

servatory, and has been occupied partly with equatorial work. Only a month ago he was assigned to the 26-inch equatorial, and had entered upon researches of great promise.

On account of his extreme modesty, and the arrearages of our publications, his scientific reputation at the time of his death was in no way commensurate with his merits. Yet he was already a member of the American Association for the Advancement of Science, and last year participated in the meeting of the Astronomical and Astrophysical Society of America.

His mind was developed in admirable symmetry and harmony, and his scholarship was almost as good in Latin and Greek and general literature as in modern science. He had that happy faculty of cool, quiet judgment, combined with good nature, which made him adequate to any occasion. Besides possessing scientific and literary talents of a high order, he was of a very high-minded and noble disposition, universally beloved by his associates. Unseen by men he continually did many acts of benevolence, and bestowed gracious remembrances which add to the charm of life and make us realize that the high types written of long ago have not wholly passed away. He was an active member of St. Thomas's Church in this city and of the Brotherhood of St. Andrew and of the Alumni Association of the University of Michigan. During his residence here of five years, he became fairly well known in the city, more by the reputation of his high character than by any very extensive mingling with the people. When the writer had to send the saddest of messages to his grief-stricken family, the telegraph operator who knew him only by reputation was nearly overcome, and said, 'That good man is not long for this world.' In all my experience I have never met quite so modest, so noble, and so lovely a character.

The sudden death of Mr. Lawton, almost at the very beginning of what promised to be a brilliant career, has cast a deep gloom over the entire Observatory. He was indeed the noblest of the noble, and his place can never be filled.

T. J. J. SEE.

WASHINGTON, D. C.,
July 27, 1901.

SCIENTIFIC BOOKS.

Astronomischer Jahresbericht. Mit Unterstützung der Astronomischen Gesellschaft herausgegeben von WALTER F. WISLICENUS. II. Band, enthaltend die Litteratur des Jahres 1900. Berlin, Georg Reimer. 8vo. Pp. xxv + 631. Price, M. 19.

This series of annual volumes, whose somewhat cumbrous title is officially abbreviated to the symbol AJB, owes its inception to its editor, Professor Wislicenus, who in September, 1898, submitted to the Astronomische Gesellschaft a well-elaborated plan for a year-book that should serve both as an annual summary of current astronomical literature and as a bibliography sufficiently complete for the use of students and other investigators. The proposal was favorably received by the Society, which not only gave its official sanction and pecuniary support to the undertaking, but also appointed a committee, consisting of Professors Seeliger, Bruns and Müller, to confer with the editor as to the contents of the future volumes and the manner of their arrangement.

The plans thus agreed upon and incorporated in the first volume, that for 1899, have been closely followed in principle in the present volume, although with greater completeness of detail, as is shown by the addition of nearly a hundred pages to its size. That so few modifications should be found necessary in the second year of publication is sufficient indication that future volumes may be expected to appear in substantially the same form and character as the two already issued.

Premising that in its entire scope the AJB is to be purely expository and not critical in its summaries, the editor indicates it to be his purpose to treat with all possible completeness the purely scientific and technical literature of

theoretical and practical astronomy and astrophysics, together with, in smaller measure, that of the higher geodesy. Mathematical and physical papers are to be included in the scope of the work only in so far as they have a direct bearing upon one or more of the topics above named, while the literature of meteorology and geophysics is wholly set aside as foreign matter. With regard to the popular literature of astronomy the editor sagely remarks that while for the most part it is of small scientific value, the bibliographic purposes to be served by the AJB call for a 'fairly complete summary of this literature, including even 'crank' papers, all of which are to be presented in a purely objective manner without comment or criticism, in order that 'the reader may be given an opportunity to form for himself a provisional judgment of the article abstracted.'

In respect of arrangement the subject matter of the AJB is divided into four principal categories, entitled: General and Historical; Astronomy; Astrophysics; Geodesy and Nautical Astronomy. These are appropriately subdivided, while a brief supplement, of only four pages, contains the miscellaneous matter that the editor has not found expedient to classify under any of the preceding titles. Noteworthy in this connection is the following criterion by which papers upon astronomy and astrophysics are assigned to their respective classes: Problems involving only space and time relations of the celestial bodies constitute astronomy; problems of the celestial bodies involving other elements than the above are to be classified under astrophysics. As the editor himself notes, this rule of classification assigns to astrophysics the visual estimation of stellar magnitudes even though made in connection with meridian circle work, while the spectroscopic determination of motions in the line of sight is assigned to astronomy. This reversal of the popular classification seems to the reviewer sound in principle and well adapted to become the general practice.

Some conception of the amount of labor involved in the preparation of the abstracts here presented may be formed from the list of nearly 200 periodical publications, including publications of observatories, which have been so

largely drawn upon for abstracts that the editor has found it convenient to assign to their names abbreviations for permanent use. To this material there must be added books independently published and periodicals rarely cited. As a type of the latter and a source not usually included under astronomical literature we note *The Congressional Record* and several of the monthly magazines commonly sold at news-stands and on railway trains. The bulk of material to be digested is beyond the competence of any one man, and the editor has therefore associated with himself seven foreign colleagues who are charged with the supervision of special portions of the work, in large part pertaining to the literature of their own countries. The American representative is Dr. H. S. Davis, who has elsewhere requested that papers of American origin which are germane to purposes of the AJB and are published in such manner as not to be readily accessible through the ordinary channels may be sent to him for review at the address, International Latitude Station, Gaithersburg, Md.

In respect of scope and plan the AJB is beyond question a welcome addition to the literature of astronomy, but one whose actual value must be tested by the experience of many persons in using it as a work of reference. A subject index is hardly to be expected in a volume of this character and no attempt at furnishing one is made, but the well-classified Table of Contents and an extended Index of Names, including institutions as well as persons, will be found of service by whoever uses the volume for serious purposes. A feature of special value to computers of orbits is the tabular Index of Observations of Comets and Minor Planets occupying no less than 34 pages of the volume, which cannot fail to save much time that has hitherto been spent in the endeavor to make complete the computer's list of observations of the object with which he is concerned.

So far as may be judged from its apparatus of classification, cross references, indexes, etc., there is no reason apparent to the reviewer why the AJB should not stand the test of time and use, and in those parts of its subject matter with which the writer is specially conversant he has found the work eminently complete,

satisfactory, and convenient to use. It is certainly worthy of a cordial reception by all who are interested in the progress of astronomy, and the editor should receive that cooperation which he solicits for future volumes by bringing to his notice all published articles which come properly within the scope of the work.

GEORGE C. COMSTOCK.

Les plantes tinctoriales et leurs principes colorants. By V. THOMAS (Chef des travaux de chimie appliquée à la Faculté des Sciences de Paris). Une publication de l'Encyclopédie Scientifique des Aide-Mémoire. Publiée par Gauthier-Villars, Paris, sous la direction de M. Léauté (Membre de l'Institut). Pp. 196. The author divides the study of tinctorial plants as follows:

1. The coloring matters themselves.
2. The glucosides; the form of combination in which coloring matters exist most frequently in plants.
3. The ferments capable of decomposing these glucosides into sugars and the coloring matter.
4. The tinctorial plants themselves, from the point of view of the coloring principles which they contain.

In a previous volume in this same series, 'Matières colorantes naturelles,' the author has already discussed those natural coloring principles which belong to the keton, xanthon, and pheno- γ -pyron groups.

Part I. (pp. 7-142), therefore, of the present volume, treats of the remaining important plant-coloring principles, arranged in the following chapters:

Chapter 1. Colors of the anthraquinon group; alizarin, xanthopurpurin, munjistin, rubiadin, chrysazin and chrysammic acid, purpurin, pseudopurpurin, alkannin, morindon and ventilagin.

Chapter 2. Brasilin and brasilein; including isobrasilein, and derivatives of brasilin and dehydrobrasilin, together with a review of the work done by Perkin, Kostanecki, Herzig and others, to establish the constitutional formula of brasilin.

Chapter 3. Hæmatoxylin and hæmatein; also isohæmatein and derivatives of dehydrohæmatoxylin.

Chapter 4. Miscellaneous coloring matters, as follows: cyanomaclurin, genistein, gossypetin, rottlerin, flemingian, orcein, santalin, carthamin, lokanic acid, crocetin, curcumin, lapachol, lomatiol, and bixin.

A brief history of every color is given, then the most interesting and important methods for obtaining it, together with its most characteristic physical and chemical properties and a discussion of its structural formula. The tinctorial properties are dealt with briefly, tables being freely employed to show change of color with change of mordant, effect of various substituting groups upon the color, comparison of shades obtained from the natural colors with those obtained from the same colors prepared synthetically, etc.

Part II. (pp. 143-180), Glucosides. Includes the consideration of the following: ruberythric acid, glucosides of quercetin and its derivatives, apiin, vitexin, morindin, datiscin, crocin, fustin, lokaonic acid.

Then follows a list of the principal tinctorial plants, arranged alphabetically according to their botanical names, and showing the coloring matters which they contain; also an alphabetical table of the coloring principles themselves, giving their melting points and the references to the text where the same are described in detail.

The references to the literature form a commendable feature of the work, thus affording ready access to the original articles.

Upon the whole, the book gives a very good digest of the work in this field and should prove of value to the chemist.

MARSTON TAYLOR BOGERT.

Mosquitoes: How they live; how they carry disease; how they are classified; how they may be destroyed. By L. O. HOWARD, PH.D. New York, McClure, Phillips & Co. 1901.

One of the triumphs of the combined labors of modern biologists and students of medicine is the discovery of the animal parasite of malaria and of the fact that the parasite of yellow fever, whether it be an animal or a bacterium, is, like the malarial one, transmitted by the mosquito.