Encyclopedia on Cathode-Ray Oscilloscopes and their Uses

By John F. Rider and Seymour D. Uslan. Pp. vii+982. (New York: John F. Rider Publisher, Inc.; London: Chapman and Hall, Ltd., 1950.) 75*s*. net.

THIS impressive volume, in common with most Rider publications, is not an advanced textbook. It has been compiled for those users of oscilloscopes—students, teachers and others—who have had a limited training in electronics and who can profit by obtaining a thorough understanding of the principles involved in the design and application of an instrument that is nowadays one of the most important items of apparatus in the lecture room, laboratory and factory.

The first half of the book contains a thorough account of the construction of the cathode-ray tube and the design of the associated circuits, as employed in American commercial equipment. The British reader may find the continual reference to American types of cathode-ray tubes and valves rather disconcerting; but this is more than compensated for by the clarity of the exposition. The more advanced reader will notice that there is no reference in the chapter on time bases to the Miller type of circuit that is frequently used in British oscilloscopes, and that a description of the wide-band chain amplifier has been omitted. No doubt these omissions will be corrected in the next edition.

The second section of the book covers the main applications of the oscilloscope to the testing of radio receivers and transmitters and to the measurements commonly made in the laboratory and factory. These chapters are well illustrated with oscillograms showing the wave-forms due to typical faults in the circuits under test.

There is a long chapter illustrating the wave-forms of oscillations containing harmonics up to the sixth, and this should enable the reader to identify the various wave-forms he may encounter in his experimental work. The book concludes with a chapter giving the circuits and a brief explanation of each of some seventy commercial oscilloscopes of American manufacture.

Although a book covering such a vast subject as oscillography cannot contain details of every aspect, the authors have produced a volume that will prove to be of great value to those for whom it has been compiled. G. E. Ashwell

Vorlesungen uber Theoretische Physik

Band 4: Optik. Von Prof. Arnold Sommerfeld. Pp. xvi+390. (Wiesbaden: Dieterich'sche Verlagsbuchhandlung Inh. W. Klemm, G.m.b.H., 1950.) DM. 18.50.

THIS volume on optics follows the other parts of Sommerfeld's lectures on theoretical physics in its mathematical elegance and clarity, while never allowing the reader to forget the connexion of the mathematical problems with physical reality. The material is deliberately arranged in a somewhat unorthodox sequence. The theory of plane waves and plane interfaces (including refraction, reflexion and interferometers) is followed by relativistic theory and the optics of moving media. Dispersion theory is treated using the results of wave mechanics of the atom, and the section dealing with phase, signal and group velocity is of very convincing simplicity and completeness. Crystal optics is covered fairly briefly, but two full chapters deal with diffraction, one of the subjects to which Sommerfeld made decisive contributions. There is a short list of problems, mostly to derive generalizations of results mentioned in the text, and instructive notes on their solution.

In the review of earlier volumes (see *Nature*, **168**, 887; 1951) I remarked on the desirability of having the series completed and of making a translation into English. Several correspondents have since informed me that the last volume is in course of publication, and that a translation is being prepared.

R. E. Peierls

The Apple and the Spectroscope

Being Lectures on Poetry designed (in the main) for Science Students. By T. R. Henn. Pp. xix+166. (London: Methuen and Co., Ltd., 1951.) 12*s*. 6*d*. net.

THOSE who devote their lives to the pursuit of natural science often realize how little they know of English prose and poetry, which contribute so much to the thought of people educated in the humanities. A few years ago, a group of young Cambridge scientists asked for instruction during the 'long vacation' in English literature and language. The series of lectures that was arranged proved very popular, and the lectures given by Mr. T. R. Henn as part of this course have now been published. The first eight chapters are about poetry, and an appendix contains the poems and passages examined in the text. Two chapters are entitled "Notes on a Background to English Literary History", with an appendix of authors and their dates. The concluding chapter, full of interesting reflexions and suggestions about reading, is accompanied by a list of works suggested for casual reading.

This delightful little book can be recommended to those who wish to know something of the qualities which distinguish good poetry and prose. It is full of interest in its matter and approach, while its consideration of the significance of words may prove of practical value to those who write scientific papers and lecture notes. There are some pleasing illustrations, and it is easy to see why the author's lectures to Cambridge scientists were so popular.

H. H. T.

The Bird Lover's Week-End Book

By Eric Hardy. (Week-End Library.) Pp. 444. (London: Seeley, Service and Co., Ltd., n.d.) 15*s*. net.

THIS "Week-End Book" is an ambitious volume, its author trying to cover a very big field. The first chapter on the bird-watcher's year is a lengthy review of the passing months as seen by the author and recorded in weekly notes. He then gives a key to bird identification under such headings as "What the bird looks like", "the bill", "upper parts" and so on. It will be gathered that the book is written for the amateur ornithologist, and the beginner at that. There is no doubt that the tyro will find it a real help.

The chapter on the bird-watcher's equipment contains much useful information on subjects varying from binoculars to bird-baths. Reference to subjects is here facilitated by their alphabetic arrangement. Bird haunts and bird holidays are among the topics dealt with, and there is a long chapter on "nicknames" of British birds. The reader wanders on through chapters on migration, British birds abroad, etc., and winds up with a glossary of the bird-watcher's terms. There is no doubt that the amateur ornithologist spending a week-end in the countryside will find this a helpful book. Frances Pitt