

Nuclear Engineering

Edited by Prof. Charles F. Bonilla. (McGraw-Hill Series in Nuclear Engineering.) Pp. xi+85 (London: McGraw-Hill Publishing Company Ltd., 1957.) 94s.

TWELVE specialists have collaborated in writing this book. Of the 800 pages, 170 are devoted to nuclear physics and associated subjects, 100 to reactor physics and shielding theory, about 300 to thermal and structural considerations, about 60 to instrumentation and less than 20 to metallurgy.

Although the nuclear physics is well presented, a more rigorous selection of topics with greater emphasis on those of immediate importance would have pleased the reviewer. There is a well-written chapter on radiation protection, which includes a clear explanation of the units used, the variety of which usually bewilders students.

Reactor physics is not allotted enough space and too much is attempted in the space available. In covering neutron cycles, flux, extrapolation distance, one group, multigroup and age theories, and resonance absorption effects, as well as discussing transport and diffusion theories and other topics in the space of 30 pages it has only been possible to survey the subject.

The real value of the book lies in its treatment of thermal and structural aspects of reactors, and for this section it can be recommended. There is a stimulating discussion of the potentialities and problems of non-elastic design methods.

Concluding chapters deal with reactor types and legal aspects of nuclear power.

As a text-book it suffers from having too many authors; as a work of reference its value is enhanced by the many references included, particularly on heat transfer, but weakened by an inadequate index.

W. MURGATROYD

A Revision of the Australian Chafers (Coleoptera: Scarabaeidae: Melolonthinae)

By E. B. Britton. Vol. 1. Pp. viii+186+42 plates. (London: British Museum (Natural History), 1957.) 80s.

IT is now generally recognized that an effective investigation into the biology and control of any group of animals must be based upon a sound taxonomy, but all too frequently this basic requirement remains unfulfilled until a very late stage, when already much effort has been wasted because of faulty identification. In the present volume the systematics of an important group of beetles is placed upon a satisfactory footing in a comparatively early stage of the investigation. The damage done by the Melolonthinae as a whole is of considerable economic importance, and it is chiefly due to the root-feeding habits of the larvæ. A great variety of plants are attacked by one or other of the species: grasses and various field crops including maize and sugar cane and also vegetables and fruit. Sometimes a considerable amount of damage is done by the adults of some species that feed upon the leaves of shade and fruit trees and also injure vines. It is somewhat surprising to find that all the pest species are indigenous, as indeed are all other Melolonthinae of Australia.

The volume is exceptionally well illustrated; there are 524 figures of which all but 25 drawings of the whole insect are arranged in 42 plates at the end. Most of the figures are simple but good outline

drawings of the male genitalia and of the head and prothorax of the different species. The keys are well done in the best modern style, and there would seem to be no difficulty in choosing between the alternatives offered in each couplet. Thirteen tribes are recognized of which no less than ten are described as new. The Sericini and four of the new tribes are dealt with in this first volume. These five tribes include 203 species of which 67 are described for the first time.

H. E. HINTON

Fibre Microscopy

Its Technique and Application. By Dr. J. L. Stoves. Pp. viii+276. (London: National Trade Press, Ltd., 1957.) 50s. net.

SO much is the make-up of all biological tissues of a fibrous construction, so much does man put numerous animal and vegetable fibres to supplementary uses, and so much has he now extended the idea into similar fields more purely of his own invention, that there is a continual need for good and up-to-date writing on the subject, and a new book of the kind on fibre microscopy can scarcely fail to be most acceptable to all sorts of readers. Dr. Stoves, out of his wide experience and contacts in such matters, has certainly provided one in the volume noticed here, directed to "students, laboratory assistants, analysts and research workers"—and that means, among many others, archaeologists and criminologists, for example; and he has spread its informative coverage over all the latest developments, including, of course, phase-contrast, interference and reflexion microscopy and, of ever-growing importance these days in spite of the expense, electron microscopy (plus, it should be mentioned, a chapter on metal shadow-casting in visible microscopy). He applies them then to the examination of almost anybody's fibres, so to speak. There are also excellent bibliographies and suggestions for further reading, indexes of animals and plants, and lists of stains and staining reactions. Altogether, this is a very worthwhile book indeed.

W. T. ASTBURY

Bakteriophagie 1917 bis 1956

Zugleich ein Vorschlag zur Dokumentation wissenschaftlicher Literatur. Von Dr. Hansjürgen Raettig. Teil 1: Einführung—Sachregister—Stichwortverzeichnis. Pp. xix+215. Teil 2: Autorenregister. Pp. iii+344. (Stuttgart: Gustav Fischer Verlag, 1958.) 44 D.M.

THESE two little books are intended as a guide to the literature on bacteriophage published between 1917 and 1951; they are a monument to German industry and thoroughness. Vol. 2 lists under authors no less than 5,655 references. Looking up fifty references, some of them from rather obscure journals, failed to reveal one which was not listed, and quite a large number from Russian journals are included. Vol. 1 classifies the material under subjects; here the arrangement is good but not perfect. A few omissions were detected: for example, *Escherichia* is unaccountably missing on p. 137. The books suffer, as do most bibliographies, from the defect that one cannot tell which of the many references are the really important ones.

The format is excellent; the limp covers in an attractive blue-grey add to the appeal of the volumes. Anyone who has to write an article, a review or even a book on phage will find that Dr. Hansjürgen has saved him much of his labour. C. H. ANDREWES