

eral results. The book seems to be a thoroughly trustworthy guide to modern histology. The author emphasizes the need of keeping physiology constantly in mind in studying morphology; this is one of the crying needs of morphological study at the present time, and it may be safely predicted that future advances will most often be made by those who see in morphology the agent or material vehicle of physiology.

Unlike most guides to investigation in which a microscope is necessary, this one omits all consideration of the instrument of the investigator. The author believes that as the microscope is a physical instrument it should be studied in a course on physics. He stands nearly or quite alone in this respect. Most teachers have found that the special application of an instrument could best be taught in actually applying the instrument to the investigation, and the best instructor is the one who has had experience in the use of the special instrument, it being always understood, of course, that the teacher has an adequate knowledge of the theory of the instrument. The author also believes that in a work on histology the methods by which the results are obtained should find no place, but be in a separate volume. He is here also largely in a minority, as the best works on modern histology give the methods by which each preparation has been obtained. This is sometimes given with the preparation or at the end of the chapter. The advantage is that a student can follow exactly the method of the book he is studying and avoid the confusion of being compelled to make his own selection from several methods. The uncertainty as to the cause of any failure is thus largely eliminated.

From the standpoint of a teacher who has had much experience with students, the reviewer is compelled to say that it would require one of experience to make the best use of this guide, as in many, if not the majority of, cases the directions are so brief that a beginner would find it impossible to fill the gaps. For one with experience, however, the book would serve an excellent purpose, for its directions include many late methods, and the general discussions are very suggestive. A drawback for the teacher is the lack of references to the sources of the

various methods given. Credit is given, as Ranvier's method, etc., but no reference to the place in which the full discussion can be found, and certainly in a book serving as a guide to investigation—and this professes to be such—the investigator should be given every aid. The *Microtomists' Vade Mecum* of Leé is far more satisfactory in this respect.

In a word, the book, with all its excellencies, is too brief for beginners without experienced teachers, and for the advanced worker the lack of references to original sources detracts greatly from its usefulness. S. H. G.

SCIENTIFIC JOURNALS.

PSYCHE, OCTOBER.

The number is almost exclusively given to a revision of the species of the orthopteran genus *Spharagemon* by A. P. Morse. The author divides it into three series: *bolli* (with 4 species), *æquale* (3) and *collare* (2); but he further divides *S. collare* into no less than six races, to which he gives names; considerable change in the synonymy results. Excellent outline figures are given of the face of six of the commoner species with a few other characteristic parts. Three new species are briefly described. The genus is strictly North American and has not been found west of the Sierra Nevada. Mr. Morse expresses no definite opinion regarding the intimacy of its relationship to *Dissosteira*, under which Saussure placed it as a subgenus.

NEW BOOKS.

Report of the Chief of the Weather Bureau for 1893. Washington. Government Printing Office. 1894. Pp. 319.

The Forces of Nature. HERBERT B. HARROLD and LOUIS A. WALLIS. Columbus, Ohio, the authors. 1895. Pp. 159.

Psychology in Education. Ruric N. Roark. New York, American Book Company. 1895. Pp. 312. \$1.00.

The Herschels and Modern Astronomy. AGNES M. CLERKE. New York, Macmillan & Co. 1895. Pp. vi+224. \$1.25.

Justus von Liebig, His Life and Work (1803-1873). W. A. SHENSTONE. New York, Macmillan & Co. 1895. Pp. vi+215. \$1.25.