

second is the main ecological chapter, and involves the use of many anatomical expressions that a young student will not understand until later. The mode of protrusion of the tongue by lymph pressure; the changes in the liver, fat-body, and gonads; the formation of new blood corpuscles and other difficult topics, are referred to before so much as a brief reference to the chief features of the frog itself.

The succeeding chapters are arranged on the stereotyped anatomical plan. In reference to the external features, no remark is made of the prevalence or significance of the dark upper sides and light under sides of animals, or of the meaning of gradational shading. A green pigment is attributed to the frog at the close of the third chapter and denied on p. 192. Descriptions of the internal organs, of development, and of the histology of the different organic systems occupy the rest of the book. We have, however, admirable summaries of physiological action under each histological section, and for these teachers will be thankful. The treatment of the skin and of the blood, of digestion and respiration calls for praise. The seasonal metabolic changes in the tissues of the frog are well described under the various organs that are affected, and the references will enable one to find the original papers with ease.

The book is one that will prove useful to every teacher of elementary biology, and its usefulness would have been enhanced by a thorough-going biological treatment and simplification of the anatomical details. Few biological writers realise what a stimulus to teachers and to taught lies in a new mode of presentation of a well-worn subject. In the writing of a biology of the frog a superb opportunity has presented itself of boldly embarking on the physiological method and of subordinating anatomy to the working out of function and response. Moreover, the biology of the frog is not well worn. It is, in contrast with anatomical knowledge, inaccessible and scattered, and with much labour it has been brought together for the first time. With so much novelty at his disposal one cannot help regretting that the author has adopted an arrangement for his work that puts biology into a subordinate place, with the result that he has made a useful but not an illuminating work.

It is in no carping spirit that we point out a few suggestions and corrections for a second edition. Chiefly we should advise the deletion of the experiments and experimental results dealing with severe lesions. The chapter on the nervous system is one that no sensitive student could read without shuddering, and a recapitulation of the revolting experiments made by certain writers was wholly unnecessary in such a work as this. It is with regret that we notice this serious drawback.

The description of the tadpole, and, indeed, of the life-history generally, while fairly careful in cellular detail, is lacking in any broad suggestiveness that will remain after the anatomical detail has faded from the mind. The mode of hatching, the meaning of food-yolk, the fish-like character of the larva are not touched upon, nor is there given in this or any other

chapter of the book an idea of the process of evolution.

Few misprints occur, but "Wiedersheim" for the distinguished anatomist of Freiburg is of irritating frequency.

F. W. G.

OUR BOOK SHELF.

Morphologie und Biologie der Algen. By Dr. Friedrich Oltmanns. Zweiter Band, Allgemeiner Theil. Pp. vi+443. (Jena: Gustav Fischer, 1905.) Price 12 marks.

It is difficult to say of this much-wished-for and long-expected fruit of Dr. Oltmanns's industry more than that it meets all these wishes and hopes. There is one respect in which a fault may be found, the last to be thought of, viz. the arrangement, but it is cured by the provision of an excellent index. Detailed criticism of a work of this size in the pages of NATURE is out of the question, and the present writer confesses that he has attempted such a task several times, but always with the result that his effort not only left no satisfaction to himself, but kept a fear before him that his judgment might easily be misunderstood.

In a word, the book is invaluable to all workers at this subject, and well worthy of the great reputation of Dr. Oltmanns as a researcher and teacher. If any faults were to be found in a detailed criticism they would be, not with Dr. Oltmanns, but with the fate that has prevented his access to our great collections. This short notice of so great a work must not, from its brevity, seem to lack in the heartiness the reviewer wishes to express in his welcome to it. The volume has been long needed by those who are earnestly at work, and no one values it more than the writer of this brief note of thanks for it, and for the industry of the author of it.

GEORGE MURRAY.

Atlas colorié de la Flore alpine. By J. Beauverie and L. Faucheron. Pp. 98. (Paris: J. B. Baillière and Son, 1906.) Price 7.50 francs.

THE recollections of botanising expeditions in the High Alps must ever remain a source of pleasure to those who have had such enjoyable experiences. Not only the botanist, but anyone endowed with a spark of latent appreciation for the beauties of nature cannot fail to be aroused to enthusiasm when for the first time he has the good fortune to behold patches of *Anemone vernalis* in the spring, or to discover clumps of *Ranunculus glacialis* on the snow-line. It is natural, therefore, that there should be a demand for floras of the Alpine regions adapted to amateurs, and also worthy of professed botanists. Such is the nature of this volume, which contains excellent illustrations combined with simple descriptions of the flowers and references to localities where they may be found. To confine the book to reasonable compass, only fairly common Alpine plants are included, and preference is given to the denizens of the higher Alps. So far as the selection is concerned, there is little to note except that the orchids have received rather scant measure, and the thistles are entirely omitted. Some of the plants, e.g. *Douglasia vitaliana* and *Androsace villosa*, are interesting for their association with the French Alps, while, on the other hand, several species are included that are absent from French territory. The compilation reflects credit on the authors for their clear and pithy descriptions, and on the publishers for the manner in which the plates are produced.