keep in constant touch with the land. "Local time" requires a knowledge of the ship's position and any record of events at sea is dependent at present for the hour on the accuracy of the local time. Various suggestions are considered by M. Renaud to avoid the difficulty. Perhaps the most practical is that ships' logs be kept in both local and Greenwich time and that all reports be furnished with the latter time only. Zone time is also perfectly practicable. The reader who has travelled much at sea can enjoy a relaxing hour in considering his personal preferences concerning the "how" and "when" of the daily alteration of the clock.

M. Bigourdan gives a full account of the Egyptian calendar; M. Maurice Hamy summarizes our present knowledge of the connection between solar phenomena and terrestrial magnetism and M. Emile Picard has a brief account of the life and work of Darboux. The last of these "Notices" will be read with interest as showing the varied activities of a scholar who is known to most of us solely as a pure mathematician.

Minor changes and improvements in the body of the volume are somewhat more numerous than usual. One useful feature is the addition in the Index of references to articles appearing in the three previous issues. It will be remembered that the growth of the Annuaire has required a division of the subjects, which are now treated in alternate years or at longer intervals. The new Index will save much trouble in searching previous volumes. The principal astronomical events and tidal data for 1919 are to be found in a supplement.

E. W. BROWN.

NOTES.

THE April number (volume 19, number 2) of the *Transactions of the American Mathematical Society* contains the following papers: "Proof that certain ideals in a cyclotomic realm are principal ideals," by H. H. MITCHELL; "The order of primitive groups (III)," by W. A. MANNING; "On the degree of convergence of Birkhoff's series," by W. E. MILNE; "Problems in the theory of ordinary linear differential equations with auxiliary conditions at more than two points," by C. E. WILDER; "Transformations of applicable conjugate

nets of curves on surfaces," by L. P. EISENHART; "A new integral test for the convergence and divergence of infinite series," by R. W. BRINK; "On the reduction of certain differential equations of the second order," by W. D. MACMILLAN; "Invariants of differential configurations in the plane," by E. F. SIMONDS.

THE concluding (June) number of volume 19 of the *Annals of Mathematics* contains: "A class of developments in orthogonal functions," by TOMLINSON FORT; "A formula of polynomial interpolation," by W. G. SIMON; "Plane nets with equal invariants," by G. M. GREEN; "Recent extensions of Descartes' rule of signs," by D. R. CURTISS; "A general form of integral," by P. J. DANIELL; "Elastic stresses in an infinite solid with a spherical cavity," by T. H. GRONWALL.

THE second annual Register of Officers and Members of the Mathematical Association of America has recently appeared as supplement to the May number of the *American Mathematical Monthly*. The Association has now a membership of 1,056, not including institutional members.

AT the meeting of the Edinburgh Mathematical Society held May 10, 1918, the following papers were read: By D. M. Y. SOMMERVILLE: (*a*) "Some applications of spherical geometry to geometrical optics", (*b*) "Note on the minimum duration of twilight"; by T. H. MILLER: "Note on the radical axis of intersecting circles."

IN the announcement of courses to be given at the University of Illinois (June BULLETIN, page 460), Professor G. A. MILLER'S course on "Continuous groups" should have been scheduled for the first instead of the second semester. In the second semester Professor Miller will give a course on "Finite groups," which was not included in the announcement.

FEW personal sacrifices of this war can have been greater than that of Professor CAMILLE JORDAN, who has lost three sons and a grandson, killed by the enemy. The sympathies of all American mathematicians will go out to the man to whose teachings they owe so much and whom they all esteem.

THE following university and college teachers of mathematics have recently entered the national military service:

MR. RALPH KEFFER, of Harvard University, has enlisted in the aviation corps. Mr. F. H. MURRAY, of Harvard University, and Dr. G. A. PFEIFFER, of Princeton University, have joined the national army. Mr. C. H. PARSONS, of Columbia University, has joined the ordnance. Assistant Professor WARREN WEAVER, of Throop College of Technology, is serving in the science and research division of the signal corps at Washington.

PROFESSOR H. E. HAWKES, of the department of mathematics of Columbia University, has been made dean of Columbia College, Dean F. P. Keppel having resigned to become third assistant secretary of war. Professor Hawkes has been acting dean during the past year.

ASSOCIATE professor D. D. LEIB, of Connecticut College, has been promoted to a full professorship of mathematics.

MR. E. S. LANE, of the University of Chicago, has been appointed instructor in mathematics at Rice Institute.

MR. ALFRED DAVIS, of the Francis W. Parker School at Chicago, has been made head of the department of mathematics at William and Mary College.

NEW PUBLICATIONS.

I. HIGHER MATHEMATICS.

BEEGER (N. G. W. H.). Over eene functie, vooregesteld door eene reeks van Dirichlet. Proefschrift. Groningen, Gebr. Hoitsema, 1916. 8vo. 84 pp.

BORTKIEWICZ (L. VON). Die Iterationen. Ein Beitrag zur Wahrscheinlichkeitstheorie. Berlin, Springer, 1917. 8vo. 12 + 206 pp. Geb. M. 10.00

HUYGENS (C.). Œuvres complètes de Christian Huygens publiées par la Société Hollandaise des Sciences. 13 tomes in 14. La Haye, Nijhoff, 1888–1916. 4to. Couv. vélin. Fl. 180.00

D'OCAGNE (M.). Cours de géométrie pure et appliquée de l'Ecole polytechnique. Tome 2: Cinématique appliquée. Stéréotomie. Statique graphique. Calcul grafo-mécanique. Nomographie. Paris, Gauthier-Villars, 1918. 8vo. 6 + 364 pp. Fr. 18.00