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 3, 1905.

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MSS. intended for publication and books, etc., intended for review should be sent to the Editor of SCIENCE, Garrison-on-Hudson, N. Y.

THE NATIONAL BUREAU OF STANDARDS AND ITS RELATION TO SCIENTIFIC AND TECHNICAL LABORATORIES.*

THE dedication of a large and well-appointed building to be devoted exclusively to instruction and research in physics is a notable event in the history of a college. In this instance it is the realization of a hope long cherished by many, and by none more than by the present speaker. That so splendid a building has been deemed necessary for the work to be done in physics suggests two things. First, the high standard which Wesleyan is setting for herself in this as in other departments of work, and, second, the rapid development which has occurred in recent years in physics, rendering imperative an equipment for experimental work of an entirely different order of magnitude from that thought sufficient a generation ago. So great has been the demand for the best instruments and standards to be used in experimental work, both in pure and in applied physics, that the government has been led to establish at Washington a national laboratory, one of whose functions is to cooperate with scientific and technical institutions and manufacturers in the work of improving instruments and standards and developing methods of measurement. It, therefore, seems not inappropriate that something be said on this occasion concerning this work of the national government, so recently in-

* An address delivered at the opening of the John Bell Scott Memorial Laboratory of Physical Science, at Wesleyan University, Middletown, Conn., December 7, 1904.

G. S. West is well known as a contributor to journals upon algological subjects, notably the Conjugateæ, and for many reasons the author of 'British Freshwater Algæ' is particularly well qualified to write such a book. One can not but regret, however, that he saw fit to confine himself to British species. A treatise of this kind, so long waited for, should be as complete as possible, and when one looks in vain for *Pleodorina, Platydorina* and many other important genera which fit in so perfectly with the forms previously described, it leaves this treatise upon the fresh-water algæ in an unsatisfactory condition that hardly seems necessary. The fact that none of the Temnogametaceæ or Pyxisporeæ have been found in Great Britain seems a poor reason for excluding a discussion of these important groups in a book by West. Perhaps it is ungrateful to criticize a book which contains so much more than any previous one of its kind, for not containing all upon the subject, but the satisfactory way in which the included forms have been discussed makes it the greater pity that the plan of publication or other considerations made it necessary to confine the scope of the book to the British forms alone.

A good general discussion of the methods of multiplication and reproduction in algæ, together with a reference to the question of polymorphism and a rather full exposition of the particular theories of the author regarding phylogeny, precedes the specific treatment of the six classes, Rhodophyceæ, Phæophyceæ, Chlorophyceæ, Heterokonteæ, Bacillarieæ and Myxophyceæ. These classes, with their included genera, constitute an arrangement very different from that found in the average textbook or even in more pretentious publications, and offers a wide field for discussion. While in the main following the suggestions of Borzi, Blackman, Bohlin and others, there are certain divergences for which there does not always seem to be justification. On the other hand, long experience with certain groups has enabled Professor West to adopt what seems to be a more natural and satisfactory disposition of some forms than that followed by either Bohlin or Blackman and Tansley. On the whole, the classification is based upon the results of careful observations of the plants themselves, rather than a mere theoretical arrangement. Whether the author is justified, by the evidence at hand, in including the rather heterogeneous Syngeneticæ under the Phæophyceæ, or whether the Conjugateæ may not after all be regarded as a unicellular order which has come from the Volvocaceæ, with other disputed points, will probably require more facts before they can hope to be definitely settled. Nevertheless, it would be difficult to produce a system of classification which in the present state of our knowledge would be more satisfactory to a large number and at the same time recognize at least most of the investigations of recent years calculated to throw light upon the subject.

Attempts to revise the nomenclature for the purpose of putting the names of the principal genera upon a more stable and satisfactory basis have been made, not always, however, with success. That is, the rules adopted at one place seem to have been disregarded in another, resulting in a lack of consistency which can not but weaken any attempt to modify the names of well-established genera and species.

The book is fully illustrated and too much can not be said for the successful effort to secure new and accurate drawings of not only the more recently described genera, but for the older forms as well. It certainly is refreshing to be able to look through a book of this kind without seeing all of the old cuts of algæ that have done service since there began to be any literature upon the subject.

The need for a treatise upon the fresh-water algæ has been referred to; that this book will come as near to filling such a need as one of its scope, written by one man, could possibly be expected, is all that is necessary to say regarding its worth.

GEORGE T. MOORE.
BUREAU OF PLANT INDUSTRY.

SCIENTIFIC JOURNALS AND ARTICLES.

THE December number (volume 11, number 3) of the *Bulletin of the American Mathematical Society* contains the following articles: Report of the October Meeting of the

American Mathematical Society, by F. N. Cole; 'The Fundamental Conceptions and Methods of Mathematics,' by Maxime Bôcher; 'The History of Mathematics in the Nineteenth Century,' by James Pierpont; 'De Séguier's Theory of Abstract Groups' (Review of de Séguier's Eléments de la Théorie des Groupes Abstraits), by L. E. Dickson; Shorter Notices (Cajori's Introduction to the Modern Theory of Equations, by L. E. Dickson; Annuaire Astronomique pour 1905, by E. W. Brown); Notes; New Publications. The January number of the *Bulletin* contains the following articles: 'The Group of a Tactical Configuration,' by L. E. Dickson; 'Application of the Theory of Continuous Groups to a Certain Differential Equation,' by J. E. Wright; 'On the Quintic Scroll having a Tacnodal or Oscnodal Conic,' by Virgil Snyder; 'On the Deformation of Surfaces of Translation,' by Burke Smith; Report of the International Congress of Mathematicians at Heidelberg, by H. W. Tyler; Report of the Sectional Meetings of the Heidelberg Congress, by E. B. Wilson; Notes; New Publications.

The contents of the December issue of the *Journal of Terrestrial Magnetism and Atmospheric Electricity* are as follows:

Portrait of Ettrick W. Creak, Frontispiece.

F. Bidlingmaier: 'Ueber den Einfluss der Torsion bei den Ablenkungen eines hängenden Magneten.'

L. A. Bauer and G. W. Littlehales: 'Proposed Magnetic Survey of the North Pacific Ocean by the Carnegie Institution.'

W. Sutherland: 'On the Cause of the Earth's Magnetism and Gravitation.'

L. A. Bauer: 'The Physical Decomposition of the Earth's Permanent Magnetic Field. No. V.: Systems of Magnetic Forces Causing the Secular Variation of the Uniform Portion of the Earth's Magnetism.'

Biographical Sketch of Ettrick W. Creak.

Letters to Editor: Interruptions to Telegraph Lines in New South Wales, Australia, as observed from the Chief Office (Sydney), on October 31, 1903, O. J. Klotz; Principal Magnetic Disturbances recorded at Cheltenham Magnetic Observatory, Sept. 1 to Nov. 30, 1904, W. F. Wallis; Some Observations of the Diurnal Variation of the Magnetic Declination at Cuajimalpa, Mexico, M. Morenoy Anda.

Notes, Abstracts, Reviews, and list of recent publications.

The Journal of Infectious Diseases (Volume 2, No. 1) contains the following articles:

David J. Levy: 'Some Physical Properties of Enzymes.'

Maximilian Herzog: 'Fatal Infection by a Hitherto Undescribed Chromogenic Bacterium, Bacillus Aureus Fœtidus.'

E. O. Jordan and Mary Hefferan: 'Observations on the Bionomics of Anopheles.'

George H. Weaver, R. M. Tunnicliff, P. G. Heinemann, May Michael: 'Summer Diarrhœa in Infants.'

Albert Woelfel: 'Identification of Alcohol-Soluble Hemolysins in Blood Serum.'

Richard P. Strong: 'Protective Inoculation against Asiatic Cholera.'

L. Hektoen and G. F. Ruediger: 'Studies in Phagocytosis.'

SOCIETIES AND ACADEMIES.

BIOLOGICAL SOCIETY OF WASHINGTON.

The 392d regular meeting was held December 5, 1904. G. K. Gilbert spoke briefly of observations of the marks of the claws of bears and other animals upon the bark of the aspen in the Sierra Nevada Mountains of California. Photographs of the trunks of trees so marked and specimens of the bark were exhibited.

Henry Oldys, under the title 'Some New Bird Songs,' gave an account of interesting songs noted by him in the spring of 1904. Most of these offered additional evidence of the use by birds of rules of construction that govern human music. The speaker reproduced, among others, several chewink songs, all of which were sung by one chewink. Two songs of a wood thrush, which were given, the speaker declared the most remarkable songs he had heard in years of experience. Each followed a form common in the modern four-line ballad and each was a model of melody. Hitherto, this four-phrase form had been found only in the morning and evening song of the wood pewee and in the usual song of the summer tanager, and neither had the melodic beauty that characterized the two wood thrush