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background in the subject, who need and want an excellent exposition of more than the trivial aspects of modern electronics, and who need an understanding of the principles and functions of their apparatus, this is indeed *the* book.

Basic Astronautics. By Frederick I. Ordway, III, James Patrick Gardner, Mitchell R. Sharpe, Jr. 587 pp. Prentice-Hall, Inc., Englewood Cliffs, N. J., 1962. \$16.00. Reviewed by Jacques E. Romain, *General Dynamics/Fort Worth*.

INITIALY my reaction to this book was negative. It seemed to include a little of everything, an exhaustive treatment of nothing, and in places looked like a picture book. However, I soon understood the authors' point, namely, that "astronautics" is not just another name for applied celestial mechanics, but a blend of pure science, engineering, and medicine, the ultimate goal of which is "to put man into a new environment". The wide scope of astronautics is demonstrated by an elementary presentation of the problems that must be faced, the main lines of approach to these problems, and the principles of the solution—when a solution is available. And yet this simple-looking program furnishes ample material for 587 pages crammed with facts, figures, graphs, and pictures.

The book is divided into three parts: space science (ranging from the principal characteristics of the members of the solar system through "astrogeology" to space environment), space engineering (vehicles inside as well as outside an atmosphere), and space medicine (physiological and psychological factors, hazards, and training). Each chapter includes review questions and an impressive number of references, from the elementary to the advanced level. The relationships between the different topics are clearly displayed. The subject index has been prepared with particular care, and, although a few errors have crept into the book, they are for the most part minor.

The book provides a sound basis for putting into the proper perspective the various fields that contribute to astronautics and for reading specialized textbooks in these fields. It may be especially helpful to the reader who wishes to acquire a broad but elementary knowledge of the multiple facets of astronautics, and it will undoubtedly be useful as well to the specialist in one of the fields involved in astronautics who wishes to gather essential data about neighboring fields.

Physical Properties of Polymers. By F. Bueche. 354 pp. Interscience Division, John Wiley & Sons, Inc., New York, 1962. \$9.50. Reviewed by Herbert Leaderman, *National Bureau of Standards*.

THE physics of high polymers is concerned with the morphology of and molecular motion in condensed systems containing long semiflexible molecules. An ideal polymer chain, by virtue of free rotation under conditions where Brownian motion can exist, is characterized by a randomly kinked shape, and the structure