

the general purpose of the work, much more space is devoted to the geographical distribution and general natural history of mollusks than to the details of systematic arrangement or technical discussion. Twelve chapters of 377 pages are devoted to generalities, and four, comprising 66 pages, to classification.

The work deserves high commendation for the thorough manner in which Mr. Cooke has foraged for fresh data, bringing together a vast number of facts on the biography, distribution, growth, anatomy and reproduction of mollusks. The style is clear and easy, and the facts are well selected and agreeably presented. For the audience for which the book is intended it seems admirably adapted, and so far as we know there is no work available at present which can be more cordially recommended to a beginner or the general reader.

It would be easy to criticise details of classification here and there, and on many points the opinions of experts will differ in the present state of our knowledge; but in recognizing the aim of the author and publishers it must be conceded that it has been well carried out.

It does not appear to have been necessary to separate the recent from the fossil brachiopoda, and recent efforts at a revised classification of the group have been so successful and complete that Mr. Reed's work appears already somewhat antiquated and too brief, but this perhaps was inevitable from the necessity of preserving due proportion between the parts of the series. Mr. Shipley's account of the anatomy and embryology is good, and his conclusions as to the relations of the class are conservative and reasonable.

The book is fully illustrated with rather unequal woodcuts, many of which are good and others rather 'wooden,' but an unusually large proportion of them are original and fresh. There are four very good maps

of geographical distribution and an excellent index.

W. H. DALL.

*A Laboratory Guide for a Twenty Weeks' Course in General Chemistry.* By GEORGE WIL-LARD BENTON, A. M., Instructor of Chemistry, High School, and Chemist for the City of Indianapolis. Boston, D. C. Heath & Co.

This book might be better termed 'A Guide for a Course of Test-Tubing,' since nearly all the reactions are performed in a test-tube, and the sole object of the book seems to be to acquaint the unfortunate pupil who uses it with 'Tests' for the various elements and compounds.

The manual is supposed to be put into the hands of beginners in the subject, and yet before a single element is considered or anything is said about elements, compounds or formulas, quite a number of formulas and reactions are given. As an illustration of what the author calls compounds, a piece of wood and granulated sugar are taken and the equation  $C_{12}H_{22}O_{11} + H_2SO_4 = 12C + 11H_2O + H_2SO_4$ , is written out. Then the student is asked to explain the equation and to define a compound. And yet the author, according to his preface, is one of those 'who see in the Laboratory (with a big L) the means of high development on approved pedagogical grounds.'

It would require more space than the book is worth to point out all its faults. It will, perhaps, be sufficient to state that directions are given for making dangerous compounds without any mention of the danger connected with the work. The pupil is asked, for example, to determine the odor of carbon monoxide, and not an intimation is given that it is one of the most poisonous gases known to the chemist.

Altogether, the book is one that can be most cordially recommended as the kind of a book for both teachers and students to avoid using, if possible.

W. R. O.