substances, due to Frevel, may be somewhat misleading as it is by no means complete. For example, although the β-brass and related structures are listed, the complex γ-structures in alloys are omitted as also are the α- and β-manganese structures.

I. G. EDMUNDS

Crystal Structures

By Ralph W. G. Wyckoff. Vol. 3. Pp. xi+641. 14.50 dollars. Second Supplement. (Supplement to Chapter 13.) Pp. 148. 4.00 dollars. (New York: Interscience Publishers, Inc.; London: Interscience Publishers, Ltd., 1953.)

THE appearance of Vol. 3 of this work marks the end of the first stage of the task which Dr. Wyckoff has set himself—the presentation of the whole of the results of crystal-structure determination. The two previous volumes (see *Nature*, **169**, 681; 1952) were concerned with inorganic and some organic structures; the present volume is confined to organic structures, and, with the addition of the earlier organic section (Chapter 13), provides a complete review of organic structures up to about the middle of 1952.

The loose-leaf form of publication makes the removal of chapters in this way quite possible, and also allows the introduction of supplements, one of which is published together with Vol. 3. This supplement brings up to date some of the information in Vol. 2, and two more Chapters, 11 and 12, remain to be included.

The results are clearly set out, with brief descriptions of the various structures, tables of atomic parameters, drawings, and references. The drawings are of two types—schematic ones, showing the heights of the atoms above a reference plane, and perspective ones, showing the packing of the atoms, which are represented as shaded spheres. These latter drawings are often very beautiful; but it is questionable whether the information they provide justifies the work of preparing them; the more complicated molecules look quite bewildering.

It is a pity that the price of the book is so high. In particular, the supplement, consisting of relatively few pages without any binding, is very costly.

The Measurement of Particle Size in Very Fine Powders

Four Lectures delivered at King's College, London. By Dr. H. E. Rose. Pp. 127. (London: Constable and Co., Ltd., 1953.) 9*s*. net.

THREE properties, which Dr. Rose terms primary characteristics, are of importance in many industrially significant dusts and powders; they are size frequency, specific surface and particle shape. In his lectures, Dr. Rose is concerned mainly with the determination of particle size and size frequency and subordinately with specific surface. He refers to most of the techniques available for particle-size determination in powders within the size range 1 to 60 microns and discusses simply, but adequately, the theoretical principles of the various techniques and their practical application and limitations. The photo-extinction method, in which Dr. Rose is particularly interested, receives, rather naturally, more detailed treatment than other methods. He refers, also, to some of his own research work.

The lectures are interestingly written; the illustrations are clear; the equations are easy to read; and the whole forms a satisfying small book which should prove valuable not only to those with experience in this field but also to newcomers, especially in helping to solve the problem of selection of the best method of particle-size determination for a particular powder or dust.

STACEY G. WARD

Physical Formulae

By Dr. T. S. E. Thomas. (Methuen's Monographs on Physical Subjects.) Pp. vii+118. (London: Methuen and Co., Ltd.; New York: John Wiley and Sons, Inc., 1953.) 8*s*. 6*d*. net.

DR. THOMAS'S little book contains many of the more important results in statistics and classical physics. The chief criticism is that it is out of place in a series intended to supply science students at university-level with a compact statement of the modern position in each subject; and that it would have been entirely in keeping with this intention if it had dealt equally generously with modern physics.

G. R. NOAKES

Mechanics

(Lectures on Theoretical Physics, Vol. 1.) By Arnold Sommerfeld. Translated from the fourth German edition by Martin O. Stern. Pp. xiv+289. (New York: Academic Press, Inc.; London: Academic Books, Ltd., 1952.) 6.50 dollars.

THE appearance of this English translation makes a valuable addition to the books now available to introduce students to mechanics as a live subject. The contents of this volume have already been discussed in a review of the German edition (*Nature*, **168**, 887; 1951); but it is worth stressing again the value of this introduction as a counter-weight to the tendency, so widespread in the teaching, particularly in English schools, of regarding mechanics merely as a branch of mathematics. The lively and readable style of the book has not been lost in translation. The book covers the contents of a normal university course in mechanics. The numerous examples with aids to their solution are all designed to bring home important points of principle, and none of them is of the 'ladder leaning against a wall' type, which is more suited to traditional examination papers than to develop an understanding of the subject.

This book, like the others in the same series, will help to make available to the prospective theoretical physicist the insight and the experience of one of the most successful and inspiring teachers.

R. E. PEIERLS

Principles of Modern Acoustics

By Prof. George W. Swenson, Jr. Pp. vii+222. (New York: D. Van Nostrand Company, Inc.; London: Macmillan and Co., Ltd., 1953.) 30*s*. net.

IN this book the subject of acoustics is considered as the study of inter-related electrical, mechanical and acoustical systems as applied to the production and reproduction of sound, and, as may be expected, great use is made of analogies, especially in the discussion on electroacoustics.

For a thorough study of the analysis and description of acoustical phenomena it is, as the author quite rightly recognizes, very necessary to approach the problem from the mathematical angle. This is what is done in this book, and for those students who can think, reason and understand in terms of mathematical equations and deductions it will be helpful, for the author starts from first principles and his exposition is clear. It is not the book, however, for those students who require a general description of acoustical phenomena and devices and who are