SCIENCE

A WEEKLY JOURNAL DEVOTED TO THE ADVANCEMENT OF SCIENCE, PUBLISHING THE OFFICIAL NOTICES AND PROCEEDINGS OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

FRIDAY, FEBRUARY 22, 1901.

CONTENTS:

MSS. intended for publication and books, etc., intended for review should be sent to the responsible editor, Professor J. McKeen Cattell, Garrison-on-Hudson, N. Y.

*THE MIND OF PRIMITIVE MAN.**

ONE of the chief aims of anthropology is the study of the mind of man under the varying conditions of race and of environment. The activities of the mind manifest themselves in thoughts and actions, and exhibit an infinite variety of form among the peoples of the world. In order to understand these clearly, the student must endeavor to divest himself entirely of opinions and emotions based upon the peculiar social environment into which he is born. He must adapt his own mind, so far as feasible, to that of the people whom he is studying. The more successful he is in freeing himself from the bias based on the group of ideas that constitute the civilization in which he lives, the more successful he will be in interpreting the beliefs and actions of man. He must follow lines of thought that are new to him. He must participate in new emotions, and understand how, under unwonted conditions, both lead to actions. Beliefs, customs, and the response of the individual to the events of daily life, give us ample opportunity to observe the manifestations of the mind of man under varying conditions.

The thoughts and actions of civilized man and those found in more primitive forms of society prove that, in various

* Address of the retiring president before the American Folk-Lore Society, Baltimore, Dec. 27th.

and in the discovery of further facts. The subject is presented in what seems to me the correct perspective, theory being subordinated to fact." The method of treatment is the interrogatory one and an effort is made to teach the student to observe for himself. While this method is an excellent one in theory it is doubtful whether it can be used with success with a class of beginners who have had no experience in scientific methods. In the early stages of the work they must be taught how to observe, and their powers of observation must be trained by showing them what they should see in each case. In some cases the important features of the experiment might be entirely overlooked and unimportant details magnified if the attention is not directed to the desired points. Of course, this might be overcome by constant personal contact with the student; but such is hardly possible in many institutions.

J. E. G.

BOOKS RECEIVED.

Les diastases et leurs applications. E. POZZI-ESCOT. Paris, Masson et Cie. 1900. Pp. 217.

Alcyonium. SYDNEY J. HICKSON. London, Williams & Norgate. 1901. Pp. viii + 22. 3 Plates.

Lehrbuch der vergleichenden Anatomie der wirbellosen Thiere. ARNOLD LANG. Jena, Gustav Fischer. 1901. Pp. vi + 311.

Proceedings of the Iowa Academy of Sciences for 1899. SAMUEL W. BEYER. Des Moines, F. R. Conway. 1900. Volume VII. Pp. 212.

Bibliotics or the Study of Documents. PERSIFOR FRAZER. Philadelphia, J. B. Lippincott Company. 1901. Pp. xxiv + 226.

Thirty-second Annual Report of Births, Deaths, Marriages and Divorces in Michigan. JUSTUS S. STERNS. Lansing, Robert Smith Printing Co. 1900. Pp. xvi + cixxii. Tables, 189.

Laboratory Companion. W. A. SHENSTONE. London, Edward Arnold. 1901. Pp. viii + 117.

Theoretical Mechanics. L. M. HOSKINS. Stanford University, Cal., published by the Author. 1900. Pp. x + 436. $3.25.

Reservoirs for Irrigation, Water-Power and Domestic Water-supply. JAMES DIX SCHUYLER. New York, John Wiley & Sons; London, Chapman & Hall, Limited. 1901. Pp. xviii + 414.

SCIENTIFIC JOURNALS AND ARTICLES.

IN the January number of the *Physical Review* Theodore Lyman presents the results of a study of the 'false spectra' often produced by a Rowland concave grating. These spectra are most clearly seen in the extreme ultra-violet, and are shown to be diffraction spectra of much less dispersion than the ordinary spectra. They appear to be due to errors of ruling, extending over the whole surface of the grating. A. A. Noyes describes in the same number a modification of the usual method of determining transference numbers, and applies the method to a large number of salt solutions of varying concentration. The application of interference methods to the determination of Poisson's ratio forms the subject of an article by J. R. Benton; while two articles by Chas. T. Knipp deal respectively with the employment of the bicyle wheel in illustrating the principles of the gyroscope, and with a new form of automatic temperature regulator. The former article describes a number of simple experiments with an ordinary bicycle wheel which are readily performed, and at the same time illustrate very strikingly the properties of the gyroscope and gyroscopic pendulum. Experiments are described by E. C. Roberts to determine whether the dielectric constant is altered by a magnetic field. The results are wholly negative.

THE January number of the *American Journal of Mathematics* (Vol. XXIII., No. 1), contains the following articles: 'Die Typen der linearen Complexe rationalen Curven im R_r,' by S. Kantor; 'Transformation of Systems of Linear Differential Equations,' by E. J. Wilczynski; 'Distribution of the Ternary Linear Homogeneous Substitutions in a Galois Field into Complete Sets of Conjugate Substitutions,' by L. E. Dickson; 'Distribution of the Quaternary Linear Homogenous Substitutions in a Galois Field into Complete Sets of Conjugate Substitutions,' by T. M. Putnam; 'On the Determination and Solution of the Metacyclic Quintic Equation with Rational Coefficients,' by J. C. Glashan; 'Construction of the Geometry of Euclidean n-Dimensional Space by the Theory of Continuous Groups,' by E. O. Lovett; 'A Table of Class Numbers for Cubic Number

Fields,' by L. W. Reid; 'On Certain Properties of the Plane Cubic Curve in Relation to the Circular Points at Infinity,' by R. A. Roberts. The number contains a portrait of the venerable ex-mathematician, George Salmon, Provost of Trinity College, Dublin.

The Popular Science Monthly for February has for its leading article 'Huxley's Life and Work,' by Lord Avebury, being the first Huxley Memorial Lecture of the Anthropological Institute of Great Britain. 'Malaria,' by Geo. M. Sternberg, being the address of the President of the Philosophical Society of Washington, gives a *résumé* of our knowledge of this subject and brings it up to date. 'A Study of British Genius,' by Havelock Ellis, is based on the Dictionary of National Biography and this, the introductory paper of a series, explains how the selections were made and gives the names of those selected. 'The Weather *vs.* the Newspapers,' by Harvey Maitland Watts, is an excellent brief exposition of the main facts of weather phenomena and of the general misunderstanding by the press and public. A brief and interesting article on 'The Philippines Two Hundred Years Ago,' by E. E. Slosson, is culled from the writings of Father Dominick Fernandez Navarette and Dr. John Francis Gemilli Careri. 'The Prehistoric Tombs of Algeria' are described by Alpheus S. Packard. Charles L. Bristol treats of 'The York Aquarium,' and in 'Chapters on the Stars,' Simon Newcomb discusses their clustering, the Milky Way, and stars with waning brightness. Finally Oliver C. Farrington, in 'A Century of the Study of Meteorites,' gives a brief summary of our knowledge of these bodies. Discussion and Correspondence comprises two contributions that especially deserve to be read, the one 'A Defense of Christian Science' as a fine example of this peculiar style of 'scientific' writing; the other 'Mr. Tesla's Science,' for its temperate criticism of certain kinds of 'science.' The departments of 'Scientific Literature and the Progress of Science' contain much good reading.

Bird Lore for February opens with an article on 'Pelican Island Revisited,' by Frank M. Chapman, with numerous and admirable illustrations from photographs by the author. 'Elliott Coues on Audubon' is a verbatim report of an address delivered by Dr. Coues before the American Ornithologists' Union in 1897, and this is followed by "Three Letters to Audubon's 'Kentucky Lads'" (his sons Victor and John), contributed by Maria R. Audubon. 'An Adirondack Lunch Counter,' with illustrations, describes the habits of some of the winter visitors. The second series of 'Birds and Seasons' discusses the birds to be met during February and March in various sections of the country, and then comes 'The Christmas Bird Census,' giving a list of the birds noted on that day at various places from Massachusetts to California and Canada to Louisiana. There is an interesting paper, by C. William Bebee, of a pair of Bald Eagles in the New York Zoo, who built a nest and have placed therein a good-sized stone on which they sit. Reviews and the department devoted to the Audubon Societies complete the number.

The Vermonter, St. Albans, Vt., C. S. Forbes, publisher, begins the year in magazine form and proposes to print monthly articles on the history, science and mineral interests of Vermont. The February number contains an interesting article on the geology of Vermont by Professor Henry M. Seely, of Middleburg College.

THE University of Missouri is about to publish, under the editorship of Frank Thilly, professor of philosophy, a series of *University Studies*, containing contributions by members of the faculty and graduate students.

SOCIETIES AND ACADEMIES.

PHILOSOPHICAL SOCIETY OF WASHINGTON.

AT the 529th meeting held February 2, 1901, three reports were made of observations during the solar eclipse of May 28, 1900.

Professor S. P. Langley reported on the Smithsonian observations at Wadesboro, N. C., exhibiting many lantern slides of the apparatus used and superb photographs of the corona and sky. He stated that direct photographs were taken showing the moon 15 inches in diameter, and that the bolometric work, performed by Mr. Abbot, showed the heat from the corona to be only five eighty-fifths of that received from