

# SCIENCE

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## A MAGNETIC SURVEY OF THE UNITED STATES BY THE COAST AND GEODETIC SURVEY.

IN the plan of reorganization of the 'survey of the coast,' adopted in March, 1843, explicit provision was made for magnetic observations.

Determinations of the magnetic declination were made at various points along the coast, under the superintendency of F. R. Hassler; the real work of magnetic observations, however, began with Superintendent Bache, who had previously made a magnetic survey of Pennsylvania and who had established the first magnetic observatory in this country, that of Girard College, Philadelphia.

Since that time the three magnetic elements, the declination, the dip and the intensity, have been determined by survey parties at various points in the United States, including Alaska, and in some foreign ports.

The general charge of this work, as well as the theoretical discussion which has given it value, has been in the hands of the Assistant Schott, Chief of the Computing Division, who has called attention from time to time to the need of a systematic prosecution of a magnetic survey of the country. It is largely due to Mr. Schott and his energy in that work that the present state of advancement has been reached.

In recognition of his contribution to Ter-

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.

on the carbohydrates and on uric acid; of v. Baeyer, Claisen, Waitz and others on the work in their respective fields.

The introduction occupies 77 pages, and among other subjects includes condensed presentations of the aims of physical chemistry and stereochemistry, of the work based on the optical and magnetic properties of carbon compounds, and of that based on measurements of conductivity. The book is written tersely and clearly. The nomenclature in common use is retained, but that recommended by the Geneva Conference is also given. The literature and historical references are abundant.

Professor Smith's translation is very good. A slip is on page 122, where wine is said to be obtained from 'St. John's berries;' a term not found in the Century Dictionary. The German word 'Johannisbeeren' means currants. The volume before us contains the results of the latest work on the subject, and, as the second (and last) volume on the aromatic series is promised by the publishers during the present year, the student purchasing this excellent book may feel confident that he has the last word on the subject up to the date of publication.

E. RENOUF.

*Physical Chemistry for Beginners.* By DR. CH. VAN DEVENTER. With an Introduction by Professor J. H. VAN'T HOFF. Authorized American edition from the German edition. Translated by BERTHRAM B. BOLTWOOD, PH.D., Instructor in Physical Chemistry in the Sheffield Scientific School of Yale University. First edition, first thousand. New York, John Wiley & Sons; London, Chapman & Hall, Limited. 1899. Pp. 154.

In the preface it is stated that "in the book at hand the author has endeavored to collect the most important results of physical chemistry in such a manner that this important branch of modern chemistry may be accessible to those who have not made an exhaustive study of physics and mathematics. The requirements of students of medicine and pharmacy, as well as of elementary chemistry, have been especially considered in the preparation of this work."

Chapters are devoted to the fundamental

laws of composition, the properties of gases, thermochemistry, solutions, phenomena of light and the periodic system. It would seem that a chapter on electrochemistry would add to the value of the book.

The work has been used by Van't Hoff in connection with his lectures on chemistry to students in Amsterdam, and is spoken of as having furnished him welcome assistance.

The work of translation has been done with care by Dr. Boltwood, his purpose being, in part, to place in the hands of his own students a book which shall contain a clear and concise statement of the fundamental facts of physical chemistry.

HARRY C. JONES.

#### BOOKS RECEIVED.

*Das Tierreich.* 7 Lieferung, *Demodicidæ* und *Sarcoptidæ*. G. CANESTRIUM and P. KRAMER. Pp. xvi + 193. M. 9.20. 8 Lieferung, *Scorpiones* und *Pedipalpi*. KARL KRAEPELIN. Pp. xviii + 265. M. 12.60. Berlin, R. Friedländer und Sohn. 1899.

*Steinbruchindustrie und Steinbruchgeologie.* O. HERRMANN. Berlin, Borntraeger. 1899. Pp. xvi + 428. M. 10.

*Essai critique sur l'hypothèse des atomes dans la science contemporaine.* ARTHUR HANNEQUEN. Paris, Alcan. 1899. Second Edition. Pp. 457.

*The Newer Remedies.* VIRGIL COBLENTZ. Philadelphia, P. Blakiston's Sons & Co. 1899. Third Edition. Pp. vi + 147. \$1.00.

*The Psychology of Reasoning.* ALFRED BINET. Translated from the second French edition by ADAM GOWANS WHITE. Chicago, The Open Court Publishing Co. 1899. Pp. 191.

#### SCIENTIFIC JOURNALS AND ARTICLES.

THE first article in the *American Naturalist* for May is by H. S. Jennings, and is a continuation of 'Studies on Reactions to Stimuli in Unicellular Organisms.' The present part, III., treats of 'Reactions to Localized Stimuli in Spirostomum and Stentor,' the writer reaching the conclusion that the organisms react as individuals and not as substances. But while it will not do to think of their reactions as those of chemical substances, neither will it do to attribute to unicellular organisms the psychological powers of higher animals. Under the title of 'Vacation Notes, II., The Northern Pacific