

# SCIENCE

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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 ADMINISTRATION OF GOVERNMENT SCIENTIFIC WORK.

A CORRESPONDENT, whose letter is printed in another column, calls attention to the oft-recurring questions of the superintendency and organization of the U. S. Coast and Geodetic Survey. Whatever may be the merits or demerits of the considerations adduced by this correspondent with reference to matters of detail, it is evident that the essentials of these questions are quite as important now as they have been at any time during the past half-century. These essentials are, in fact, not limited in their application to any one scientific bureau of the government, but are of equal importance to all of them. The question of re-organization of the Naval Observatory is now pending, after a long and painstaking investigation by a committee specially delegated to consider the matter; and the question of the establishment of a new bureau which may take charge of the indispensable business of national standards is likely to come up in the near future. The mode of selection of a head, or director, of any one of these scientific bureaus is, then, or at least ought to be, a matter of concern to all men of science; for whatever mode is

sions from the technical journals and from many experts among business men.

R. H. THURSTON.

#### GENERAL.

MESSRS. GAUDRY AND BARROIS and their confrères in France have brought out in the form of a guide-book to the geological excursions undertaken this summer under the auspices of the International Congress of Geologists, a veritable hand-book of the geology of France, entitled 'Livret-guide des Excursions en France du VIII<sup>e</sup> Congrès Géologique International.' The work is beautifully illustrated with reproductions from photographs, with cuts of sections and colored maps, making the collection of papers on the different geological provinces of the Republic by far the most complete publication of the kind for any country. The matter is presented in such a form that it will serve the reader as well as the geological traveler. Paper and press-work are of the best quality.

J. B. W.

In the first part of his work 'Ueber Museen des Ostens der Vereinigten Staaten von Nord Amerika,' Dr. A. B. Meyer, the director of the Dresden Museum, describes the museums of New York City, Albany and Buffalo.

#### BOOKS RECEIVED.

*Status of the Mesozoic Floras of the United States.*

LESTER F. WARD, with the corroboration of WM. M. FONTAINE, ATREUS WANNER and F. H. KNOWLTON. Washington, Government Printing Office. 1900. Pp. 213-430. Plates XXI-CXLIV.

*A Practical Course in Mechanical Drawing.* WILLIAM FOX and CHARLES W. THOMAS. New York, D. Van Nostrand Co. 1899. Pp. vi + 98.

*Chemical Technology.* Edited by C. E. GROVES and WILLIAM THORP, Vol. III. *Gaslighting.* CHARLES HUNT. Philadelphia, P. Blakiston's Son & Co. 1900. Pp. xviii + 312.

#### SCIENTIFIC JOURNALS AND ARTICLES.

The *Botanical Gazette*, October, contains an important paper by Dr. R. A. Harper, of the University of Wisconsin, on 'Cell and Nuclear Division in *Fuligo varians*,' a common slime mold. The results have led Dr. Harper to discuss in a general way the processes

of cell division, and he discovers no such definite rules of cleavage as have been urged by authors. Mr. W. J. G. Land, of the Hull Botanical Laboratory, describes cases of double fertilization in *Erigeron* and *Silphium*, in both of which cases he discovered the second male cell conjugating with the endosperm nucleus or with one of the polar nuclei. The male cells of *Silphium* are remarkable in that they are much elongated and spirally coiled. Miss Mary Hefferan, of the Bacteriological Laboratory of the University of Chicago, describes 'A New Chromogenic Micrococcus,' discovered in the course of an examination of river water for the Sanitary District of Chicago. Mr. E. R. Hodson, of the Iowa Agricultural College, describes 'A New Species of *Neovossia*,' a smut affecting the ovaries of *Phragmites communis*. Mr. Henry Kraemer, of the Philadelphia College of Pharmacy, writes concerning the origin of tannins in galls, coming to the conclusion that the crystalline compound found in the galls which he examined is gallic acid, which becomes transformed into tannin.

*The Auk*, for October, has for its first article an account of 'A Nuptial Performance of the Sage Cock,' with a plate showing how the bird slides along on its breast with distended air sacs. J. A. Allen discusses 'Aptoso-chromatism,' reviewing the most recent articles on alleged change of color in feathers without moult, changes which Dr. Allen does not consider as taking place. James J. Carroll presents 'Notes on the Birds of Refugio County, Texas,' giving a list of 185 species, and William H. Kobbé in 'The Birds of Cape Disappointment, Washington,' gives an annotated list of 63 species. W. E. Saunders describes the 'Nesting Habits of the Cerulean Warbler.' J. A. Allen under 'North American Birds Collected at Santa Marta, Colombia,' presents a list of 43 species. Finally Jonathan Dwight, Jr., makes another of his important contributions to ornithology in 'The Moults of the North American Shore Birds (*Limicolæ*),' which has a very direct bearing on the question of change of color without moult. Dr. Dwight emphatically states that changes of color in plumage are the results of moulting and wear. There are the customary General Notes and Reviews of Recent Literature.

ture, and the number contains the Index to Volume XVII. It is noted that hereafter *The Auk* will be published by Edward W. Wheeler, 30 Boylston Street, Cambridge, Mass.

THE October number (Volume 7, No. 1) of the *Bulletin of the American Mathematical Society* contains the following articles: Report of the recent summer meeting of the Society, by the Secretary; 'The Undergraduate Mathematical Curriculum,' report of the discussion at the Summer Meeting, by Professor W. H. Maltbie; 'On a Memoir by Ricardo de Paolis,' by Professor Charlotte Angas Scott; 'Notes'; and 'New Publications.' The November number of the *Bulletin* contains. 'The International Congress of Mathematicians in Paris,' report by Professor Charlotte Angas Scott; 'The Forty-ninth Annual Meeting of the American Association for the Advancement of Science,' report of the meeting of Section A, by Dr. G. A. Miller; 'Note on Geometry of Four Dimensions,' by Professor E. O. Lovett; 'Notes'; and 'New Publications.'

The October (closing) number of Volume 1 of the *Transactions of the American Mathematical Society* contains the following papers: 'On Surfaces enveloped by Spheres belonging to a Linear Spherical Complex,' by P. F. Smith; 'On Certain Relations among the Theta Constants,' by J. I. Hutchinson; 'On the Groups which have the same Group of Isomorphisms,' by G. A. Miller; 'Die Hesse'sche und die Cayley'sche Curve,' by P. Gordan; 'Application of a Method of D'Alembert to the Proof of Sturm's Theorems of Comparison,' by M. Bôcher; 'Two Plane Movements Generating Quartic Scrolls,' by E. M. Blake; 'The Invariant Theory of the Inversion Group: Geometry upon a Quadric Surface,' by E. Kasner; 'A Simple Proof of the Fundamental Cauchy-Goursat Theorem,' by E. H. Moore; 'Notes and Errata,' Volume I.

CAMBRIDGE UNIVERSITY press will begin on the first of January next the publication of a quarterly *Journal of Hygiene*, to be edited by Dr. G. H. F. Nuttall, Lecturer in Bacteriology and Preventive Medicine in the University of Cambridge, Dr. John Haldane, F.R.S., Lecturer in Physiology in the University of Oxford, and Dr. Arthur Newsholme, M. O. H., Brighton.

#### SOCIETIES AND ACADEMIES.

##### AMERICAN MATHEMATICAL SOCIETY.

A REGULAR meeting of the American Mathematical Society was held at Columbia University, New York City, on Saturday, October 27, 1900. Professor Thomas S. Fiske, Vice-President of the Society, occupied the chair during the two sessions. The total attendance amounted to thirty-two, including twenty-five members of the Society.

The Council announced the election of the following persons to membership in the Society: Professor George L. Brown, South Dakota Agricultural College, Brookings, So. Dak.; Mr. Charles H. Davis, New York, N. Y.; Dr. Derrick N. Lehmer, University of California, Berkeley, Cal.; Miss Ida M. Schottenfels, Chicago, Ill.; Professor Frank D. Sherman, Columbia University, New York, N. Y.; Mr. Burke Smith, Northwestern University, Evanston, Ill. Twenty-five applications for admission to membership were received.

In response to the invitation of Cornell University the Summer Meeting and Colloquium of the Society will be held at Ithaca, August, 1901.

The following papers were presented at the October meeting:

(1) PROFESSOR MAXIME BÔCHER: 'On linear dependence of functions of one variable.'

(2) PROFESSOR DAVID HILBERT: 'Ueber Flächen von constanter Gauss'scher Krümmung.'

(3) PROFESSOR E. O. LOVETT: 'Three notes on the geometry of contact transformations.'

(4) DR. G. A. MILLER: 'On a theorem in substitutions.'

(5) PROFESSOR S. L. PENFIELD: 'The solution of spherical triangles by graphical methods, and exhibition of scales and protractors for plotting.'

(6) MISS I. M. SCHOTTENFELS: 'On a set of definitional functional properties for the analytic function

$$f(z) = \frac{\tan \pi z}{\pi},$$

(7) PROFESSOR P. F. SMITH: 'Geometry within a linear spherical complex.'

(8) DR. E. J. WILCZYNSKI: 'Invariants of systems of linear differential equations.'

(9) MR. H. W. KUHN: 'Several theorems on imprimitive groups.'

After the meeting several members of the Mathematical and Physical Societies dined and passed the evening together.