valuable class and laboratory instruction as he reports its use for five years with success.

J. E. G.

*The Living Organism.* An Introduction to the Problems of Biology. By ALFRED EARL. London, Macmillan & Co. 1898. Pp. xiii + 271.

This book gives the too wordy reflections upon biological phenomena of an author who seems to have a fair general acquaintance with biological principles, but no very extensive knowledge of biological facts. The consequence is a book which is philosophical in form, discusses biological phenomena in an extremely general and abstract way, contains few errors, but, on the other hand, has little of suggestiveness for the advanced biologist. The style is flowing, but often obscure; and after reading a few pages one wearies of the pedantry which clothes well-known and simple ideas in a heavy blanket of abstract verbiage. Thus, the fact that organisms assimilate is put (in Italics) thus: "Both animals and plants depend for their continued existence upon certain material which is absorbed and changed in properties by contact with the living body." This is typical (p. 227): "The remarkable constancy of the living form, one of its distinctive signs, even when united in thought with the ceaseless occurrences tending to disturb that form, gives no positive indication of other than physical agents. Indeed, it is only by a just apprehension of everything that concerns or affects the organism, in other words, by a due regard to external changes as well to the more prominent activity of the organism, that it is possible to gain coherent knowledge of the fact known as life." We must conclude that the book contains little of importance for the working biologist.

C. B. DAVENPORT.

SUTER'S HAND-BOOK OF OPTICS FOR STUDENTS OF OPHTHALMOLOGY.

This little book, as its title implies, contains such small portions of geometrical optics as may be useful directly to a certain limited class of students. Like all fragmentary text-books, it suffers under the difficulties of such special treatment. Many important portions of the subject are omitted or barely mentioned, and only those are developed in detail which appertain directly to the object in view. Thus the introductory and general portions, including the general treatment of refraction, are condensed almost to obscurity, and, considered as demonstration, are incomplete. Refraction through spherical surfaces is much more satisfactorily handled, and is succeeded by an excellent chapter on lenses, following in general the methods of Gauss. In both these chapters the use of algebraic signs is somewhat arbitrary and inconsistent. The principles thus expounded are then applied to the eye as an optical instrument, both in its normal condition, and in connection with the spectacle lenses used to correct its errors of refraction. These chapters form, as was to be expected, the most important part of the book. They are clear and instructive, and well illustrated by numerical examples. They are followed by discussion of cylindrical lenses, and prismatic glasses. The final chapters on the ophthalmoscope are too brief to be of great practical benefit.

The whole presentation of the subject is adequate to its immediate purpose, though the rare student of ophthalmology who has enough interest in the optical side of his work really to profit by this book would find it much more to his advantage to read instead a larger and more complete treatise.

FRANK P. WHITMAN.

BOOKS RECEIVED.

*Memoirs Presented to the Cambridge Philosophical Society on the Occasion of the Jubilee of* Sir GEORGE GABRIEL STOKES, Bart, Hon, LL.D., Hons. ScD. Lucasian Professor. Cambridge, at the University Press; New York, The Macmillan Company. 1900. Pp. xxviii + 447 and twenty-five plates. $6.50.

*Papers on Mechanical and Physical Subjects.* OSBORN REYNOLDS, F.R.S. Cambridge, The University Press; New York, The Macmillan Company. 1900. Vol. I, pp. xv + 416. $5.00.

*An Introduction to the Study of the Comparative Anatomy of Animals.* GILBERT C. BOURNE. London, George Bell & Sons; New York, The Macmillan Company. 1900. Vol. I, pp. xvi + 269. $1.10.

*Zoological Results,* based on material from New Britain, New Guinea, Loyalty and elsewhere, collected during the years 1895, 1896 and 1897. ARTHUR WILLEY. Cambridge University Press;