

cise to serve as a text; however, it is an admirable reference work for the specialist and could also be a companion to the text for many courses.

An Introduction to the Physics of Mass, Length and Time. By Norman Feather. 358 pp. (Edinburgh U. Press, Scotland) Quadrangle Books, Inc., Chicago, Ill., 1960. \$5.00. Reviewed by R. Bruce Lindsay, Brown University.

THE proper introduction into physics for the student who intends to make this his profession has long been a challenge to the resourceful teacher as well as the writer of textbooks. The tradition in Britain, going back to Maxwell or even earlier, has been to provide the embryonic physicist first with a book on mechanics and fundamental properties of matter, and texts bearing this title have been numerous. They have concentrated on the basic principles of mechanics, followed by a consideration of what are commonly referred to as mechanical properties of matter, e.g., gravitation, flow of fluids, elasticity, etc. Separate texts have in general been provided to carry the story along in electricity, heat, and optics. In America on the other hand the tendency has been to lump all such material into a single compendious volume with the amorphous title "General Physics".

The eminent nuclear physicist at the University of Edinburgh, Professor Norman Feather, has decided to have another go at producing a book on introductory physics in the British tradition. It should be said at once that he has freshened up the treatment considerably. In the relatively modest compass of some 350 pages, he has written a clear and graceful account of the basic concepts on which all physical science rests. Though somewhat conventional in outline, the volume is enlivened by attractive historical accounts which are not merely anecdotal in character but provide the reader with a genuine insight into the evolution of physical ideas. The author puts particular stress on the notion of measurement and the methods available for accurately measuring fundamental physical quantities. His treatment of the basic concepts of mechanics within the framework of the analysis used is beyond reproach. Some critics will object to his avoidance of the calculus in his development, but there is something to be said for the author's implied contention that for the elementary student elaborate mathematical analysis often gets in the way of a real understanding of the physical ideas. This is of course a highly debatable question and the reviewer has no intention of getting involved with it here. At any rate the student with a good command of calculus and differential equations can still use Professor Feather's book to advantage by translating the algebraic results into calculus language and hence increase his command over the whole subject.

In addition to basic mechanics, the book contains a good brief account of heat and energy and the kinetic theory of gases. There are some interesting illustrations chosen from atomic and nuclear physics. A possible

weakness from the standpoint of actual class use is the absence of the usual lists of problems. But the material for such is present in abundance and the author observes that the instructor should be able to construct his own, a suggestion which the reviewer applauds.

This book is recommended as a refreshing contrast to the ponderous volumes still being handed out to students of elementary physics.

Books Received

PHYSICS OF THE UPPER ATMOSPHERE. Edited by J. A. Ratcliffe. 586 pp. Academic Press Inc., New York, 1960. \$14.50.

HARPER TORCH BOOKS. *Problems of Life: An Evaluation of Modern Biological and Scientific Thought* (Reprint of 1952 Ed.), by Ludwig von Bertalanffy, 216 pp. \$1.35. ***A Short History of Chemistry*** (Reprint of 1957 Revised Ed.), by J. R. Partington, 415 pp. \$1.95. Harper & Bros. Science Library, New York, 1960. Both paperbound.

ELECTRONICS FOR SPECTROSCOPISTS: Schwarz Memorial Volume. By members of the Photoelectric Spectrometry Group & the Electronics Dept. of Southampton U. Edited by C. G. Cannon. 333 pp. Interscience Publishers, Inc., New York, 1960. \$9.50.

POLICIES FOR SCIENCE EDUCATION. Edited by Frederick L. Fitzpatrick. 219 pp. Bureau of Publications, Teachers College, Columbia U., New York, 1960. \$3.95.

CAREERS IN PHYSICS. By Alpheus W. Smith and Winston L. Hole. 310 pp. Long's College Book Co., Columbus, Ohio, 1960. \$5.95.

ADVANCES IN SPACE SCIENCE, Vol. 2. Edited by Frederick I. Ordway, III. 450 pp. Academic Press Inc., New York, 1960. \$13.00.

MY LIFE AND TIMES AS A PHYSICIST. By I. I. Rabi. 55 pp. Claremont College, Claremont, Calif., 1960. \$2.75.

INSTRUMENTATION REQUIREMENTS FOR HUMAN COMFORT AND SURVIVAL IN SPACE FLIGHT: Proc. of Pilot Clinic (Ohio State U., Columbus, Oct. 1959). Edited by L. E. Slater. 165 pp. Foundation for Instrumentation Education and Research, New York, 1960. Paperbound \$5.00 for industry; \$3.00 for schools and students.

BIBLIOGRAPHY ON MOLECULAR AND CRYSTAL STRUCTURE MODELS. NBS Monograph 14. By Deane K. Smith. 7 pp. US Govt. Printing Office, Washington, D. C., 1960. Paperbound \$1.15.

VIBRATION-ROTATION STRUCTURE IN ABSORPTION BANDS FOR THE CALIBRATION OF SPECTROMETERS FROM 2 TO 16 MICRONS. NBS Monograph 16. By Earle K. Plyler, Alfred Danti, L. R. Blaine, E. D. Tidwell. 20 pp. US Govt. Printing Office, Washington, D. C., 1960. Paperbound \$2.00.

THE RADIOCHEMISTRY OF BARIUM, CALCIUM, AND STRONTIUM. NAS-NS 3010. By D. N. Sunderman and C. W. Townley. 118 pp. OTS, Dept. of Commerce, Washington, D. C., 1960. Paperbound \$1.25.

GRAPHITE AND ITS CRYSTAL COMPOUNDS. By A. R. Ubbelohde and F. A. Lewis. 217 pp. Oxford U. Press, New York, 1960. \$5.60.

NUCLEAR PHOTO-DISINTEGRATION. By J. S. Levinger. 144 pp. Oxford U. Press, London, 1960. \$2.00.

SELECTED LECTURES IN MODERN PHYSICS: For School Science Teachers. Edited by H. Messel. 328 pp. (Macmillan & Co., London) St Martin's Press, New York, 1960. \$5.25.