Tetrahedron, 1963, Vol. 19, p. 677. Pergamon Press Ltd. Printed in Northern Ireland

BOOK REVIEW

Modern Very High Pressure Techniques. Edited by R. H. WENTORF, Butterworths, London, 1962. 233 + xiv pages. 60s.

THE subject of high pressure research essentially originated with the work of P. W. Bridgman, of Harvard University, at the beginning of this century. The important advances that he, and others, made in the subsequent 50 years are well-known through his book *The Physics of High Pressures* (G. Bell & Sons, London, 1949). The present book, comprised of eleven articles written by sixteen authors and co-authors, brings the subject up-to-date; it includes a number of well written accounts of modern very high pressure apparatus.

At the present time, "very high pressures" vary from about 20 kilobars (1 bar = 10^6 dynes cm^{-2} = 0·987 atm.) up to the hundred kilobar range in static experiments and up to about 10^9 bars in shocks lasting for times that are measured in microseconds. Research in the subject has received a fillip from the synthesis of diamonds and other minerals, and is now going on in many laboratories throughout the world. The general principles of high pressure apparatus design are covered in twenty-three pages by Bundy from the General Electric Research Laboratory, Schenectady, and optical and electrical measurements are treated by Drickamer and Balchan from the University of Illinois. Drickamer has done much to improve and to extend Bridgman's work on "fixed points". The difficulties of this field are well illustrated by the fact that the pressures of some of the earlier reference points were much too high; for example, the new pressure of the resistance maximum in caesium is 42, compared with the older value of 53 kilobars. Readers of papers published in the 1950s should be aware of the subsequent downward revision of the pressure scale.

The book contains clear and authoritative accounts of instruments used for producing very high pressures (including Hall's tetrahedral anvil and "belt", and shock wave generators) at temperatures between 4°K and 4000°K, and for studying the optical, electrical and X-ray diffraction properties of various materials under these extreme conditions. It can be thoroughly recommended to physicists, chemists, geochemists and engineers.

A. D. BUCKINGHAM

BOOKS RECEIVED

R. S. CAHN: **Annual Reports on the Progress of Chemistry. Vol. LV 1958.** The Chemical Society, London, 1959. 527 pp. £2.

R. S. CAHN: **Annual Reports on the Progress of Chemistry. Vol. LVI 1959.** The Chemical Society, London, 1960. 476 pp. £2.

XVIIth International Congress of Pure and Applied Chemistry. Butterworths, London, 1960. 426 pp. 75s.

Radioactivation Analysis—Proceedings of the Radioactivation Analysis Symposium held in Vienna, Austria, June 1959. Butterworths, London, 1960. 141 pp. 30s.

Pure and Applied Chemistry, Vol. 1, No. 1, 1960. Butterworths, London, 1960. 186 pp. £6 per volume.

ATTILA E. PAVLATH and AMOS L. LEFFLER, **Aromatic Fluorine Compounds.** ACS Monograph No. 155, Reinhold Publishing Corporation, New York, N.Y., U.S.A. (Chapman & Hall, Ltd., London), December 14, 1962, XVIII, 820 pp., $26.00.