

A Text-Book of General Physics

An Introduction to Mechanics, Properties of Matter and Wave Motion. By G. R. Noakes. Pp. viii+416. (London: Macmillan and Co., Ltd., 1950.) 10s. 6d. net.

THIS book is a welcome addition to Mr. G. R. Noakes's series of books on physics, and is a worthy companion to the previous volumes. The author deals with the principles of Newtonian mechanics and their application to the study of solids, liquids and gases to a standard required by those students taking physics in examinations at the level of Advanced and Scholarship papers of the new General Certificate of Education. The chief aims are "to encourage a proper attitude of mind towards the subject, to guide the student's progress along the right lines and to lead him to think carefully about the essential physics of a problem before attempting its solution".

This last statement is sound common sense. Mr. Noakes may, or may not, be right in asserting that students find the mathematical aspects of the subject difficult because of the physics, and not the other way round. The writer's experience is that it is the application of mathematics to the solution of physical problems which presents difficulties, probably pointing to the necessity of a greater degree of co-operation in the teaching of mathematics and physics. But whatever the reason, there seems no doubt that mechanics, involving both subjects, is found difficult by many students, and Mr. Noakes is right in advocating learning the subject slowly and surely in stages.

To achieve his aim of winning mastery of the physical principles, the author's approach is experimental rather than mathematical, though the mathematics given is adequate for an intelligent understanding of the problems.

It might seem to some an encroachment on other preserves to include any reference to acoustic problems in a book chiefly on mechanics. But this is quite understandable (after all, the title of the book is "General Physics"), and indeed is all to the good, for apart from other considerations, it does emphasize the interdependence of one branch of physics with the others, which is highly commendable.

The scheme of work is well planned and thoroughly carried out, and the book should certainly be extremely useful to those students who desire a very readable text which presents all the necessary work clearly and fully.

T. M. Y.

The Work of the Sanitary Engineer

A Textbook on Water Supply, Sewerage and the Sanitation of Buildings. Based on the original work by the late Arthur J. Martin; rewritten and enlarged by L. B. Eseritt and Sidney F. Rich. Pp. xix+689. (London: Macdonald and Evans, 1949.) 42s. net.

IN 1935 the late Arthur J. Martin produced a comprehensive handbook on the many-sided work of the sanitary engineer, "for engineers, students, and others connected with public health". This rapidly established itself as a combined text-book and standard work of reference; indeed, it was perhaps the only book to cover, in clear and concise form, so wide a field as that on which the sanitary engineer is required to possess some knowledge, embracing hydraulics, chemistry, bacteriology and geology; and, combined with them, administration and law.

In this revised edition, published under the same title, Mr. L. B. Eseritt has been responsible for the technical side, which constitutes the bulk of the work, and which alone is here considered; and Mr.

S. F. Rich for the legal. The various sections of Martin's original work have been brought thoroughly up to date, that on water supply having been notably improved. The status of the book has been enhanced correspondingly over the already high standard of the first edition. It is felt that A. J. Martin would have fully approved of this revision, for which his work forms so broad a basis. It is a moot point whether the replacement of flow tables by graphs in the hydraulics section is an entirely desirable feature; it is in accord with modern tendencies, but it is possible for one to become too graph-minded. Of less importance is the inclusion of two quite irrelevant appendixes, respectively on sheep (that is, dew) ponds and the mechanics of the divining rod; their presence is the more remarkable since it is specifically mentioned in the authors' preface that Martin's original section on coast erosion, which in any event was but six pages long, had been excluded on the grounds of irrelevance.

The book has been furnished with a bibliography of 296 references, and with an excellent index. It is well printed, and the illustrations are carefully prepared.

School Laboratory Management

By Arthur Sutcliffe. Second edition. Pp. xi+164. (London: John Murray, 1950.) 6s.

ALTHOUGH the larger part of the text of this book is concerned with the chemical laboratory, the physics and biological laboratories are also dealt with, and there is an interesting Nature calendar. The information covers the storage, use and care of apparatus and chemicals, the preparation of solutions and reagents, the furniture of the laboratory, and hints on laboratory discipline. The section on accidents in laboratories includes the legal aspects and a list of dangerous substances. The book is based on experience and can be strongly recommended as likely to be useful to the science teacher in school and to the lecture assistant and storekeeper in university laboratories.

Ulla-Britt and the Birds

By Laurens Sargent. Pp. 116. (London: University of London Press, Ltd., 1950.) 6s. net.

LAURENS SARGENT has written a delightful book. Not only children, but adults too, will find pleasure in his "Ulla Britt and the Birds". The story hangs on the experience of a Swedish child, named Ulla Britt, who has her home deep in the forest and loves birds and other animals. Into the story of these experiences the author has skilfully woven his own knowledge of birds, which, as the reader soon realizes, is full and deep. We are told of the coming of spring—of the breaking up of the ice and the melting of the snow—and then the swift arrival of the cranes to feast upon the cranberries (the meaning of the word, the author tells us, is crane berries) which have been imprisoned, full-flavoured, by the snow throughout the winter. I have seen this happen with cowberries, an allied species, in the Cairngorm Hills in Scotland.

Into the book are woven stories and anecdotes. We are told of the life of that great Swedish naturalist, Linnæus or Linné, and how he bestowed his own name on that lowly plant of fragrant flower, *Linnaea borealis*, which is rare in Scotland but numerous in the countries of the north. On p. 94 we learn that the Swedish song thrush and the Swedish robin are shy birds, and thus unlike their British cousins. How many people, adults let alone children, realize that