

Although it was the admitted intention of the author to cater for the needs of the amateur entomologist with no laboratory training, the book will also prove a useful guide to those who have adopted entomology as a profession. A. E. C.

Couleurs et pigments des êtres vivants. Par Dr. Jean Verne. (Collection Armand Colin : Section de biologie, No. 123.) Pp. 219. (Paris : Armand Colin, 1930.) 10-50 francs.

At every turn the students of natural history and of biology are compelled to consider the colorations of animals, and the first essential is to know what are the physical and chemical characters of the pigments with which they have to deal—and, if possible, how they are produced. Some pigments are excretory, others for respiration, others for nutrition, and others to fix energy (chlorophyll). Living matter has a colour of its own and there are pigments in the blood and other internal tissues, in special pigment cells, usually provided with pseudopodia, and in the exoskeletons of animals. Plants have chlorophyll and the colours in fruits are especially interesting. Then there are colours due to reflection, to refraction, and to light decomposition. Lastly, an animal may be coloured by its food. The discussion from the point of view of protective coloration is very short, but it is unnecessary, since the facts relating to all types of colour are given succinctly so that the student may judge for himself. We recommend this as a book useful to and within the means of every biologist. It has an excellent bibliography.

Chemistry.

Recent Advances in Physical and Inorganic Chemistry. By Prof. Alfred W. Stewart. Sixth edition. Pp. xi + 387 + 5 plates. (London, New York and Toronto : Longmans, Green and Co., Ltd., 1930.) 18s. net.

THE new edition of Prof. Stewart's "Recent Advances" provides striking evidence of the rapidity with which fundamental facts and theories of physical and inorganic chemistry have developed, since there is scarcely a single topic in the whole volume which could have been foreseen when the first edition of the book was issued. Thus, the foreground of the picture is now occupied by line spectra and X-ray spectra, and the background by band spectra and Tesla-luminescence spectra; whilst the centre is devoted mainly to radioactivity, positive rays, and other aspects of the problem of atomic structure. Amongst these chapters on atomic physics, there are interpolated a few of a more chemical character, dealing with newly discovered elements, with various forms of active hydrogen, and with some new hydrides. This gives to the book the character of a very modern inorganic chemistry, but the inclusion of physical chemistry in the title is definitely misleading, since there is no reference of any kind to recent advances in this field (as it is commonly defined), with the exception of a belated chapter on "The Donnan Equilibrium", which might have appeared in an

earlier edition of the book, but is now wedged uncomfortably between chapters on "The Periodic System" and "Some Flame Reactions".

Whilst, therefore, Prof. Stewart has provided an up-to-date report on atomic physics and related topics, it would be a *reductio ad absurdum* to pretend that a book in which dipole moments and strong electrolytes are not mentioned can serve as a guide to the very real advances which have been made in physical chemistry since the War. It should, however, be made clear that it is the title of the book that is at fault, and not the contents, since these are full of interest and contain many valuable references to work which is only beginning to find a place in the systematic textbooks of inorganic chemistry.

The Study of Crystals : a General Introduction. By T. V. Barker. Pp. xvi + 137. (London : Thomas Murby and Co., 1930.) 8s. 6d. net.

It is greatly to be hoped that science teachers will respond generously to Dr. Barker's efforts to mitigate the ill-effects of specialisation in science. The subdivision of natural science into several branches, while unavoidable in consequence of the extension of scientific knowledge, is unfortunate. The teacher should endeavour to treat science as a unit so far as possible, that his pupils' knowledge may be built on the broadest possible foundations. But when it comes to the study of crystalline matter, he is chary of handling a subject he has never been taught. Dr. Barker's book should assist him greatly, indicating how a study of crystals may readily be incorporated into the usual courses in chemistry and physics. Moreover, benefit will be felt in the teaching of solubility and other phase-rule relations, heat and light, and the concept of isomorphism and polymorphism and the like.

Of the value of such a course to the pupil, no one can doubt who has met the numerous examples in physical chemistry where the slightest experience in the study of crystals under the microscope would have avoided grave error. To those workers who have not had the benefit of such experience or instruction, the book may be cordially recommended; it should help to dispel the illusion that crystallography is essentially and necessarily a matter of difficult trigonometry and of no practical value. M. H. H.

A Text-book of Organic Chemistry. By Dr. A. F. Holleman. Seventh English edition, completely revised with the co-operation of the Author. Pp. xx + 594. (New York : John Wiley and Sons, Inc.; London : Chapman and Hall, Ltd., 1930.) 17s. 6d. net.

THE great success of Prof. Holleman's text-book, of which thirty-seven thousand copies have been issued in all and in nine languages, is certainly in part due to the point of view which the author expresses in the preface to the present edition. "So long as there is a public to buy it," he says, "a novel can be reprinted unchanged; but even with an interval of only a few years between successive issues, each new edition of a text-book