

bibliographies arranged in alphabetical order; this has a distinct advantage over a chronological arrangement where the reference hunter is concerned.

The most valuable sections are those in which the authors have made some assessment of the significance of the results recorded, or have attempted to harmonize evidence from various sources or to formulate plans for the resolution of conflicts or problems developed in the articles under review. Of course, this can only be attempted in a limited number of cases, but such constructive presentation is very helpful and fully justifies the careful selection of authors by the editorial board. Noteworthy examples of this type are found in Eccles' discussion on conduction in nerve, Osgood's account of hæmoglobin formation and erythropoiesis, Wilhelmi's picture of the significance of hepatic anoxia in shock, Brobeck's attempt to harmonize the 'central' and 'gastric' components of hunger and Anderson's account of thyroid physiology.

The third potential of this publication, its international influence, is recognized by the editorial board in the preface. The board regrets the persistence of difficulties in obtaining contributions from a truly universal field, but affirms its intention to persist in its attempts to overcome these barriers. In this it must receive every encouragement from those who believe in scientific freedom.

A COMPARATIVE HISTOLOGY OF VERTEBRATES

Microscopic Anatomy of Vertebrates

By Prof. James I. Kendall. Third edition, thoroughly revised. Pp. 354. (London: Henry Kimpton, 1947.) 30s. net.

IT is a defect of the great majority of text-books of histology that, being intended chiefly for medical students, they wholly neglect all vertebrate classes except the mammals. As a result, students of zoology either learn no histology, or, being led into the subject by men whose interest is limited to one class, and even to one species, acquire a slight superficial knowledge with the same limitation. The book under review attempts to tackle the subject in a less limited manner. Inevitably, because of the vast preponderance of work done on mammals, it is heavily influenced by our knowledge of the microscopic anatomy of that class; but it is rich in descriptions of histological structures in other classes. Thus, the chapter on the integument deals with the skins of the dog-fish, of teleostean fishes, of the frog, reptiles, birds and mammals; that on excretory organs discusses separately the pronephric, mesonephric and metanephric kidneys, as illustrated in such animals as the hag-fish, the frog and the mammal.

Of course, no book of this kind, held within these limits of size, could satisfy every reviewer, and the present reviewer would have preferred greater emphasis on considerations of function and especially, where possible, on the functional differences correlated with differences of structure. On points of detail, one is made a little uneasy by finding the terms 'pre-cartilage', 'chondroid tissue' and 'pseudo-cartilage', used as synonyms. In the section on bone there does not seem to be any recognition of the existence of a microscopically homogeneous sub-

stance between the fibres, or of a distinction between lamellar and non-lamellar types of bone. The description of the dog-fish skin and placoid scale could well be revised, and the figure replaced; in the ganoid scale it is incorrect to describe the ganoin layer as "fibrous and uncalcified". In the paragraph on myogenic and neurogenic theories of heart-beat, statements are made which will lead students to believe that the elasmobranch heart is two-chambered and that of amphibians three-chambered.

The book is well illustrated with photomicrographs and diagrams, a number being new since the second edition. Some of the diagrams are rather crude, and one would have liked to see an illustration which would have made easier the identification of leucocytes in some laboratory animals below the mammalian level, especially of the Amphibia.

However, the reviewer, having done his duty by carping a little, would like to end: this is a good book, and it should be in every zoological library.

P. D. F. MURRAY

CYANOGEN COMPOUNDS

Cyanogen Compounds:

Their Chemistry, Detection and Estimation. By Herbert E. Williams. Second edition. Pp. xvi+ 443. (London: Edward Arnold and Co., 1948.) 40s. net.

THE chemistry of the cyanogen compounds is one of the more difficult branches of the subject, and is one on which it is not easy to find collected information. The first edition of this book, published in 1915, served a very useful purpose in bringing together a large amount of information in a systematic form, and the new edition is necessary in view of the work which has appeared since that time. The treatment is practical, scarcely any space being given to theory, and in some cases this is a real defect of the book. The only formula for Prussian Blue is an old one which is incorrect, no notice being taken of recent work in this field which has cleared up much obscurity. Many of the formulæ given in all parts of the book are semi-empirical, and some account should have been taken of modern co-ordination formulæ for the compounds.

The treatment covers all that could be expected from the title, and a praiseworthy feature is the inclusion of many compounds which have not been investigated for a long time, some of which would, no doubt, repay new work and show interesting and useful properties. The chapters include the subjects of cyanogen and its derivatives, cyanamide, urea and related compounds, cyanates, cyanides, iron-cyanogen compounds, nitroferrocyanides, thiocyanates, and five chapters on analysis, which are particularly noteworthy. References to literature are mostly given, and some patents are listed.

The book, taken as a whole, is good, and is one which should be found useful in the laboratory. The absence of an adequate theoretical background makes it essentially a work of reference. The reviewer noticed an unusually large number of errors in names, many of which appear also in the index: these include "Maequer" for Macquer, "Vanquelin" for Vauquelin, "Hautefeville" for Hauteville, "Blitz" for Biltz, etc. This creates a certain lack of confidence in the accuracy of the text. Some ordinary words also appear in unfamiliar forms: