

BOOKS

Structural Chemistry and Molecular Biology

Edited by A. Rich and N. Davidson
W. H. Freeman\$15.00

reviewed by Max Delbrück,
professor of biology

Nobody, but nobody, undersells Freeman—907 pages, 60 original papers by 86 associates and students, a classical paper from 1931 by Linus Pauling on the nature of the chemical bond, a bibliography of 375 research papers and nine books by Pauling (omitting about 100 papers on science and world affairs), three portraits of the dedicatee (Pauling)—all this for \$15.00! Paper, printing, and editing are excellent. One glaring misprint on the first page of the first paper has been cleverly inserted to put the reader on guard.

The book is as immensely interesting as the man, testifying to the breadth and depth of his impact on vast areas of chemistry, biology, and medicine. Many of the papers are highly sophisticated and speculative; quite a few are review articles; some of the best are retrospective essays; a scattering are purely technical reports. It stands to reason that a book planned to be presented to Linus on his 65th birthday, but delayed in publication for two years by the sweet patience of the editors, will contain only papers which the authors feel they or the world could afford to have in limbo for more than three months. Such a book attracts the contemplative and sometimes the marginal sediments of the mainstream.

Young research students of chemistry, biology, and medicine may well consider this as a bible, not because of its doctrines and dogmata but for its wealth of diversity of content and comment. However, one serious miscalculation appears to have been made—the book weighs over four pounds. The publisher seems to have had in mind a student doing his reading standing in front of a lectern sturdy enough to hold a medieval Bible. Has he not

heard that modern man likes to read stretched horizontally? This book would crush him should he fall asleep around page 700. The only practical solution is to Xerox the papers one wants to read closely; this I intend to do and would advise every prospective buyer to do, notwithstanding a scurrilous copy-right notice of the publisher's expressly forbidding all forms of copying. Such an attitude strikes me as out of tune with reality as the marijuana laws. Indeed, a "Freedom to Xerox" march on the Supreme Court by 20,000 professors and students would set even Art Buchwald on fire!

Nuclear Astrophysics

by William A. Fowler
Amer. Philosophical Society\$3

In 1965 William A. Fowler, Caltech professor of astrophysics, delivered four Jayne Memorial lectures for the American Philosophical Society in Philadelphia on the origin of the elements, nuclear reactions in stars, the age of the elements and of the universe, and some early results and interpretations of galactic explosions and quasars.

The subject matter of these lectures, updated to include information gathered through 1967, now appears in this well-written book.

For the mathematician, the physicist, and the astrophysicist (Dr. Fowler is all three) to have the additional ability to present these understandable accounts of difficult scientific subjects is indeed a lucky break for the enlightened lay reader.

Matrix Theory

by Joel N. Franklin
Prentice-Hall\$10.95

reviewed by Richard A. Dean,
professor of mathematics

This text is an outgrowth of Joel Franklin's course in Matrix Algebra, which he has given at Caltech since 1957. The text presents a variety of applied problems and emphasizes the role of matrices as combinatorial

entities which make possible the solution of these problems. The first half of the book presents determinants and the basic algebraic properties of matrices from the standpoint of solutions of linear equations and differential equations. Two chapters discuss eigenvalues, eigenvectors, and canonical forms, including the Jordan form theorem.

The second half of the book is devoted to two chapters on variational principles and numerical methods. These last chapters are of particular interest to students of engineering and science. Dr. Franklin, who is professor of applied science at the Institute, has taken care to see that his discussions are both mathematically sound and comprehensible to the reader.

Leonardo, International Journal of the Contemporary Artist

Edited by Frank J. Malina, MS '35,
AE '36, PhD '40.
Pergamon Press, Oxford\$6 yr.

reviewed by Robert R. Wark, curator of art collections, Huntington Library and Art Gallery

The founder and editor, Dr. Malina, explains the scope and aims of this new quarterly periodical to be "primarily a channel of communication between artists."

This is a praiseworthy aim. Artists communicate basically (one hopes) through art itself. But the writings of artists about their own work are always of interest both to other artists and to the general public—provided one remembers that there is often a fascinating discrepancy between what an artist says he is doing and what he actually does.

The magazine seems to be primarily for people professionally involved with the contemporary art scene, it would not make light recreational reading for the casually interested layman. It seems probable, given the (Caltech) background of the editor, that there will be a considerable number of articles dealing with the interrelations between science and art.