the whole gamut of contemporary theories from relativity to quantum theory, from the atomic nucleus to the cosmos. That she has not been wholly successful is not surprising, as the task is next to impossible. She endeavors to explain in a chatty style and with the use of many clever cartoons ideas which the average graduate student of physics has a sufficiently difficult time getting through his head and which even the experts are not wholly agreed on. The reader will at any rate be exposed to the key words and may catch some of the spirit of the undertaking, but if he is incautious he will come away with many misconceptions, for the volume abounds with loose and confusing statements, as well as inaccuracies of detail. The reviewer feels the author might have been more successful had she concentrated on the methods behind modern theorizing instead of the factual detail.

An Introduction to the Mechanics of Solids. Edited by Stephen H. Crandall and Norman C. Dahl. 444 pp. McGraw-Hill Book Co., Inc., New York, 1959. $8.50. *Reviewed by Ellis H. Dill, University of Washington.*

ORDINARILY a new text of sophomore level devoted to strength of materials would not be reviewed in a physics journal. Such a review of this book seems justified, however, for it is likely to have a profound effect upon the engineering undergraduate curriculum and therefore upon the physics courses for engineers.

In a few years, it will probably be difficult to understand how such a book could have been considered revolutionary. But one has only to compare it with current texts on the same subject to realize what a tremendous shift in emphasis the authors have effected. While most authors appear to be willing to go to almost any length to avoid unifying the various special topics through a general statement of the fundamental relations of the mechanics of continuous media, the present authors have achieved an explanation of the fundamental statical, geometrical, and stress-strain relations in three-dimensional elasticity and plasticity which can easily be read by sophomore students who have had introductory physics and calculus courses.

The lack of a discussion of the manner of energy storage in matter and the law of conservation of energy constitutes a serious omission which the reviewer hopes will be remedied in future editions.

As intended, this book forms an ideal text for a core course for all engineers in the mechanics of solids.

Advances in Space Science, Volume 1. Edited by Frederick I. Ordway, III. 412 pp. Academic Press Inc., New York, 1959. $12.00. *Reviewed by M. W. Friedlander, Washington University.*

UNTIL the Space Era commenced in October 1957, travel beyond the Earth's atmosphere, to the moon and further afield, in and perhaps beyond the solar system, seemed largely the domain of science fiction. With the impetus of the International Geophysical Year and major technological advances, extraterrestial travel has suddenly materialized; as this review is being written, signals are being received from a rocket more than a million miles from the Earth. Without the accelerated development of propulsion systems for military purposes, the present spectacular space enterprises would almost certainly not yet have been possible, and it is also questionable whether the large sums of money necessary would have been made available in the first instance to nonmilitary projects. The annual budget of the Army Ballistic Missile Agency alone, at which only a part of the development is done, runs at about twice what the Atomic Energy Commission has just requested for a 10-year period for basic nuclear research.

The present book has chapters on the following topics, each written by an authority in his own field: interplanetary rocket trajectories, interplanetary communications, power supplies for orbital and space vehicles, manned space cabin systems, radiation and man in space, and nutrition in space flight. With commendable foresight, there is an appendix on a decimal classification system for literature on astronautics.

The emphasis is entirely on the technological side of space travel. Perhaps a more appropriate title for this series would be "Advances in Space Technology"; the confusion of science and technology is already too widespread. The purely scientific reasons for wanting to get away from the Earth are usually covered in other publications.

This is a well-produced, well-documented guide to a rapidly expanding field where surveys are presently few and authoritative reviews like these will be invaluable. This book is recommended for inclusion in all space cabins.

Mechanical Properties of Intermetallic Compounds: Electrochem. Soc. Symp. Proc. (Philadelphia, Pa., May 1959). Edited by J. H. Westbrook. 435 pp. John Wiley & Sons, Inc., New York, 1960. $9.50. *Reviewed by Cyril Stanley Smith, Institute for the Study of Metals, The University of Chicago.*

HOW different this is from previous books on intermetallic compounds! The works of Giua and Desch were mainly concerned with those factors which made the compounds unpopular among nineteenth-century chemists who wished to believe in simple combining proportions and in the ordinary rules of valence. Intermetallic compounds are no longer useless brittle materials, but are compounds of highly special properties which must be used as ceramets and as semiconductors despite their mechanical intractability. This book contains an excellent review of the whole field by the editor, followed by a series of papers on divers aspects of strength and deformation, which reflects an important concern with structure. It has more coherence than do most symposia and is a welcome addition to the literature.