

accomplish impossible changes in the form of matter.") He chooses interesting subject matter and arranges it with care. He has seen to it that the book contains excellent line drawings and outstanding illustrations. He has marked sections for convenient omission. Regrettably, but probably of necessity, he has soft-pedaled mathematics. Twenty-five years ago we said that students couldn't do arithmetic—now the preface mentions "a class for which mathematics is a *serious emotional block*"! (Italics supplied.)

The main theme of the book is admirable. To summarize man's knowledge of his world, the author performs a synthesis of astronomy, physics, chemistry, and geology, using the solar system as his point of departure for reasons that the ancients would have understood. Important subsidiary themes, appropriately emphasized, are science as a human adventure with a method of its own, and the relation of science to other intellectual activities. To accomplish the synthesis, the four sciences had to be dismembered and reassembled. In general, these difficult operations have been done logically and smoothly. Only in the introduction to Part 4 (there are six parts) did this reviewer find forcing and strain.

The book should teach easily. Repetition and development for pedagogical purposes are unobtrusive and effective. End-of-chapter aids are diverse and well thought out.

Only three items seem worth mentioning here on scientific grounds. The Second Law of Thermodynamics (pp. 147, 148) has been watered down too far. The importance of electrons in conduction through gases is slighted (p. 354). Isn't there a better adjective than the time-honored "uniform" for the geologist's important law of uniform change (p. 541)? "Continual"? "Experiential"? A list of minor items is being sent the author.

Appropriate revisions and additions have been made in this, the fourth edition. Topics that qualify at least for mention in the fifth would seem to be: macromolecules, semiconduction, superconductivity, research at high temperatures and pressures. Rather than imply the synthesis of an allotrope even in these times, isn't it better to speak of man-made diamonds (Fig. 15.4)?

The book is a bargain. It should prove attractive to many long out of college—to the physicist, for example, who occasionally wishes to dip into organic chemistry. An equally good companion volume on the life sciences would be most welcome.

General Circuit Theory. By Gordon Newstead. 144 pp. (Methuen, England) John Wiley & Sons, Inc., New York, 1959. \$3.00. *Reviewed by J. Gillis, The Weizmann Institute of Science.*

THE first word of the title of this excellent little monograph is clearly the operative one. The author carefully restricts himself throughout to the most general aspects of the subject and steers clear of any particular circuit problem. One might have expected

the result to be dry and cheerless, and it is a tribute to the author's grasp of the subject and his expository skill that nothing like that has happened.

The discussion includes some interesting remarks on reciprocity theorems and nonreciprocal networks. There is a fairly comprehensive account of four-terminal networks. Fourier transform theory is inevitably invoked to deal with transient phenomena; and the Bode theory, even though presented very succinctly, is actually given with most of the relevant detail.

The last chapter, on nonlinear circuits, describes some ideas which have been advanced during the past two decades. In this field no general theory exists and all that we have is, in fact, methods for handling particular problems. It was clearly difficult to fit this into the framework of the book, a fact which is reflected by the brevity of the chapter.

The Many-Body Problem: U. of Grenoble cours donnés à l'école d'été de physique théorique (Les Houches, 1958). Edited by Cécil DeWitt and P. Nozières; 15 lecturers. 675 pp. (Dunod, France) John Wiley & Sons, Inc., New York, 1959. \$15.00. *Reviewed by H. Mendlowitz, National Bureau of Standards.*

IT is now becoming usual for physicists to participate in summer institutes devoted to some special field. The Summer School for Theoretical Physics at Les Houches, France, is one of the better known of these schools. Here, the seminars and lectures are devoted to a central theme, and in 1958 this was the many-body problem. The various topics covered under this general theme included: Systems of many fermions, nuclear structure, electron gas, binary collisions and the grand partition function, collective motion, Bose systems, Bogoliubov's method, liquid He^3 , superconductivity (experimental and theoretical), liquid helium II, the method of pseudopotentials, and the binary collision expansion of Lee and Yang. Under these headings are numerous subtopics, each being important and interesting in its own right. Each of these was covered by experts and specialists who themselves have done original and important research in the various topics.

Instead of listing all the authors at this point, I prefer to discuss and evaluate the general features of the book. First, the publishers and authors are to be commended for bringing to completion within less than a full year the publication of the notes on the various lectures, in most cases, in a rather complete form. Unfortunately, this great speed caused a large number of casualties in the form of misprints and proofreading errors. In most cases, these errors are quite trivial, but several of these errors were quite misleading and time-consuming for the reader. In spite of this latter remark, the usefulness of the book was not impaired sufficiently to negate the value of bringing it into print with such speed.

It is probably the most complete compendium of recent work on the many-body problems to be found