SCIENCE

FRIDAY, JULY 27, 1900.

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 ASTRONOMICAL AND ASTROPHYSICAL SOCIETY OF AMERICA.

I.

THE second annual meeting of the Astronomical and Astrophysical Society of America (fourth conference of astronomers and astrophysicists) was held on June 26–28, 1900, at Columbia University, in the City of New York, in connection with the forty-ninth annual meeting of the American Association for the Advancement of Science.

A brief report was presented by the Secretary upon the action of the Council in administering the affairs of the Society during the past year showing an addition of forty-three members since the date of the last meeting. With one exception the officers of the Society whose terms of office expired at the present meeting were re-elected, and the list for the year 1900–'01 is as follows: *President*, Simon Newcomb, of Washington, D. C.; *First Vice-President*, Charles A. Young, of Princeton, N. J.; *Second Vice-President*, George E. Hale of Williams Bay, Wis.; *Secretary*, George C. Comstock of Madison, Wis.; *Treasurer*, Charles L. Doolittle of Philadelphia, Pa.; *Councillors*, Edward C. Pickering of Cambridge, Mass.; James E. Keeler of Mt. Hamilton, Cal.; Ormond Stone of Charlottesville, Va.; and Stimson J. Brown of Washington, D. C.

By direction of the Council the next annual meeting of the Society will be held in Denver, Col., in August, 1901.

The most valuable matter to one interested in distribution is the list of one hundred and eleven breeding birds, which concludes the chapter on migration. The work, which was published privately, contains a little over one hundred pages, and is illustrated by six fairly good half-tone plates, representing nests or nesting sites. The text is good and we are glad to recommend the book to the consideration of the public.

A. K. F.

D. LANGE'S little book, 'Our Native Birds and how to protect them and attract them to our homes'* is one of the many popular treatises issued for the commendable purpose of awakening public interest in the protection of birds. To make the matter more available and easy of reference the various subjects are treated in eight sections, some of which are further subdivided into chapters. Among the causes of the decrease of song birds given by the author are lack of proper nesting places, lack of water, the English sparrow, boys, collectors, birds on hats, and the cat (which, in the opinion of the reviewer, destroys more bird life than all the others combined). For the purpose of protecting the birds and encouraging them to come to the door yards he advocates planting trees, shrubs and vines for them to live in, putting up nesting boxes for breeding purposes, providing an abundance of water for drinking and bathing, and regular feeding in winter and during unfavorable weather generally.

He very properly deprecates the killing of predaceous mammals and advocates protection for the birds of prey. We rather wish the chapter on 'Birds before Uncle Sam' had been omitted, but the book as a whole is well got up and should be read by all bird lovers.

A. K. F.

BOOKS RECEIVED.

A Treatise on the Theory of Screws. ROBERT STAWELL BALL. Cambridge, The University Press; New York, The Macmillan Company, 1900. Pp. xix + 544. 18s.

The Contents of the Fifth and Sixth Books of Euclid Arranged and Explained. M. J. M. HILL, Cambridge, The University Press; New York, The Macmillan Company, 1900. Pp. xii + 143.

Aberration and the Electromagnetic Field. GILBERT T. WALKER, Cambridge, The University Press; New York, The Macmillan Company, 1900. Pp. xix + 96. 5s.

Exploitation commerciale des forêts. M. H. VANULBERGHE. Paris, Gauthier-Villars, 1900. Pp. 155.

Les Phénomènes de Dissolution et leurs Application. V. THOMAS. Paris, Gauthier-Villars, 1900. Pp. 196.

Tonometrie. F. M. RAOULT. Paris, G. Carré and C. Naud, 1900. Pp. 116.

L'Élimination. H. LORENT. Paris, G. Carré and C. Naud, 1900. Pp. 75.

An Outline of the Theory of Thermodynamics. EDGAR BUCKINGHAM. New York and London, The Macmillan Company, 1900. Pp xix + 205. $1.90.

* Macmillan Co., 66 Fifth avenue, New York City. Price, $1.00.

SCIENTIFIC JOURNALS AND ARTICLES.

The Journal of Geology for May–June, 1900, opens with an article on 'Methods of Studying Earthquakes,' by Charles Davison. Three methods of determining the epicenter are discussed, depending respectively on the direction of the force, the time of occurrence at successive points, and the intensity of the shock. Double-shock earthquakes are put into two classes: those in which two successive shocks, separated by an interval of fifteen seconds or more, proceed from a single epicenter; and 'twin earthquakes,' having two foci whose impulses are due to the same initial stress. In these the interval between the two shocks varies from zero to a few seconds. E. R. Barbour describes 'Glacial Grooves and Striæ in Nebraska,' giving the geographical distribution of glaciation and the direction of the striæ. Charles E. Monroe notes a 'New Area of Devonian Rocks in Wisconsin.' The area is a small one near the northern boundary of Ozankee county in the vicinity of the village of Lake Church. He gives a list of Devonian fossils from this outcrop. C. R. Keyes contributes an article on 'Kinderhook Stratigraphy.' The data of recent deep well drillings along the Mississippi River are brought to bear upon the perplexing question of the correlation of the Kinderhook beds at Burlington, Ia., with those of Illinois and Missouri. In a paper on the 'Probable occurrence of a larger area of Nepheline-bearing rocks on the northeast coast of Lake Superior,' Frank D. Adams describes thin sections of rocks from a

magma rich in alkalis, and closely related to the nepheline-syenites. Hans Rusch discusses 'The Last Stage of the Ice Age in Central Scandinavia.' He offers a new theory of the origin of the glacial lakes north of Christiana, whose beaches occur in the upper parts of the valleys to the south of the divide. In an extended article Buckley continues his valuable discussion of the 'Properties of Building Stones' which was begun in the number for February–March, 1900. Editorial, Reviews, and a list of Recent Publications close this valuable number with its varied table of contents.

J. H. S.

Terrestrial Magnetism and Atmospheric Electricity for June contains the following articles:

'The Magnetic Observatory at De Bilt, near Utrecht,' M. Snellen; 'Magnetic Intensity Variometers,' M. Eschenhagen; 'Einige Bemerkungen zur Messung der Horizontal-intensität des Erdmagnetismus Mittels des magnetischen Theodoliten,' J. Liznar; 'A Possible Cause of the Earth's Magnetism and a Theory of its Variations,' William Sutherland; 'Biographical Sketch of Dr. William Gilbert' (with portrait); 'Some recent Contributions to Terrestrial Magnetism,' L. A. Bauer.

SOCIETIES AND ACADEMIES.

THE TEXAS ACADEMY OF SCIENCE.

The Annual Meeting of the Texas Academy of Science was held in the Chemical Lecture Room of the University of Texas on the morning of June 18, 1900, President Simonds in the chair.

The program offered was as follows:

1. 'The Nature of Justice,' by Professor S. E. Mezes, University of Texas.
2. 'The Development of the Present Texas Railway System,' by R. A. Thompson, M.A., Engineer to the State Railroad Commission, Austin.
3. 'Mind and Brain,' by Dr. Edmund Montgomery, Hemstead, Texas.
4. 'The Relation of the Work of the Sanitary Engineer to the Public Health,' by J. C. Nagle, M.C.E., A. and M., College of Texas.

The follpwing papers were read by title:

1. 'Note on the Marte and Bluff Meteorites,' by Professor O. C. Charlton, Baylor University, Waco.
2. 'My Experience with a Siphon Pipe-Line,' by John K. Prather, B.S., Waco.
3. 'Fossils of the Fort Worth Limestone near Waco,' by John K. Prather, B.S., Waco.
4. 'Research Work done in Organic Chemistry at the University of Texas,' by J. R. Bailey, Ph.D., and Messrs. S. F. Acree, M.S., Louis Knox, Louis Kirk, and Omerod Palm.

In his paper on the 'Nature of Justice,' Dr. Mezes undertook to base the conception of justice on the systems of legal justice of the most advanced nations, in so far as these systems are in agreement; the ground for this position being that the conclusions are thus made to rest on a study of the best instances of justice that can be investigated. It was pointed out that there are three subdivisions to justice. The first subdivision defines and forbids the doing of wrong, either to private individuals or to the public; the legal basis here is the law of torts and the criminal law. The second defining the benefits that each individual receives from others and from society, points out those to whom return should be made for these benefits, and requires that such return be made; here the legal basis is the law of contract, and the little systematized law of the obligations that arise out of relations. The third subdivision deals with the proper procedure towards those charged with injustice, and the just treatment of the unjust, but how should they be treated and who should take them in hand; here the basis is the law of procedure, and portions of the law under the heads previously mentioned. Otherwise stated, under the first head the line is drawn separating liberty from license; under the second specification is made of the individual's debts and of the payment that honesty demands; under the third provision is made for readjusting the balance that injustice has disturbed. In conclusion the speaker pointed out that justice requires each man to consider his capacities, the deserts of others, their needs, and all the other relationships in which he finds himself, and then to do his part as the particular social member that he is.

Mr. Thompson discussed the development of the present railway system of Texas and illustrated by map and diagram the progress of construction from the inception of the first line to the present time. The first railway charter was granted in 1836. The first road to begin construction was the Buffalo Bayou, Brazos and