

mere clichés. The introduction contains valuable observations on living species, an addition to the scanty literature of this subject which has real interest. Dr. Cushman here directs attention to the protective coloration of a small crab which has reddish spots of the same colour as *Homotrema rubrum* (Lamarck), the remainder of its carapace and legs being of the same colour as the dead coral with which both the crab and *Homotrema* are associated. So far as we remember, this is the first record of a rhizopod in such a connection. There is also a short note on the colours of living Foraminifera, but this adds little to our knowledge of the subject, and we regret that Dr. Cushman, with the facilities at his disposal, has not gone more deeply into this question, especially as regards *Homotrema*, *Globigerina rubra*, and *Truncatulina rosea*.

Space does not permit us to discuss many interesting points raised by the author, but his observations are always temperate and demanding attention. We cannot, however, agree with his suggestion that *Marsipella cylindrica*, Brady, is really a species of *Haliphyssema*. If we have any quarrel with Dr. Cushman it is but the old feud between "lumpers" and "splitters." Dr. Cushman has an enthusiasm for the creation of new species and varieties for what in many cases appear to be merely local variations, a practice which, in our opinion, is to be deprecated as tending to increase an already intolerable state of confusion. There is less excuse for him than for most "splitters," as his knowledge of the literature of the order is phenomenal. In this memoir, out of 144 species and varieties recorded 23 are described as new to science, and there are 9 others previously separated by the author. Consideration being had to the existing literature of West Indian Foraminifera, we cannot help regarding the proportions as excessive.

E. H.-A.
A. E.

Our Bookshelf.

Organic Chemistry, or Chemistry of the Carbon Compounds. By Victor von Richter. Edited by Prof. R. Anschütz and Dr. R. Meerwein. Translated from the eleventh German edition by Dr. E. E. Fournier D'Albe. Vol. 2: *Chemistry of the Carbocyclic Compounds.* Pp. xvi+760. (London: Kegan Paul, Trench, Trubner and Co., Ltd., 1922.) 35s. net.

"RICHTER" is too well known to need description, and the only matter requiring attention is the way in which the translator has done his work. In the first place, it must be pointed out that the German edition on which the translation is based was published so long as ten years ago, and the volume for review is, therefore, relatively out of date. In the second place, a much more serious fault is the surprisingly inexact way in which the translation has been carried through. Even an elementary knowledge of chemistry and of technical

German would have prevented such translations as "carbohydrate" for "Kohlenwasserstoff," and would have allowed the German names "benzol," "anilin," "hydrazin," "hydrokinone," "mono-sulpho-per-acid," etc., to have been rendered into their English equivalents. As examples of chemical errors may be mentioned the use of ferric sulphate as a reducing agent, MnKO as the formula of potassium permanganate, etc. These are but a few of the elementary blunders for which the translator is responsible, and as a result the book will be found very confusing by students. As a book of reference for those who already have a good knowledge of organic chemistry it will certainly be found very useful.

The Chemistry of Combustion. By Dr. J. Newton Friend. Pp. viii+110. (London: Gurney and Jackson, 1922.) 4s. net.

THE account given by Dr. Friend of the chemistry of combustion, including flame, ignition temperatures, and the propagation of flame in gaseous mixtures, is clear and concise and should be of interest to students. Most of the newer work, especially that of Dixon and his students, is covered, and adequate references are usually given. If one might venture a criticism of many recent monographs, including that under review, it would be that far too little attention is now paid to the experimental methods. To young students a study of the way in which practical difficulties have been faced and overcome is of much greater value than a bald abstract of the results finally won. One misses here, for example, an adequate account of the highly ingenious apparatus of Dixon for the measurement of the velocities of detonation waves (is there not a difference between "detonation" and "explosion"?), and that of Petavel and of Pier for the measurement of explosion pressures (there is not even a reference to the latter). The collected numerical data in the book are useful; a more critical treatment would perhaps have been possible only if the author had been an expert.

A Course of Instruction in Quantitative Chemical Analysis for Beginning Students: With Explanatory Notes, Questions, and Analytical Problems. By Prof. G. McP. Smith. Revised edition. Pp. x+218. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd., 1921.) 12s. net.

PROF. SMITH'S book is intended for students who have completed a year's work in elementary chemistry, including qualitative analysis, and are beginning the study of quantitative analysis. In England a certain amount of volumetric analysis is usually included in the first year's course at the university, so that some of the second half of this book could be used with intermediate students. The directions are usually arranged under the headings of "Method," in which a brief but fully adequate account of the process is given; "Procedure for the Determination," in which all the needful practical details of manipulation are described, so that the work of the demonstrator may be reduced to a minimum; and, finally, "Notes," in smaller type, which give the reasons for the procedure, equations, theoretical explanations (in which physical chemical conceptions are explained and used), and