

forms this service most effectively for the bulk of our people is the Christian church.

Nearly all Americans will agree that the separation of church and state has been to the advantage of both and that it is not the function of a state university to teach religion. At the same time the faculties of our state universities ought to be in the heartiest sympathy with those who are carrying on religious work among the students and as individuals they should take an active part in work of this character.

W. A. NOYES

UNIVERSITY OF ILLINOIS

SCIENTIFIC BOOKS

Handbuch der Vergleichenden Physiologie.
Herausgegeben von HANS WINTERSTEIN.
Jena, Gustav Fischer. 1910 et seq. Each part contains about 100 pp. Price unbound 5 Marks.

In SCIENCE, August 12, 1910, p. 211, there appeared a notice of the publication of the earlier parts of Winterstein's comprehensive "Handbuch," begun in 1910. Since that time numerous parts have continued to be issued until at the present moment more than 42 are available. For reasons which are doubtless defensible on the part of the editor and publisher, but not obvious or convincing to the subscribers, the text is being issued in fragments, prepared successively or simultaneously by different authors on quite unrelated topics. In this way a great delay ensues until the individual monographs are completed; and still more time elapses before the volumes can finally be bound in the form intended for them. These are drawbacks which seriously impair the usefulness of any book of reference, especially at a period when the literature of the natural sciences is growing with leaps and bounds.

It would be futile for a reviewer to attempt any detailed reference to a cyclopedic work of this character, even if one individual competent to offer critical opinions upon so great a diversity of topics were available for the task. The best indication of the scope and importance of this scientific-literary under-

taking is afforded by the mention of the many well-known biologists and physiologists who are cooperating in it. The list of collaborators now includes the following: E. Babak (Prag), S. Baglioni (Sassari), W. Biedermann (Jena), R. du Bois-Reymond (Berlin), F. Bottazzi (Naples), E. v. Brücke (Leipzig), R. Burian (Naples), R. Ehrenberg (Göttingen), L. Fredericq (Liege), R. F. Fuchs (Breslau), S. Garten (Giessen), E. Godlewski (Krakow), C. v. Hess (Munich), J. Loeb (New York), E. Mangold (Freiburg), A. Noll (Jena), H. Przibram (Vienna), J. Strohl (Zürich-Naples), R. Tigerstedt (Helsingfors), E. Weinland (Erlangen), O. Weiss (Königsberg), H. Winterstein (Rostock).

Among the completed volumes is one (III. 2) upon the metabolism of energy and the physiology of changes in form, in which chapters upon animal heat (Tigerstedt), the production of electricity (Garten), the production of light (Mangold), animal form (H. Przibram), and reproduction (Godlewski, Jr.) are included. Volume IV. deals with the physiology of irritability, conductivity, etc.—phenomena of the nervous system. For this a chapter on tropisms has been prepared by Jacques Loeb. The first half of Volume II. is devoted to the classic compilation of Biedermann upon the ingestion, alimentation and absorption of food by the invertebrates. This alone is a most extensive monograph, the exhaustive character of which is represented in nearly a thousand pages, with 200 illustrations and about 1,200 references. Volume I. is to deal with the fluids and tissues, and with the comparative physiology of respiration.

The foregoing comments give a very imperfect idea of the contents of many hundreds of pages of illustrated text—an invaluable cyclopedia in a field which has hitherto not afforded any such elaborate systematic compilation.

LAFAYETTE B. MENDEL

SHEFFIELD SCIENTIFIC SCHOOL,
YALE UNIVERSITY

Kristallberechnung und Kristallzeichnung.
By B. GOSSNER. Leipzig und Berlin, Wilhelm Engelmann. 1914. Pp. viii + 128;