

build up further experiments and check his own theories.

From time to time there arise individuals, diligent and of orderly mind, gifted at cataloguing and summarizing the literature. Beilstein has done this for organic, Mellor for inorganic, Abderhalden for physiological chemistry, Oppenheimer for

enzymology. The completion of this work entitles him to be ranked with these others as a benefactor to experimental science.

All of them have made it easier for workers to-day to press forward their experimental investigations by which alone, slowly but surely, the truth is unveiled. E. F. ARMSTRONG.

BIOLOGY FOR SCHOOLS

(1) A School Course of Biology

With Suggestions for Practical and Field Work. By L. J. F. Brimble. Pp. x+470. (London: Macmillan and Co., Ltd., 1939.) 6s.

(2) Biology for Junior Forms

With Instructions for Simple Practical Experiments. By M. R. Lambert. Pp. 320. (London: Macmillan and Co., Ltd., 1939.) 3s.

(1) **I**N the preface to his book, Mr. Brimble writes that "the teaching of biology is still in the experimental stage, and thus the completely satisfying course which covers the period allocated to it in secondary schools is still to be formulated". It is inherent in the nature of progress that this completely satisfying course may never be attained, but it stands to the author's credit that here, as in his "Intermediate Botany", he has made a valuable contribution to biology teaching. "A School Course of Biology" bravely attempts to deal with biology as a whole science in which no use is made of the "convenient" divisions into botany, zoology and physiology. The other general feature of importance is that the elements of human biology are liberally distributed throughout the text, and here lies the reason for much of the intrinsic value and attractiveness of the book.

Although the requirements of candidates for school certificate and matriculation examinations are more than adequately provided for, whenever possible the author has carefully diverted the issue to deal with matters that make up the natural and ever-present interests of pupils. Great prominence is given to economic uses of plants and animals, and attention is focused upon the human being in a section on human anatomy and physiology, with the attendant medicine, hygiene, health and fitness. Historical references are repeatedly inserted to illumine the facts presented. The pupil is invited to consider familiar plants and animals before attempting the unfamiliar. Another feature of considerable value is represented by the author's attempt to inculcate the spirit of inquiry by the frequent inclusion of suggestions to the effect that

though much is known in science, the vast ocean of discovery lies largely uncharted.

Each chapter contains suggestions for practical work and, as an aid to examination candidates, some two hundred typical questions are provided. The 355 diagrams and photographs have been collected from many sources and are varied in appearance. The great majority of the diagrams have been prepared by the author himself; these are uniformly excellent. It is to be desired that, when the book reaches its second edition, the author should even further extend its attractiveness by replacing the few poorer diagrams by yet more of his own. There are a few inaccuracies which are of a trifling nature. The only outstanding omission is that no reference is made to the pasteurization of milk, and the section dealing with soil might have been extended.

Mr. Brimble's book should soon find its way to all schools where biology is taught and should be a real boon at present to teachers whose schools have been evacuated.

(2) "Biology for Junior Forms" is the adapted third book of a series that was written for senior schools. This series was written using a concentric system so that each of them would cover a year's course. The third book has accordingly been published for use in the junior forms of Secondary Schools. It is doubtful, however, if it will achieve the same success in its present form as in the original. The pace of the introductory chapters appears to be too rapid for younger pupils, strange terms frequently being introduced without adequate explanation. The references to the earlier books of the series might also be disturbing to pupils having no previous acquaintance with them, while the exclusive divisions into botany, zoology and human physiology could scarcely be permitted in a book that is meant to be the foundation for Mr. Brimble's book on biology.

This little volume contains much useful material, however, and with a different presentation would perform valuable service in the lower forms of secondary schools. T. H. HAWKINS.