

Thus the roots of the characteristic equation of  $A_\rho$  are  $\rho\lambda$ ,  $\rho^{-1}\lambda$  each of multiplicity one and  $\lambda$ ,  $\mu$  each of multiplicity two; therefore, for all values of  $\rho$  which render  $\rho\lambda$  distinct from the other roots of the characteristic equation; in particular if  $\rho$  is sufficiently near to unity,  $A_\rho$  belongs to a continuous one-term group containing the identical transformation.\* By varying  $\rho$  we obtain a family of one-term group, to which, as before,  $A$  is a limit.

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NOTES.

A REGULAR meeting of the American Mathematical Society was held in New York on Saturday afternoon, May 23, at three o'clock, the President, Dr. G. W. HILL, in the chair. There were thirteen members present. On the recommendation of the Council the following persons, previously nominated, were elected to membership: Mr. LOUIS TRENCHARD MORE, Johns Hopkins University, Baltimore, Md.; Professor HENRY ALLEN PECK, Syracuse University, Syracuse, N. Y. The following paper was read:

Dr. J. E. HILL: "Bibliography of surfaces and of twisted curves."

THE meeting of the British Association for the Advancement of Science will be held this year at Liverpool, opening on September 16. The President is Sir JOSEPH LISTER. Next year the Association will meet in Toronto.

THE German Mathematical Society will meet in conjunction with the German Association of Naturalists and Physicians at Frankfort-on-the-Main, September 21-26.

WE learn from *Nature* that the De Morgan Memorial Medal has this year been awarded by the Council of the London Mathematical Society to Mr. SAMUEL ROBERTS, F. R. S. This medal is awarded every three years. Mr. ROBERTS was one of the earliest members of the Society, and has published numerous papers, many of them of great value. The presentation will be made at the annual meeting of the Society in November next.

COLUMBIA UNIVERSITY. The Department of Mechanics will give the following graduate courses during the year 1896-97: By Professor R. S. WOODWARD: (1) Theory of

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\* See page 232.

the potential, with applications to gravitation, hydromechanics and geodynamics, two hours per week throughout the year; (2) Advanced analytical mechanics, embracing the theory of virtual displacements in statics and kinetics, the methods of Lagrange, Hamilton and Jacobi, with applications especially to rotating masses of variable form, two hours per week throughout the year. By Professor M. I. PUPIN: (3) Maxwell's theory of electricity and magnetism, two hours per week throughout the year; (4) Electromagnetic theory of light, three hours per week during the second half year. By Mr. J. C. PFISTER: (5) Theoretical mechanics (based on Ziwet's Theoretical Mechanics), two hours per week throughout the year.

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## NEW PUBLICATIONS.

### I. HIGHER MATHEMATICS.

- AUTONNE (L.). Sur la représentation des courbes gauches algébriques et sur le nombre des conditions qui expriment qu'une courbe algébrique est située sur une surface algébrique. Paris, Gauthier-Villars, 1896. 8vo. 41 pp.
- BARKER (A. H.). Graphical calculus, with an introduction by J. Goodman. London, Longmans, 1896. 8vo. 198 pp. 4s. 6d.
- BOREL (E.). See NIEWENGLOWSKI (B.).
- BOYER (J.). Le mathématicien franc-comtois François-Joseph Servois, ancien conservateur du Musée d'artillerie, d'après des documents inédits (1767-1847). Paris, Gauthier-Villars, 1895. 8vo. 26 pp. Fr. 0.75.
- BURALI-FORTI (C.). Il metodo del Grassmann nella geometria proiettiva. [*Rendiconti del Circolo matematico di Palermo*, Vol. 10, pp. 177-195.] 8vo.
- CHEMNITZER (B.). Koordinaten-Transformationen auf beliebiger Oberfläche in konjugiert-komplexen Variablen. [Progr.] Annaberg, 1896. 4to. 32 pp.
- DYCK (W.). Beiträge zur Potentialtheorie. I: Ueber die Darstellung der Kronecker'schen Charakteristik eines Functionensystems durch bestimmte Integrale. [*Sitzungsberichte der math.-phys. Classe der k. bayer. Akademie der Wiss.*, Vol. 25, pp. 261-277.] 8vo.
- . Beiträge zur Potentialtheorie. II: Die Gauss'sche Formel für die gegenseitige Umwindung zweier Raumcurven und ihre Ausdehnung auf höhere Mannigfaltigkeiten; Darstellung der Windungszahl zweier Mannigfaltigkeiten durch Kronecker'sche Charakteristiken gewisser Functionensysteme. [*ib.*, pp. 447-500.] 8vo.
- GOLDSCHIEDER (F.). Ueber die Gauss'sche Osterformel. Teil I. [Progr.] Berlin, Gaertner, 1896. 4to. 30 pp. Mk. 1.00