L. Bianchi.

PROFESSORS W. FÖRSTER, of Berlin, and E. WEISS, of Vienna, recently celebrated twenty-five year jubilees as professors at the respective universities.

PROFESSOR L. BOLTZMANN, of Vienna, has accepted the call to a professorship of physics recently tendered him by the University of Leipzig.

MR. J. F. HUDSON, of Oxford University, has been appointed mathematical lecturer at University College, Bristol, in the place of Mr. J. F. McKEAN, who resigned to become mathematical lecturer at the Royal Naval Engineering College, of Devonport.

PROFESSOR F. MORLEY, of Haverford College, has been appointed head of the department of mathematics at Johns Hopkins University.

AT Yale University the following changes have taken place in the mathematical staff : In the Sheffield Scientific School, assistant professor PERCEY F. SMITH has been promoted to a full professorship, and Dr. G. P. STARKWEATHER to an assistant professorship of applied mechanics. Mr. E. B. WILSON has been appointed instructor in the academic department.

AT Princeton University Mr. A. H. WILSON resumes his duties as instructor in mathematics after spending a year on leave at the University of Göttingen, and Dr. E. O. LOVETT has been promoted to a full professorship in mathematics and granted a year's leave of absence.

A SEPARATE department of astronomy has been organized at the University of California and placed under the charge of associate professor A. O. LEUSCHNER. DR. E. M. BLAKE and MR. D. N. LEHMER have been appointed instructors in the department of mathematics.

AT Columbia University, Mr. C. J. KEYSER, has been promoted to an instructorship in mathematics, and Mr. D. H. POLLARD has been appointed assistant in mathematics.

DR. G. H. LING, of Wesleyan University, has been appointed professor of mathematics at the University of Cincinnati for the summer session of 1900.

MR. A. H. LYBYER, of Princeton University, has been made professor of mathematics at Roberts College, Constantinople.