

## NOTES.

THE tenth regular meeting of the Chicago Section of the AMERICAN MATHEMATICAL SOCIETY will be held at Northwestern University, Evanston, Ill., on Friday and Saturday, December 27–28 next. Titles and abstracts of papers to be read at this meeting should be in the hands of the Secretary of the Section not later than December 5.

AMONG the officers of the American association for the advancement of science elected at the Denver meeting are : president of the association, Professor ASAPH HALL, U. S. Navy, retired ; president of Section A (mathematics and astronomy), Professor G. W. HOUGH, of Northwestern University ; secretary of Section A, Professor E. S. CRAWLEY, of the University of Pennsylvania. The next summer meeting of the Association will be held at Pittsburg, Pa., June 28 to July 3, 1902.

AT a meeting of the Liverpool Mathematical Society held in University College on Wednesday, June 26, 1901, Professor F. S. CAREY in the chair, Professor SEBASTIAN SIRCOM was unanimously elected president for the ensuing year, Professor CAREY, the retiring president, becoming vice-president. A paper on “Möbius’ barycentric calculus and Grassmann’s calculus of extension” was read by Professor R. A. SAMPSON, who explained the two methods and showed the connection between them. Professor L. R. WILBERFORCE exhibited some apparatus, using his springs showing the transformation of longitudinal into rotational oscillation, and vice versa. He also exhibited and explained the principal oscillations of the apparatus.

THE annual meeting of the German mathematical society was held at Hamburg, September 22–28. The preliminary programme of papers to be presented is as follows : V. EBERHARD, Halle : “Contribution to the theory of equations” ; W. EBERT, Kiel : “On a question in celestial mechanics” ; F. ENGEL, Leipsic : “Higher differential quotients” ; F. FOLIE, Grivegnée : “On Oppolzer’s formulæ for nutation” ; D. HILBERT, Göttingen : “On certain recent mathematical dissertations” ; J. KOWALEWSKY, Leipsic : “Report on the theories of Sophus Lie” ; R. v. LILIENTHAL, Münster : “The geometry of motion in its application to differential geometry” ; A. MARCUSE, Berlin : “Recent developments in the determination of geographical positions” ; F. KLEIN, Göttingen, F. MEYER, Koenigsberg, and E. WIECH-