

treatment of which is most evidently insufficient, and among the Protozoa, Cœlenterata and Vermes much recent work of great importance is omitted. Thus it is hard to see why the Flatworms, which are both of general and also of special clinical interest, should have been passed over with merely three pages of text and no illustrations; and the dismissal of malarial organisms by the citation in a brief footnote of a few authorities generally inaccessible, does not conform to the purpose of the work or to the manner in which other topics are handled. These are, however, instances from chapters of which a few have not been revised in either of the recent editions of the book.

In general the work has been carefully and thoroughly revised and brings together in convenient form a mass of valuable material which can hardly be found in any other single volume. It is indispensable to the amateur worker with the microscope who wishes assistance or information on the many problems which arise in his work, while biologists and others to whom the microscope is a professional instrument will find it a reference book of real value.

HENRY B. WARD.

PERNTER'S METEOROLOGICAL OPTICS.

AN important work on the optical phenomena that occur in meteorology is announced from the press of Wilhelm Braumüller, of Vienna, viz., 'Meteorologische Optik,' by Professor J. M. Pernter. This work is the fruit of the author's studies for twenty years past and represents the lectures that he has delivered to students in the universities at Innsbruck and Vienna. He proposes to thoroughly work over a field in the physics of the atmosphere that is often neglected by meteorologists, although in many respects of importance to those who are studying the dynamics of the atmosphere. Although treatises on meteorological optics have been published by Clausius, Mascart and others, yet, it is to be expected that this volume by Pernter will be the first that has done justice to the subject. The whole work will be divided into four sections, relating respectively to the apparent

shape of the celestial vault; the phenomena due to the gaseous components of the atmosphere, such as refraction and scintillation; those due to haze or cloud, such as halos, glories, rainbows and the colors of the clouds; finally, the phenomena due to very small particles of any kind always existing in the air, such as the blue color of the sky, the polarization of skylight, twilight and the absorption of light in the atmosphere. The first section, price 2 Kroners, or 45 cents, has already appeared, covering 54 pages of large quarto, and shows us that the whole work, which will embrace about 480 pages, is eminently worthy of commendation.

C. ABBE.

SCIENTIFIC JOURNALS AND ARTICLES.

Bird Lore for March-April opens with a most interesting article by William Brewster on the 'Voices of New England Marsh,' in which we are given a picture of the cycle of life throughout the year as indicated by the voice of the residents. The second article, on 'Bird Clubs in America,' is by S. N. Rhoads, and tells of the Delaware Valley Club. Edith M. Thomas contributes a poem on the 'English Starling,' and the third paper on 'How to Name the Birds,' by Frank M. Chapman, treats of the orioles and finches. Lawrence F. Love tells of 'My Bluebirds,' and we have reviews, editorials and the Audubon Department to complete the number.

The Osprey for March has 'Notes of some Yellow-throated Vireos' Nests,' by William R. Maxon; 'The Birds of the Marianne Islands and their Vernacular Names,' by W. E. Safford; 'Notes of McCown's Longspur in Montana,' by P. M. Silloway; 'The Carib Grassquit (*Euethia bicolor omissa*),' by B. S. Bowdish and a 'Biographical Notice of John Cassin,' by Theo. Gill, besides shorter articles and reviews. The supplement on 'The General History of Birds' continues the description of the feathers.

The Museums Journal of Great Britain has a brief article on 'Museums and Teaching,' which is rather flattering to American museums, an article by W. H. Edwards on 'An Economical Method of Mounting Shells and