

noted; but it seems a pity that so extensive a collection should have such notable gaps.

Reference must be made to the many books from Newton's library, to the noteworthy Newton manuscripts and to the many portraits in the collection, including what is apparently a fine copy of the Vanderbank portrait in the National Gallery.

The appearance of this catalogue is another sign of the informed and enthusiastic interest in Newton which is taken in the United States at the present time. The best life of Newton now available is that by L. T. More, of Cincinnati. Marjorie Nicolson's recent "Newton Demands the Muse" was an original study that gave much pleasure to students of Newton. If we have felt bound to animadvert upon certain from among the small blemishes noted in this Catalogue, nevertheless nothing set down here must be allowed to obscure the fact that this volume is a noteworthy record of a collection of great interest, which any Newton bibliophile will be glad to possess.

E. N. DA C. ANDRADE

TUNICATE BIOLOGY AND DEVELOPMENT

The Tunicata

With an Account of the British Species. By Prof. N. J. Berrill. (Ray Society Vol. for the Year 1946.) Pp. vii+354. (London: Bernard Quaritch, Ltd., 1950.) 27s. 6d.

THE appearance of Prof. N. J. Berrill's work on the tunicates is a major event for students of the group. It brings together in convenient form the results of researches by European and American workers, leavened throughout by the very substantial contributions of the author.

The book is divided into two parts, dealing respectively with the sessile and pelagic tunicates. Each part begins with a well-documented general account, followed by a synopsis of the classification with a key to the families, and, finally, by a detailed and generously illustrated account of the British species. There is a synopsis of the genera in each family, but no key to the species. This will be a disappointment to biologists unfamiliar with the group, and students must still be referred to the key given by Huus in "Die Tierwelt der Nord und Ostsee"; by a curious oversight this is not listed in the bibliography.

The treatment of the Didemnidæ is rather sketchy. The author does not refer to ten of the twelve species of *Didemnum* described in the "Faune de France", a good proportion of which, if they be confirmed as separate species, might be expected to occur in Britain; but he includes, without comment, *Didemnum gelatinosum* and gives only a very brief description of *D. maculosum*. It is by no means certain that there is such a species as *D. gelatinosum*, while *D. maculosum*, as generally recognized, includes several varieties, some of which may be accorded specific rank when more precise characters for their determination have been worked out.

In the Polyclinidæ, the author grasps the nettle more firmly and, amalgamating *Aplidium* and *Amaroucium*, discards *A. roseum* and *A. albicans* as varieties, but includes both *A. proliferum* and *A. nordmanni* and also *A. densum*. Ascidian systematists have so far failed to deal successfully with these

two groups, and further progress will depend upon a careful study of the range of variability of each so-called species. In the account of the sessile ascidians, the sections on development are outstanding and are illustrated by a fine series of figures mainly from the author's publications.

The account of the pelagic tunicates is not so complete, and many of the illustrations are too small to be of real value in diagnosis. One new generic name, *Haplopleura*, is introduced for a form that is not British; a separate publication of this new name would have been advisable.

Throughout the book many of the figures reproduced from other works have been reduced and have suffered in consequence. A tendency to group too many drawings in one figure also occurs repeatedly. Errors in the text appear to be few, the worst I have noted being the sadly garbled spelling of *garstangi* in the legend to Fig. 19. The bibliography has not been so carefully checked and mis-spellings are rather numerous; there is also an error in the list of contents.

The style is eminently readable, which in itself greatly increases the value of the work; very frequently the author points to gaps in our knowledge where further research is needed. Finally, I must refer to the most remarkable feature of the book, the fact that it has been written by a busy professor of zoology at a large Canadian university; this is indeed proof of scholarship.

H. A. COLE

THE NEW VISION

Electron Microscopy

Technique and Applications. By Ralph W. G. Wyckoff. Pp. ix+248. (New York and London: Interscience Publishers, Inc., 1949.) 40s.

DR. WYCKOFF has achieved the sort of thing that several of us must have turned over in our minds and hoped perhaps to be able to settle down to one of these days, and we should wish to congratulate him on that in any case. He has done it exceedingly well, too, which is more to the point, and has thereby earned our thanks besides. We should have been disappointed, though, if it had turned out otherwise, for every electron microscopist knows of the industry, experience and experimental skill of R. W. G. Wyckoff.

There is, of course, a fair variety of articles and books on electron microscopy available already, and together they cover a lot of ground; but, all the same, this one is something different. The book has a relative simplicity and wide appeal which make it rather the story of the new field of vision; it contains plenty of instruction and workaday 'tips' for specialists but keeps up a fascination that many others, concerned only indirectly with particular techniques, will find irresistible. The text is authoritative but friendly, and all the time there is the background of collaboration and of the tremendous reaches still waiting to be explored. The author says, "The possible fields of application of an instrument which extends the range of our perceptions as much as does the electron microscope are so numerous, and so unpredictable, that little can be done at this early date besides indicating the kinds of objects that can be examined and the new techniques that are needed for this purpose"; but that is just what was wanted, and wanted in this kind of way, because electron microscopy is not simply a triumph of electron optics